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THE RECORDING INDUSTRY MAGAZINE

# Mix<sup>®</sup>

INTERVIEW: KING CRIMSON

**Video Production  
Supplement**

**Listings:  
Southwest Recording Studios  
Recording Schools**



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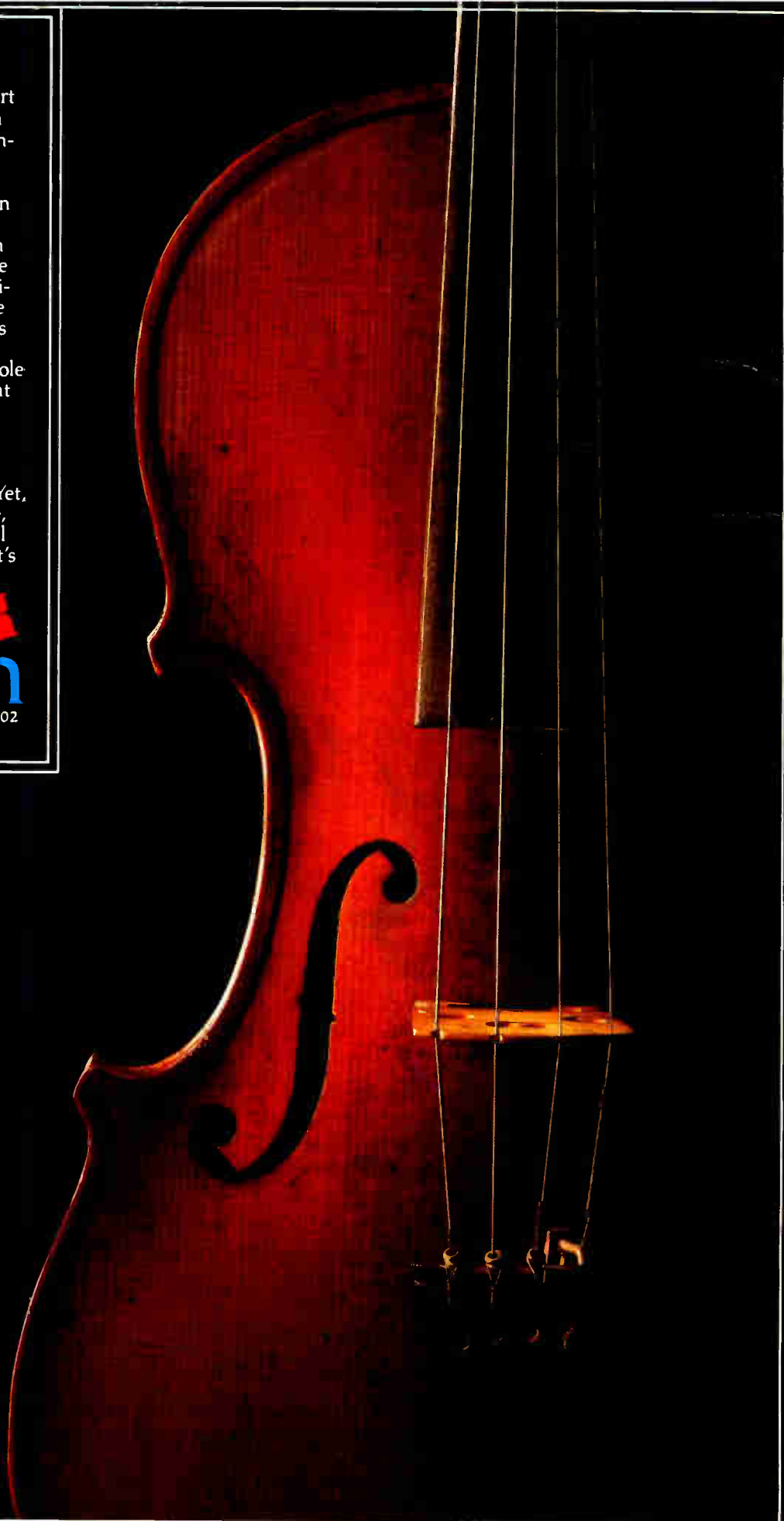
Three hundred years ago, it took the hand of a master craftsman to create a concert violin. It also took commitment—a commitment to producing the highest quality, purest possible sound.

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Cover: Since opening in the multi-million dollar Dallas Communications Complex a year ago, Dallas Sound Labs has become one of the busiest and most respected studios in the Southwest. Specializing in audio-for-video and film scoring, the facility's massive Studio A (pictured on the cover) can hold up to 60 players for multitrack recording to picture. It also boasts film editing rooms, a mixing theater and Foley effects stage.

Photo: Doug Tomlinson

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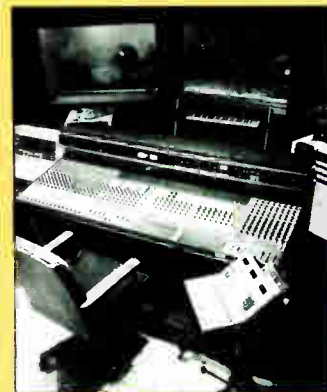
## MUSIC

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The main reason for the boom in *multitrack cassette recorders* is that they allow musicians to make quality demos with a minimum of expense. George Petersen looks at the various brands on the market and points up some similarities and differences, beginning on page 14.

This issue we have two sets of listings: *Recording Studios of the Southwest* (accompanied by an article on that scene), and *Recording Schools and Programs*, which has a piece on job prospects in the recording business as a companion article. The Southwest listings start on page 60, the school listings on page 38.



His organ style is instantly recognizable, the mark he's left on contemporary music indelible. He's *Booker T. Jones*, guiding light of the Memphis R&B sound, and Bonzai's got him for an entertaining and illuminating lunch. The maitre d' will seat you now, on page 92.

Topping the features in our video supplement is a talk with *Charles Ginsburg*, who with a small team, developed the first video tape recorders for Ampex in the mid-'50s. In part one of this two-part interview, writer Peter Hammar talks to Ginsburg about the VTR's embryonic stages. See page 110.



## KEVIN CRONIN ON MAKING IT: ON AN OTARI.

Recording Artist-Writer Kevin Cronin has been laying his ideas down on an Otari since 1978. Many of the REO Speedwagon cuts are produced the way Kevin likes to work:

"There's nothing harder than bringing an idea up to the band. By recording my musical ideas, working-out some of the things I hear in my head, the apprehension of presenting a new song is gone. Anyone who works with other musicians knows about this kind of 'musical frustration factor.'

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"With the OTARI 8-track, everything is right at your fingertips. The autolocator is amazing! and, with the remote it speeds up the whole recording process. I can be a musician and my time spent being an engineer is kept to a minimum. Otari reduces the distraction.

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Dear *Mix*:

Since your July issue of *Mix* contains listings of recording schools and many of the students in these programs will eventually go on to become second engineers, I would like to air some of my feelings about seconds. I really have a lot of respect for second engineers, realizing that they are generally thought of as the lowest life form on Earth. Seconds serve as an extra hand for the engineer, of course, or as a buffer for the producer when the equipment is having a mild seizure. A second is a technician, waiter, bus boy, valet, delivery service, and occasionally, a smuggler: You want it, you got it.

Some second engineers I've worked with were already full-fledged engineers themselves just standing around to make sure I got going okay and then split. However, if you're being paid to second for someone, regardless of how much you or he knows, it is your job to stay in the control room until he or she tells you you can take a break or just leave. I find it refreshing to get up from behind the console and leave it to someone else. It gives me a chance to view the session from a different perspective, to BS with the producer or artist, and to let my mind and eyes escape from the array of knobs, buttons and meters in front of me.

It is essential to remember the basic reason for being in this business in the first place, servicing your clients. And a good second is worth his or her weight in platinum.

Sincerely,  
Ron Lagerlof  
Chief Engineer,  
Studio Centre  
Dallas, TX

Dear *Mix*:

This is in response to the article, "Equalizers, Use and Abuse" in the May issue. I think the article is a potential disservice to readers because of some distortions.

The history section begins with home equipment, and jumps to the studios in a rather confusing manner. The article implied that Disco music was invented before the four-band EQ. Really? It also is implied that all four-band EQs operate in 2 dB steps and have 15 dB of range. I know of many that have continuous controls, and more or less than 15 dB.

"Shelving" means much more than "the top and bottom range of the equalizer"—it means that all frequencies beyond a specific point are lifted or cut equally, rather than more the farther out it goes. The result can be a cleaner sound and easier resettability.

Also, many engineers, I know will recommend that recording be done flat, adding EQ on remix, unless the exact sound desired is known at the outset or it's a complex mix.

Sincerely,  
Louis T. Judson  
Intuitive Audio  
Larkspur, CA

Dear *Mix*:

I enjoyed reading your article on "Console Automation" in the May issue of *Mix*. However, I would like to point out two errors in the paragraphs on the JH-50 Automation System.

The Processor Base is a 6502 not a Z-80. In addition, the JH-600 Series has a separate facer package containing all of the functions that are not normally contained in the JH-500 Series Module Top Panel.

Also in the later JH-50 systems, the clock rate of the processor has been doubled to allow faster scan time.

Please keep writing these types of articles. I feel that they are in the best interest of everyone in the pro audio field.

Sincerely,  
Al Simons  
Senior Technical Instructor  
MCI/Sony

# CURRENT

## SPARS Internship Program

The Society of Professional Audio Recording Studios (SPARS) has developed a three-level internship program to provide the serious audio engineering student with regular and continuing exposure to professional situations. The three-level program begins after the student's second full year of study with a day spent on each of four or five professional studios. At the second-level, after three years of study, the student will observe three studios for a period of three to four days. The purpose of the second-level is to allow the student and the studio to determine a proper match for the third-level, a ten- to 15-week working internship in one of the SPARS member studios. SPARS executive director, Gary Helmers, explained, "We were aware that many schools are seeking internships for their students. SPARS will act as a clearing house for students seeking internships and studios willing to accommodate them. We will work with each institution to provide the kind of internship experience required."

The third SPARS program will facilitate entry into the job market for the audio engineering graduate. SPARS will publish, twice a year, a resume book of those individuals seeking employment in

the audio recording industry. The resume book will be distributed to SPARS studios and other studios that request a copy.

Schools and individuals interested in participating in any of the SPARS educational programs should contact SPARS, Box 11333, Beverly Hills, CA 90213.

## Biology of Music Conference

A conference on "The Biology of Music Making" will be held July 8 through 12, in Denver, with more than 50 internationally known musicians, music educators, medical scientists, physicians and musical instrument designers and manufacturers presenting a wide range of programs exploring the physical basis of musical ability and performance.

"A Closer Look at the Musician with Camera and Computer," will present a panel of scientists who have recorded and analyzed body movement, including hand and arm movements of string and keyboard players, through a variety of techniques, such as the same high speed filming used to study athletes' movements. Other major topics on the program include The Neurology of Music, Brain Mechanisms in Hearing, Medical Management of Voice, and Arm Problems and Psychological Factors in Performance.

Among those presenting programs during the meeting will be composer Milton Babbitt; pianist Lorin Hol-

lander; electronic instrument designer and manufacturer, Dr. Robert Moog; Margaret Rowell, cello professor, University of California, Berkeley; and Dorothy Taubman, Dorothy Taubman Institute of Piano. Also on the program are Dr. Ivan Shulman, tour physician for the Los Angeles Philharmonic Orchestra; Dr. Minoru Hirano, Kurume University, Japan; Oren Brown, The Juilliard School; and Dr. Christoph Wagner, Hochschule Fur Musik und Theater, Hannover, West Germany.

"The Biology of Music Making" is being sponsored by The Denver Center for the Performing Arts, the University of Colorado, Denver and Boulder, and The World Federation of Neurology.

For more information contact Martin J. Wilson, The Denver Center for the Performing Arts, 1245 Champa St., Denver, CO 80204.

## College of Steel Guitar

Nashville steelmen Weldon Myrick, Terry Crisp and Hal Rugg will be teaching their craft at the newly established Nashville College of Steel Guitar. Three levels of courses, each 5½ days in length, are available, and E9 and C6 tunings are taught in separate courses. The three instructors collaborated on text and instructional program, and will participate in classes on a rotating basis. For information, contact the Nashville College of Steel Guitar, P.O. Box 679, 157A Lebanon Road, Mt. Juliet, TN 37122, (615) 754-0449.

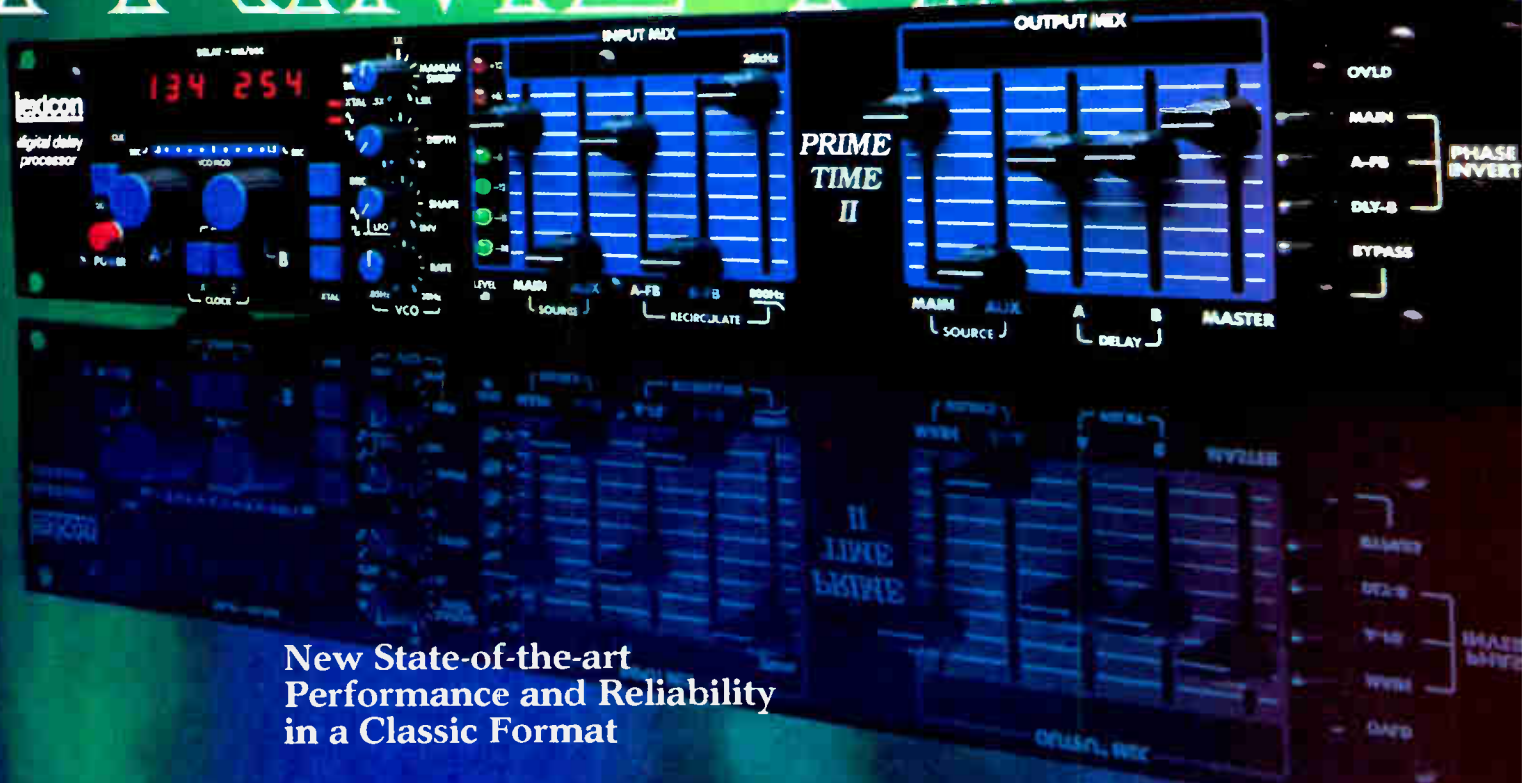
## notes

*William L. (Bill) Robinson* passed away on April 18, 1984, at the age of 67. A true pioneer of the recording industry, Bill was instrumental in developing Capitol Records and Sunset Sound Records in Los Angeles, as well as contributing greatly to the Audio Engineering Society and many branches of professional audio. His presence will be deeply missed...*Soundcraft Electronics* has opened a New York office at 44 West 62nd St., #20C, New York, NY 10023, phone (212) 315-0877, 8...*Quad Eight/Westerex* has expanded its US operations to a new 45,000 square foot facility at 225 Parkside Dr. in San Fernando, CA...The *Videotape Production Association* has awarded *MCI Quantel Corporation* and *Solid State Logic Ltd.* the VPA Special Achievement in Engineering Monitor Award...*Advanced Music Systems*, of England, has won the Queen's Award to Industry...*Edwin E. Pes-*

*sara, Jr.* has been appointed director of business management for *Ampex Corporation's* Magnetic Tape Division...*Dubner Computer Systems*, of Fort Lee, New Jersey has become a part of *The Grass Valley Group, Inc.*...*L.D. Systems, Inc.*, of Houston, has announced the addition of *Scott Davis* to its sales staff...*Community Light and Sound* has appointed *John D. Strand* as regional sales manager for the southern half of the US, the mid central states and Canada...*Studer* has added three new dealers to their authorized network: *The Audio Broadcast Group* of Grand Rapids, MI; *Research Associates, Inc.* of Colorado Springs, CO; and *Audiotechniques, Inc.* of New York City and Stamford, CT...*Skyline Productions, Inc.* of Hollywood has added *Tim Holly, Susan Green* and *Fred Ginsburg* to their staff...*Carl Weisse*, marketing director of the *David Hafler Company*, has announced the cre-

ation of a national sales organization for the firm's new line of professional electronics...The rental division of *Audiotechniques* has joined forces with *Scharff Communications* to become *A/T Scharff*, located at 1619 Broadway, in New York City...*The National Association of Music Merchants* (NAMM) is relocating its staff offices, effective August 1, to 5140 Avenida Encinas, Carlsbad, CA 92008...*Fostex* is planning a series of home recording workshops in Los Angeles, New York, Chicago and Dallas, following their recent all day event at San Francisco State University that attracted 275 attendees...*Larry Rallo* has been promoted to Marketing Manager of Consumer and Professional Products at *BASF*...New York's *Martin Audio Video Corp.* has announced the formation of their rental division, with *Jim Flynn* at the helm.

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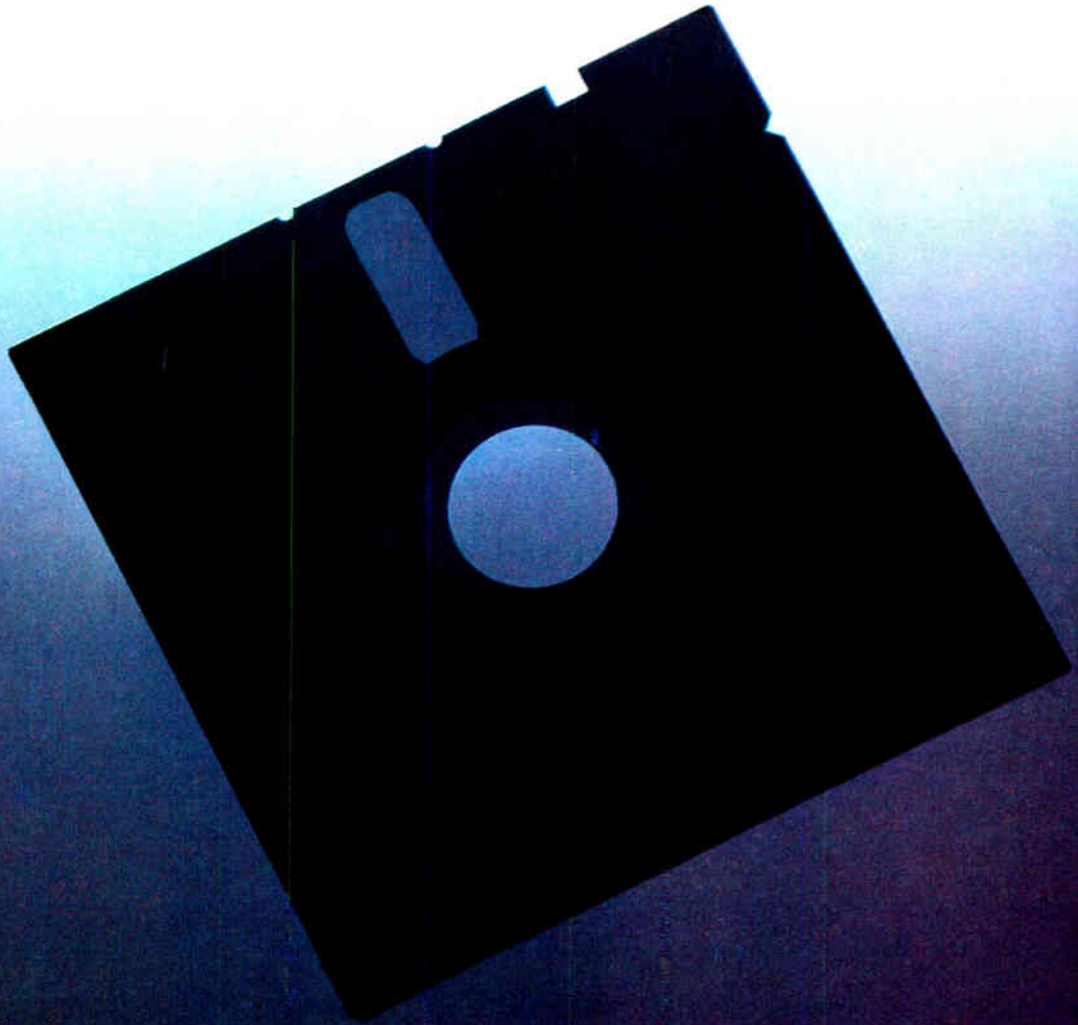
But a new company called CompuSonics has developed a multitrack digital audio mixer/recorder that allows you to produce digital recordings from mike to master. Without a single analog step in-between.

Introducing the CompuSonics DSP-2000. With it, an engineer records from start to finish with digital sound.





# to here.



True digital sound.

Without analog compromise. Which means the elimination of signal loss on dubbings and re-mixes. High end loss. Tape hiss. Degradation. And background noise.

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# SESSIONS



Giorgio Moroder (right) confers with engineer Brian Reeves at LA's Oasis Studio during sessions for Moroder's scoring of Fritz Lang's 1926 silent classic, "Metropolis." The score was recorded on twin Sony PCM-3324 digital multitracks.

## SOUTHERN CALIFORNIA

Popular Southern California recording artists *Ruth Barrett* and *Cynthia Smith* put down tracks at *Back Lot Recorders*, North Hollywood, with *Scott Fraser* engineering as well as co-producing the project with Barrett and Smith...At *Group IV Recording* in Hollywood *Patti Labelle* laid vocal tracks and *Taj Mahal* added guitar and harmonica for music for the feature film *Soldier Story* with producer *Ron Schwary* for *Caldix Films, Ltd.*...Composer *Elmer Bernstein* was in at *Evergreen Studios* in Burbank working on the music for *Ghostbusters*, a Columbia feature film starring Dan Akroyd and Bill Murray. The soundtrack will be released on Arista Records, Engineer on the session was *Rick Riccio* assisted by *Mike Hatcher*...Recent recording activity at *Larabee Sound* in LA included *Cameo*, mixing their new 12" with producer *Larry Blackman*, engineer *Gerry Brown*, and assistant *Sabrina Buchanek*, and producer *Steve Barri* and engineer *Tony Peluso* in mixing a *Michael Jackson* album for Motown...At LA's *Skip Saylor Recording*, *Roger Green* was in producing a single on *Brittany* for International Enterprises Inc. *Skip Saylor* was at the board with *Tom McCauley* assisting...They're busy at *Soundcastle Studios*. Among the projects: *The Jacksons* were in mixing their own LP on Epic Records. They were doing their own production with *Bill Bottrell* engineering and *Paul Ericksen & Bino Espinoza* assisting; *The Crusaders* were in producing *Wilton Felder* on MCA Records. *F. Byron Clark* engineered with Paul Ericksen assisting; and *Jermaine Jackson* mixed his latest LP for Arista with Jermaine doing his own production...EMI artists *Chequered Past* were in *Sunset Sound Studio* with producer *Michael Jackson* working on percussion overdubs for upcoming LP. *Chris Minto* engineered and *Bill Jackson* assisted. *The Post Group* in Los Angeles was named to provide all post production facilities to

Roadblock Productions and Ohlmeyer Communications Company for the new NBC prime time comedy show *People Are Funny*. The show was shot on location throughout the California area and resembles the old format of the Art Linkletter series of the same name...

For an update on recording in the Southwest; see story on page 56.

## NORTHWEST

Legendary blues harpist *Charlie Musselwhite*, whose style is drawn from the great Chicago blues scene, recently mastered his new album, *Where Have All The Good Times Gone?* at the *Sonic Arts Mastering Room* in San Francisco. The album, which was recorded at *Oasis Studio* with *Greg Goodwin* engineering and *Pat Ford* producing, features "Stranger In A Strange Land," a brief version of the *Exodus* theme, and several new original compositions by Musselwhite. *Alex Guinness & The World Records*, stalwarts of the Bay Area rock scene, were also in the *Sonic Arts Mastering Room* recently with mastering engineer *Kenneth Lee*, cutting the lacquer for their new single...Former Traffic drummer and solo artist *Jim Capaldi* finished working at the *Automatt* in San Francisco on four songs for his upcoming Atlantic Records (domestic)/WEA (international) release. Playing on the tracks recorded at the Automatt were Carlos Santana on guitar, Santana percussionist Orestes Vilato, and Santana keyboardist Tom Coster. *Jim Capaldi* and *Stewart Levine* produced with *Richie Corsello* engineering and *Ray Pyle* assisting...The score for the musical theatre piece "Raven's Seed" was recorded at *T & B Audiolabs* in San Francisco. Directed by *Jaime Jaimes*, produced by *Eric Hayashi*, written by *Stephen Most*, with music composed by *Mark Kennedy* and arranged by *Gregory Jones*, "Raven's Seed" tells a story in song of animal terror-

ists who try to steal plutonium from a nuclear power plant...At *Triad Studios* in Redmond, WA, tracking was completed for *The Gestures*; *Dave Kincaid* producer; *Marcia Ridley's* project was completed; *Danny Deardorff* producer; and Northwest impressionistic guitarist, *Eric Tingstad* completed his second LP project...Album work at *Starlight Sound Studio* in Richmond, CA has been round the clock. It has included S.F. Symphony violin virtuoso *Dan Kobialka's* new album for Lisem Records with *Andy Kulberg* producing and *Norman Kerner* and *Karl Derfler* engineering; *Larry Batiste* and *Clayton Richardson* producing various artists for Lovejoy Records, engineered by *Stacy Baird*; and *David Crosby* (yes, he's back with a brand new band) with *Peter Brown* behind the board...At Berkeley's *Fantasy Studios*, *Sammy Hagar* completed tracks and overdubs on his upcoming album for Geffen Records. The producer on the dates was *Ted Templeman* and engineering was *Jeff Hendrickson*...Sports and radio personalities *Joe Montana*, *Don Klein*, and *Jim Dunbar* were at *Avid Productions* in San Mateo, CA recently cutting spots for the Mike Harvey Auto Dealerships. Avid also produced original music for Cadillac '85 and songs for San Francisco's all-female band, *Jain*...At *Montage Recording Co.*, Newark, CA recent projects include 45's and LP's produced by *Art Walker* for *Caminante Records* with *David Hartzheim* engineering and *Randy Spendlove* and *Louise Singleton* assisting...At *Tres Virgos Studios* in San Rafael, CA *Van Morrison* was in with *Jim Stern* engineering assisted by *Robert Missbach*, working on a new, untitled album; release expected later this year. Also, *D.O.A.*, Vancouver thrash punkers, flew *Thom Wilson* up from LA to do what may be the first digi-punk mixes on D.O.A.'s upcoming release on the C.D. Presents label...

## NORTH CENTRAL

At *Gateway Recording Studio* in St. Louis, MO, *Luther Ingram*, whose song credits include "If Loving You is Wrong, I Don't Want to Be Right," and "Respect Yourself," was in working on his new LP. Also, the rock band *S.L. Ferrari* has finished their new EP. Engineers on these projects were *Brian Williams* and *Richard Brown*...At *Triad Studios* in Des Moines, IA, *Karen Voegtlin* recorded her third album, *He's My Leader*, produced by *Susan Oatts-Tucker* and *Bob Jenkins*, with engineer *Tom Tucker*...Recording Activity at *Studio A*, Dearborn Heights, MI, included Songwriter-guitarist *Rick Rouse* producing tracks on his first EP; *Bernie Worell* of Talking Heads producing the new wave band *Changing Bodies*, *Jim Vitti* behind the console for both sessions; and *Johnnie Mae Mathews* laying down rhythm tracks for the *ADC Band's* next

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single... At *Gnome Sound Studios* in Detroit, ex-Temptation *David Ruffin* tested out Gnome's new AKG "Tube" microphone while working on vocal overdubs for his new album. Also *Don Was* of Was (Not Was) was in producing overdubs for *David Lasley's* new EMI-America album. Bruce Nazarian engineered both projects... Alan Kubicka's *Chicago Recording Company* has been the scene of a steady flow of exciting recording projects in recent weeks. In Studio B, Styx guitarist and lyricist *Tommy Shaw* started work on his first solo album for A&M Records. Superproducer *Mike Stone*, fresh from his latest Journey and Asia projects, has been enlisted to produce the sessions. *Survivor* was in recently cutting a track for their upcoming Scotti Bros./CBS album with *Ron Nevison* producing. And Chicago singer/songwriter *Steve Goodman* just cut a new Chicago Cubs theme song—"Go Cubs Go"—with *Hank Neuberger* engineering. The song was created as part of a promotion for Cubs broadcast outlet WGN and is currently being aired over the radio station and during Cubs games at Wrigley Field...

## NORTHEAST

*Classic Sound*, a 6-month-old 24-track studio in Manhattan's Soho district, has already completed 20 jazz albums including *John Abercrombie/John Scofield* for Palo Alto Jazz, *Abbey Lincoln* for Enja, and *Archie Shepp* and *Clifford Jordan/Barry Harris* for Soul Note... Independent engineer/producer *Steve Kahn* completed work on an EP for the group *Hi Fi Tie* at *Quadrasonic Studio* in NYC... *Fred Schneider* of the B-52's was in at NYC's *Blank Tapes, Inc.* recording a solo LP. *Butch Jones* engineered *Bernie Worrell* and *Fred Schneider* produced... At *E.A.R.S.* in East Orange, NH, *Mtume* worked with engineer *Dave Dachinger* on a group project with his band, and a solo project with the group's lead singer, *Tawatha Agee*, as well as projects with CBS Artist *Bloodstone*, and *Jimmy Reilly*... *Pal Rakes* and *Johnny Neal* were the first to try the new facilities at *The Power House* (formerly *Phoenix 413*) in Camden, NJ following major renovations... At the *Platinum Factory* in Brooklyn, *Greg Henderson* of Rain Records has just completed two tunes with engineering being handled by *Dick Hammond*... At the *Sound Cottage* in Port Jefferson, NY the *Rockaholics* are presently doing production work on their upcoming EP. Several major record companies have shown interest in their project... *Tom Wisner*, southern Maryland folk singer and story teller, was in at *Lion & Fox Recording* in Washington, D.C. putting finishing touches on his children's album entitled *Come Full Circle*, released on the Folkways Record Label in July... Philadelphia's *Chestnut Sound, Inc.* had *The Clash* cutting promotional tracks for their recent US Tour... *Accent on Travel* completed work on an EP for an undisclosed label. The recording was done at *All-Star Sound Studios*, Bloomfield, NJ. *Steve Becker*, drummer with Southside Johnny & The Jukes, produced. *Joe Vicari* engineered... Recent projects at *If Walls Could Talk* studios in Passaic, NJ include albums by *The Jitterz, Akacis & Ka-*

*yawa International*, and singles by *Attacker, Touch of Class, Metropolis* and *Herbie Pabst*... Elektra/Asylum recording artist *Howard Jones* was captured live by *Secret Sound/Aura Sonic*. The live recording from the Ritz in New York was engineered and mixed by *Steven Remote* and *Jack Malkin* for FM Tokyo. Additional assistance was provided by *Lee Friedman, Jimmy Murphy* and *Paul Winnicky*... At *Greene Street Recording*, NYC, *David Sanborn* overdubbed for his Warner Bros. record, with *Marcus Miller* producing, *Russ Tittleman* executive producing, *Marty Robertson* engineering, *Joe Arnold* and *Erika Klein* assisting... *Omega Recording Studios'* downtown Washington, D.C. facility played host to the *Pointer Sisters*, who videotaped a project for Public Television. Also at the downtown studios was *Roy Ayers* and *Trouble Funk*, with *Tom McCarthy* engineering... Digital activity at *Dimensional Sound*, New York City, included jazz electric-violinist *Michael Urbaniak's* latest LP recorded direct to Mitsubishi two track with *Dan Doyle* producing. Also *Cyndi Lauper's* version of "You Make Loving Fun" was sweetened and remixed there by veteran producers *Ed Chalpin* (of Jimi Hendrix fame) and *Giorgio Gomelsky* (producer of Yardbirds)... Warner Bros. recording artists *The Reds* were in recently at *Howard Schwartz Recording* in NYC. *Mike Thorne* produced the sessions with *Michael Laskow* engineering, assisted by *Jeff Levy*. Thorne was also in producing avant-garde rockers *Indoor Life*, again with Laskow and Levy... Producer *Kenny Vance* has been recording and mixing a new album for Scotti Brothers/CBS recording artists *John Cafferty & Beaver Brown* with engineers *Phil Greene* and *Bob Winsor* and assistant *Fletcher* at Normandy Sound in Warren, RI... At *Secret Sound Studio* in New York City, artist *Gail Boggs* was in recording a single for her new video. *Matt Dillon* directed. *Jeff Kent* and *Ellie Greenwich* produced, with *Bob Clifford* engineering and *Warren Bruleigh* assisting... *Authorized Personnel* put the finishing touches on their debut album, set for release this summer at *39th Street Music Productions* in NYC. *Tim Cox* handled the engineering duties and co-produced along with A.P.... At *Celebration Recording Studios* in NYC, *Teruo Nakamura* was in producing *Jorge Datto's* album for release on Toshiba EMI, which is being mixed digitally on a Mitsubishi X80A...

## SOUTHEAST

World renowned boxer, *Roberto Duran* was in at *New River Studios* in Fort Lauderdale recording vocals and mixing for upcoming releases, produced by *Mauricio Smith*. Also at New River was the reggae band *Gumbo Limbo*, cutting tracks for Edible Records. *Rick Holcomb* produced, it was engineered by *Ted Stein*, assisted by *Teresa Verplanck*... At *Lamon Sound Studios* in Charlotte, N.C., *Billy Scott*, the 1982 Male Single Artist of the Year at the Beach Music Awards, was in the studio working on his second single release on Lamon Records. The session was produced by *Carlton Moody* and *David Moody* for CDT Productions with *David Moody*

at the board, *David Floyd* mixing... *Sound Emporium Recording Studios* in Nashville was "swingin'" when country star *John Anderson* came in to record several Chevrolet commercials for the Campbell Ewall agency. Producing the sessions was *Larry Roode* of Campbell Ewall, with *Lou Bradley* engineering. Another big star recently using the studio was *Jerry Reed*, who was in working on several new releases for RCA with Sound Emporium staff engineer *Gary Laney* engineering... *Disc Mastering Inc.*, one of Nashville's busiest mastering facilities, had another #1 record recently with *The Kendalls'* "Thank God For The Radio," the *Blake Mevis*-produced Mercury country smash which topped the *Billboard* singles chart this spring. The record was mastered last November by studio owner/engineer *Randy Kling*. More recently at the same studio, engineer *Lois Walker* mastered the duo's next single, "My Baby's Gone," produced by *Brian Ahern*... At *Patmos Productions* in Jackson, MS, *Greg "Fingers" Taylor*, harp whiz for Jimmy Buffett's Coral Reefer Band, was in overdubbing and mixing his own album. *James Griffin* engineered... *Paradox* put the finishing touches on their debut album *The Power of Passion* recorded at *Perfect Pitch*, Statesville, NC. The album was composed and produced by owner *Marcus Kearns*... Recent activity at *Crescendo Records*, Atlanta, Georgia included *Rebecca De Mornay* star of *Risky Business* doing vocal overdubs for her new movie *The Slugger's Wife*. The score was by *Scores-R-Us*, a Quincy Jones Production with *Thomas Vicari* engineering and *Tom Baylor* producing... The *Oak Ridge Boys* were in at *Woodland Studios* in Nashville doing some keyboard work. *Ron Chaney* produced the project with independent engineer *Les Ladd*, Woodland engineer *Tim Farmer* assisting. Producer *Chips Moman* was in doing string overdubs for *Willie Nelson*. Independent engineer *David Cherry* was behind the controls with *Ken Cribblez* assisting... At *Morrisound Recording* in Tampa, FL, MCA recording artist *Tony Carey* ("Fine Fine Day," "Vigilante"... ) was in to mix the live recording from his Atlanta concert for the King Biscuit Flower Hour... Sessions at the *Music Mill* in Nashville included *Harold Shedd* producing new tracks on *Alabama* for RCA Records; *Jim Cotton*, *Joe Scaife*, *Paul Goldberg*, *George Clinton* engineering, and Shedd also producing vocal overdubs and strings on *Price Mitchell*; Cotton, Scaife, and Goldberg engineering... Nashville's new horn section, the *Third Coast Horns*, recently produced their digital demo at *The Castle*, using the new computer assisted Solid State Logic 4000 E console. *Chuck Ainlay* engineered. Also, they played on *Tyrone Edmonds'* single to be released in conjunction with the LA Olympics. *Jay Collins* and *Al Jolson* produced the theme song at *Jack's Tracks*, with *Mark Miller* engineering... *Mobile Audio's* dual 24 track remote truck has been working on projects on the road with *Tony Carey*, *Jerry Jeff Walker*, *Auburn University Band and Choir*, and *Jason & the Scorchers*... Recording recently Island's *Compass Point Studios* in Nassau, the Bahamas, were *The I-Threes*, working with *Thom Bell*; *Sheila*, a French artist on Carrere Records; and Delite/Polygram recording artists *Kool & The Gang*...

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# MULTITRACK CASSETTE RECORDERS

By George Petersen

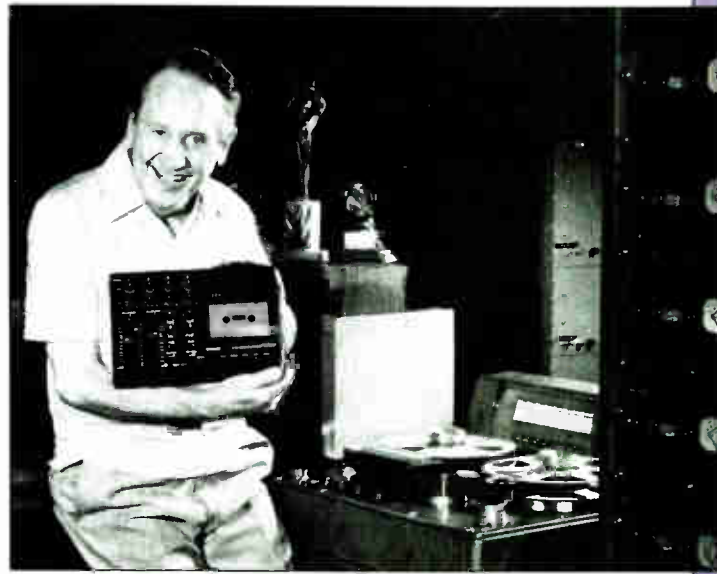
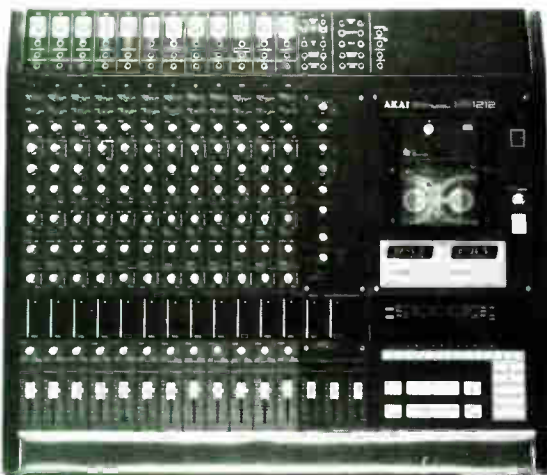
Several years ago, when Tascam introduced their first Portastudio® four track cassette mixers, a quiet revolution began. The units were relatively inexpensive, easy to use, and sounded amazingly good, considering they were recording on tape that was only 1/8" wide. Eventually other companies introduced their own four track cassette decks and the race was on, with overall quality and recording flexibility improving every step of the way.

Today, these phenomenally popular mini-studios have found their way into almost every segment of the industry, from students to home hobby recordists and musicians to professional songwriters and major artists who use these little wonders as "sketchpads" for planning productions and working out ideas before going into the studio.

Multitrack cassette decks have even found their way onto vinyl, as in the case of Bruce Springsteen's *Nebraska* album, which was recorded at his home on a four track cassette machine.

Currently there is a wide variety of "mini-studio" machines on the market in a price range to fit almost anybody's budget. And the prospective purchaser has a good selection of machines to choose from. The lower speed (1-7/8 ips) machines offer longer recording times, and compatibility with

*Akai MG 1212*



*Les Paul, inventor of the solid body guitar and the multitrack recorder, compares a Fostex X-15 to his original 1700-pound 8-track recorder built by Ampex in 1956. The machine was nicknamed "The Octopus" by W.C. Fields who was impressed by its size and eight channel capacity.*

standard stereo cassette decks, while the 3-3/4 ips speed affords better audio performance. Noise reduction is another area with multiple options available in a variety of systems.

The following is a listing of the currently available multitrack cassette machines. Since the space in this report is limited, you are encouraged to contact your local audio dealer or write the manufacturers directly. Their addresses are listed at the end of this report.

The Akai MG1212, which was unveiled for the first time in the U.S. at last month's NAMM show in Chicago, is a truly unique unit among the class of multitrack cassette machines. The MG1212, a self-contained "micro studio system," integrates a 12 channel mixer and 12 track recorder that utilizes 1/2" tape cassettes. Two additional tracks are provided for internal control and sync purposes for a total of 14 tracks at either 3-3/4 or 7-1/2 ips.

Extensive use of computer-based and digital logic is utilized throughout, from the real-time counter (which reads tape operation time in one-tenth second increments, from -99 min 59-9/10 sec to +99 min 59-9/10 sec), to the manual-auto memory/search/repeat functions for tape location and editing flexibility, to the digital channel assign and bussing circuitry. Other features include auto punch-in/punch-out between any



*Aria Studiotrack III R-504*



## 4-TRACK MASTERPIECES

While the Beatles were teaching Sgt. Pepper and the Band to play, twenty years ago, George Martin was getting everything down on a 4-track tape recorder. Even by today's standards it's a masterful feat of technology.

So is the X-15, in its own way. It's the ultimate evolution of 4-track recording, designed by the engineers who invented the format of a multitrack cassette recorder/mixer.

This is the one that's really portable, easy to use and costs less than \$500, retail. Plus, there's a companion mixer/compressor, microphones, headphones, self-powered speakers, the works.

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MULTITRACK DIVISION

FOSTEX CORPORATION OF AMERICA, 15431 Blackburn Ave., Norwalk, CA 90650 (213) 921-1112

# SPECIAL REPORT

two points on the track, and automatic playback muting when mixing down or ping-ponging tracks.

Preliminary manufacturer specifications indicate a frequency response (at 7-1/2 ips, with dbx) of 40 to 20k Hz  $\pm$  2dB, with a signal to noise ratio rated at better than 97 dB. Interchannel crosstalk is said to be better than 45 dB between adjacent tracks. The Akai MG1212 is priced at \$6995, and is distributed in the U.S. by the International Music Corporation of Fort Worth, Texas.

The Aria Studi-track III R504 is a rack-mountable four channel cassette recorder which can be used alone or with an external mixer. The unit allows for simple mixdowns with its built-in level and pan controls on the output of each track. Tracks can also be ping-ponged via send switches provided on each channel.

One of the R504's interesting features is its noise reduction system. In essence, the deck's recording head increases sensitivity in the mid and high frequency range, while the playback head compresses mid and high frequencies, thus reducing unwanted noise, according to the manufacturer.

The Aria Studi-track III R504 is priced under \$800, and a protective cabinet rack/case is optional.

The Clarion XD5 is a 3-3/4 ips four track cassette machine with switchable Dolby-B noise reduction. The XD5 incorporates slide faders for input/output levels and pan controls, and gain selector switches on each of its four tracks. Send switches allow ping-ponging of the tracks, and the output master controls both left and right output level as well as headphone volume.

Distributed by Kamen Music Distributors of Bloom-

field, CT, the Clarion XD5 is priced at \$1095. Standard accessories include a dustcover, angle stand, and a remote punch-in/punch-out footswitch



*Clarion XD-5*

The Cutec MR 402 is a basic four channel cassette simul-sync recorder with input, output, pan and send controls on each track, and both line and mike inputs. A headphone selector switch allows the monitoring of either the unit's main outputs or any or all of the four individual tracks. Back panel connectors include pin-jack line inputs/outputs, a 1/4" remote footswitch jack, and two pairs of "mixdown out" jacks wired in parallel, so both monitor amplifier and mastering recorder (or two stereo decks) can be connected without using "Y" adapters. The Cutec MR402 is distributed by the Dauphin Company of Springfield, Illinois, and is priced at \$895.

The Fostex X-15 is not only the smallest, and first battery powered four track cassette machine, but it is also the least expensive, priced at \$495. The X-15 operates at the standard

## CASSETTE MULTITRACKS: FEATURES AT A GLANCE

MANUFACTURER	MODEL	# OF TRACKS	NR1 TYPE?	TAPE SPEEDS (IPS)	PITCH CONTROL (%)	SIMULTANEOUS RECORD CAPACITY (IN TRACKS)	MIKE INPUT TYPE	EQ CONTROLS	EQ TYPE	EFFECT SENDS/CHANNEL METERS	RETURN TO ZERO	RACK MOUNT	WEIGHT (LBS.)	PRICE (US DOLLARS)
AKAI	MG 1212	12	dbx	3-3/4, 7-1/2	$\pm$ 12	12	XLR	12 HF, 12 MF, 12 LF	Parametric	2 14 LED	Yes	No	88	\$6995
ARIA	Studi-track III R-504	4	Aria NR	3-3/4	$\pm$ 10	4	1/4"	—	—	— 4 Vu	Yes	Yes	15.5	Under \$800
CLARION	XD-5	4	Dolby B	3-3/4	$\pm$ 10	4	1/4"	—	—	— 4 LED	Yes	No	20	\$1095
CUTEC	MR 402	4	—	3-3/4	$\pm$ 10	4	1/4"	—	—	— 4 Vu	Yes	No	22	\$895
FOSTEX	X-15	4	Dolby B	1-7/8	$\pm$ 15	2	1/4"	2 HF, 2 LF	Shelf	— 2 LED	No	No	6.4	\$495
FOSTEX	250	4	Dolby C	3-3/4	$\pm$ 10	4	1/4"	4 HF, 4 LF	Shelf	1 4 Vu	Yes	No	19	\$1300
FOSTEX	250 AV	4	Dolby C	1-7/8	$\pm$ 10	4	1/4"	4 HF, 4 LF	Shelf	1 4 Vu	Yes	No	19	\$1300
STUDIOMASTER	Studio 4	4	Dolby B	3-3/4	$\pm$ 15	4	XLR	6 HF, 6 MF, 6 LF	Shelf HF, Parametric MF, Parametric LF	2 4 LED	Yes	Yes	32	\$1650
TASCAM	234	4	dbx	3-3/4	$\pm$ 12	4	1/4"	—	—	— 4 Vu	Yes	Yes	21.6	\$900
TASCAM	244	4	dbx	3-3/4	$\pm$ 15	4	1/4"	4 HF, 4 LF	Parametric	1 4 Vu	Yes	No	20	\$1300
YAMAHA	MT 44	4	Dolby B, Dolby C	1-7/8	$\pm$ 10	4	—	—	—	— 4 LED	Yes	Opt	12	\$570
YAMAHA	MT 44/MM 30/PB 30	4	Dolby B, Dolby C	1-7/8	$\pm$ 10	4	1/4"	4 Tone	Shelf	1 6 LED	Yes	No	20	\$995



# DIGITAL DELAY DIGITAL CHORUS DIGITAL FLANGER



The new 900 series Digital Delay systems from DOD can do much more than just echo effects. ONLY with DOD do you truly get all three delay functions in one unit. The DOD R-908, R-909, and R-910 all have sweep widths of 10 to 1; this allows each unit to flange and chorus like no other digital delay system.

R-908 Digital Delay: PCM (900 ms.-30-8KHZ)  
R-909 Digital Delay: PCM (450 ms.-30-15KHZ)  
R-910 Digital Delay: PCM (1900 ms.-30-15KHZ)

\*When comparing digital delay systems, check the specifications—you will find that the effect specialists at DOD have developed the only full function digital delay systems available today.

\*Note: Most other digital delays have sweep widths of less than 6 to 1.



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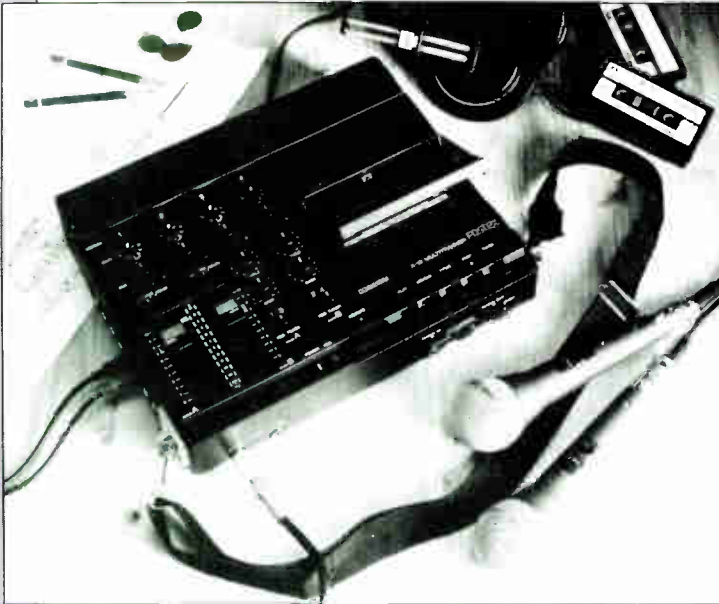
## SPECIAL REPORT



*Cutec MR 402*

1-7/8 ips cassette speed and can be used to play back and record standard stereo cassettes, using tracks one and two.

Like other four track cassette decks, the recorder allows overdubbing and the ping-ponging of tracks, but due to the machine's size and price limitations, only two tracks can be recorded at a time. Since the X-15 operates on 11-15 Volts DC, it can also be run from a car battery via the lighter socket or with an optional AC adapter. Other optional accessories for



*Fostex X-15*

the Fostex X-15 include a punch-in/punch-out footswitch and a gig bag/carry case.

The Fostex 250 Multitracker is a 3-3/4 ips four track cassette deck which incorporates a 4x4 mixer with pan, EQ, and effects send on each channel, and Dolby C noise reduction. The unit's patching flexibility allows the mixer to be used independently of the recorder, or vice-versa. The 250 also features a four channel mixing buss function, so for example, four mixer inputs could be used to record on a single track.

Four VU meters with peak LEDs are provided.

The Fostex 250 is priced at \$1300, and optional accessories include a gig bag, flight case, and record punching footswitch. The recorder is also available as a lower speed (1-7/8 ips) audiovisual production model, the 250 AV, which features a one Volt monitor output for driving Kodak-type slide programmers.

The Studiomaster Studio 4 is an integrated mixer/recorder combination which has both a six input mixer and 3-3/4 ips four track cassette deck in a single package. The unit can be either rack mounted or free standing (decorative wood side panels are optional). Dolby B noise reduction and a switchable built-in 48 volt phantom power supply for condenser microphones are standard features. However the Studio 4's most important feature is its mixer, which offers more flexibility than is currently available on any other four track cassette unit.

The mixer (which can also be routed separately, for

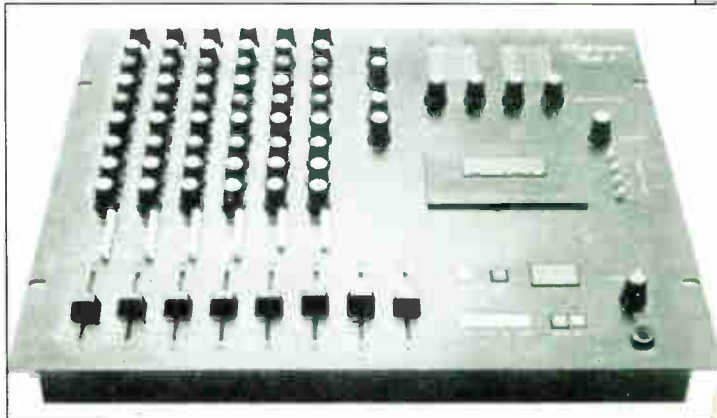
*Fostex 250*



stage and sub-mixing as well) offers six transformerless balanced XLR mike inputs, three band shelving and parametric EQ on each channel, 1/4" line and effects send/receive inputs (with two aux sends per channel), and a straightforward track assign switching system.

Distributed in the U.S. by the International Music Corporation of Fort Worth, Texas, the British-made Studio-

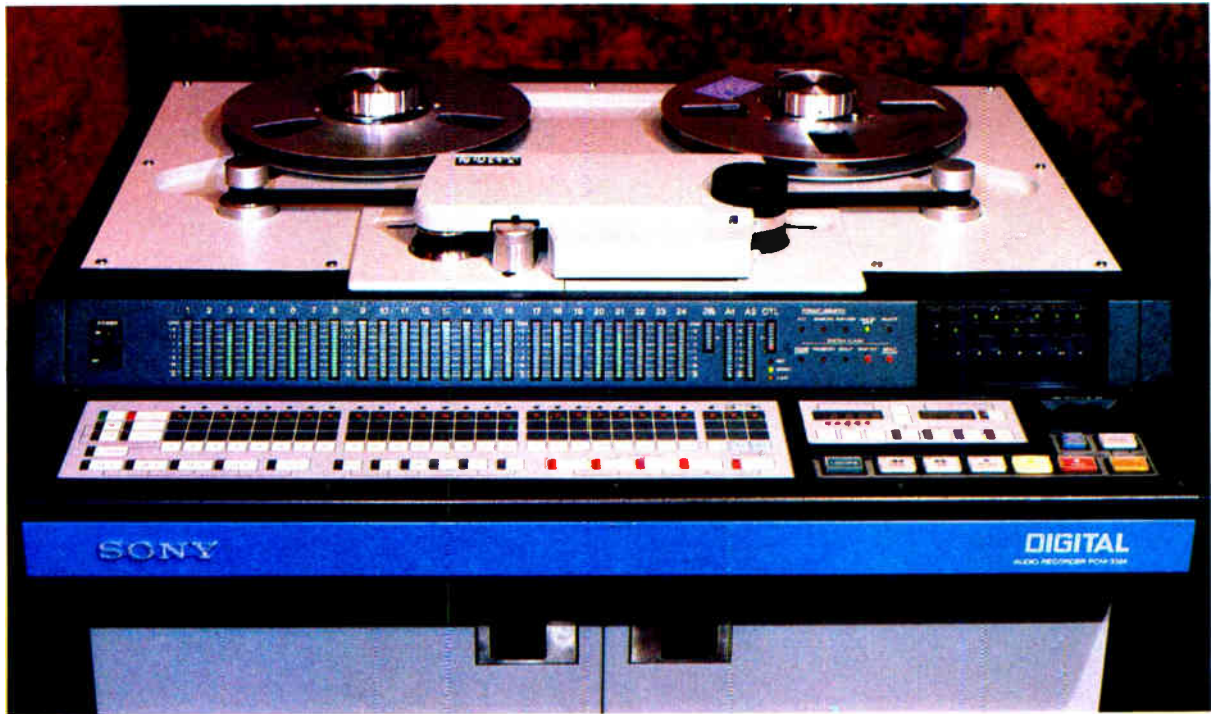
—PAGE 22



*Studiomaster Studio 4*

# Digital Services

48 Track Digital Recording—Nationwide  
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**The Digitals:** 4 Sony PCM 3324 Digital Multitracks • Complete PCM 1610/DAE 1100 Electronic Editing System • RTW/F1 Portable Digital Recorders and Format Transferring

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## Digital Services

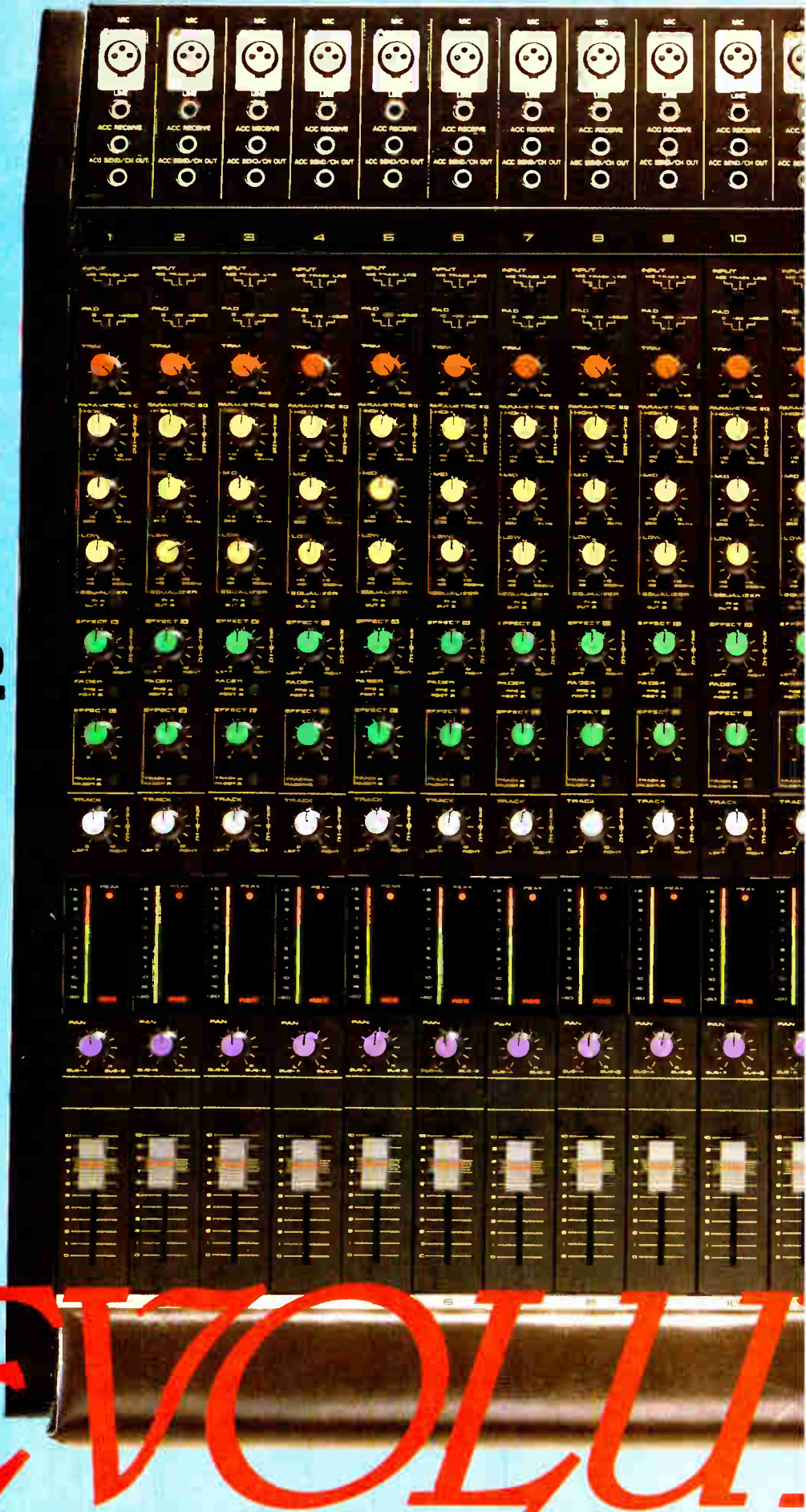
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# AKAI

## Micro Studio System

# MG1212

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- DBX — Type 1
- Computerized Multi Function Locator



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Akai, through the use of advanced micro technology has developed a system that has revolutionized the compact mixer/recorder. The MG1212, the world's first affordable programmable 12 channel mixer 12 track recorder with 1/2 inch cassette tape format. The MG1212 delivers professional quality recordings using computerized digital features found only in major recording facilities. The Akai MG1212, a revolutionary sound creation system for tomorrow's market today.

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 City \_\_\_\_\_  
 State \_\_\_\_\_

## SPECIAL REPORT



*Tascam  
Model 244 Portastudio*

—FROM PAGE 18

master Studio 4 is priced at \$1650.

The Tascam Syncaset® 234 is a rack mounted 3-3/4 ips four channel cassette recorder with integral dbx noise reduction. The unit functions with a microprocessor controlled transport with three servo-motors and an electronic four digit tape counter. Both pin jack line and 1/4" microphone/instrument inputs are provided, with rear panel trim pots on the latter to allow additional input sensitivity adjustments. Using the unit's output level and pan controls, simple mixes can be performed, even without an external mixer.

The Tascam 234 is priced at \$900, and optional accessories include a transport remote control (RC-71), a punch-in/punch-out footswitch, and a multi-frequency test tone oscillator (TO-122A).

The Tascam Portastudio® 244, an integrated four track, 3-3/4 ips recorder/mixer with dbx noise reduction, is the second generation update of the original Model 144 Portastudio. The 244 offers many significant improvements over its predecessor, which was the world's first four track sync recorder/mixer combination.

The 244's mixer section features two band parametric EQ and a switchable pre/post fader effect send, as well as peak LED indicators and input/output panning on each channel. The versatile stereo aux and stereo cues can be configured to provide extra effect sends in many instances, and each channel's mic/line—tape input selector has a center "off" position which also serves as a channel mute.

The Tascam 244 is priced at \$1300, and an optional punch in/out footswitch is available.

The Yamaha MT44/MM30/RB30 is a modular recording system consisting of the MT44 four track cassette recorder, the MM30 mixer and the RB30 patch bay/freestanding "rack" assembly. The components can be purchased separately or as a set.

The MT44 is a no-frills recorder with only line inputs and no output controls, since it is designed to be used with any outboard mixing board (such as the Yamaha MM30), which would provide such amenities as microphone inputs and mixing flexibility. Since the MT44 operates at 1-7/8 ips, it can also be used as a standard cassette deck in the stereo mode. A 19" rack mount adapter (RK-44) is now available for the recorder.

The MM30 mixer offers several noteworthy features, including a built-in analog delay unit and a seven band stereo

### *Tascam Model 234*



equalizer, as well as controls for input select, level, panning, tone and a stereo aux input which expands the mixer to a possible 6x2 configuration. The RB30 provides a 27 point patch bay and a convenient mounting package for the system.

The Yamaha MT44 recorder is priced at \$570. The complete system (recorder, mixer, patch bay) is \$1095. ■

### *Yamaha MT44-MM30-RB30*



For more information on these multi-track cassette recorders, contact:

- Akai MG1212  
International Music Corporation  
PO Box 2344  
Fort Worth, TX 76113
- Aria Studiotrack III  
Aria Music USA, Inc.  
1201 John Reed Court  
City of Industry, CA 91745

- Clarion XD-5  
Kamen Music Distributors  
PO Box 507  
Bloomfield, CT 06002
- Cutec MR402  
Dauphin Company  
PO Box 5137  
Springfield, IL 62705
- Fostex X-15, 250, 250AV  
Fostex Corporation of America  
15431 Blackburn Avenue  
Norwalk, CA 90650

- Studiomaster Studio 4  
International Music Corporation  
PO Box 2344  
Fort Worth, TX 76113
- Tascam 234, 244  
TEAC Corporation of America  
7733 Telegraph Road  
Montebello, CA 90640
- Yamaha MT44/MM30/PB44  
Yamaha International Corp.  
PO Box 6600  
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sounds come on plug-in sound chips and are easily changed by the owner.

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# AUDIO APPLICATIONS

by Ken Pohlmann

This month's assignment to write about the educational/job entry situation in the professional audio field gives me an opportunity to change hats. My dubious reputation as an author sometimes overshadows my more legitimate profession as an educator. Specifically, by day I am the director of the Music Engineering program at the University of Miami in Coral Gables, Florida. This four year degree program was the first of its kind in the U.S. and in its eight year history has graduated a number of gold record engineers and manufacturing VIPs. Part of that success can be attributed to the fundamental quality of the students;

the program receives hundreds of inquiries and applications yet admits only 15 students a year. Furthermore, four years of courses in recording, acoustics, digital audio, electrical engineering, and music theory and performance and hundreds of hours of hands-on experience in our 24 track studio thoroughly prepares our graduates for the real world. Of course, no training program can supplant job experience and the maturity it yields, but education is critically important to a new employee, particularly as the sophistication of audio technology continues to evolve. Our goal at the University is to over-qualify the students in terms of audio theory so that once they are on the job they can devote their full attention to the fundamental task of acclimation to the professional

working environment. In other words, our graduates start at the bottom, but often rise to the top quite quickly.

Of course, even a professor can't answer all the questions. For example, what is the role of education in the audio industry, what skills are required to be employable in the business, how does one get started? Most importantly, once you have started, how do you succeed? For answers to those questions, and first-hand insight into the traumas of negotiating unfamiliar recording studio terrain for the first time, I turned to one of our recent graduates. Ms. Lee Shapiro has completed our degree, and is now working at Mack Emerman's Criteria Studios, one of the foremost recording facilities in the country.

**Mix:** How long have you been working at Criteria, and how many of your albums have been shipped platinum?

**Shapiro:** I started at Criteria about three months ago, and while none of my albums have been shipped platinum, I've shipped a lot of other things like boxes, packages, and mail, made a lot of trips to the bank, gone for donuts, the usual.

**Mix:** I guess even college graduates have to start at the bottom. Is the job turning out to be as you envisioned it?

**Shapiro:** Actually, it's a lot better than I expected. I've been doing a lot of assisting—mostly small projects, but some album sessions too.

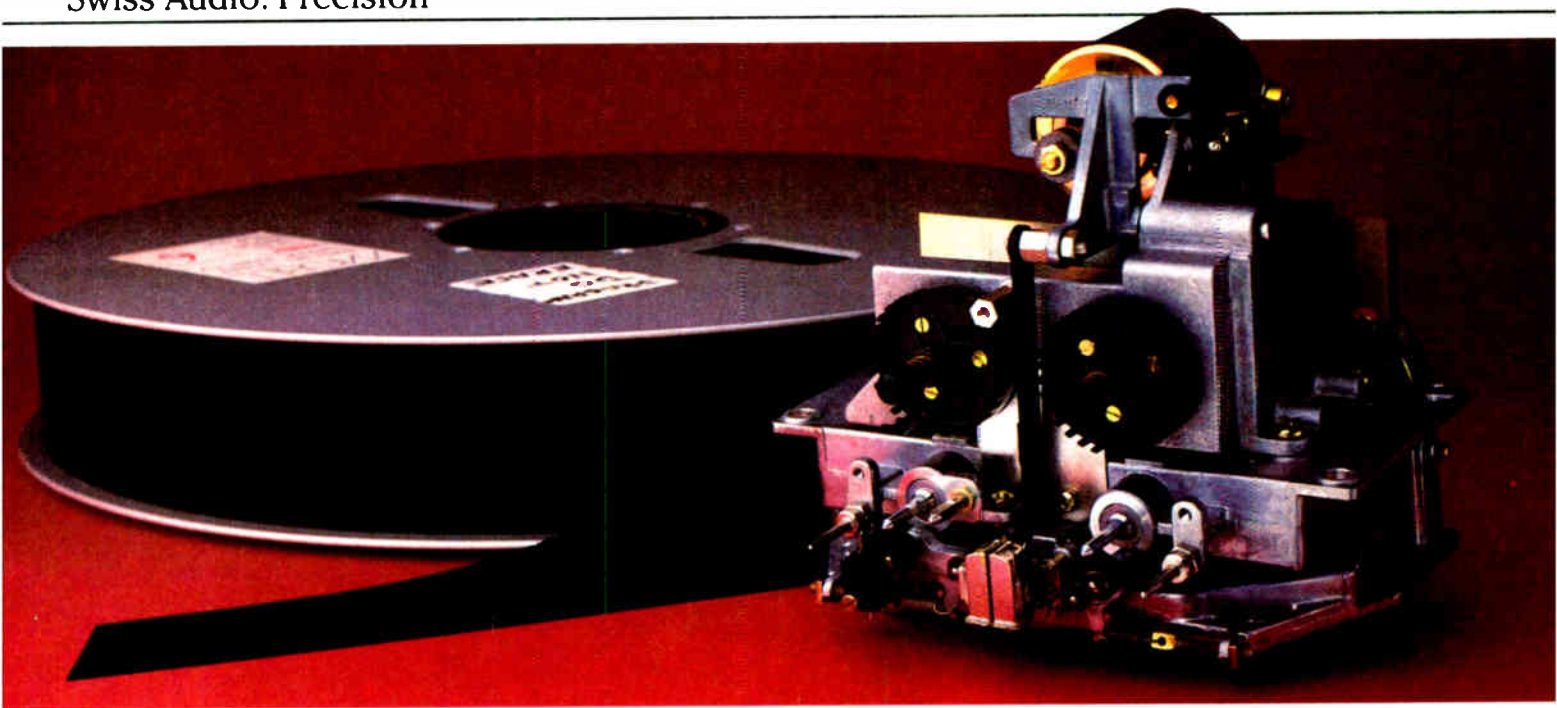
**Mix:** Is recording engineering your definite career choice? How do you anticipate your career progressing from here?

**Shapiro:** Right now, at this moment, I want to be a recording engineer. But who knows where I'll be ten years from now. Having graduated from U.M.'s program, I have a number of career possibilities. With the musical training I could go into producing, which has always interested me. Or, if I wanted to make steady money, I could use some of the electrical engineering experience and go into equipment design, working with one of the manufacturers. Who knows? Right now, I'm happy at Criteria.

## getting STARTED

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**Mix:** Bearing in mind the fact that for the first time in four years, your response won't be graded, how would you appraise your training in music engineering?

**Shapiro:** Honestly, I think it's pretty well-rounded. The program is in the Music School, which is important—a lot of people tend to forget that recording is a performance-oriented situation. I've studied music theory, performance, history, composition, arranging, jazz, copyright law, you name it. You also end up with a minor in Electrical Engineering. Then there's the actual music engineering courses like acoustics, music synthesis, audio design, digital audio, plus all the hands-on time I've spent in the studio.

**Mix:** Did you learn anything in school?

**Shapiro:** Well, I've pretty much nailed down audio theory and with the hands-on I've had four years of dress rehearsals for my career, and hopefully I've learned from my mistakes. It's a lot smarter to goof-up on your own time than on a client's time.

**Mix:** Instead of spending four years in school, you could have gone directly to work and gotten four years of experience by now.

**Shapiro:** Yes, I'd have four years of experience, but I wouldn't have the theoretical knowledge to back it up. Either way, you have to accept starting at the bottom, but with an education I think I have a better chance than someone walking in cold off the street. Also, I've had four years of practice. One course, in addition to personal studio time, is called recital recording. Performers from the School have spent 4 to 6 years preparing for their final recitals, and we have to record it, one shot, live! After a couple of months of that, you've learned your technique.

**Mix:** Quick, what did you do at Criteria today?

**Shapiro:** You caught me on a good day. I was covering for the assistant on Robin Gibb's solo album, so I was running the tape machines, patching, setting up the console and whatever else Dennis (Hetzendorfer) needed. I might add that it's a great album.

**Mix:** Is your work meaningful to you? More generally, how do you view the recording engineer's existence?

**Shapiro:** Well, in some ways, assisting is tougher than the chief engineer's job. Assisting means keeping your mouth shut a lot of time, but keeping your eyes open all of the time. It also means keeping quiet around the producers and musicians and volunteering your opinion only when asked. But when everyone's left the control room and

you know the sounds on the tape are the best that can be, you're satisfied.

**Mix:** What's the best part of the job—the long hours, low wages, lack of string players, or obnoxious clients?

**Shapiro:** Well, let me put it this way—with good string sounds on synthesizers, the fourth biggest hassle of the job has been eliminated.

**Mix:** When will you be able to afford a Ferrari?

**Shapiro:** That depends—can you chip in about \$50,000?

**Mix:** Any sex discrimination?

**Shapiro:** That's a touchy subject. Most people are a little uptight when I walk into the control room, and there have been some rude comments about girl engineers, but once they realize that I can do my job they settle down. I've had to make it clear to a couple of clients that my social life is completely separate from my job. I just hope the men can handle the rejection!

**Mix:** You sound fairly optimistic about your career and things in general. Any second doubts or career insecurities?

**Shapiro:** No, not really. I feel pretty good about things. Also, working at Criteria is a great opportunity for me.

**Mix:** As a person who is just starting out, what is your advice to others just starting out?

**Shapiro:** Well, be open to opportunities. Get whatever education you can find. The more you have going for you the better. More than anything, it's your attitude that counts.

**Mix:** And what's your advice to the old-timers in the business? Careful, Mack might read this.

**Shapiro:** Watch out! There's a new generation coming up. Today's technology is changing radically. Technology itself demands current thinking and that idea is quickly taking over. Actually I shouldn't be so threatening. Older engineers have already seen so many changes in the industry that they are generally open to the idea. I think the key to success is willingness to adapt to change, and to take advantage of new techniques.

**Mix:** If you could irrevocably change one thing about the recording business, what would it be?

**Shapiro:** I'd make it a money-making venture for engineers!

**Mix:** Will you let me interview you again after you win a Grammy?

**Shapiro:** That depends on if I'm still talking to the little people I met on my way up the ladder of success. ■

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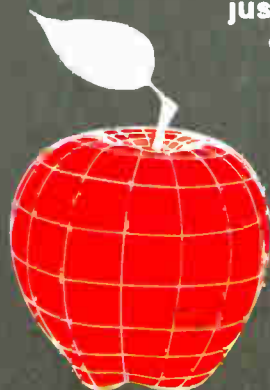
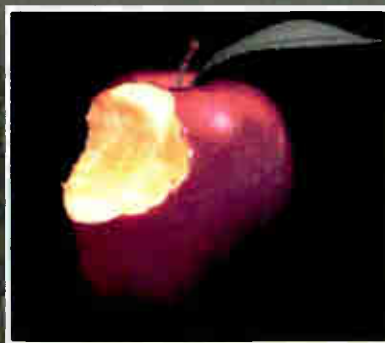
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# JOB HUNTING

By Gary Kaplan

Shortly after graduation from college, I realized one basic element was lacking in my education. There had been little preparation about the realities of looking for a job in the highly competitive entertainment industry. While in school, one receives a lot of guidance, and is conditioned to rely on counseling and advice from someone at a superior level. However, when you graduate and enter the world of business, the scene quickly changes.

You're thrown into the actual practice, as opposed to the theoretical role-play you experienced in the classroom. Pretending you're head of a giant company, making multimillion dollar decisions during a case study, seems easy enough. However, if you were actually in that position, the repercussions of your decisions could greatly affect the financial stability of the company and its employees.

Your first realization of this contrast comes when you begin your search for a job. Be prepared. Don't expect to find people you encounter during the employment process to be kind and benevolent. One big mistake people often make is that they assume the interviewer is a friend. He or she isn't. In fact, that person's job for the most part is to screen you out, as opposed to screening you in.

The interviewer wants to find out what's wrong with you. There's no correlation between the counseling you received in college and the job interview. The interview process is similar in technique, but not in its purpose and results.

Looking for a job has all the earmarks of a marketing and sales campaign. The marketing end involves planning and research, while the resume is the sales promotion tool, and the sell itself is the interview. It's all up to you, since no one can sell you better than yourself.

But what can you do to prepare yourself in advance of the job hunt? By all means, finish school, and afterwards try to get a job with a recognized company, where you can acquire additional training. A number of firms even have educational assistance programs that allow you to continue school and reimburse you for tuition and books, providing you make adequate grades, and your studies are work-related.

If your career plans include senior-level management responsibilities, you'll need more than a technical education. I recommend a strong liberal arts background coupled with a masters degree in business administration, because as you move out of programming or engineering, the route to the top is on the business side.

When embarking on a job hunt, keep in mind the following suggestions and guidelines.

## YOUR RESUME

The idea behind your resume is to pre-sell yourself and get your foot in the door. Think about the philosophy behind its use, and be positive. Your resume should be readable, action-oriented, interesting, informative and brief. If possible, keep it to one page, and two at the most, because the longer it is, the less chance it has of being read. Never include a photo, information about your health or references. A prospective employer will ask for references at the appropriate time.

List examples of responsibilities and accomplishments using action words and phrases, but stay away from over-used words like aggressive, assisted, helped and participated in. This information should not be in narrative form, but be highlighted by "bullets."

A typed resume, reproduced by an offset printer on white, off-white, or beige 8½ by 11 inch bond paper is fine. Don't use gimmicks like loud colors, fancy type or an unusual paper size.

Begin with your name, address and home phone number. Only use a work number in a cover letter and state that it is to be used in a discreet manner. Typically your business experience should come next. However, if you're fresh out of school, you may wish to use part-time jobs held during the school year. This information should begin with your most recent position.

The name of the company, the date of employment, and your position should begin at the left side of the page. Next, list your accomplishments and responsibilities with "bullets." Do this for each position.

Your education follows, with the degree listed first, then the college, year and class standing, if it is impressive. Any graduate work or classes are next, followed by military service if you think it will enhance the resume. Then community activities should be listed, and your age and marital status may follow to complete the resume.

## PREPARATION AND RESEARCH

The job hunter, like the interviewer, must glean as much information as possible about the position and the organization before and during the interview. Not only does advance preparation help improve your chances, it also reduces nervousness and the fear of being caught off-guard during the interview.

Research and learn as much as possible about the company from collateral literature, directories, trade associa-

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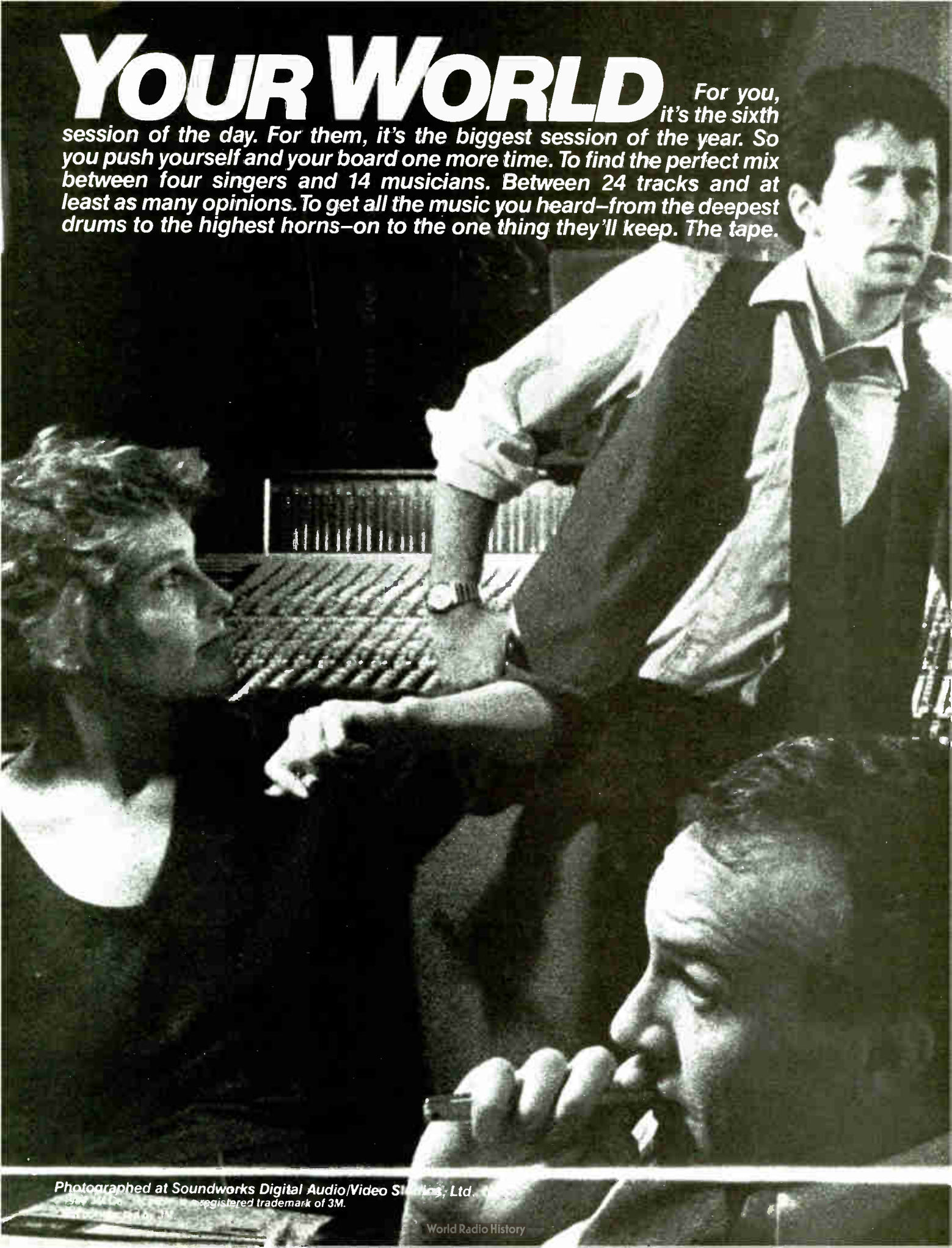
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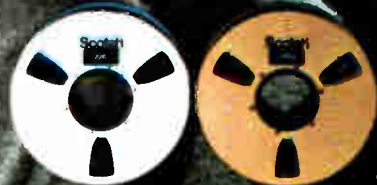
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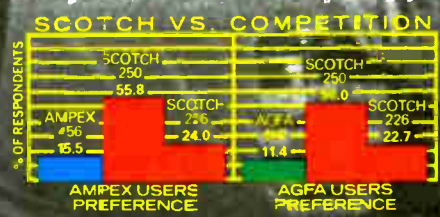


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tions and journals. This also applies to the position for which you are interviewing, and includes its relationship to other key positions in the firm, previous incumbents' history, problems in the job, and future advancement possibilities. Find out about the backgrounds, personalities, and management styles of the company's executives.

Practice how you might answer specific questions about your capabilities assets, and liabilities. This encompasses those non-factual questions that are generally tougher to answer on the spur of the moment: what are your strengths and weaknesses, what happened on your last job, why are you looking, what kind of a people-person are you, why should we hire you, and what are your career goals?

Another important aspect of any marketing and sales campaign is how the product is packaged. For the job seeker, it's how he or she is dressed—especially since a judgement call is very often made the minute the interviewer greets the candidate. First impressions do count.

### THE INTERVIEW

Don't be late. Allow time for traffic jams, giving yourself an extra 30 minutes. If you arrive early, have a cup of coffee or go for a walk. Never appear more than 15 minutes early for an interview, which begins the moment you walk in the door.

Keep your composure. Even the receptionist may be asked for an opinion. Everyone you come in contact with should be greeted cordially. However, there's a fine line between becoming too friendly and treating them as inconsequential. They may be asked to offer their impressions of you.

When you meet the interviewer, it's customary to offer a quick, firm handshake, coupled with a simple, warm greeting. After being seated you can expect a few minutes of social chitchat, before the formal interview begins.

There are two basic kinds of interviews, the preliminary or screening interview and the line interview. The first type is usually done by a representative from the personnel department, whose responsibility is to screen out unqualified candidates. The line interview continues the conversation begun in the preliminary interview, and progresses to technical information and your track record and ability to fit into their company's environment.

During the interview, you should size up the interviewer, and be aware of several basic types. Even though they are supposed to suppress biases, many don't. The standardized interviewer typically asks the same questions, in the same order with no variation, and rarely asks for extension or amplification of your answers.

The chatty interviewer's exchanges of common experiences, such as hobbies, make up the entire interview. In this case, meaningful information is almost impossible to obtain. Third-degree or stress interviewers are probably the worst. They attempt to antagonize job seekers under the premise of learning how they react to various situations. The reserved or cautious interviewer will sit back and ask, "What do you have to offer us" or "Tell me why you think you're good." This type is usually not very objective.

During a good interview, 80% of the information should come from you and about 20% from the interviewer. Unfortunately this isn't always the case. If the reverse occurs, don't compete for time, but try to tactfully interject pertinent information.

Remember, the interviewer is not your friend, counselor, or psychiatrist. So, don't discuss your problems, or use the individual as a sounding-board. He or she is trying to figure out why you should be screened out. Stick to the positives. Don't supply unnecessary, damaging information.

### DO'S AND DON'TS

Don't repeat yourself, tell dumb or dirty jokes, knock a previous employer, be too opinionated, lie or misrepresent yourself.

Do ask intelligent questions, ask for collateral material, convey a sincere sense of enthusiasm, and follow-up the interview with a thank you letter. Don't ask about compensation and benefits in the preliminary interview. Your final round of interviews or the pre-offer stage is the appropriate time to discuss money.

If you're really on an aggressive job-hunting campaign, it's wise to keep records, covering contact names, dates, what occurred, and follow-up.

To summarize, more is required of the job hunter than just showing up for the interview, especially in today's competitive job market. Some advance preparation can give you the edge.

Remember, you're entering the real world of business, and you may find it very different than what you expected. ■

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**Gary Kaplan is a Managing Vice President and Partner in Korn/Ferry International's Century City office in Los Angeles, where he specializes in high-technology, telecommunications, aerospace and manufacturing assignments. In addition, he heads the Entertainment Division, which specializes in search assignments in the broadcasting, motion picture, record, cable and consumer electronics fields. He also is responsible for assignments for service and hardware companies serving the entertainment industry.**

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Students working on a session mix at The Recording Workshop in Chillicothe, Ohio.

# Who's Getting the Jobs?

## Educators talk about prospects for recording school graduates.

By Blair Jackson

**R**ock star fantasies come in a million different forms. There's the kid who stands up in front of a mirror, tennis racquet in hand, and imagines that he is Eddie Van Halen exciting a crowd with his guitar pyrotechnics. There is the kid who spends hours a day playing a real instrument, who joins a band in hopes that someday the deafening applause and lighted matches at show's end are for *him*. And there are always a couple of kids for whom the glitter is not the magnet. They would prefer to work behind the scenes, perhaps in a recording studio control room helping Mick and Keith get that perfect sound for the next Stones album. Just as there is precious little room at the top of the rock heap, there are relatively few choice jobs in the technical end of music, too. Yet the number of young men and women who are interested in careers in recording continues to grow each year, as does the number of schools that cater to those eager learners. Is there a danger of a glut in the industry? Of too many qualified people battling it out for too few jobs in a still tentative economy?

Apparently not, if you look at the placement statistics of top recording schools and programs. Upwards of eighty

percent of the graduates of the best schools find employment in some area of the music business—as assistant engineers in studios, helpers in audio-for-video concerns, service technicians, and a hundred other jobs ranging from glorified go-fer to tape loaders. There isn't much glamour at that level, nor money for that matter, but it *is* a start up the ladder, and increasingly it looks as though jobs in the business are going to the highly educated students coming out of recording schools. The days when a person could hang out in a studio, sweep up occasionally, and suddenly find himself at the console for a major session because he hung in there for so long, seem to be past.

"Studios have developed so much in recent years that they can't afford to take in flunkies they have to teach from the ground up," says Leo Kulka of the S.F. Bay Area-based College for Recording Arts. "At this point, studios need people who have a functional knowledge of recording studios."

"The person who goes to a recording school is going to be more qualified to work in a studio than the person who has the largest record collection on the block or has a TEAC or Fostex four track at home, and the studios recognize that," adds David Leonard head of Canada's premier recording education

concern, the four-campus Trebas Institute of Recording Arts. (In addition, Leonard is president of the large Music Industry Educator's Association.) "I see it as a very positive market for qualified graduates," he continues, "despite the fact that record companies are still laying people off. What they're doing in most cases is getting rid of dead wood. We're getting plenty of calls to place qualified people at a number of different levels."

Bob Yesbek of Washington D.C.'s Omega Audio, which runs a recording education program, the School of Applied Recording Arts and Sciences, cautions that in smaller markets, "The job prospects aren't quite as good. In a sluggish economy, it's the entry level positions that are cut out of the budget first and that's where most students would go. The other thing that has hurt is the proliferation of home studios for demo work. The demo money that used to go to studios now stays at home in a lot of cases, and that affects entry level personnel."

At the same time, though, Yesbek believes that "There will always be positions for students with great technical knowledge and the attitude to go with it. That means sometimes having to accept doing less than what you've been trained for, whether it's making deliveries, sending out the Federal Express or

making coffee for clients. Those are tasks that sound like nothing and never get talked about, but the fact is they're very important. People *do* notice if they are treated well. The average musician wants to be comfortable, so the service end is critical. You don't get repeat business at a studio just by having good equipment."

Chances are a recording school won't teach you how to brew a good cup of java, but more and more they are diversifying their programs in hopes of preparing their students for many different aspects of the music business. And whereas a few years ago, most students enrolled in schools with the expressed intent of being the next Phil Spector, or at least the next Jimmy Iovine, many are now finding, through the varied course load they have to carry, that areas other than producing and engineering interest them even more.

"At the beginning of the course I ask for a show of hands of how many people want to be engineers and usually about two-thirds go up," comments Leo Kulka. "By the end of it, the number is a lot smaller. We try to teach a broad spectrum so our grads can work in a variety of careers. People get into publishing, management companies, manufacturing and pressing, all sorts of areas. You need to give them that freedom."

"One of the keys," says Miriam Friedman of New York City's Institute of Audio Research, one of the oldest (15 years) and best established recording schools in the country, "is to prepare students so they understand how and *why* things work. We hone in on the technology with real meat and potatoes courses."

At Studio Production Techniques of Dallas, "we stress to our students that the way to get a job is not to go banging on studio doors," says Terry Pope. "Instead we try to give them a good enough foundation in different areas of production that perhaps when they get out they can get clients on their own." Pope says that once studios have seen a young producer in action they are more likely to be inclined to hire him or her. "In a sense, we're trying to give them the tools so they can sell themselves."

To Fred Munch of the LA-based Institute of Audio/Video Engineering, part of the key to finding jobs is to lower your expectations at the same time you broaden your horizons. "Not everyone is going to get an exciting, high paying job right away. Most won't in fact. But if you're willing to work very hard, and if you're willing to work for \$4, \$5 or \$6 an hour, or maybe even free for a while, you'll get a job. Beyond that, I think students have to be open to jobs outside of

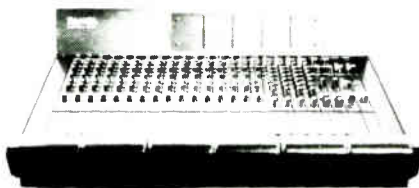
recording studios. For instance, there are a lot of good positions developing in the audio and video departments of corporations, there are jobs in audio and video duplication, and in the military. Those might not seem as glamorous as mixing for Toto, but they're good jobs, and they're a good beginning. We try to make them aware of all the options." With an avowed placement rate of close to 90 percent, Munch's school seems to be delivering on its promise of a broad-based education.

Jim Rosebrook of Chillicothe, Ohio's Recording Workshop agrees that "It's very important that students get a well rounded education. It isn't enough to be able to push the buttons on a digital recorder. To be competitive, you have to know miking techniques and have a good grasp on the theoretical concepts behind recording and equipment." Rosebrook, too, says that this school tries to prepare its students for the realities of the job market. "We tell them that it's fine to begin in an eight or 16 track studio or doing sound for a band. Also, as the audio-for-video field grows, more and more students are getting into that area, as well."

Over and over again, the educators we spoke with emphasized that students' attitudes would have a great bearing on their success in entering the job market. As Kulka stated, "Graduates will have a hard time unless they buckle down, work hard and learn how to present themselves well." The same might be said for getting through the programs: "There are people who come to us because they think it would be 'fun' to work in a studio," Kulka says, a trace of disgust in his voice. "We say, 'If you want to play, go somewhere else. This is *work* here.' In the first few weeks, the ones who just want to push buttons usually weed themselves out."

There are differing opinions on the overall preparedness of students entering the schools. On one hand, are people like Omega Audio's Yesbek who thinks that "people know more now because more of them have been brought up using home equipment, more are familiar with a lot of the studio toys, and there's more literature out there for them to read." On the other side of the issue is the Institute of Audio Research's Friedman who finds that many of her school's students come in with "less knowledge than a few years ago. It's changed from being primarily audiophiles to music fans and people who are anxious to get into the music business." She worries that the going gets tough for many in the latter two groups "because high schools aren't adequately giving them the training in physics and math they need for studio work." IAR has been known to send prospective students to courses that teach them the algebra and physics

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they'll need before admitting them to their intensive one-year program.

There was wide agreement, however, that students who did do well would have an edge over people trying to get into studio jobs through other channels. Of course there will always be the maddening cases of nepotism, favoritism and downright luck in getting jobs, but as Recording Workshop's Jim Rosebrook put it, "There's no question that students are more widely accepted within the industry than ever before. The studios are getting the people they need and that's the best advertisement for schools we could have. The students are finding work."

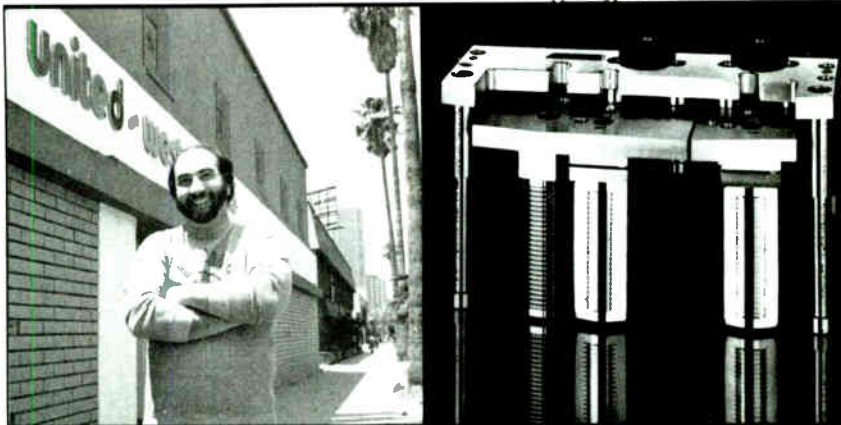
To make sure their students are qualified to meet the needs of today's recording studios, schools have been forced to constantly update their curricula, incorporating the latest in digital recording techniques and preparing students to work in such diverse fields as audio-for-video and satellite transmission. In fact, many students coming into the profession from schools are now in a sense over-educated for work in smaller studios equipped with four and eight track machines. Still there's no substitute for having a secure training ground "where you can make mistakes and not cost the studio thousands of dollars," as Kukla puts it. "Part of what we try to do," he adds, "is teach students how little they really know. They will always be learning in this profession and there are always situations that are going to arise which weren't covered in school."

What the schools hopefully *can* do is give students the foundation of knowledge they'll need to work in different situations, and a sense of the realities of the profession—by the time most students get through recording schools they harbor few illusions about the glamour of the business; the gold record visions have been replaced by an awareness that what's really ahead of them is years of hard work, often for low pay, with scant recognition. The satisfaction comes from doing whatever the job is as well as possible, and being a part of an exciting creative process. "You have to tell them that most musicians are flaky and forewarn them of all the potholes on the road," says Studio Production Techniques' Pope. "But you don't want to blow it out of proportion. It *is* a fun business and there *is* glamour, too."

"We want students to enjoy what they're doing," comments Yesbek, "but they have to know the pitfalls, too. That's why one of the first things I tell students is that once you're an engineer you'll never make your own surprise birthday party because the session you're working on will go overtime that day."

And that truism is learned in the hardest course of all—Reality 1A. ■

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The school is accredited by the Accrediting Commission of the National Association of Trade and Technical Schools (NATTS), approved by the Cal. 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.

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## WEST

### ACCU-SOUND

4274 S. E. Cajon Blvd. San Diego, CA 92105  
(619) 281-6694  
Chief Administrator: John Hildebrand

### THE ASPEN AUDIO-RECORDING INSTITUTE

Box AA, Aspen, CO 81612  
(303) 925-3254  
Chief Administrator: Harold Boxer

An intensive, full-time clinic/workshop which helps prepare students for the occupation of recording engineer. Hands-on participation in recording the daily concerts and rehearsals of the Aspen Music Festival is emphasized. Students have full use of professional recording equipment. Conducted in (3) three-week sessions throughout the summer, classes combine work experience with lecture/demonstrations by a faculty drawn from noted representatives of the recording industry.

### AUDIO CONSULTANT COORDINATION

2040 Ave. of the Stars, Ste. 400, Los Angeles, CA 90067  
(213) 306-6736  
Chief Administrator: Claude Venet

[ ] Designed for audiophiles, sound engineers and architects, our course covers acoustics, recording studios, design and sound reinforcement systems. Two types of courses are offered: year-round (1) during 3 continuous days (30 hours) the other over 4 week-ends (40 hours). Either course costs \$280 including class textbook and calculator. No previous experience is required. A certificate is granted at the end of the course.

### AUGUSTWOLF

1250 Pine St. #102, Walnut Creek, CA 94596  
(415) 932-4594  
Chief Administrator: Doug Reid

Program: **Studio Workshop**

### BLUE BEAR SCHOOL OF MUSIC

Bldg. D, Fort Mason, San Francisco, CA 94123  
(415) 673-3600

Chief Administrator: Carol Snow, director  
Program: **Frequency Modulation & the Yamaha DX Synthesizer**

### 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**

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.

### CALIFORNIA INSTITUTE OF THE ARTS

24700 McBean Parkway, Valencia, CA 91355  
(805) 255-1050

Chief Administrator: Kenneth Young, Director of Admissions

### CALIFORNIA PROFESSIONAL MUSIC BUSINESS ACADEMY

1014 Morse Ave., Suite 11, Sunnyvale, CA 94086  
(408) 745-1888

Chief Administrator: Hewlett Crist, Exec. Dir.  
Program: **Sound Recording Engineering, Diploma Programs for Performers, Managers, Promoters**

[ ] Course approval: State of California, approved for veterans. 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., SCHOOL OF HUMANITIES & FINE ARTS

Victoria St., Carson, CA 90747

(213) 516-3543

Chief Administrator: David Champion, Music Dept. chairman, John Hill, Audio Recording, David Bradfield, Audio Synthesis  
[ ] CSUDH offers programs in Audio Recording and Synthesis within the Music Department (NASM accredited) of the School of Humanities and Fine Arts. Two general types of study programs are offered: the B.A. in Music degree (3 options available) and the Certificate Programs in Audio/Telecommunications (5 options available). Also available is the minor in Audio Recording and Synthesis. Core requirements for all programs include: lecture

and lab courses in Sound Recording and Music Synthesis, Music Production/Analysis of Recordings and Studio Electronics/Maintenance. Elective courses in Music Theory, History, Physics, Computer Science, etc. are determined by program option. Inquiries by post telephone and in-person campus visits are invited.

### CALIFORNIA STATE UNIVERSITY, L.A.

5151 State University Dr., Los Angeles, CA 90032  
(213) 224-3348

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

### CASPER COLLEGE MUSIC DEPT.

125 College Dr., Casper, WY 82601  
(307) 268-2532

Chief Administrator: Terry Gunderson

### CITY COLLEGE OF SAN FRANCISCO

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

Chief Administrator: Bill Hayward  
Program: contact Broadcasting Dept.

### 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.**

### COLLEGE FOR RECORDING ARTS

Sponsor: Bi-Cultural Foundation, Inc.  
665 Harrison St., San Francisco, CA 94107

(415) 781-6306

Chief Administrator: Leo De Gar Kulka, President

[ ] One year course for recording engineers and others intending on a career in the music recording industry. C.F.R.A. is accredited by the National Association of Trade and Technical Schools (NATTS), approved by the California Superintendent of Public Instruction, approved for veteran training, and authorized under federal law to enroll non-immigrant alien students. Semesters start the first full week of June, October, or February. Over ten years of providing quality graduates to the music record industry!

### DIABLO VALLEY COLLEGE

321 Golf Club Rd., Pleasant Hill, CA 94523

(415) 685-1230

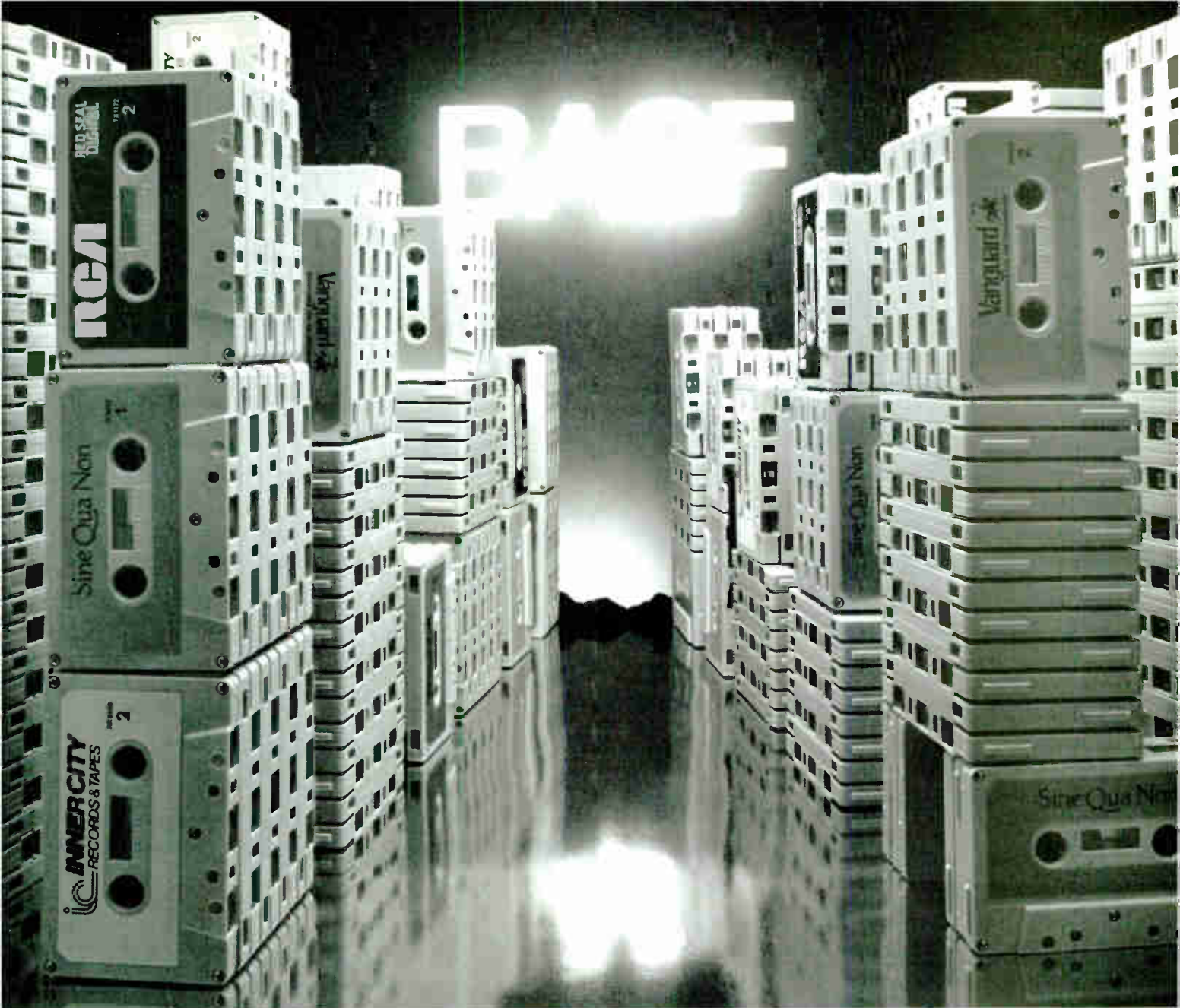
Chief Administrator: Chris Nelson

### EASTERN WASHINGTON UNIVERSITY

DEPT. OF RADIO & TV

RTV Building, Cheney, WA 99004  
(509) 359-2228

Chief Administrator: Marvin Smith  
Program: **Audio Recording, Video Taping**



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#### THE EVERGREEN STATE COLLEGE

Olympia, WA 98505  
(206) 866-6000  
Chief Administrator: Terry A. Setter, Ken Wilhelm  
Program: 2, 4, & 16 track Audio Recording and Production. Also film, video, and electronic music.

#### FAMILY LIGHT MUSIC

P.O. Box 683, Kentfield, CA 94914  
(415) 459-2862  
Southern California office  
6706 Vesper Ave., Van Nuys, CA 91405  
(818) 908-9062  
Chief Administrator: Mr. Jan Tangen  
Program: Art of Performance, Background Vocals, Theory, Technical Sound Training, and Music Camps.

#### FASTRAX

4033 Aurora Ave. N., Seattle, WA 98103  
(206) 632-8300  
Chief Administrator: Candace Williams  
Program: Modern Recording Techniques 1 & 2

#### FULLERTON COLLEGE, MUSIC DEPT.

321 East Chapman Ave., Fullerton, CA 92634  
(714) 871-8000 (Music)  
Instructor: Alex Cima  
□ Program Description: Our recording program encompasses 2 semesters of theory and practice in our fully equipped 16 track studio, covering the fundamentals of recording studio business practices, sound, microphone technique, outboard signal processing, monitors, mixing consoles, tape recorder alignment, session production, and hearing conservation. A music business class and synthesizer class are also available. Fullerton College is a public Community College and is fully accredited by the Western Association of Schools and Colleges, and by the California State Department of Education. Contact Admissions Office for enrollment information.

#### GOLDEN WEST COMMUNITY COLLEGE

15744 Golden West St., Huntington Beach, CA 92647  
(714) 892-7711  
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 producing.

#### DICK GROVES SCHOOL OF MUSIC

12754 Ventura Blvd., Studio City, CA 91604  
(818) 985-0905  
Chief Administrator: Mike Julian  
□ The Dick Groves School of Music proudly announces that it is accepting applications for the summer semester of its Recording Engineer Program. Beginning July 9th the program offers the most hands-on experience of any recording program on the West coast. With a variety of performing groups at DGSM, you'll record everything from rock to big bands. Specific training includes acoustics, recording theory, studio maintenance, electronics, sound reinforcement, video and more. Music classes include Eartraining, Modern Harmony. Graduates of the program will have musical as well as sound recording ears. And where better to study than LA - home of the recording industry.

#### HEAVENLY RECORDING STUDIO

620 Bercut Dr., Sacramento, CA 95811  
(916) 446-3088  
Chief Administrator: Gary Woltman  
Program: Professional Recording Techniques

#### INSTITUTE OF AUDIO RECORDING

3465 El Cajon Blvd., San Diego, CA 92104  
(619) 280-7454  
Chief Administrator: 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 apti-



tude 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: Fred Munch  
Program: Audio/Video Recording Arts  
□ Eight month, 568 hour program, including internship. Class size max 10 in workshops. Prerequisites: High school grad, or equiv. and entrance exam. Accreditation offered. Diploma. New sessions begin Jan., March, June, Sept., Nov. Tuition: Diploma Program \$4,850. Individual classes also available, \$200 to \$550 per class.



SHERMAN KEENE PUBLICATIONS  
Sedona, AZ

#### SHERMAN KEENE PUBLICATIONS

P.O. Box 2519-M, Sedona, AZ 86336  
(602) 282-1258  
Program: Recording School Curriculum Service

We publish a complete curriculum for individuals, schools or recording studios wishing to teach the study of sound and recording engineering. Already in use by over 75 universities, colleges and studios throughout the world. Includes two textbooks, Teacher's Manual, Student's Workbook and Final Exams. Teacher's Manual: complete lesson plans for a two textbook, 24 module course in three levels. Progressively intensive coverage. Homework/verbal review questions for each module. Suggested session content for studio work. Three comprehensive final exams. Keene Textbook: over 250,000 words of real, practical, useful content. Covers all specialized information while Runstein's book covers conventional subjects. Write for more information.

#### SHERMAN KEENE PUBLICATIONS

Program: Recording Theory Correspondence Course  
□ Study sound engineering with our correspondence course. This course covers it all: Acoustics, mikes, consoles, signal processing, recorder alignment, tricks of the trade, special effects, the psychology of working closely with others in a recording environment, and much more. All are covered in great detail! A lifetime of musical, technical, psychological and practical information is presented in clear, progressively intensive lesson format. Build your own streamlined sound engineering technique based on this course! Written, corrected and graded homework plus unlimited dialog via audio cassettes provides direct, private, and personal feedback from the instructor. This is the only course available through correspondence with all of these features.

#### LOS ANGELES VALLEY COLLEGE, MUSIC DEPT.

5800 Fulton Ave., Van Nuys, CA 91401  
(213) 781-1200  
Chief Administrator: Richard Carlson, chairman

#### MARIN SOUND RECORDERS

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

#### MEDIA TECHNOLOGY INSTITUTE

680 Indiana St., Golden, CO 80401  
(303) 278-2551  
Chief Administrator: Diane Weigle  
□ MTI offers a variety of courses in the communication arts. One-year programs in Recording Studio Production, Live Audio Production, and Video Production are offered, as well as individual courses in these areas and in computer technology. Students gain extensive hands-on experience in a 24-track, fully automated recording studio, and they work with state-of-the-art video equipment. Emphasis is placed on the interface of audio, video and computer technologies, in order to provide realistic understanding of modern communication systems. Please call or write for a complete catalog.

#### MELON STUDIO

P.O. Box 22504, San Francisco, CA 94122  
(415) 552-0600  
Chief Administrator: Steve Rosen, Robin Woodland  
Program: Hands-On Recording Workshops  
□ For over 3 years, Melon Studio has offered a unique 30-hour course that is entirely hands-on. Now, we've moved to a fantastic, soundproof facility and have added 16 track, new mixer, digital reverb and other goodies! Class size is limited to just five students, so you'll get plenty of individual instruction. You'll participate in all aspects of the recording of a band: setting up mikes & equipment, editing, overdubs; mixing, etc. May be taken as a 10-week or 5-week course, and we now feature evening classes. Call for a free brochure and an appointment to visit.

#### MILLS COLLEGE

P.O. Box 9991, Oakland, CA 94613  
(415) 430-2191  
Chief Administrator: Maggie Payne  
Program: Sound Techniques of Recording

#### MIRACOSTA COMMUNITY COLLEGE, MUSIC DEPT.

One Barnard Ave., Oceanside, CA 92056  
(619) 757-2121, ext. 446  
Chief Administrator: Dave Megill & John Gornindo  
Program: Studio Recording, Music 24 A-D

#### MT. HOOD COMMUNITY COLLEGE

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

#### ORANGE COAST COLLEGE

2701 Fairview Rd., Costa Mesa, CA 92626  
(714) 432-5818  
Chief Administrator: Howard M. Judkins, chairman music

#### PACIFIC LUTHERAN UNIVERSITY, COMMUNICATION ARTS DEPT. (BQ-7)

Tacoma, WA 98447  
(206) 535-7778  
Chief Administrator: Dr. Rick Ruidl, Mr. Bob Holden  
Program: Audio/Video/Broadcast Journalism Production

#### POIEMA STUDIOS

P.O. Box 651, Camarillo, CA 93010  
(805) 482-7495  
Chief Administrator: Marsha Cobb  
Program: Recording Arts and Sciences  
□ Poema Studios offers a three-part curriculum in Professional Recording Engineering. The *Basic Recording Theory and Workshop* introduces the student to basic recording concepts and provides "hands-on" experience in Poema Studios' state-of-the-art 24 track facility. The *Advanced Recording Theory and Workshop* provides an in-depth study in the application of digital processing equipment, automated mix-down, interlocking of tape machines, and more. In the *Advanced Independent Workshop*, each student is responsible for organizing and engineering an individual recording project. The entire program is 30 weeks, with 40 hours of lecture and 95 hours of "hands-on" experience. Workshops are limited to 10 students.

#### RECORDING ASSOCIATES

5821 S.E. Powell Blvd., Portland, OR 97206  
(503) 777-4621  
Chief Administrator: Jay Webster



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The most power in the lightest weight package ever offered to the hard knocks, no-compromise world of pro sound.

An amplifier that can run heavy metal flat-out into any impedance down to 4 ohms all day long.

When Bob first began working on his PM-1.5, he knew a great deal about amplifiers but not enough, he believed, about the night-in night-out requirements (and wish dreams) of the pro sound world. And so he spent much time consulting with a large number of sound reinforcement professionals, including the "pros' pro," Clair Brothers.

Clair Brothers asked for lower input ac line current, greater transformer thermal capacity, dual modes of precision balanced inputs with 1% resistors, back-to-front cooling with a fully proportional fan system that can just tick over at idle or blast 1000 ft/min. to keep output transistor temperatures constant. They wanted greater noise immunity and unbelievable long-term, high-power operation, as well as a 3/16" front panel with deep-recessed controls.

Others wanted rear rack-mounts, adjustable protection circuit thresholds, front panel selectable clipping eliminator, and even a sequential, soft-start power-up mode.

Now that the PM-1.5 has undergone thousands of lab test hours and seven months of hard road testing, Clair Brothers, Bob, and you get all that and more.

The PM-1.5 is designed to run balls-to-the-wall, even into 4 ohms day and night without compromising itself or your drivers. Because the PM-1.5 has three special adjustable speaker

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An adjustable Short-Term Speaker Protection circuit adjusts dynamic headroom between 60 and 77 volts with a short term burst capability of 70 volts rms at 8 ohms, or 60 volts rms at 4 ohms.

The circuit locks-in to the control setting after 0.5 seconds.

An adjustable Long-Term Speaker Protection circuit matches the time constant of the output shutdown circuit to your PA or monitor system.

Finally, the Clipping Eliminator detects clipping lasting longer than 30 milliseconds and attenuates the input signal just enough to pull the PM-1.5 out of clipping.

As for sound quality, consider this quote from **The Audio Critic Magazine**, "...the equal

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Roy Clair and Ron Borthwick of Clair Brothers said it this way, "We are amazed that Bob was able to put the same wattage into one-fourth the volume of conventional amplifiers without sacrificing audio performance. It's hard to believe that an amp so small and lightweight can put out so much clean power. But it does!"

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\*Power: 8 ohms, 450 watts/chan 20 Hz-20 kHz both channels driven with less than 0.1% THD. 4 ohms, 600 watts/chan. rms 20 Hz-20 kHz both channels driven with less than 0.1% THD. 16 ohms, 300 watts/chan 20 Hz-20 kHz both channels driven with less than 0.1% THD. 2 ohms, 525 watts/chan. at clipping, 1 kHz, with less than 0.2% THD. Note: 2-ohm specification for information purposes only. Operation at 2 ohms is permissible but not recommended. **IM Distortion:** Less than 0.1% SMPTE **Frequency Response:** -3 dB at 3 Hz, -3 dB at 40 kHz **Damping:** 200 at 1 kHz **Gain:** 26 dB **Noise:** Better than 115 dB below 450W A-weighted **Input:** Balanced to ground, XLR or phone **Impedance:** 15k-ohm each leg, balanced to ground **Bridging:** 1200W into 8 ohms, 1000W into 16 ohms, accessed through rear-panel recessed switch. **Dimensions:** 19 in wide, 3 1/2 in high, 10 1/4 in deep Weight: 21 lbs.



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(415) 469-1787  
Chief Administrator Karen Holmes

#### SANTA ROSA JUNIOR COLLEGE DEPT. OF COMMUNICATION STUDIES

1501 Mendocino Ave., Santa Rosa, CA 95401  
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Chief Administrator Dr. Roy Mikalson, Dept. Chair, John  
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## SOUND MASTER



## RECORDING ENGINEER SCHOOLS

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North Hollywood, CA

#### SOUND MASTER RECORDING ENGINEER SCHOOLS, AUDIO/VIDEO INSTITUTE

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□ Basic Theory/Recording A beginning course in multi track recording technology Beginning Studio Workshop Using equipment to perform duties of the recording process Advanced Audio Theory Audio technology dealing with advanced recording techniques Advanced Studio Workshop Hands-on experience on 24 track recording equipment and its operation Disc Mastering The basic principles of disc recording techniques Recording Studio Maintenance Basic electronics and trouble shooting of studio equipment and maintenance of equipment Sound Reinforcement Live sound mixing sessions held with live groups Solving, setting up and operating equipment, mixing the live concerts, and breakdown of equipment Video Production A 4-level course dealing with the technical operation for all phases of color video pre and post production, including camera operation, editing, lighting, scenery, and special effects Under water video dealing with techniques for all underwater photography Must be a certified scuba diver Call for free brochure

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Program Sound Engineering and Acoustics Seminars

#### UNIVERSITY OF ARIZONA SCHOOL OF MUSIC

Tucson AZ 85721  
(602) 621-1655

Chief Administrator Jeffrey Haskell, director

Program Recording Studio

#### UCLA MUSIC DEPT.—EXTENSION

10995 Le Conte Ave., Westwood, CA 90024  
(213) 825-9064

Chief Administrator Van Webster

Program Recording Engineering Theory; Recording Engineering Practice I & II

#### UNIVERSITY OF SOUND ARTS

6525 Sunset Blvd., Suite G-7 Hollywood CA 90028  
(213) 467-5256

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#### UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MUSIC

University Park, MUS 318 Los Angeles, CA 90802  
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#### ASHLAND COLLEGE, DEPT. OF RADIO/TV

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3123 E Lake St., Minneapolis, MN 55406  
(612) 721-2481

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Program Audio Technology & Recording Techniques

#### CASE WESTERN RESERVE UNIVERSITY & THE CLEVELAND INSTITUTE OF MUSIC

University Circle, Cleveland, OH 44106  
(216) 368-2400 (CWRU), 791 5165 (CIM)

Chief Administrator Dr. Peter Webster (CWRU), Mr. David Peelle (CIM)

Program Bachelor of Arts in Music; special emphasis in  
Audio Recording Technology

#### CEDAR VALLEY COMMUNITY COLLEGE

3030 N Dallas Ave., Lancaster, TX 75134  
(214) 372-8120

Chief Administrator Dr. M. Davidson, Chairperson of Div of  
Com/Hum

Program Commercial Music Recording Technology (2 year  
Associate's 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.

#### THE CLEVELAND INSTITUTE OF MUSIC

11021 East Blvd., Cleveland, OH 44106  
(216) 791-5165

Chief Administrator David Peelle

Program Bachelor of Music Recording Technology double  
major

□ The Cleveland Institute of Music offers this special double major program to musicians who need professional training in audio recording as well as conservatory studies in an instrument, voice, or composition (including electronic music). Normally completed in five years of study, this program consists of the traditional Bachelor of Music curriculum, plus thirty credit hours of audio recording courses, seminars, projects, and commercial studio internship. Small recording classes of two to five students guaranteed studio time for students at all levels, and "hands-on" learning are key features. A complete description will be sent upon receiving your request.



THE CLEVELAND INSTITUTE OF MUSIC  
Cleveland, OH

#### CENTRAL STUDIOS

Sponsor Central High School  
275 North Lexington, St. Paul, MN 55104  
(612) 645-9217

Chief Administrator Ben James studio mgr

□ Central Studios is a multi track studio for secondary students offering vocational instruction covering two-track, four track and sixteen-track recording, as well as popular music ensembles, songwriting, radio playwriting and production, and theory and composition

#### COLUMBIA COLLEGE CHICAGO

600 South Michigan Ave., Chicago, IL 60605  
(312) 663-1600

Chief Administrator Al Parker Chairman Broadcast Com  
munications

□ Sound Engineering is offered in a three-semester sequence. Sound Engineering I deals with electronics, the basics and language of recording. Sound Engineering II is taught in a multi-track professional recording and film studio, where each link of multi-track recording chain is explained and demonstrated as our entry level skills such as editing and production work. Sound Engineering III is split into small teams, each required to set up, record and mix a professional quality session. Each team is allowed 20 hours studio time, with professional engineers available to assist at all times. 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 III, The Record Producer Arranger, Survey of the Recording Industry and Career Opportunities in Music, Art & Business of Recording 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.

#### HUTCHINSON AREA VOCATIONAL TECHNICAL INSTITUTE

200 Century Ave. Hutchinson, MN 55335  
(612) 587-3636

Chief Administrator Warren E. Macemon

Program Audio Tech

□ Two year intensive Technical Audio Program. Extensive hands-on training in Audio Electronics (Analog and Digital), Studio and Remote Recording, Systems Design and Installation, Acoustics, Signal Processing, and Sound Reinforcement for pro sound market. Music Television training option available. Heavy on lab and practical applications. Personalized instruction allows students to enter throughout year, receive credit for previous experience, and work at accelerated pace. Graduates available throughout year. Extensive cooperation with employers for internships and supervised work experience. Students active in AES State school, low tuition. Our graduates have the mix of technical and production skills for today's pro sound market.

#### INDIANA UNIVERSITY, SCHOOL OF MUSIC

Bloomington, IN 47405  
(812) 335-1613 or 335-1900

Chief Administrator Ted W. Jones, Director of Technical  
Studies or David A. Pickett, Director of Recording Arts

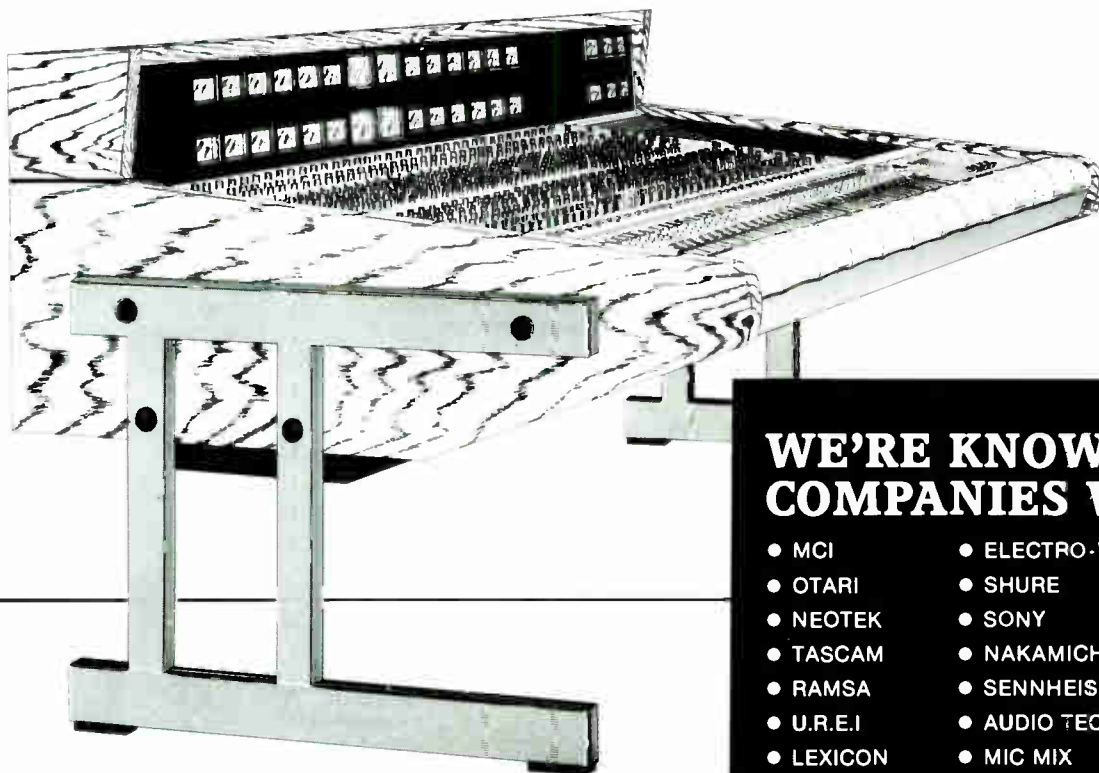
Program Associate of Science in Audio Technology

□ The Associate of Science in Audio Technology offers training in audio recording, reinforcement and media production. Courses in audio techniques, equipment operation-maintenance-acoustics, and musical styles stress practical experience and aural awareness. Professional equipment includes

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#### JEWEL RECORDING COMPANY

1594 Kinney Ave., Cincinnati, OH 45231  
(513) 522-9336  
Chief Administrator: James Krause  
Program: **Audio Engineering**

□ Our main goal is to give you the highest quality instruction in a short term course. Each student can learn the "how to's" of editing, splicing, mixing, soldering, 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. Also offered is a 2 week course for out of town students.

#### 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: Charles Schultz  
□ Prerequisite: none. Licensed by the Wisconsin Educational Approval Board. Fees: \$650, includes all materials, tape, equipment, etc. Class lengths are 80 hrs. total - 4 meetings per week, 4 weeks total. Classes are run monthly with a maximum of 7 students per class. Students are qualified for entry level positions by working with narrators and musicians under the guidance of professional audio engineers. Students receive "hands on" training on mono two track & sixteen track tape machines and MCI 428 series consoles. The studio offers a good solid education in audio engineering preparing the students for the working recording world.

#### L.M. RECORDING ENT.

206 Locust, Americus, KS 66835  
(316) 443-5181

Chief Administrator: Lee C. Muller  
Program: **Basic Recording Technique and Science regarding signal flow paths.**

#### MEDIA ARTS WORKSHOP

232 1/2 Main St., Ames, IA 50010  
(515) 232-4331

Chief Administrator: Jon Michael Kent Newman  
Non-profit youth program with a fully equipped 8-track recording studio, video equipment, computers, and photography program. Open to area youth and some with some adult education and workshops.

#### MICHIGAN STATE UNIVERSITY DEPT. OF MUSIC

217 Music Bldg., M.S.U., East Lansing, MI 48824  
(517) 355-7674

Chief Administrator: John McDaniel  
Program: **Sound Recording for Music Educators**

#### MIDLAND COLLEGE

3600 North Garfield, Midland, TX 79705  
(915) 684-7851

Chief Administrator: Mr. Ron Franklin, director  
Program: **Audio Technology**

#### 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 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.I.I.I. and two MCI JH110 2 track mastering recorders. Complementing the major equipment is JBL monitoring with Yamaha power amps; Echo-plate reverbation, signal processing equipment by dbx, Audioarts, Omni-craft, 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



MILIKIN UNIVERSITY - SCHOOL OF MUSIC  
Decatur, IL

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 (Dallas), TX 75061  
(214) 438-8248  
Chief Administrator: Phil York

**NORTHEAST TECHNICAL COMMUNITY COLLEGE**

801 East Benjamin, P.O. Box 459 Norfolk NE 68701  
(402) 371-2020 ext. 272  
Chief Administrator: Timothy Miller  
□ Offering a two-year Associate of Arts and or Associate of Applied Science in Audio and Recording Technology, accredited by the North Central Association of Colleges and Schools and the Nebraska State Department of Education



**OHIO STATE UNIVERSITY, SCHOOL OF MUSIC**

2015 Neil Ave Columbus, OH 43210  
(614) 422-7301  
Chief Administrator: Robert B. Lackey  
Program: Four-year program leading to the degree B.S. in Audio Recording

**OHIO UNIVERSITY, SCHOOL OF TELECOMMUNICATIONS**

RTVC 253, Athens, OH 45701  
(614) 594-5503  
Chief Administrator: Director: Drew McDaniel, Audio Production Coordinator: David Mould  
□ Four year B.S. degree program in Telecommunications, with professional production sequences in audio and video. Audio production majors take a series of courses in studio & location recording and related classes in music business and engineering. Video production majors take courses in studio and field production and editing, and related classes in art, film, and theater. Production students take internship at broadcast stations, production houses and recording studios. Facilities include stereo and multitrack production studios, TV studios and remote production equipment. Two public radio stations, a public TV station, a cable channel, a student commercial station, and local recording studios offer other professional opportunities.

**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, INC.**

14611 E. 9 Mile Rd., E. Detroit MI 48021  
(313) 779-1380  
Chief Administrator: Robert Dennis  
□ Established in 1976, The Recording Institute of Detroit is licensed by the Michigan Dept. of Education. The school is a member of the Michigan Organization of Private Vocational Schools and Michigan Chamber of Commerce. The program consists of two classes, 93 hours of class time in a fully-equipped 24 track automated recording facility. A 90 hour recording internship is available to A students. Credits transferable to Institute of Audio & Video Recording, L.A. Total program cost \$1090 including materials. Eleven starting dates each year.

**RECORDING STUDIOS, SCHOOL OF MUSIC**

Sponsor: The University of Iowa  
2057 Music Building, U. of Iowa Iowa City IA 52242  
(319) 353-5976  
Chief Administrator: Prof. Lowell Cross  
Program: Recording Techniques (L. Cross); Seminar in Audio Recording (S.F. Temmer)

**THE RECORDING WORKSHOP**

Licensed by Ohio State Board of School & College Registration #80-07-0696T  
455 Massieville Rd., Chillicothe OH 45601  
(614) 663-2544, (800) 848-9900  
Chief Administrator: Jim Rosebrook, Director: Willi Pack, 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.

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(312) 885-1330  
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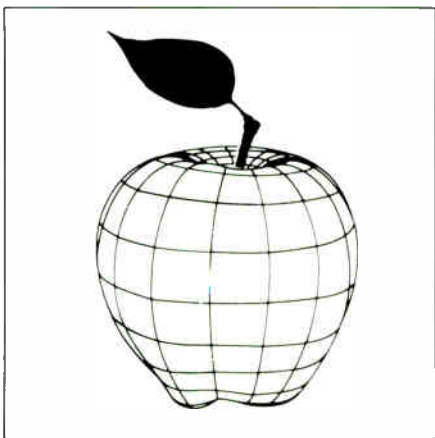
**SOLID SOUND RECORDING STUDIO**

2400 W. Hassell Rd. Suite 430, Hoffman Estates, IL 60195  
(312) 882-7446  
Chief Administrator: Judd Saeger

**SOUTH PLAINS COLLEGE**

1401 College Ave., Levelland, TX 79446  
(806) 894-9611, ext. 271  
Chief Administrator: Randy Ellis  
Program: Sound Technology Program

□ South Plains College's two-year program in sound technology awards an associate in applied science degree. The program trains students in recording engineering, sound reinforcement 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 79346 (806) 894-9611.



**STUDIO PRODUCTION TECHNIQUES**  
Dallas, TX

**STUDIO PRODUCTION TECHNIQUES**

P.O. Box 741444, Dallas, TX 75274-1444  
(214) Hands-On (426-3766)  
Chief Administrator: Terry Poppe  
Program: Studio Production Techniques

□ General Function Private school for audio and video education and music production. Also Available: Consultation for high school and college music programs including courses on video



Private and public seminars Course Description A 100-hour course in basic audio engineering and music production, with emphasis on Hands-On experience. Each class limited to 10 students each of whom mixes on their own separate professional console. Designed for anyone interested in multi-track recording technology, live sound mixing, music producing, equipment maintenance, and business tools for the audio and music industry. Each class visited by top industry engineers or recording artists. Cost includes books, materials, housing and meals. Also available: advanced level audio course and video courses. No previous experience needed. Courses available in Dallas, Tulsa, and Nashville. Free brochure available upon request.

**TEXAS MUSIC ARTS COLLEGE**

8377 Westview Drive, Houston, TX 77055  
(713) 465-6554  
Chief Administrator: Dale Mullins

**UNITED AUDIO RECORDING STUDIO**

8535 Fairhaven, San Antonio, TX 78229  
(512) 690-8888  
Chief Administrator: Marius Perron III

**UNIVERSITY OF MISSOURI—KANSAS CITY**

Sponsor: Conservatory Recording, Center for the Performing Arts  
4949 Cherry St., Kansas City, MO 64110  
(816) 363-4300, ext. 250  
Chief Administrator: Tom Mardikes

**EAST**

**AUDIO RECORDING TECHNOLOGY INSTITUTE**

Sponsor: Dawn, Inc.  
756 Main St., Farmingdale, NY 11735  
(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 splicing 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. College credit for the programs may be awarded. Prerequisites: High School Diploma.

**AUDIO RECORDING TECHNIQUES SEMINAR**

Sponsor: Highland Studios  
5 West Pittsburgh St., Delmont, PA 15626  
(412) 468-6661  
Chief Administrator: Mark S. Valenti

**AUDIO WORKSHOP SCHOOL OF SOUND**

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

□ 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 (MCI & Studer) and 16-track (Otari, CMI, & digital) studios. Except for a 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.

**BELMONT COLLEGE SCHOOL OF BUSINESS**

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

**BERKLEE COLLEGE OF MUSIC**

1140 Boylston St., Boston, MA 02215  
(617) 266-1400  
Chief Administrator: Don Puluse  
Program: Music Production & Engineering

□ Music Production and Engineering is the 1st program of its kind in the United States. Our goal is to provide the music industry with highly skilled, disciplined and fully responsible producers/engineers. Students receive extensive hands-on training in recording studio technology and procedures and individual instructor assisted time in the college's 4 professionally equipped recording studios, culminating in individual productions of studio-quality master tapes. Courses are specifically designed to teach production of radio and TV commercials, film or video soundtracks, and records. Berklee is an accredited college and offers degree and diploma programs.



**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

**EASTERN ARTIST'S RECORDING STUDIO (EARS)**

36 Meadow St., East Orange, NJ 07017  
(201) 673-5680

Chief Administrator: Pamela Haynes (Asst. Manager)  
Program: E.A.R.S. AEC (Audio Engineering Course)

□ The E.A.R.S. Audio Engineering Course is offered in two levels. Level I is introduction to multi-tracking, level II consists of advanced engineering and mixing techniques. Each class is 2 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 are limited to no more than nine students. Applications are available upon request and should be submitted 1 month prior to the start of class.

**EASTMAN SCHOOL OF MUSIC, UNIV. OF ROCHESTER**

26 Gibbs St., Rochester, NY 14604  
(716) 275-2933 or 3180

Chief Administrator: Ros Ritchie, dir., Dept. of Recording Services  
Program: Basic & Advanced Recording Techniques

**EDEN GARDEN STUDIO/CARUSO SOUND**

27 Garrett Rd., Upper Darby, PA 19082  
(215) 352-6710

Chief Administrator: Joan Caruso  
Program: Audio Engineering

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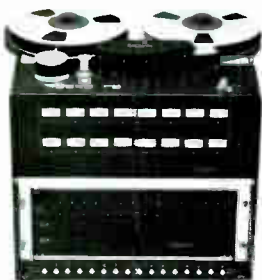
660 Douglas Ave., Altamonte Springs, FL 32714  
(800) 221-2747, In Florida, call (305) 788-2450

Chief Administrator: Gary Jones, Vice President of Education  
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□ Full Sail offers seven training programs in the Music Video field ranging in length from two weeks to one year. The programs

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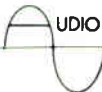
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Program: Commercial Music/Recording

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(301) 337-6277  
Chief Administrator: Professor Brownlee Sands Corrin

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Chief Administrator: Mark Valenti  
Program: Audio Recording Techniques Seminar

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3812 Hillsboro Rd., Nashville, TN 37215  
(615) 383-5511  
Chief Administrator: Vic Gabany



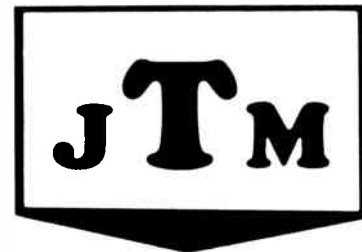
**INSTITUTE OF AUDIO RESEARCH**  
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**INSTITUTE OF AUDIO RESEARCH**  
64 University Place, Greenwich Village, New York, NY 10003  
(212) 677-7580  
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Program: Diploma in Multi-track Recording Technology

**JTM WORKSHOP OF RECORDING ARTS**  
Box 686, Knoxville, PA 16232  
(814) 797-5883  
Chief Administrator: Frank T. Battista  
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**JTM WORKSHOP OF RECORDING ARTS**  
Knox, PA



## WORKSHOP of RECORDING ARTS

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(516) 586-2486  
Chief Administrator: Keith A. Gutschwager

**LEBANON VALLEY COLLEGE**  
College Ave., Annville, PA 17003  
(717) 867-4411  
Chief Administrator: John J. Uhl  
 The Recording Technology program at Lebanon Valley College is a comprehensive course of study combining the art, science, and philosophy of recording. The students follow a variety of disciplines involved in the field of audio engineering including recording technology, music, physics, electronics, mathematics, computer science, business administration, and selected courses in the liberal arts. Emphasis is placed on student usage of equipment in laboratory and level 500 courses. All applicants to the program must pass a musical audition for acceptance. The degree conferred is a Bachelor of Science.

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175 Elm St., Somerville, MA 02144  
(617) 625-7882  
Chief Administrator: Bruce Petschek, director  
Program: Audio, video, photography and silkscreening

**MEMPHIS STATE UNIVERSITY MUSIC DEPT.**  
Memphis, TN 38152  
(901) 454-2559  
Chief Administrator: Larry Lipman  
Program: Commercial Music Program  
 Bachelor of Fine Arts Degree with concentrations in audio recording or music business. Careful selection of CMUS faculty has created a balance between successful professionals actively working in the music industry and experienced educators with a broad knowledge of music industry practices. Modern audio/video production facilities include: 24-track MCI studio; electronic music lab; full convergence editing and post-production on Ampex 1" and Sony 3/4" video machines. Internship opportunities, placement, and potential for students to become involved in the University's production and publishing companies. Commercial composition/performance degrees also available. Enrollment is limited and based on selective procedures.

**MIDDLE TENNESSEE STATE UNIVERSITY**  
Box 21, MTSU, Murfreesboro, TN 37132  
(615) 898-2813  
Chief Administrator: Geoffrey Hull  
Program: Recording Industry Management  
 This four-year program leads to a Bachelor of Science in Recording Industry Management (RIM). RIM offers over 33 semester hours of specialized training in the recording industry. Courses include audio engineering, music publishing, copyright law, artist career development, merchandising of recordings, promotion and publicity, record store operation, studio administration



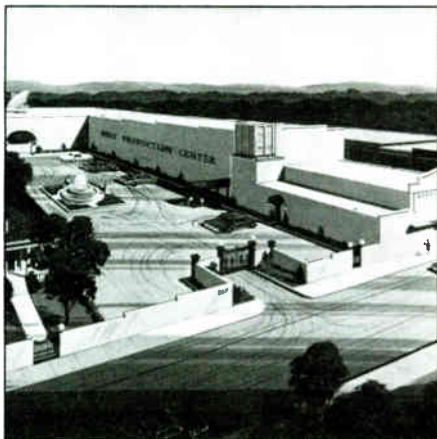
and others. It prepares students for entry level positions in audio engineering and all business aspects of the recording industry. Video applications are available through a minor in Mass Communications. The program has an on-campus 16 track professional studio. Electronics, music, and business courses are available through other departments.

**THE MUSIC BUSINESS INSTITUTE**

3376 Peachtree Rd. N.E. Atlanta, GA 30326  
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Chief Administrator: Mert Paul

□ A Career Program in Music Course includes recording and studio production, record promotion, marketing and airplay, artist representation and management, retail/wholesale distribution, copyright and music industry legalities, songwriters and music publishing, concert promotion and production, video production, and more. The Music Business Institute is accredited by Southern Association of Colleges and Schools, approved and licensed by State of Georgia Department of Education, approved by Social Security Administration for Education Benefits, approved by Georgia Department of Human Resources Division of Vocational Rehabilitation, and authorized under Federal law to enroll non-migrant alien students. Financial aid including Pell Grant, available.



**MUSIC CAREER WORKSHOP**  
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**MUSIC CAREER WORKSHOP**

Sponsor: Roxy Production Center  
827 Meridian St. Nashville, TN 37207  
(615) 227-0920

Chief Administrator: Donna Bridges

□ Music Career Workshop is unique. The first learning process of its kind for the music industry. It incorporates the "Total Immersion" teaching system that covers all phases of the record production 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.

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Chief Administrator: Ken Pohlmann

**Program: Music Engineering**

□ The Music Engineering program at the University of Miami is a four year program culminating in a Bachelor of Music degree with a minor in Electrical Engineering. Admission entails a competitive musical performance audition and high SAT scores. Courses in the curriculum include recording engineering, digital audio, acoustics and studio design, video production, film scoring, circuit theory, computer programming, music merchandising, music theory, orchestration and arranging. The principle recording studio houses an automated MCI 500 console, MCI 24, 16, 4 and 2 track recorders, signal processing equipment, and dbx and Sony digital audio processors. Also in the studio is a Audio Kinetics synchronization system and ¼" Sony video recorders.

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East Building, Ste 300, Washington Square  
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(212) 598-7791

Chief Administrator Prof Richard L Broderick, Director

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□ A four year bachelor of science degree in music business and music technology is offered. Adjunct professors include Robert Liftin, President Regent Sound, Jeffrey Graubart, music attorney and other industry leaders. A masters program will be offered beginning in September 1984.

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Chief Administrator Richard P Robinson

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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 Supersession, 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 Supersession features presentations by several of these well known people. The Basic Supersession is \$995, 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.

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1 E. Mt. Vernon Pl., Baltimore, MD 21202  
(301) 659-8136

Chief Administrator Alan P. Ketauer

### Program Bachelor of Music, Recording Arts & Sciences

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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

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Chief Administrator James Rattazzi

### Program Introduction to Multi-track Recording

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(703) 820-2025

Chief Administrator Don Daugherty

### Program Sound Recording Technology

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(404) 866-2432

Chief Administrator Steve Mullins

### Program Basic Recording Engineering

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Chief Administrator Cliff Pia

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(205) 481-1455

Chief Administrator Lisa Harless

### Program Commercial Music

## UNIVERSITY OF NORTH ALABAMA

Wesleyan Ave., Florence, AL 35632-0001

(205) 766-4100, ext. 361

Chief Administrator Dr. James K. Simpson

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1741 Volunteer Blvd., Knoxville, TN 37996

(615) 974-7552

Chief Administrator Dr. Kenneth Jacobs

### Program Courses in Recording Techniques, Degree Program in Electronic Music

## WIDENER UNIVERSITY

Chester, PA 19013

(215) 499-4338

Chief Administrator John A. Vanore

### Program Musical Aspects of Recording

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Canada V6B 1B6

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Canada V6J 3G7

(604) 734-5474

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Canada H3A 1E3

(514) 392-4501

Chief Administrator Wieslaw Woszczyk or Paul Pedersen

## MUSIC INDUSTRY EDUCATORS ASSOC.

c/o Trebas Institute of Recording Arts

1435 Bleury St., Suite 301, Montreal, Quebec

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 programs in music industry education, and to promote music industry related research.

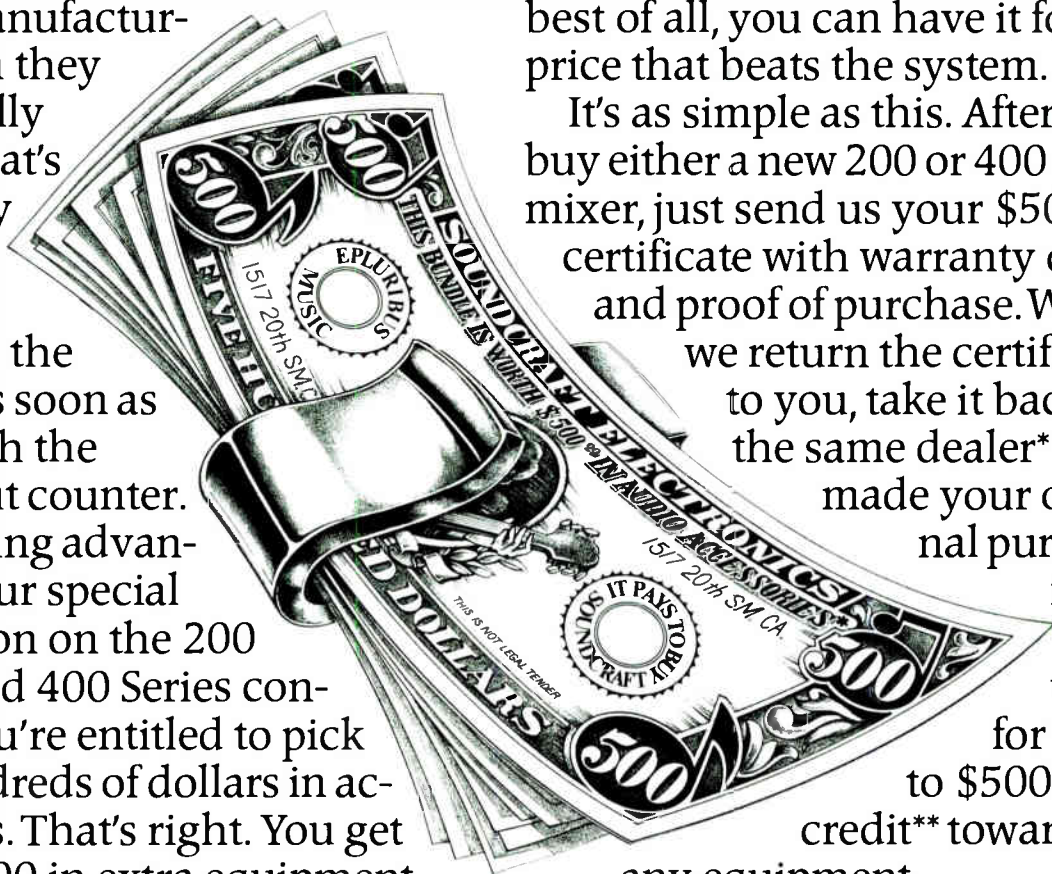
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613-237-7144  
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435 Bay St., Suite 401,  
Montreal, Quebec Canada H3A 2H7  
514-849-4141  
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Program: (see Vancouver Listing)

### UNIVERSITY OF SURREY, MUSIC DEPT

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PHOTO: DAVID GANS

## MITCHELL FROOM'S 'COOL' NEW FUSION

By David Gans

Mitchell Froom is best known for his keyboard work with rock guitarist Ronnie Montrose, but the versatile composer-performer has been nursing some different ideas. His new Slash album, *The Key of Cool*—through a strange sequence of events—provides the public with a look at the real Froom.

"It's always been a bit frustrating to have people know of me through things I consider to be more craftsmanship than creativity—sessions on other people's records, that sort of thing," says Froom. "I had ideas of certain kinds of music I wanted to do, but I thought it was always destined to remain on a shelf somewhere. Everybody goes through that."

It was a visit to the Guggenheim Museum in New York—more specifically, an encounter with the works of Joseph Beuys—that provided Froom with the inspiration to proceed with his ideas. "I walked in and there were four hunks of lard, about eight feet by eight feet each, in the middle of the floor," he laughs. "Seeing a museum full of this sort of thing triggered the notion that perhaps I could do things differently."

Froom had just gotten his first polyphonic synthesizer, and he wanted

to do something completely different from his work with Montrose. Beuys' art, says Froom, "shook me out of a certain complacency about music. It made me think, why start with any preconceived notions? Why not do things that don't have any drums? Why do I have to have a singer—why can't [lyricist] Jerry Stahl just *speak* some of these things?"

The lard-triggered bolt from the blue struck just after Froom returned to Los Angeles from Ronnie Montrose's *Open Fire* tour. He was struggling to get established as a studio player, and just to keep his head on straight he decided to work on "something that had an original voice to it. I'm a rock musician, although I have some classical and jazz training, and I want to introduce new possibilities into the parameters of rock music."

"See, music itself can no longer be subversive. Just about everything has been done. When Stravinsky premiered the *Rite of Spring* it caused riots in the streets of Paris, but it wouldn't have that effect now."

Previous attempts to combine musical disciplines have proven strangely narrow, Froom notes. "They fused jazz and rock, but with only a few exceptions everybody's continued along more or less the same lines. Why not fuse what I

always loved about jazz—that smoky, club feel, and the types of chords that were used in the '50s—with a futuristic sound through synthesizers?"

"The elements of rock I wanted to maintain were its aggression, which is best personified in the way the drums are played, and in the subversive quality of the lyrics here and there."

With Montrose producing, Froom went into the studio in 1980 and recorded two experimental tracks. "Patio" featured lyricist Stahl speaking a provocative lyric against a background of synth strings, doubled pianos and sound effects. It's brief and a little disconcerting ("There's dinosaurs all over the house. I hear them singing...")—definitely *not* hit material, but quite effective. "Zip Code" again featured Stahl, backed by less episodic, but no less intriguing, music.

"Believe me, when I took that tape around in 1980, I got very strange reactions," Froom recalls, "most of which were people not knowing quite what to say."

The important thing about this music is not its weirdness per se, Froom insists. "The strangest things are apparently normal, but with something a little off kilter. Somebody saying, 'Oh, I'm so strange' with eerie sounds—that's not strange." Froom's music "challenges your basic concept of normality," but it acts like nothing's wrong.

After Gamma's demise Montrose and Froom mounted an ambitious computerized-music project in which they programmed all their accompaniment on sequencers, drum machines and bass synth. Gigging turned out to be "a monster. We had this huge system that required a lot of upkeep, and the gigs couldn't support it." Although the duo hasn't officially disbanded, Froom is working in Los Angeles and Montrose has been performing solo.

In 1982 Froom was approached to score a film which Stahl had co-written, a post-meltdown sex fantasy called *Cafe Flesh*. "It's set in the future, but most of the characters speak and dress in 1950s style," says Froom. It was a perfect opportunity to try some of the recombinant musical experiments he'd envisioned.

The budget for the *Cafe Flesh* soundtrack was "less than most groups spend tuning their drums," Froom notes. "I worked out as many pieces as I could ahead of time, then I brought in Denny Carmassi [a longtime Montrose associ-

ate now playing drums with Heart]." Working with an Otari half-inch eight-track recorder, Froom had to plan carefully and make sure his shortcuts were inspired ones.

"The drums are recorded mono, with the reverbs in stereo—which is what drums are really like. We got a good, live room; the drums sounded good to Denny, so he played well. I used some close miking, but only in a very bastardized way, using an ultra-band-pass effect around 8-10 kHz and just adding a little of it when a drum needed a little more attack. I didn't want to do any bouncing, so I had to open up every track I could."

*Cafe Flesh* was financed by a company whose specialty is X-rated flicks. The director, who used the pseudonym Rinse Dream, shot and edited an R-type film, and that's what Froom scored. But the backers refused to accept the mild version. Dream "had shot X scenes, knowing he might have to put them in later," says Froom. "But he decided that if he had to do that he was going to make it an *anti*-pornography movie by making the sex really ugly."

The X-rated version of *Cafe Flesh* made the rounds of the porno theaters. "Those guys in the raincoats had a heart attack when they saw these

sex scenes," Froom chuckles. "The movie was shelved after about four weeks. Then another film company picked it up and put it on the midnight movie circuit." To audiences conditioned to the bizarre by the likes of *Rocky Horror* and *Eraserhead*, *Cafe Flesh* was more than a stroke flick; its antinuke, maximum-alienation theme combined with people in kinky costumes doing things to each other added up to cult success—and a record contract for Mitchell Froom.

Of the labels which showed interest in Froom's music, Slash was the one that didn't flinch at some of his more daring ideas. "We were considering interspersing dialogue from the film with the music, or adding vocals," he recalls. "I said I'd like to add vocals as long as they could be completely non-conventional." To Froom's surprise, Slash agreed.

Froom could have taken this opportunity to rerecord parts that weren't perfectly performed, "but I didn't want to touch it. As soon as you touch one instrument you throw the rest of the track off kilter. You gain the 3 percent you're looking for, but you lose 10 percent from messing with it." He did manipulate the tape a little, taking sections from one cue and adding them to another piece as an intro.

*The Key of Cool* does have

some pretty weird stuff on it. "Fruto Prohibido," characterized by Froom as a "punk synthesizer tune," uses a whole-tone scale, which he says is "normally associated with 'beautiful music.' You literally cannot hit a wrong note; everything sounds very smooth all the time."

"I turned it into a real burlesque piece and used a lot of midrangy synthesizers and withheld any real bass until the very end of the track, trying to get a sort of drunken feel. Then I brought in the Pink Tools, this underground Mexican band. They showed up around 11 in the morning, drinking beer. I told them, 'When I point at you, yell out 'fruto prohibido!' And at the end when I point at you, start arguing.'"

As an escape from the rock world, *The Key of Cool* makes a clean break. As an exercise in interdisciplinary composition, it's successful in that its concepts are engaging, its musical vocabulary accessible and its execution honest. It remains to be seen what its commercial fate will be, but as a demo for Producer Mitchell Froom, *Key of Cool* certainly exhibits an open and versatile mind. Summing up his own feelings about it, the characteristically understated artist says, "Hopefully, what this is is extreme enough—and it sounds good enough—that it's fine for a first effort." ■

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# Hot Times in the Sunbelt



Control room at Star Track studio in Tulsa, Oklahoma. Design by Paul Westbrook of Westbrook Audio.

By George Petersen

The hale and hearty state of the recording market in the Southwest often surprises outsiders. While studios on both coasts compete fiercely for business, facilities along the "third coast" are busy, and sometimes overbooked with all varieties of sessions: country, pop, and gospel music; jingles, commercials, audio for film/video, and spoken word dates.

To keep up with this demand, Southwest studios are constantly upgrading, remodelling, expanding, and a fair number of new facilities have sprung up over the past year, while even more are in either the construction or planning stages at this time. Retailers are selling equipment at a break-neck pace, and studios are rolling tape and cutting tracks day and night. Chances are that any talk of a hot summer for Southwest studios refers more to the business climate rather than the scorching rays of old so. We checked in with a few of our friends from Las Vegas to Arkansas and they could feel

the mercury rising. These are definitely hot times for the studios in the sunny Southwest.

Of course one of the hottest areas of the Southwest recording scene is Dallas, which has evolved into a major center for television, motion picture and advertising work. Dallas Sound Lab, which is featured on this month's *Mix* cover, has been involved with a 50/50 ratio of video and music spot/record production projects since opening last November. Recent sessions include Phil Collins doing vocal overdubs and a remix of a video concert shot in Pasadena, California for an Orion video cassette release; overdubs and mixing for Aldo Nova's RKO concert special; and Gary Olazabal producing Bill Whitehead and Bruce Conole's album for Dallas-based Recovery Records.

At producer Gordon Perry's Goodnight Dallas recording studio, album activity has been steady. One interesting project of late was Stevie Nicks cutting rhythm tracks for an upcoming album with producer Jimmy

Iovine, engineer Shelly Yakus, and Tom Gondolf assisting. A few of the notable players on the sessions included Kenny Edwards, Bob Glaub, Russ Kunkel, Bill Payne, Waddy Wachtel and Dallas session drummer Brad Smith. Also showing up to help out were guitarists Mike Campbell (of The Heartbreakers) and Joe Walsh.

Dennis Lowe, manager of January Sound, in Dallas, reports that the studio's new 42' mobile unit (designed by Sierra Audio) should be rolling by July 1, 1984. This spring they finished adding an eight track production room to their two 24-track facility, and Lowe added that they are "seriously considering" building a new, totally state-of-the-art studio to be designed by Tom Hidley, and construction should commence as soon as a site is selected.

In nearby Sunnyvale, Matt Trap, a co-owner of Studio Southwest notes that his studio has been doing quite well since opening last December. A recent guest at the facility, which features MCI recorders and a Trident Series 70 console in a large asymmetrical



control room, was Leslie Phillips, who cut vocals and overdubs for her new Word Records release with producer Dan Postum and engineer Jeremy Smith. The basic tracks for the LP were recorded at Bill Schnee's studio in Los Angeles.

According to Keith Rust, manager of Crystal Clear Sound in Dallas, 1984 has so far been a very good year, and business has steadily been picking up since the studio remodelled and up-graded to MCI and UREI gear two years ago. Crystal Clear is kept busy with mostly jingle and TV spot work during the day, and is usually booked at night by local acts, such as pop/new wavers The Elements, whose recent sessions have generated a good deal of label interest.

Out at the Dallas' Love Field, Omega Audio has been involved with a large number of video sweetening and location recording jobs, and owner Paul Christensen says the company is getting ready to build a new, bigger truck. Paul has been working with producer Patrick Tourville (of Associated Media of Dallas) on a series of 24 shows entitled "Video Music Clinic." The 15 minute episodes feature top musicians such as Russ Kunkel talking about their playing techniques and secrets, as well as giving an inside look at the music business. Future shows will spotlight other illuminaries such as Joe Walsh and Stanley Clarke.

Drew Townson of Castle Audio in Carrollton (near Dallas) notes a strong flow of local music projects coming into his studio, including the Dogs of Texas, a fusion/funk/psychedelic/reggae band who completed their first album with engineer Dave Rosenblatt; and The Derangers, who cut their pop/wave tracks with the assistance of co-producers Lisa Wickenden (KEGL air personality) and Drew. Lisa also performed on the tapes, which will be shipped to labels later this summer.

Otis Conner's new Studio Centre in Dallas should be on line by August 1, according to Ron Lagerlof, the facility's chief engineer. Studio Centre, designed by Russ Berger of Dallas-based design firm Joiner, Pelton and Rose, is an LEDE design with 12 quadratic residue diffusors placed along the back wall of the large control room which features a 48-input Harrison 4832C console with a Harrison Auto-Set computer, an MCI 24-track recorder with SMPTE synchronizer, UREI 813B monitors with Crown Delta-Omega 2000 power amps, and a large microphone complement with vintage tube mikes. Although the studio will be booked about 60 percent of the time by Otis Conner Productions, it will also be available to outside clients.

Some of Joiner, Pelton and



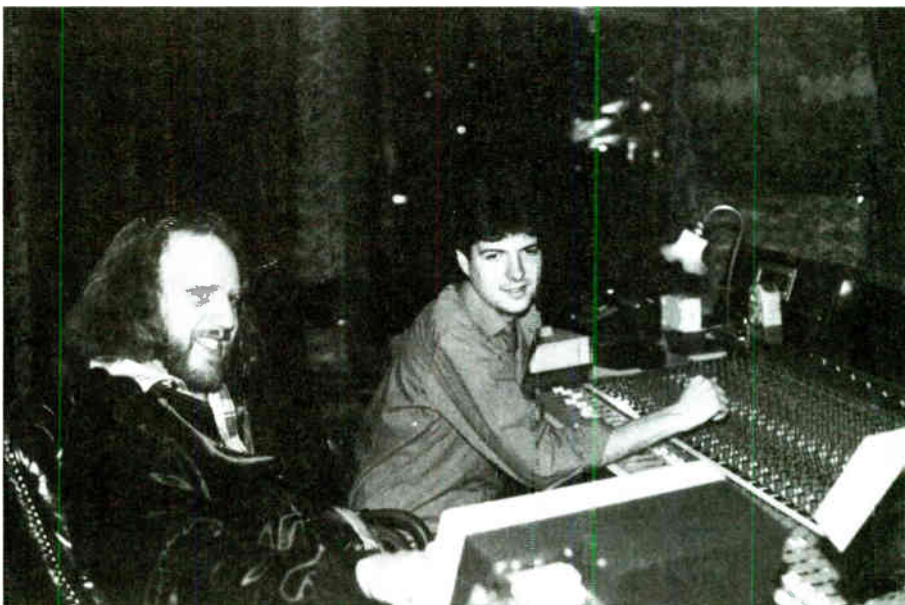
*Star Track's main recording room, showing large drum room and vocal/isolation booth.*

Rose's other designs in Texas include an LEDE-type production room for KVIL radio in Dallas; the 24-track audio suite/studio for Tele-Image which should be completed late this year; Doc Clayton's four studio complex in Houston, due next summer; the remodelling of Buffalo Sound in Fort Worth, and Tim Robeson's two studio suite slated for next spring in Houston.

Greg Klingensmith, of Southwest Pro Audio has noted "a lot more

activity since last summer. Many studios had been putting off purchases over the last couple of years, and are now taking the plunge." He also added that some of the lower cost digital reverbs, such as Lexicon 200 and Ursa Major Star Gate are popular items, and multitrack cassette recorders are strong sellers. A few of the studios which have added new gear from the store over the past year are: Brasswind (in College Station, TX) who went on line last

*Asleep at the Wheel was recently at Omega Audio in Dallas mixing their new album release. Shown here is band leader Ray Benson with engineer Larry Lawrence at the board.*



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fall with a Trident console and MCI multitrack; Huddleston's Recording Studio in Garland added a Trident console and an MCI 24-track; Eagle Audio in Fort Worth opened last December with an automated MCI Series 600 console and MCI 24-track; and Austin's Rollingwood Recording, which upgraded to an MCI 16-track and added a digital reverb.

John York, of Austin's Abadon Sun, says business is good and the firm's Dallas store (which opened a year ago) is also doing well. The Tascam line of eight and 16-track recorders sell particularly well and two San Antonio studios, Michael De Leon Productions and Toby's Custom Recording have both upgraded with Tascam one-inch 16-track machines from Abadon Sun.

In Houston, Bruce Coffman of LD Systems reports that a lot of local studios are beefing up their outboard and peripheral gear, with the Lexicon line and the Eventide 949 and SP 2016 selling quickly, along with time code and sync equipment. The Otari recorders, especially MTR-90s are also popular, with John Moran adding a 24-track MTR-90 analog recorder to supplement his Digital Services Recording company's arsenal of digital machines. Bruce feels the Houston area is definite-

## The hottest area of the Southwest recording scene is Dallas, which has evolved into a major center for television, motion picture and advertising work.

ly on the rise, and projects such as the huge Synergy soundstage (designed by Morris-Aubry architects and now under construction) will bring a lot of new business to the area.

"The entry level market is healthy," notes Paul Saunders of Westbrook Audio, who notes strong sales of Tascam and Fostex equipment. The company has expanded their service department and their special eight and 16-track studio packages have been "very successful" according to Saunders. One of Westbrook's major projects is Star Track Recording Studios in Tulsa, which went on line in February. Paul Westbrook designed the facility, which has a "Hollywood studio image and feel" according to owner Rod Slane. "A lot of clients come here from Kansas, Missouri and Arkansas rather



PHOTO: BOBBY GREENSON

Local pop/wave band *The Elements* are shown here at *Crystal Clear Sound* in Dallas. Keith Rust, seated at console engineered the sessions.

than going to Dallas. We're one of the few audio-for-video studios in Oklahoma." Aside from video work, Rod also sees a lot of jingle sessions and record dates by local and regional artists.

Baird Banner, owner of Kludgit Sound in Cerrillos, New Mexico, says his studio has played host to a wide variety of projects over the past year: Don Meredith cutting tracks for Lipton tea commercials; jazz artists Rob Mullins and David Amran cutting separate albums; *Dragonsongs*, a children's cassette book narrated by the author; and at the opposite end of the spectrum, audio work on *Lust in the Dust*, a follow-up to John Waters' infamous Smell-o-vision film *Polyester*. Baird is currently involved with Multimedia, a new video production house/soundstage/movie ranch/audio studio located in the old National Guard building in downtown Santa Fe. Multimedia will be assisting in the production of 14 major films this summer.

"It's exploding!" says John Gibson of EAR Pro Audio, trying to find the words trying to describe the vibrant state of the studio and broadcast market in Arizona. His Tempe, Arizona-based company has recently sold equipment to: Jim Brady Productions in Tucson who added a Trident Series 70 console, two Ampex ATR-100s and a MM 1200 24 track; Jack Miller Productions in Phoenix purchased an Otari MTR-90 16 track, three Soundcraft boards and a Lexicon 200; and Chaton Recordings in Scottsdale, who upgraded with an Otari MTR-12 two track, Lexicon 224x digital reverb and a BTX Shadow synchronization system.

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*An Audio Biography:*

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# SOUTHWEST STUDIO

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All studio information listed has been supplied to the Mix by studios responding to questionnaires mailed in February, 1984. People, equipment and locations change, so please verify critical information with the studios directly. The Mix does not take responsibility for the accuracy of the information supplied to use by the studios.

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A step by step guide to recording studio construction for small or large budgets. Covers principles of acoustics, how acoustics affect recording, soundproofing a room, plus chapters on the studio, the control room, and a glossary of the 100 most misunderstood terms in acoustics. \$30.00

## 15) DIGITAL AUDIO TECHNOLOGY, H. Nakajima, T. Doi, J. Fukuda, and A. Iga of Sony Corp.

Authoritative handbook covering fundamentals of digital PCM recording, audio and video disk systems. It deals with the nature and causes of code errors, low-pass filters, modulation and demodulation circuits, and analysis of future developments. Hardbound. 304 pp. \$18.95

## 28) VIDEO PRODUCTION GUIDE, Lon McQuillin

A broad overview placing continual emphasis on the human organizational aspects with lively, comprehensive coverage of both studio and location production from the viewpoint of the producer and director. Divided into four parts: pre-production, production, post-production, and other important topics. 382 pp. \$28.95

## 42) MUSIC APPLICATIONS OF MICROPROCESSORS, Hal Chamberlain

This superb volume comprehensively covers digital microprocessor sound and music synthesis including standard linear techniques, musical applications for the newer 16 bit micros in non-mathematical language, and all phases of waveform shaping and filtering as applied to electronic music generation. 661 pp. \$21.95

## 46) HOW TO MAKE AND SELL YOUR OWN RECORD, Diane Sward Rappaport

This thorough book offers technical information, practical tips, and business guidance for self-production. Every aspect of a recording project is covered, from planning and budgeting through sales and promotion. Includes sample forms and worksheets as well as advice on raising money and negotiating contracts. 167 pp. \$11.95

## 47) THIS BUSINESS OF MUSIC (REVISED AND ENLARGED), Shemel & Krasilovsky

This highly comprehensive reference provides detailed explanations of legal, practical, and procedural problems of our industry. Part 1 - Recording companies and artists; Part 2 - Music publishers and writers; Part 3 - General music industry aspects. Includes over 200 pages of contracts, forms, and licenses. 575 pp. \$18.50

## 1) PRACTICAL TECHNIQUES FOR THE RECORDING ENGINEER, Sherman Keene

A down-to-earth instructional guide for the engineering/producing arts. Divided into 3 categories (basic, intermediate and advanced), the text is accessible and extremely useful to students at different levels of competency. Also available as a correspondence course and for school curriculums with Teacher's Manual, workbooks, and exams. 221 pp. \$29.75

## 6) SOUND SYSTEM ENGINEERING, Don & Carolyn Davis

This excellent volume offers a concise and encyclopedic treatment of the decibel notation system, loudspeaker directivity and coverage, the acoustic environment, acoustic gain, interfacing electrical and acoustical systems, installation, equalization, and instrumentation. Includes sample design applications. 295 pp. \$21.95

## 8) CRITICAL LISTENING COURSE, F. Alton Everest

Designed to improve aural abilities, the 10 self-study lessons in the 106 page manual are augmented by five pre-recorded cassettes, with examples of frequency band limitation, frequency response irregularities, components of sound quality, various types of distortion, reverberation effects, and voice colorations. \$129.95

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Studio Manager: Doug Clifton

••AL CLAUSER (ALVERA)  
also REMOTE RECORDING  
402 So. Broadway, Skiatook, OK 74070 (Tulsa area)  
(918) 396-1333  
Owner: Al and Vera Clauser  
Studio Manager: Al Clauser

••ALL NIGHT RECORDS  
also REMOTE RECORDING  
208½ N. Washington, El Dorado, AR 71730  
(501) 862-0731  
Owner: All Night Recording Company  
Studio Manager: David Feinberg

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



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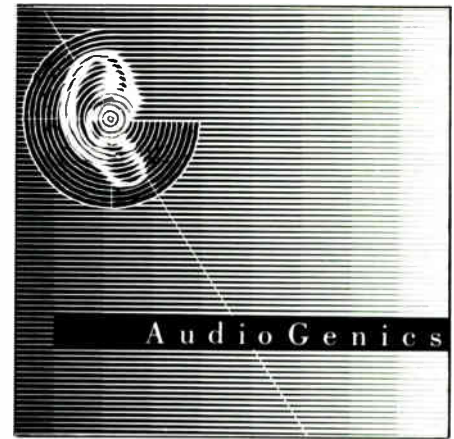
(214) 234-0301  
Owner: Ted Stanford  
Studio Manager: Bryon Parks



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••ASPEN RECORDING CO.  
603 Gladeview, Farmington, NM 87401  
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Owner: Bill and Robin Woodard  
Studio Manager: Jame Blaton

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Box 141325, Dallas, TX 75214-1325  
(214) 634-2024  
Owner: Rick Peeples  
Studio Manager: Rick Peeples  
Engineers: Rick Peeples  
Dimensions of Studios: approx 600 sq ft.  
Dimensions of Control Rooms: 13 x 16  
Tape Recorders: Tascam 40-4 w/dbx 4 track, Sony PCM-10/SL-5000 digital 2 track, Revox ½ track B77 w/dbx 2 track, Sony K777 cassette  
Mixing Consoles: Ramsa 8118 18x4x2, Studiomaster, modified 8 into 4  
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-



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essers, parametric EQ, dbx 164 comp/limiter, Roland SEQ315 graphic EQ, Integrex Dolby decoder, Goldline spectrum analyzer.

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**Instruments Available:** Moog Rogue

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Owner: Autograph Incorporated  
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••AVALON SOUND  
P.O. Box 2691, Fort Worth, TX 76101  
(817) 483-4722  
Owner: David Hughes  
Studio Manager: David Hughes

••THE BAND FACTORY  
also REMOTE RECORDING  
1414 W. Rosedale, Fort Worth, TX 76104  
(817) 877-3391  
Owner: Edward R. Stradley  
Studio Manager: Edward R. Stradley

••BOSS MOSS PRODUCTIONS  
1720 W. Clarendon Ave., Phoenix, AZ 85015  
(602) 279-4160  
Owner: Tom Mossburg  
Studio Manager: Rande Mossburg

••BRANDY/SWANN RECORDING STUDIO  
also REMOTE RECORDING  
1901 Edwards #20, Denton, TX 76201  
(817) 387-9279  
Owner: Randy D. Bryant  
Studio Manager: Randy D. Bryant

••B.T. PRODUCTIONS  
P.O. Box 11008, Tucson, AZ 85734  
(602) 883-7044  
Owner: Bob Tripp  
Studio Manager: Bob Tripp

••BUNS-UP STUDIO  
also REMOTE RECORDING  
P.O. Box 2393, Page, AZ 86040  
(602) 645-9300  
Owner: Jerry Edwards  
Studio Manager: Jerry Edwards

••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

•CHRISTIAN AUDIO  
3005 W. Glendale Ave., Phoenix, AZ 85021  
(602) 246-4976  
Owner: Jack Murray  
Studio Manager: Bob Van Allen

••COMMUNITY VIDEO SERVICES  
4500 West Davis St., Dallas, TX 75211  
(214) 330-0344  
Owner: CCSD  
Studio Manager: Tom Matasso  
Engineers: Chris Cavnar  
Dimensions of Studios: 31 x 27  
Dimensions of Control Rooms: 13 x 10  
Tape Recorders: Analog Otari MX5050 8 track; Revox A810 2 + T.C.; Otari 5050B 2 track; TEAC A2300SR 2 track; Technics M55 cassette  
Mixing Consoles: Panasonic/Ramsa WR8816 16/16/4/2.  
Monitor Amplifiers: Haller, Technics  
Monitor Speakers: E-V 100A, Auratone, custom with E-V components  
Echo, Reverb, and Delay Systems: DeltaLab Effectron, DOD reverb, Echoplate  
Other Outboard Equipment: UREI 546, dbx 160X, dbx noise reduction on video and audio mach., BTX Shadow, Cypher and Soltouch system w/2 slaves and video for sweetening  
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•DUSTBOWL PRODUCTIONS  
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••EPOCH SOUND STUDIO  
also REMOTE RECORDING  
10802 N. 23rd Ave., Phoenix, AZ 85029  
(602) 864-1980  
Owner: Epoch Universal Publications  
Studio Manager: Tom Kendza

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

•GOLD LENA SOUND PRODUCTIONS  
also REMOTE RECORDING  
P.O. Box 555, Monticello, AR 71655  
(501) 367-3076

Owner: Jimmy D. Orrell  
Studio Manager: Jimmy D. Orrell

••GRAND THEFT PRODUCTIONS  
1628 Canyon Oak, Irving, TX 75061  
(214) 254-6647  
Owner: Jimmy Papa  
Studio Manager: Mike Raupp

•MICHAEL HAYNES SOUND SERVICES  
4026 Rosser Square, Dallas, TX 75234  
(214) 484-2161  
Owner: Michael Haines  
Studio Manager: Michael Haines



HEIGHTS SOUND STUDIO  
Houston, TX

••HEIGHTS SOUND STUDIO  
2044 Columbia, Houston, TX 77008  
(713) 880-3843  
Owner: Karl A. Caillouet  
Studio Manager: Karl A. Caillouet  
Engineers: Karl A. Caillouet, Pete Gorsich  
Dimensions of Studios: Studio 21 x 28 x 9, Iso Booth: 9 x 12 x 9  
Dimensions of Control Rooms: 14 x 18 x 9  
Tape Recorders: Analog Otari MK 111-8 8 track, Otari MX 5050 B II 2 track, TEAC 3440 4 track, Tascam 122 cassette 2 track.  
Mixing Consoles: Ramsa WR 8816 16x4x2  
Monitor Amplifiers: Crown DC-300, D-75  
Monitor Speakers: JBL 4411's, 4401's  
Echo, Reverb, and Delay Systems: AKG BX5 reverb, (2) DeltaLab ADM 1024 DDL's tape delay  
Other Outboard Equipment: Orban 424A comp/limiter, Symetrix 100 comp/limiter, Symetrix dual signal gate, Aphex Aural Exciter, Ashly parametric EQ, dbx 150 NRU on all channels  
Microphones: Neumann KM-84s, Shure 81s, 57s, 58s, AKG 414, Crown PZMs; Beyer M-500s  
Instruments Available: Todachi studio piano, Fender P Bass, acoustic bass, Ludwig drum kit  
Rates: \$25/hr. Block rates available.  
Extras: Lead sheets and arrangements  
Direction: Focused on the acoustic musician, jazz, new acoustic music, bluegrass, Irish and folk. Credits include projects by Linda Lowe, Don Sanders, Peter Gorsich, Bob Westfall (with Dave Peters, Mike Marshall and Darol Anger), Southern Manor, Bare Pickin, Jubilee, Hickory Nut Ridge, Ceili Creek, Cladaig, Wood N' String Quartet, The Aeolian Strngs, Michael Sumler.

••HO-HUM PRODUCTIONS/MORON STUDIO  
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70 N. 6th Ave., Tucson, AZ 85703  
(602) 323-2145  
Owner: Mike Ronstadt, Gale Lester  
Studio Manager: Gale Lester

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(602) 254-3849  
Owner: Rick Lamb  
Studio Manager: Rick Lamb

••**LONG CANYON SOUND**  
7415 Long Canyon Trail, Dallas, TX 75249  
(214) 298-2973  
Owner: Ronny Walthall  
Studio Manager: Ronny Walthall

••**LOST PERSON STUDIOS**  
*also REMOTE RECORDING*  
200 Timber Creek #115, Richwood, TX 77531  
(409) 265-2166  
Owner: Gregory R. Leach  
Studio Manager: Gregory R. Leach



**MARSOUND RECORDING STUDIO**  
Tucson, AZ

••**MARSOUND RECORDING STUDIO**  
915 N. Main St., Tucson, AZ 05705  
(602) 628-1554  
Owner: Michael A. Reinhard  
Engineers: Michael A. Reinhard, Jim Kitlas  
Dimensions of Studio: A: 12 x 14; B: 12 x 13; C: 12 x 24.  
Dimensions of Control Rooms: 12 x 22.  
Tape Recorders: Analog: Otari-1" MX7300 8 track; TEAC ¼" 3340S 4 track; TEAC/Tascam ¼" 25-2 ½ track.  
Mixing Consoles: Sound Workshop 1280B-SEQ 12/8/2.  
Monitor Amplifiers: ESS-500, Dynco 400  
Monitor Speakers: JBL 4311, (4) JBL Bi-Radials, JBL 4560, Ampex.  
Echo, Reverb, and Delay Systems: (2) DeltaLab DL-2 acoustic computers, Fisher Space Expander.  
Other Outboard Equipment: (2) dbx 160 compressor/limiters, Neptune Graphic EQ, TEAC-1, (8X) dbx 154 noise reduction.  
Microphones: Neumann, Sennheiser, Shure, E-V, AKG, Sony, Audio Technica, Crown P2M.  
Instruments Available: Hamilton upright grand piano, Moog synthesizer.  
Rates: \$20/4 track ¼", \$40/8 track 1" Block rate discounts available.  
Extras: Pocketed rooms, angular ceilings, natural dividers, double walls, window & doors, adobe construction.  
Direction: Demos, LP and 45 RPM record production, film soundtracks, video pre-production, theater sound and sound reinforcement.

••**MESQUITE RECORDING STUDIO**  
*also REMOTE RECORDING*  
3129 N. Highway 67, Suite H-1, Mesquite, TX 75150  
(214) 270-7453  
Owner: Don McKnight, Mike Abbott  
Studio Manager: Don McKnight, Mike Abbott  
Engineers: Don McKnight, Mike Abbott  
Dimensions of Studio: 22 x 16 x 9½.  
Dimensions of Control Rooms: 14 x 10 x 9½.  
Tape Recorders: Analog: Tascam 38 8 track, Tascam 234 4 track, Tascam 32-2B 2 track, Tascam 122 cassette.  
Mixing Consoles: Studio Master 16x8x2, Studio Master 8x4.  
Monitor Amplifiers: AB 410B  
Monitor Speakers: E-V Sentry 100, TEAC LX7.  
Echo, Reverb, and Delay Systems: Tapco 4400 A, (2) DeltaLab 1024 EXR Exciter  
Other Outboard Equipment: (3) MXR dual limiters, Tascam PE40 4 band parametric, dbx-DX2B.  
Microphones: AKG 414, Tascam 150s & 250, Shure SM57s & 58s, E-V PL9s.  
Instruments Available: Kawai EP608, Synergy, Gibson Paul, Ludwig 5 piece drum kit, Alembic bass, Roland TR808, Showbud

Super Pro, Session 500, Yamaha acoustic guitar.  
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••**MINISTRY RECORDING**  
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Studio Manager: Joe Shonk

••**MUSICK FAKTRY**  
1812 Procter St., Port Arthur, TX 77640  
(409) 982-7121  
Owner: Floyd Badaeux  
Studio Manager: Floyd Badaeux

••**OAKRIDGE MUSIC RECORDING STUDIO**  
2001 Elton Road, Haltom City, Ft. Worth, TX 76117  
(817) 838-8001  
Owner: Eloise 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: Lanis Le Baron

••**ORANGEWOOD RECORDING**  
*ONLY REMOTE RECORDING*  
2361 E. Hermosa Vista, Mesa, AZ 85203  
(602) 835-7605  
Owner: Morris Coleman  
Studio Manager: Mike Coleman, Mitchel Pietz

••**PAINT HORSE PRODUCTIONS**  
*ONLY REMOTE RECORDING*  
1515 So. Fitzhugh, Dallas, TX 75223  
(214) 823-0091  
Owner: Ron J. Glorioso  
Studio Manager: Ron J. Glorioso

••**PARROT TRACKS STUDIO**  
5201 Meadow Creek, Austin, TX 78745  
(512) 441-4314  
Owner: George Coyne  
Studio Manager: George Coyne

••**PLA-BACK RECORDING**  
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(214) 942-1387  
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Studio Manager: Lew Blackburn

••**PRODIGAL SOUND**  
*also REMOTE RECORDING*  
1510 Malone, Denton, TX 76201  
(817) 566-5555  
Studio Manager: Greg Ellenwood

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

••**THE PRODUCTION BLOCK STUDIOS**  
*also REMOTE RECORDING*  
2222 Rio Grande, D-108, Austin, TX 78705  
(512) 472-8975  
Owner: Joel C. Block  
Studio Manager: Patricia M. Brumleve

••**THE PRODUCTION CO.**  
*also REMOTE RECORDING*  
510 N. Mt. Olive (P.O. Box 1027),  
Siloam Springs, AR 72761  
(501) 524-4626  
Owner: Ken Flory  
Studio Manager: Ken Flory

••**PRODUCTION CONCEPTS**  
*also REMOTE RECORDING*  
33½ South Main, Eureka Springs, AR 72632  
(501) 253-9085



Owner: Jack Holly, Steve La Fontaine  
Studio Manager: Jack Holly

••**QUEEN BEE B.B.Q. & RECORDING SERVICES**  
3511 Bellefontaine, Houston, TX 77025  
(713) 668-6222  
Owner: Vincent French, J.T. "What it is" Thorn  
Studio Manager: "Stack your tracks at our sugar shack"



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Arlington, TX

••**RAVEN'S DEN**  
5409 Chaperito, Arlington, TX 76016  
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Owner: James Hjort  
Studio Manager: James Hjort

••**ROBB LADD STUDIOS**  
7811 S. Gary Pl., Tulsa, OK 74136  
(918) 493-6210  
Owner: Robb Montgomery II  
Studio Manager: Steve L. Patuto

••**THE ROCK STUDIO**  
*also REMOTE RECORDING*  
430 Kansas, Norman, OK 73069  
(405) 329-8431  
Owner: David Moore  
Studio Manager: David More

•**SELLERS COMPANY RECORDING STUDIOS**  
122 South Main St., Box 1087, Van Alstyne, TX 75095  
Owner: Jack Sellers  
Studio Manager: Jack Sellers

••**DAN SESSIONS PRODUCTIONS, INC.**  
*also REMOTE RECORDING*  
5645 Hillcroft #106, Houston, TX 77036  
(713) 977-7385  
Owner: Dan Sessions  
Studio Manager: Dan Sessions

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



••SOUND STAGE STUDIO  
*also REMOTE RECORDING*  
 614 Grand Ave., Nogales, AZ 85621  
 (602) 287-2811  
 Owner: Robert Louis Astengo  
 Studio Manager: Eduardo Valencia

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

••SPECIALISTS INTERNATIONAL INC.  
*also REMOTE RECORDING*  
 12880 Hillcrest Rd., Suite 215, Dallas, TX 75230  
 (214) 233-9512  
 Owner: Harlan P. Croy, president

••SPECTRUM SOUND  
 P.O. Box 1151, Bisbee, AZ 85603  
 (602) 432-4424  
 Owner: Scott Baekeland  
 Studio Manager: Scott Baekeland

••STARLINE PRODUCTIONS  
*also REMOTE RECORDING*  
 3719 Harold St., North Little Rock, AR 72116  
 (501) 758-2086  
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 Studio Manager: Howard Hutches

••STELLAR WINDS STUDIO  
 2501 Sublett Rd. #995, Arlington, TX 76017  
 (817) 465-4780  
 Owner: Joe and Mira Shaw  
 Studio Manager: Joe Shaw

••STUDIO 'B' INC.  
*also REMOTE RECORDING*  
 3405 Mercer, Houston, TX 77027  
 (713) 622-1948  
 Owner: Mike (Scott) Belile  
 Studio Manager: John Hrubec III

••SUNSHINE HIGHWAY PRODUCTIONS  
 3483 Coronado Ct., Fort Worth, TX 76116  
 (817) 244-5378  
 Owner: Airburst Pub. Co  
 Studio Manager: Jon Cunningham

••TEXAS SUNRISE MULTI-TRACK RECORDING STUDIO  
 Rt. 4 Box 715, 1 1/2 Mi. N. Jackson Rd.,  
 Edinburg, TX 78539  
 (512) 381-0077  
 Owner: Lopez-Domingo Porras  
 Studio Manager: Mike Lopez

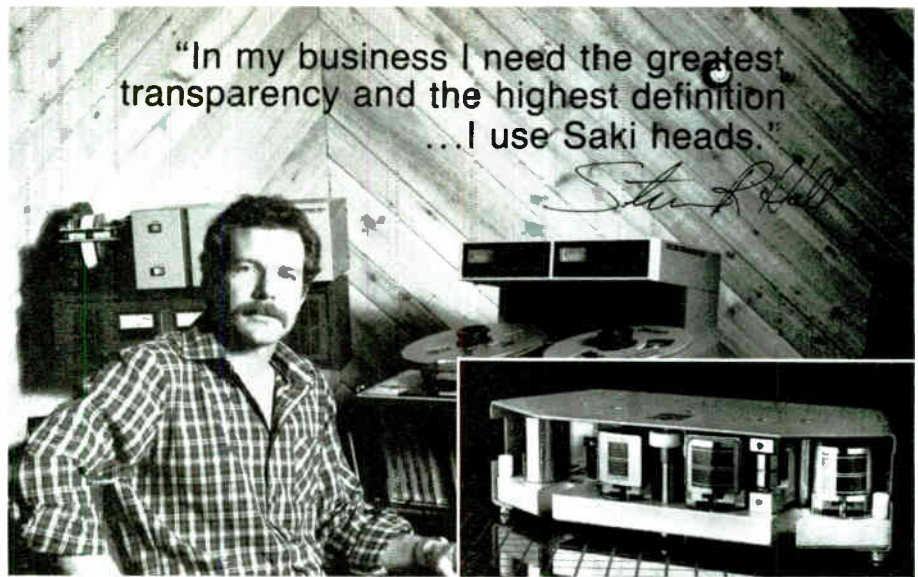
••TMPS  
 1026 Reinly St., Austin, TX 78748  
 Owner: Stanley Ginsel  
 Studio Manager: Larry Seyer

••TOOT SWEET SOUNDS  
*ONLY REMOTE RECORDING*  
 Box 3341, Fayetteville, AR 72702  
 (501) 521-8045  
 Owner: Richard A. Rew  
 Studio Manager: Kim Martin

••TRASH BAGGS PRODUCTIONS  
 12 Walnut Hill Rd., Flint, TX 75762  
 Owner: John Lasater

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

••TWIN PALMS RECORDING STUDIO  
*also REMOTE RECORDING*  
 8814 Reamer St., Houston, TX 77074  
 (713) 771-1877  
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 Studio Manager: Russell Lewandowski



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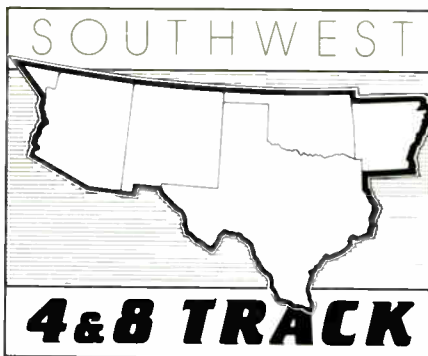
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 Otari  
 OSC  
 Ramco  
 Scotch  
 Shure  
 Soundcraft  
 Tascam  
 Turbosound  
 Urei  
 Ursa

Circle #034 on Reader Service Card

••UNIVERSITY RECORDING & PRODUCTION CO.  
3108 So. University Ave., Little Rock, AR 72204  
(501) 565-6186  
Studio Manager: Mike Beck

••VOICEOVER STUDIOS  
8625 King George Dr., Suite #335C, Dallas, TX 75235  
(214) 688-0600  
Owner: Chuck Webster  
Studio Manager: Wanda Webster  
Engineers: Chuck Webster  
Tape Recorders: Analog MCI JH 110B 1/8 track MCI JH 110A 1/2" 4 track, MCI JH 110A 1/4" full track MCI JH-110A 1/4" (2 ea) 2 track, MCI JH 110A 1/4" 4 track  
Mixing Consoles: Neotek Series 1 16x8 etc. (transformerless, digital specs)  
Monitor Amplifiers: BGW 110BS  
Monitor Speakers: JBL 4314Bs  
Echo, Reverb, and Delay Systems: AKG BX20E, Eventide delays Echoplex  
Other Outboard Equipment: dbx 165 limiters, Eventide 910 Harmonizer with all options, Korg Vocorder Wollensak 2870A and various other cassette mastering machines, Technics SP15 turntable Burwin TNE 7000 re-order de-popper Omnicraft SPI broadcast controls pulsing gear, Symetric T1101 and other custom phone patch facilities



Microphones: Neumann U89, U87 KM84, various AKG, Shure and Beyer  
Instruments Available: Piano 6' grand, Cable Converter impeccably maintained (N.C.)  
Rates: \$55/hr with 10% discount for C.O.D.  
Extras: dbx noise reduction on ALL recorders (professional series) Exclusively licensed for TM's 'Production Source' music

library in DFW area and 6 other music libraries. Ampex high speed duplication chain modified to TM Programming specs yields superior dubs. Original music and spot writing also available - reference upon request.  
Direction: An agency A/V album demo and real to reel or cassette duplicator, work. Designed and owned by 10 yr. Dr. of Eng. for TM Companies. Voiceover is technically excellent and human engineers' but production efficiency. The studio was carefully constructed around a "not too wet - not too dead" sound to achieve the most natural and non laboring voice spots. This trait with the addition of an unusually good sounding piano has lead to growing recognition for its fine "pencil vocal" sound. We invite comparison. God bless you!

VOICEOVER STUDIOS  
Dallas, TX



••WATEREDGE PRODUCTIONS  
102B Commons Way S., Portland TX 76374  
(512) 643-1886  
Owner: Art Hayes  
Studio Manager: Art Hayes

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

••WINDMILL  
also REMOTE RECORDING  
3442 Nies Fort Worth, TX 76111  
(817) 834-3879  
Owner: James Michael Taylor  
Studio Manager: July Novasod

**900 WATT SIX-PACK**

**MA 6 SIX-CHANNEL AMPLIFIER**

**RANE** Presents The FULL SYSTEM Amplifier. Sound systems of all sizes have complex power requirements. With its origins in home stereo, the two-channel amplifier format simply is not the most efficient and effective answer to the growing demands of today's sophisticated systems. The MA 6 contains SIX independent channels rated at 100W each into 8 ohms, 150W each into 4 ohms, with built-in limiters to provide 15dB extra headroom before clipping. Fully automatic built-in bridging enables 300W into 8 ohms from each pair of channels. With six separate channels the MA 6 offers these unique and valuable advantages:

**UNPRECEDENTED FLEXIBILITY.** A single MA 6 will drive: ■ Six separate stage monitor mixes ■ Stereo biamped main speakers with 100W for the highs and 300W for the lows, all limiter protected ■ Three biamped monitor mixes ■ Two triamped main speakers ■ Etc. ■ Etc. ■ Etc.!

**GREATER PERFORMANCE EFFICIENCY.** Measuring only 5 1/4" H x 19" W x 1 1/2" D, the MA 6 steel package weighs only 44 lbs., yet delivers 900 usable watts in a variety of configurations. The built-in limiters allow a 4dB increase in SPL before clipping, the equivalent of six 250W amps without limiters.

**EXTREMELY COST EFFECTIVE.** One MA 6 does the job of three stereo amplifiers at a fraction of the cost: at \$1199 list price, that's only \$2.00 per 8-ohm watt with limiters. The revolutionary MA 6: the system amplifier from

**RANE CORPORATION** 6510-D 216th SW, Mountlake Terrace, WA 98043 (206) 774-7309

Coming in August..

## STUDIO DESIGN

A very special issue of *Mix* devoted to the important topics of Studio Design, Acoustics, and Construction.

### Featuring:

- Acoustic Properties of Building Materials.
- Tips on Building a Studio in the Garage.
- Studio Monitor Placement
- Listings of Designers & Suppliers

...and much more!

**DON'T MISS IT!**

## USED RECORDING EQUIPMENT FOR SALE

### REVERBS

AKG bx10: \$800 • Micmix Masterroom 2: \$500 • Eventide SP2016 digital: \$6800 • EMT stereo plate.

### TAPE MACHINES

Otari MTR 90 Mark II 24 trk. excellent: \$29,000 • 3M M79-2 mint: \$1900 • MCI (1976) trk: \$6500 • MCI (1973) 24 trk.: \$10,000 • Stemco (Ampex) 1" 8 trk.: \$4200 • Scully mono w/console: \$900 • 3M M64-2 (needs 2 cards): \$1000.

### CONSOLES

24 input MCI: \$9500 • 32 input Trident series 80: \$37,500 • 30 input Trident b range: \$19,000 • 40 input Trident b range: \$40,000 • 24 input Electrodyne: \$5000.

### LIMITERS

dbx 162 stereo: \$500 • Allison gain brains: \$140 • UREI 175 tube limiter: \$225 • UREI 176 tube limiters (2): \$275 each • UREI 1176 limiters (not in): \$275 • API 525 limiter/deser: \$250 • Altec tube compressor: \$90 • Electrodyne limiter: \$300 • Orange County limiter: \$375 (no power supply—just module).

### EQUALIZERS

API 550: \$275 • Melcor eqs: \$70 • Map (replaces API) \$275 • Flickinger parametric eqs (no front plate) (16): \$125 each • UREI 545 parametric eqs: \$375 • Furman parametric eqs: \$200. (3) • Neve eq/mic pre modules: \$200 • Altec graphic (pas-

sive): \$100 • UREI stereo graphic: \$275 • White 1/3 oct. passive (original series): \$100 each • White active (4000 series) 1/3 oct. eq: (2) \$750 each • CBS custom 5 band (boost only?) (12): \$50 • ITI parametric modules: \$250 each • Altec/Langevin console eqs: \$100 (7) • Orange County PEQ: \$375 (no power supply—just module) • Orange County SEQ: \$375 (no power supply—just module).

### MICROPHONES

*We are having a special sale: for the months of June and July: buy an AKG c24 or a pair of AKG c12a's and get a \$350 credit towards any purchase!!!*

We also have c12/c61/c28 and km54/km56/km53/km64/u64/sm2/sm69/m250 (but not for long) • Sony ECM 377: \$185 each: this is a good microphone! • Schoeps m221 tube mics: \$375 • Beyer m101/Sennheiser md211: name the price!!!

### EFFECTS/DELAYS

Eventide Omnipressor: \$275 • Eventide phasor: \$275 • UREI time cube: \$325 • Delta labs DL1: \$325 • Eventide 1745m (needs repair): \$650 • Micmix Dynaflinger: \$325 • Roland stereo phasor: \$270 • dbx rack (900 series) with 1 compressor; 1 gate; 1 parametric eq; 1 flanger: \$1350 • Orange County vocal stessor: \$800. Dolby cat 22 cards (10): \$425 each • Dolby cat 44 cards (not h): \$180 each • Dolby m16 frame: \$800 • Dolby cat 44h (1) \$225.

### MISCELLANEOUS

API faders: \$30 • Penny and Giles faders (6) linear taper as new: \$65 • Penny and Giles audio taper faders: \$45 (used) • MCI 16 trk (head only): \$500 • 3M m56-8(1") heads (all 3): \$500 • Dolby A 301: 2 channels of pro dolby: \$250 • Stephens vso: \$200. API oscillator (line up): \$175 • Quad 8 noise gate (1 only) \$130 • Complete 24 channel API monitor system: bucket w/ motherboard; (24) 812 modules: \$4000 • Mastering Lab crossovers: \$100 each: shipping damage • Crown electronic crossover (new series): \$350 • Pultec 4 by 1 mixer (tube): \$175 • TEAC Model 1 headphone mixer • Pultec stereo panner (name the price!) • Rackmount cabinets: misc \$.

### CASSETTES

Technics: \$150 • Nakamichi 1000.2: \$450 • Aiwa m700b: \$250.

### AMPLIFIERS

Citation 12: \$90 • Marantz 240: \$125 (asis) • Symetrix headphone amp: \$80.

Make us an offer we can't understand... please.

**Dan Alexander Audio**  
965 Hilldale  
Berkeley, CA 94708

415/441-8912 415/527-1411

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# The Bigger... The Brighter

That's our way of describing the difference between the sound of the three models of Ecoplates. The larger the plate, the more high frequency decay time it can have. Since the highs last longer, the sound is brighter! Yet even our smallest plate has more highs than any other mechanical reverb at any price.

- All Ecoplates have these features
  - Variable reverb time
  - 65 Db Sig/Noise
  - Reverb covers entire audible spectrum
  - Remote controls available
  - That fabulous smooth, bright, flutter-free reverb made famous by Ecoplate.

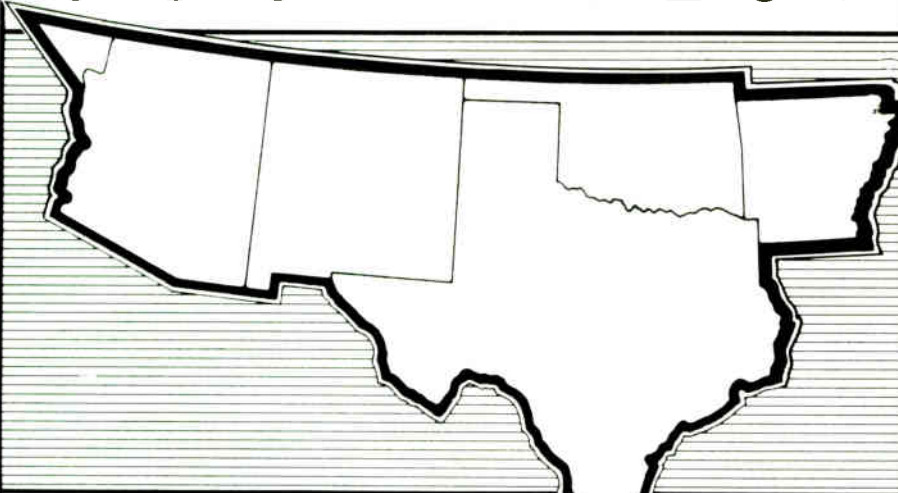


If you haven't heard the fabulous sound of the Ecoplate, pick up a copy of Michael Jackson's Thriller at your local record store and listen!

**Studio Technologies, Inc.** ||||  
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(312) 676-9400  
an affiliate of Programming Technologies, Inc.

Circle #037 on Reader Service Card

# SOUTHWEST



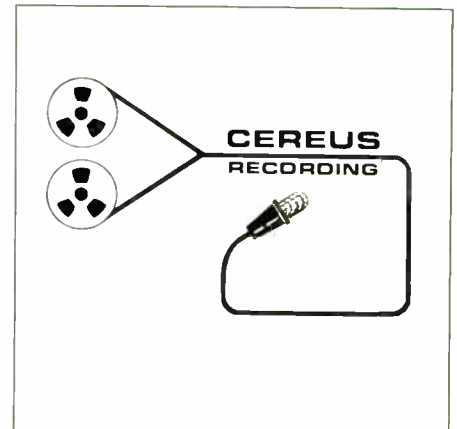
# 16 TRACK

**Other Outboard Equipment:** DynaMite noise gates EXR Exciter dbx compressor & de-essers (2) UREI 530 (3) UREI 535 (2) UREI 1176LN peak limiter LA 4 UREI compressor (2) parametric EQ  
**Microphones:** Neumann U 87, U 47 AKG 414, Sennheiser 421 E-V RE20 Shure SM81 SM57 Beyer M88 201 AKG 451 Countryman Shure SM 58  
**Instruments Available:** Yamaha acoustic grand piano Hammond organ w/ Leslie other instruments available for rental  
**Rates:** Available upon request (call ask for Herschel)

•••**AVALANCHE STUDIOS**  
 10650 Irma Dr. #27, Northglenn, CO 80233  
 (303) 452-0498  
 Owner: Harry Warman  
 Studio Manager: Karen Hinc, Linda Warman

•••**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

•••**BRIAN SOUND PRODUCTIONS INC.**  
 also **REMOTE RECORDING**  
 Box 9027, Waco, TX 76714-9027  
 (817) 776-7824  
 Owner: Brian Sound Productions Inc.  
 Studio Manager: Brian Konzelman



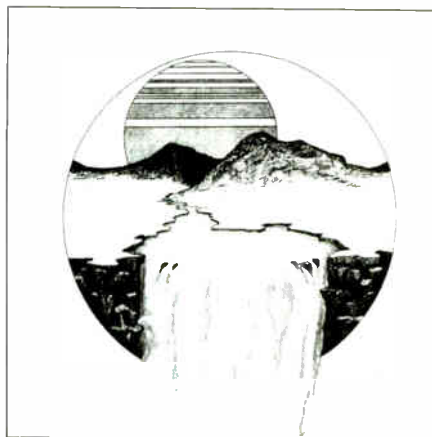
**CEREUS RECORDING**  
 Scottsdale, AZ

•••**CEREUS RECORDING**  
 also **REMOTE RECORDING**  
 3620 N. Scottsdale Rd., Scottsdale, AZ 85251  
 (602) 990-8163  
 Owner: Allen Moore  
 Studio Manager: Diane Moore, Peggy Wilke  
 Engineers: Allen Moore, Bob Pacirman, Jet Wetherly  
**Dimensions of Studios:** 20 x 20  
**Dimensions of Control Rooms:** 15 x 5  
**Tape Recorders:** Analog: Tascam 85, 16B dbx 16 track Tascam 80-8 dbx 8 track Otari MX 5050B 2 track Revox A77 2 track Digital: Nakamichi DMP1000 2 track Sony 4" VCR VD 5600 2 track  
**Mixing Consoles:** Soundcraft: 1600 PB 20x8x.6 Sound Workshop 1280 12x6  
**Monitor Amplifiers:** McIntosh 2300 Bose 1800 A/tec Lansing McIntosh neophone amp  
**Monitor Speakers:** JBL 4430 Electro-Voice Sentry 100 Auratone 5C  
**Echo, Reverb, and Delay Systems:** Lexicon 200 digital reverb Echoplex II (2) DeltaLab Effectron: 1024 Sound Workshop reverb  
**Other Outboard Equipment:** MXR Transposer Orban 622B parametric (2) UREI LA4 compressor limiters (2) dbx 160 compressor limiters (2) MXR 3: band graphic Symetrix noise gates EXR Exciter Technics RSM 85 cassette recorder (2) Jensen direct boxes, AKG headphones  
**Microphones:** Neumann: U87, AKG D12, C452, C414, Sennheiser MD421, 441, 3 Crown 30 GP P2M, Electro-Voice RE-20 (4) Shure SM57, SM58  
**Instruments Available:** Yamaha grand Oberheim system w/ current updates SCI system with Commodore 64 Mini Doctor click programmers  
**Video Equipment & Services:** Sony VO 5600 3" VCR  
**Rates:** Call

•••**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) Hungertford  
**Dimensions of Studios:** Studio A 33 x 55 x 22, Studio B 21 x 35 x 22  
**Dimensions of Control Rooms:** Studio A 20 x 21 x 10, Studio B 12 x 16 x 10, Studio C 19 x 21 x 10  
**Tape Recorders:** 3M 500 16 16 track, 3M 500 H 8 track, (4) Ampex 300 4, 2, & mono, (3) Ampex 351 2 track Scully 280 mono, Scully 280B 2 2 track Ampex ATR 2 track & 4 track  
**Mixing Consoles:** Audiotronics Model 501 24 in x 24 out, Audiotronics Model 110A 16 in x 4 out, Stephenson Interface Model 114 16 in x 4 out  
**Monitor Amplifiers:** McIntosh Mc2200 McIntosh Mc2100 (8) McIntosh MC40  
**Monitor Speakers:** Studio A Studio Alter A7 Control Room JBL 4333A, Auratone 5C & Auratone 5S, Studio B Studio Alter A7, Control Room: JBL L36, Auratone 5C Control Room C RET Delta monitors Auxiliary monitors-moveable Alter A7s RET Delta monitors  
**Echo, Reverb, and Delay Systems:** (2) EMT 140 Plates Lexicon Delta T Stereo  
**Other Outboard Equipment:** Full dbx noise reduction on all channels in all control rooms, Lexicon Delta T with flanger and doubling Orban Parasound De Esser dbx compressors UREI LA-3A limiters Allison Gain Brains & Kepex UREI graphic EQs JREI Digital Metronome Countryman 968 phase shifter, PAIA Flanger/Chorus Varispeed, Lexicon PCM 41, MXR Pitch Transposer EXR Stereo Exciter  
**Microphones:** (4) Neumann U47 (3) U67s KM84 (2) AKG C61s C451E, (2) Sennheiser 441s, Electro-Voice RE20 655E 648 PL6, Sennheiser MKH 105 Shure SM81, SM53 545 (3) Alter 639s  
**Instruments Available:** Baldwin 9 concert grand piano 2 Hammond organs (B3 & RT3) with Leslie, Pearl Drum Kit Fender Rhodes piano Mellotron  
**Rates:** Studio A 16 track \$96/hr recording, \$80/hr mixing, 8 track \$72/hr recording, \$62/hr mixing, 2 track \$60/hr Studio B 4 2 1, track \$54/hr  
**Extras:** Arranger/Producers on call Highly experienced studio musicians available for virtually any musical production. Affiliated with ACA are the Jingle Production Company Media Music Group  
**Direction:** ACA has been in continuous operation in Houston since Feb. 1948 and has cut many country, R&B, rock, Top 40, and spiritual national hits. We are experienced with symphonic, choral, jazz, big band, marching band and music of many ethnic settings. Such as music of India, Turkey, Kenya, Rhodesia, South Africa, Australia, Burma, China, Japan and many others

(800) 527-5335  
 Owner: Toby & Dolly Arnold  
 Studio Manager: Marshall Smith

•••**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 Marent



**AUSTIN'S RIVERSIDE SOUND**  
 Austin, TX

•••**AUSTIN'S RIVERSIDE SOUND**  
 also **REMOTE RECORDING**  
 7717 A Metro, Austin, TX 78744,  
 P.O. Box 33206, Austin, TX 78764  
 (512) 385-4060  
 Owner: Herschel E. Cunningham Richard Mullen Bill Johnson  
 Studio Manager: Herschel Cunningham  
 Engineers: Richard Mullen, Layton DePenning Eddie Habib Andy Almon Bill Johnson  
**Dimensions of Studios:** Main cutting room 30 x 40, Live corridor 30 x 30 (30 ft ceiling)  
**Dimensions of Control Rooms:** 15 x 20  
**Tape Recorders:** Analog MCI JH-24 16 16 track MCI JH-110B-14-2 2 track Digital Sony PCM-701 2 track  
**Mixing Consoles:** Ramsa WR-8816 16x16  
**Monitor Amplifiers:** Crest Bamp  
**Monitor Speakers:** E-V Sentry 500, Yamaha NS10M, JBL 4311  
**Echo, Reverb, and Delay Systems:** Lexicon 224 MXR digital delay

•••**THE TOBY ARNOLD STUDIOS**  
 3234 Commander Dr., Carrollton, TX 75006

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\*\*\*CROSSROADS AUDIO INC.  
**ONLY REMOTE RECORDING**  
 2623 Myrtle Springs Ave., Dallas, TX 75220  
 (214) 358-2623

Owner: Chuck and Diane Conrad  
 Studio Manager: Chuck Conrad  
 Engineers: Chuck Conrad, Doug Hall, Harold Pearce  
 Dimensions of Studios: 35 ft. converted Greyhound bus specializing in audio for video and broadcast  
 Dimensions of Control Rooms: 7.5 x 14  
 Tape Recorders: Analog Tascam 16 track, TEAC/Tascam 4 track, TEAC/Tascam 2 track  
 Mixing Consoles: Midas PR-03 32 in x 16 x 4  
 Monitor Amplifiers: Crown D150, Technics Class D  
 Monitor Speakers: JBL 4311  
 Echo, Reverb, and Delay Systems: Lexicon PCM 41, DeltaLab Effectron Dynacord DRS 80 digital reverb, MicMix reverb  
 Other Outboard Equipment: dbx noise reduction, dbx 160X limiters  
 Microphones: Shure SM57 SM58, AKG 451 CK1 or CK5, Beyer M88, Audio Technica ATM41 AT11R, HME Nady & Vega wireless mikes both hand and lavaller  
 Video Equipment & Services: JVC KY1900 ENG/EFP cameras, Panasonic 4600 switcher, special effects generator, Sony 3/4" VTRs, color and b/w monitors etc. Video is at extra charge  
 Rates: \$500/day plus mileage and per diem. Video rates negotiable

\*\*\*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 30, 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 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, Hafler 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: EXR Exciter, (2) UREI 1176 limiters, (2) dbx 160 limiters, Orban De-Esser, (6) Sweep EQs, (16) custom noise gates, (3) custom comp/limiters

Microphones: AKG 451s, 414s, Sennheiser 421s, 441, Countryman EM101, AKG D12, Neumann U47, Crown P2M 30 GPPs, Shure SM57s, SM53, Electro Voice RE20s, 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 \$300), \$25/hr 8 & 2 track

\*\*\*DUSTY DICKERSON RECORDING STUDIO  
 1514 Mercury Dr., Houston, TX 77029  
 (713) 673-6385  
 Owner: Dusty Dickerson

\*\*\*FEELINGS EXPRESSED  
 73 E. 200 S., Lewiston, UT 84320  
 (801) 258-5350

Owner: Joseph Snatsell  
 Studio Manager: Joseph Snatsell  
 Tape Recorders: Iam 16 track, Tascam 388 track, Tascam 32 track, JVC and Technics M235X cassette decks  
 Mixing Consoles: Audio Arts 18x8x18, Yamaha 1608 16x8x16  
 Monitor Amplifiers: Yamaha 2200  
 Monitor Speakers: JBL 4430, JBL 4312  
 Other Outboard Equipment: dbx noise reduction, Dolby, dbx 163s, Master-Room XL305, Valley People Inc. DeltaLab Effectron II  
 Microphones: AKG 414 (2), Sennheiser 421 (2), E.V. RE20 (2), Shure SM81 (2), 58s (1), 57s (5)  
 Rates: \$40 to \$60/hr. Block time available

\*\*\*GOOD VIBRATIONS—THE RECORDING STUDIO  
 11410 Harry Hines, Ste. #6, Dallas, TX 75229  
 (214) 247-1537

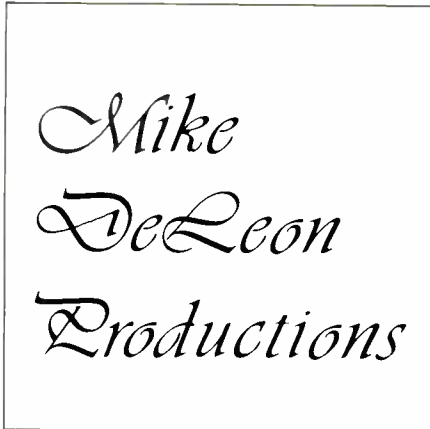
Owner: Bob and Elaine Campbell  
 Studio Manager: Elaine Campbell

\*\*\*THE GREEN ROOM  
 3234 Commander Dr., Carrollton, TX 75006  
 (214) 661-8201

Owner: Toby Arnold & Associates  
 Studio Manager: Marshall Such

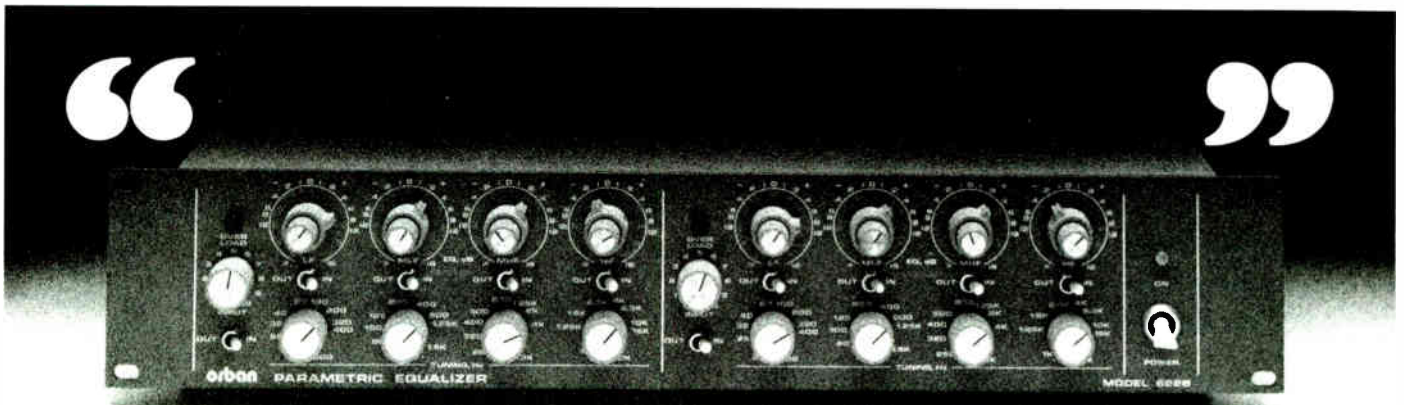
\*\*\*DUBBY HANKINS STUDIO  
 also REMOTE RECORDING  
 P.O. Box 16762, San Antonio, TX 78216  
 (512) 492-2011

Owner: W.I. Davis Hankins  
 Studio Manager: Dubby Hankins  
 Engineers: Dubby Hankins  
 Dimensions of Studios: Studio A 16 x 30  
 Dimensions of Control Rooms: Control A 16 x 30  
 Tape Recorders: Analog Fostex B-16 16 track, Ampex 440 B 2



MIKE DE LEON PRODUCTIONS  
 San Antonio, TX

\*\*\*MIKE DE LEON PRODUCTIONS  
 1924 Lamanda, San Antonio, TX 78201  
 (512) 341-5885  
 Owner: Mike De Leon  
 Studio Manager: Mike De Leon



**It speaks for itself.**

We thought about hiring an expensive superstar to extoll the virtues of the famous Orban 622B Parametric EQ. After all, there are 622B's backing up superstars worldwide in recording studios, arena shows, broadcast facilities. . . you name it! But we decided not to. Because ultimately, the Orban 622B speaks for itself—it's the most widely used, popular professional Parametric in the world.

The 622B combines full, four-band Parametric equalization with tunable notch filtering to offer extraordinary versatility and control. Our "constant-Q" design provides -40dB attenuation while allowing gentle, musically-useful broadband EQ too. This makes the 622B ideal for critical sound reinforcement chores as well as studio production work.

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 San Francisco, CA 94107 (415) 957-1067  
 TLX: 17-1480

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**DUBBY HANKINS STUDIO**  
San Antonio, TX

track Pioneer RT 1050 2 track, TEAC A-440 (cassette) 2 track  
**Mixing Consoles:** Tascam M-15B 16x16; Biamp 1229 12x12.  
**Monitor Amplifiers:** Crown Power Line One, Crown D-60  
**Monitor Speakers:** JBL 4311, Auratones.  
**Echo, Reverb, and Delay Systems:** Loft 440 delay line, Boss  
 DM-100 Chorus/echo, Biamp stereo reverb  
**Other Outboard Equipment:** (2) dbx 160, Biamp quad noise  
 gate 'keyable', Dr. Beat, cassette duplication services on request  
**Microphones:** Crown PZM, Wahnrebach PZM, Shure SM-57, PE  
 50 SP, E-V PL 77, AKG DM 100  
**Instruments Available:** Fender Precision bass, Fender  
 Telecaster, Gibson J-200, Fender twin, Fender Deluxe, Fender  
 Bassman 10 upright bass, Lap steel, Yamaha PF 15 piano, ESP  
 Stratocaster  
**Video Equipment & Services:** Full access to ¼ VCR, cameras  
 and post editing facilities  
**Rate:** \$50/hr open rate Remote \$500/day plus extras

•••HAYDEN-HUGHES  
 9024 Garland Rd., Dallas, TX 75218  
 (214) 321-2049  
 Owner: Rick Chapman, Jim Billingsley, John Curci  
 Studio Manager: Rick Chapman, Jim Billingsley, John Curci.

•••INFINITY RECORDING STUDIOS, LTD.  
 1750 So. Harvard Ave., Tulsa, OK 74112  
 (918) 747-9848  
 Owner: Alan R. Cahen, Paula Eaves, Paul Flippo, John McPhail  
 Studio Manager: Terry Blankenship

•••INSIDE TRACK STUDIO  
 313 N. Locust, Denton, TX 76201  
 (817) 566-2367  
 Owner: J. Miller  
 Studio Manager: Jeff Wrenn

•••LINCOLN INSTITUTE  
 7622 Louetta, Spring, TX 77379  
 (713) 376-9679  
 Owner: Lincoln Foundation  
 Studio Manager: J.E. Lincoln, program director  
**Extras:** The Lincoln Institute, a degree granting institution, offers  
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 leading to an Associate in Science degree. Located near Houston,  
 Texas, the 16 track facility uses state-of-the-art equipment to in-  
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 production studio. Digital synthesizers, A/V synchronization, com-  
 puter graphics, MIDI interfacing and total production with em-  
 phasis in hands-on. Curriculum includes two semesters of Elec-  
 tronics engineering. Placement assistance following graduation.  
 Write or call for informative brochure.

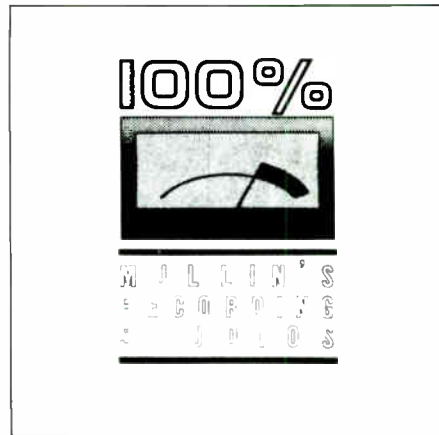
•••LONE STAR RECORDING  
 also REMOTE RECORDING  
 1204 North Lamar, Austin, TX 78703  
 (512) 478-3141  
 Owner: Guinn-Coppinger Music  
 Studio Manager: Stan Coppinger

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 8377 Westview Dr., Houston, TX 77055  
 (713) 465-6563  
 Owner: Dale Mullins, Karl Marks  
 Studio Manager: Karl Marks



MULLINS RECORDING STUDIO  
 Houston, TX

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**A complete 16 input-8 output recording console with 16 track monitoring, full function input modules with 3 band parametric EQ, and +4 output levels. Available with "Jensen" mike preamps. Also available, a complete line of "SPECKMIX" expander consoles. Under \$4,400.00.**

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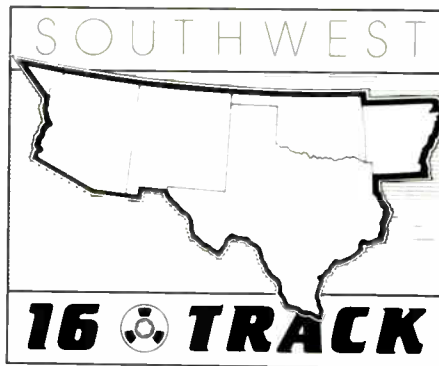
**MUSHROOM STATION STUDIOS**  
Houston, TX

•••**MUSHROOM STATION STUDIOS**  
also *REMOTE RECORDING*  
5511 Memorial Dr., Houston, TX 77007  
(713) 868-9326; 868-9724; 868-3382  
Owner: J.C. Freeman  
Studio Manager: J.C. Freeman  
Engineers: Ted Kubricht, Trey Davis, Richard Bender, John Glenn, Terry Rames  
Dimensions of Studios: A 30 x 15, B 20 x 30  
Dimensions of Control Rooms: Large 20 x 20  
Tape Recorders: Analog 3M 16 (M-56) 16 track, Ampex 350-2 2 track, Ampex 351-2 track  
Mixing Consoles: Lewis Erath custom 20/20, submix acoustic customized by Ted Kubricht 16/8  
Monitor Amplifiers: Yamaha, NAD, Cerwin Vega, Altec, TOA, Crown  
Monitor Speakers: Klipsch, JBLs  
**Echo, Reverb, and Delay Systems:** Effectron, Echotron, plex  
All the effects available under the sun in music—through Evans Music City  
**Other Outboard Equipment:** All kinds available at session to be picked out by the artists at Evans Music Studio standard piano Lyons Healy grand, Yamaha grand, Hammond organ  
**Microphones:** Altec, AKG, Shure, Sony, Neumann, Phantom power  
**Instruments Available:** Anything available, they go to Evans Music City and special effects, mikes, synthesizers, anything, if it's music, Evan's rents it or sells it. We use it in the session for you with a 24 hr. notice  
**Video Equipment & Services:** Video 7-Service, Keuerick Productions, & (ABC - Channel 13) All Sony & Ampex 1" and Sony U-Matic Ikegami, JVC, Panasonic, Hitachi  
**Rates:** 1 hr. special is \$12,500, total production. Audio rates are \$50/hr.

•••**NOMOUNTAIN RECORDING**  
also *REMOTE RECORDING*  
F.M. 1213 So., P.O. Box 8469, Midland, TX 79708  
(915) 682-9673

Owner: Nick Carlton, Diane Carlton  
Studio Manager: Nick Carlton  
Engineers: Nick Carlton  
Dimensions of Studios: 1800 sq ft total, (1) drum booth 12 x 15, (2) iso booths  
Dimensions of Control Rooms: 15 x 25  
Tape Recorders: Analog Tascam 85-16B w/dbx 16 track, Tascam 80-B w/DX 8 track, Otari MX5050 B ½ track 2 track, Tascam 35-2 w/dbx ½ track 2 track, Revox (Studer) A 77 2 track, Tascam 122 cassette  
Mixing Consoles: Tascam 15 16/16 modified, Tangent 2402 AX (effects) 24/2  
Monitor Amplifiers: SAE, Crown, BGW  
Monitor Speakers: JBL 4435 hi radials, 4313, 4401, Auratones  
**Echo, Reverb, and Delay Systems:** MicMix 305, G B S reverb, DeltaLabs DL 5, Lexicon PCM 41, (2) MXR delay system II  
**Other Outboard Equipment:** Crown RTA 2, (2) UREI 539 EQ, UREI dual 10 band, R G dynamic processor, EXR Exciter, dbx 162 compressor/limiter, dbx subharmonic synth, AudioArts 4200A parametric, dbx 157 noise reduction  
**Microphones:** AKG, Senn, Sony, Shure, E-V, Crown  
**Instruments Available:** Complete drum set, various keyboards, acoustic and electric guitar—anything you might need is available  
**Rates:** Easy! Please call

•••**PENNY LANE STUDIO**  
1214 Drexel Dr., Plano, TX 75075  
(214) 424-1157  
Owner: Adrian A. Jennings  
Studio Manager: John R. Cheney



•••**ROSEWOOD SOUND**  
4307 Merrell Rd., Dallas, TX 75229  
(214) 350-0905  
Owner: Jimmy Kelley  
Studio Manager: Lana Kelley

•••**THE SOUND FACTORY RECORDING STUDIOS**  
1721 E. Factory Ave., "F", Tucson, AZ 95719  
(602) 622-1265  
Owner: Steve & Kimberly English  
Studio Manager: Steve English  
Engineers: Steve English  
Dimensions of Studios: Studio A 18 x 20 (drum/iso 12 x 14), Studio B 12 x 12  
Dimensions of Control Rooms: Studio A 12 x 13, Studio B 10 x 10  
Tape Recorders: TEAC 85 16B w auto locator 16 track, TEAC 80-8 8 track, TEAC 40-4 4 track, TEAC 32 2 track, TEAC 3300 2 track, TEAC 1250 ¼ track, (10) TEAC v 44 cassettes TEAC 244 4 track porta studio  
Mixing Consoles: A Audioarts 8X w 27 LED metering 24x24x8 (32 mainframe), B Tascam M-5 w 5EX 20x20x4  
Monitor Amplifiers: Crown Gallien Kreuger, Sony  
Monitor Speakers: A JBL 4311, Auratone, B JBL 4301 Auratone  
**Echo, Reverb, and Delay Systems:** MXR digital delay, MXR flanger/doubler, (2) Ibanez DM 1000 digital delays Ibanez HD-1000 Harmonizer delay DOD stereo flanger DOD stereo delay, Yamaha analog delay, (2) Roland RX 1000, Furman Rv-1, custom stereo reverb, Roland SDE 1000  
**Other Outboard Equipment:** Omni-Craft noise gates, dbx compressors/limiters, various EQs (all types) test equipment (scopes, trea counters, analyzers, etc.) 196 pt Patch Bay  
**Microphones:** AKG, Sennheiser, Sony, Shure PZM, Beyer  
**Instruments Available:** Yamaha baby grand piano, Fender guitars, Gibson guitars, Ibanez guitars, Roland Juno 60 Roland 808 drum machine, Drumulator drum machine, MSA D 12 steel guitar Leslie cabinets, Peavey Roland Fender amps, (any synthesizers on request)  
**Video Equipment & Services:** Sony camera, ½" VHS machines  
**Rates:** 16 track, \$35/hr 2 track 4 track, 8 track \$28/hr Multi-track recording classes \$400 session (16 weeks) offered 4 times yearly. Contact us for block rates

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

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

•••**SOUND PRODUCTION STUDIOS**  
Highway 349 S.E., Longview, TX 75603  
(214) 643-2010  
Owner: Richard Lister  
Studio Manager: Richard Lister

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

•••**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 85-16 autolocated w/internal dbx noise reduction 16 track, Otari MX 5050B - II transformerless 2 track, (2) Tascam #32 2 track, (2) Yamaha K-1000 cassette decks  
Mixing Consoles: Ramsa WR8816, 16x4x16  
Monitor Amplifiers: Crest 2500S, Crown D150, D75, D60  
Monitor Speakers: JBL 4311Bs, Auratones, Yamaha NS10M, E-V Interface I Series II  
**Echo, Reverb, and Delay Systems:** Ursa Major 8x32 digital reverb, ADA digital delay, DeltaLab digital delay/chorus/flange, MICMIX Master room reverb, Lexicon Prime Time digital delay w/memory extension, Loft 450 analog delay  
**Other Outboard Equipment:** dbx 160X limiters (2), 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 AKGs, Sennheisers, Shures, RCA, Audio-Technica, E-V  
**Instruments Available:** Yamaha upright, studio amps, just about anything is rentable locally  
**Rates:** Comfortable — call

•••**SUGAR HILL STUDIOS**  
5626 Brock, Houston, TX 77023  
(713) 926-4431  
Owner: Huey P. Meaux  
Studio Manager: Beth Thornton

•••**TOBY'S CUSTOM RECORDING STUDIO**  
1024 S. Preza St., San Antonio, TX 78210  
(512) 533-3030  
Owner: Toby Torres  
Studio Manager: Poley Barcenes

•••**TOMLYN RECORDING STUDIO**  
Rt. 3, Box 405, Flint, TX 75762  
(214) 894-7713  
Owner: Tom Russell  
Studio Manager: Tom Russell  
Engineers: Jim Phillips  
Dimensions of Studios: 625 sq ft  
Dimensions of Control Rooms: 110 sq ft LEDE  
Tape Recorders: Analog MCI JH 24 24/16 16 track, MCI JH-110B-14 2 track, Technics 1520S 2 track, TEAC cassette C-3RX 2 track Digital Sony PCM-F1 2 track  
Mixing Consoles: MCI 600 series 16/16  
Monitor Amplifiers: Hatler 500, Crown D-75, Kenwood  
Monitor Speakers: JBL 4313, 4311, Auratones  
**Echo, Reverb, and Delay Systems:** Lexicon 224X w/LARC, MicMix 305, DeltaLab DL-2 Acousticcomputer and Korg SDD 3000 programmable digital delay  
**Other Outboard Equipment:** Omni GT 4, dbx 160X, 165A limiter/compressors, Valley People stereo Dyna-Mite, Crown RTA scope, Apex Aural Exciter  
**Microphones:** Neumann U87, KM84, AKG 414, 451, Electro-Voice RE-20, Sony C-35P, Sennheiser 421, Shure 78, 58, Crown PZM 30 GPBs and 6 LPBs  
**Instruments Available:** Oberheim DMX digital drums, Yamaha DX 7 synthesizer, Kawai upright grand, Gibson Dover, Martin D-35s, Guild 12 string and Guild high string acoustic guitars, Fender Telecaster and Stratocaster electric guitars, Fender Jazz bass, Hickenbacker bass, Takamine C 140S classical guitar, set of Ludwig drums, Yamaha G100-112 amplifier, various percussion  
**Rates:** Available on request

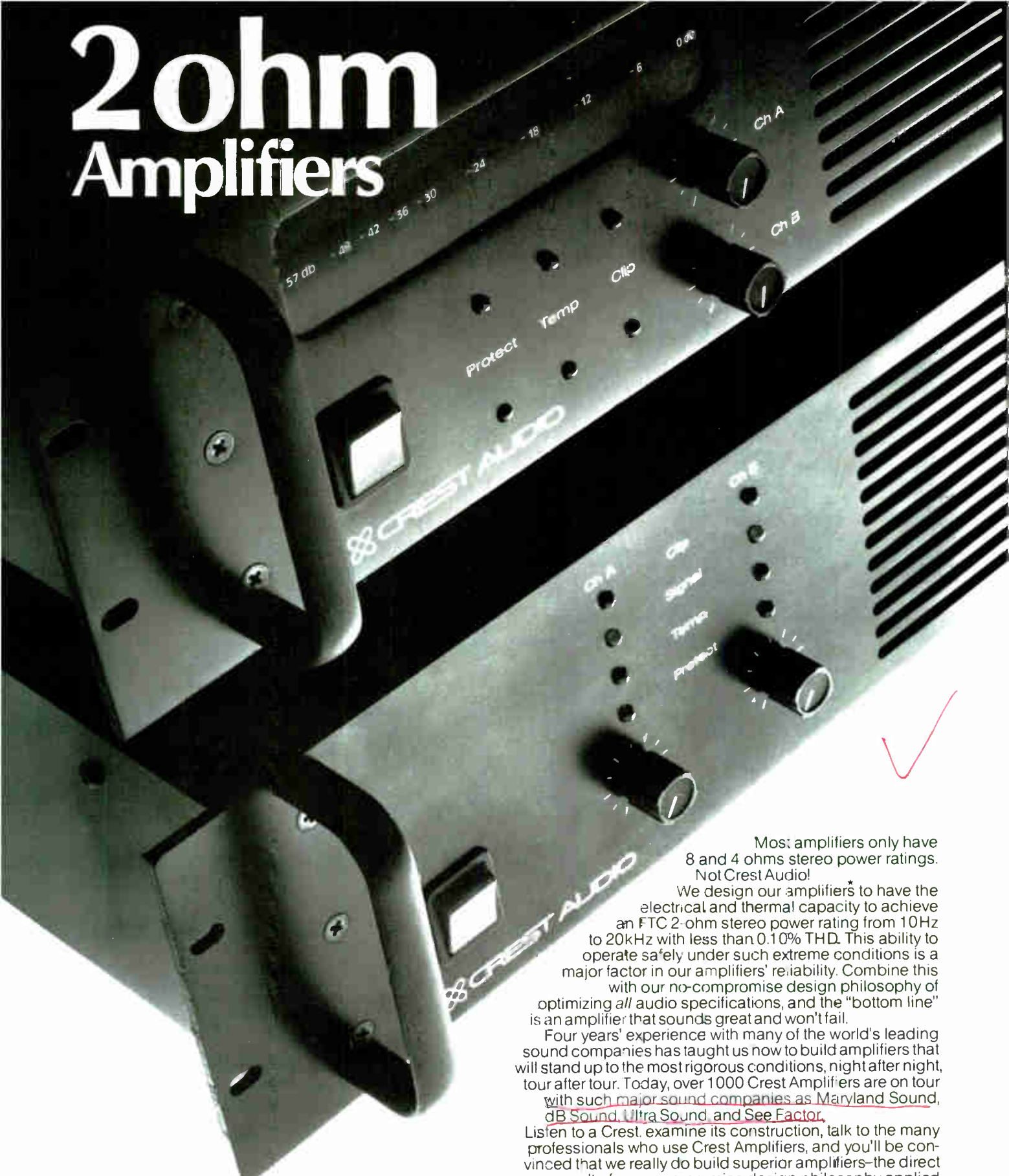
•••**TOPANGA STUDIOS**  
5022 N. 7th St., Phoenix, AZ 85012  
(602) 241-1703  
Owner: Cam Empens  
Studio Manager: Steve Hill

•••**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, Paul Middleton  
Dimensions of Studios: 17 x 30  
Dimensions of Control Rooms: 12 x 12  
Tape Recorders: Analog Tascam 85-16 16 track, Sony 850 2 track, Pioneer 701 4 track, AIWA cassette, Tascam 42 2 track, Sony TC K81 cassette, Digital 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 300A  
Monitor Speakers: UREI 813s, Yamaha NS-10s, Beta 0-75  
**Echo, Reverb, and Delay Systems:** Lexicon Prime Time delay, Eventide Harmonizer, AMS RMX-16 digital reverb, Lexicon 224  
**Other Outboard Equipment:** UREI limiters, dbx limiters, Bi-Amp graphics  
**Microphones:** PML DC-63, misc Shures, Sennheisers, Sonys



# 2ohm Amplifiers



Most amplifiers only have 8 and 4 ohms stereo power ratings. Not Crest Audio!

We design our amplifiers\* to have the electrical and thermal capacity to achieve an FTC 2-ohm stereo power rating from 10Hz to 20kHz with less than 0.10% THD. This ability to operate safely under such extreme conditions is a major factor in our amplifiers' reliability. Combine this with our no-compromise design philosophy of optimizing *all* audio specifications, and the "bottom line" is an amplifier that sounds great and won't fail.

Four years' experience with many of the world's leading sound companies has taught us now to build amplifiers that will stand up to the most rigorous conditions, night after night, tour after tour. Today, over 1000 Crest Amplifiers are on tour with such major sound companies as Maryland Sound, dB Sound, Ultra Sound, and See Factor.

Listen to a Crest, examine its construction, talk to the many professionals who use Crest Amplifiers, and you'll be convinced that we really do build superior amplifiers—the direct result of a no-compromise design philosophy applied to a very serious business.

\* FTC Ratings, 10Hz to 20kHz, continuous sine wave at one-third output. Both channels driven, distortion <0.06% at 8 and 4 ohms stereo <0.10% at 2 ohms stereo and 4 ohms mono.

Model #	3000/3001	4000/4001	5000/5001
8 ohms stereo	225W	300W	375W
4 ohms stereo	400W	500W	650W
2 ohms stereo	600W	700W	800W
4 ohms mono	1100W	1400W	1700W

## Power Is Serious Business

# CREST AUDIO

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Friday, August 10, 1984  
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ROCKAMERICA invites you to take advantage of our free listings in the definitive guide to video/music for the **Second Annual Rockamerica Video/Music Seminar**. A listing in the **GUIDE** virtually insures your company daily exposure to the most important forces in video music. For more information contact **ROCKAMERICA**

### Registration Form

Name \_\_\_\_\_ Number Attending \_\_\_\_\_  
Title \_\_\_\_\_  
Company \_\_\_\_\_ Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Phone \_\_\_\_\_  
Additional names and titles \_\_\_\_\_

\$125 Advance Registration. \$140 at the door (cash only). Enclosed is my check for \$ \_\_\_\_\_

Please send me:

More information on the ROCKAMERICA VIDEO/MUSIC SEMINAR  Hotel and Travel Information  
 Exhibitors and advertisers information packets  Information about ROCKAMERICA

Mail to: ROCKAMERICA INC.  
27 East 21st Street  
New York, N.Y. 10010

For more information call: (212) 475-5791



Instruments Available: Yamaha 5'3" grand, Ludwig drums, Fender Rhodes, Casio 202, Sunn and Music Man guitar amps, Sonor drum kit, Roland Juno-60, Roland Cube-60  
Rates: \$50/hr

••• THE UNIVERSITY OF TEXAS AT SAN ANTONIO  
Office of Media Resources, San Antonio, TX 78285  
(512) 691-4520  
Owner: The University of Texas at San Antonio (Office of Media Resources)  
Studio Manager: Larry Glisson

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

••• WARHORSE STUDIOS  
also REMOTE RECORDING  
7516 Avenue H, #B, Lubbock, TX 79464  
(806) 745-7421  
Owner: Bill Ockander  
Studio Manager: Bill Ockander

••• ZANBECK PRODUCTIONS  
Rt. 4, Box 1249, Little Rock, AR 72206  
(501) 888-7045  
Owner: Zane Beck, Charles Bailey, Bobby Gibson  
Studio Manager: Bobby Gibson

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

## Canadian Studios!

Your studio listings are coming in November.

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We've all been hearing Dynos on recordings for years, and now, Dyno presents a new generation... the Signature Series with **MIDI**, the last Rhodes® you'll ever need.

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Dyno My Piano, P.O. Box 1007, Burbank, CA 91507



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, 3M M-56 4 track  
**Mixing Consoles:** Amek "Angela" 28 24  
**Monitor Amplifiers:** Hafler Pulsar, QSC  
**Monitor Speakers:** JBL 4435, 4411, Realistic, Auratone  
**Echo, Reverb, and Delay Systems:** Lexicon digital reverb, MIC-MIX reverb, Lexicon PCM 41 DDL, Roland 2000 DDL, Roland 555 chorus echo, tape slap  
**Other Outboard Equipment:** DeltaLab Harmoniccomputer, EXR Vocal Exciter, Orban parametric EQs, White 1/3 octave EQs, dbx compressor/limiters, dbx noise reduction, Eumig FL1000 cassette desk, vocal stessor, Valley People Dynamites, UREI LA3 compressors, UREI digital metronome.  
**Microphones:** AKG C12, pair C129, pair C28, 414EB; Neumann/Telefunken pair U87, U67 pair KM54, Also Sennheiser, Crown PZM, Shure, E.V. Audio-Technica  
**Instruments Available:** Yamaha C7 grand piano, Moog synthesizer, Mesa and Fender amps Fender Gibson and Ovation guitars  
**Video Equipment & Services:** Music video production available  
**Rates:** Available upon request

••••CASTLE CHURCH STUDIOS  
 304 So. Trenton, Tulsa, OK 74120  
 (918) 587-1515  
**Owner:** Ben Ferrell, Pat Mortensen, Dina Kangles, Nick Kangles  
**Studio Manager:** Tom Russell

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

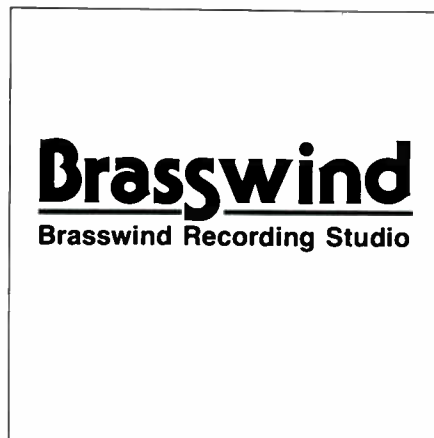
••••STEPHEN ARNOLD—RECORDING & PRODUCTION  
 1404 Forest Lane, Garland, TX 75040  
 (214) 494-6882  
**Owner:** Stephen Arnold  
**Studio Manager:** Stephen Arnold

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

••••BRASSWIND RECORDING STUDIO, LTD.  
 2551 Texas Ave., Shiloh Place, Suite F,  
 College Station, TX 77840  
 (409) 693-5514  
**Owner:** David O. Cooper  
**Studio Manager:** David O. Cooper  
**Engineers:** David O. Cooper  
**Dimensions of Studios:** 18 x 28  
**Dimensions of Control Rooms:** 13 x 16  
**Tape Recorders:** Analog MCI JH 110C-8 (1") 8 track, MCI JH 110B-VP 2 track (2), Anwa dubbing cassette deck  
**Mixing Consoles:** Trident Series 70 16x16x16  
**Monitor Amplifiers:** Crown PSA-2 and Crown D-75  
**Monitor Speakers:** JBL 4431, Auratone cubes  
**Echo, Reverb, and Delay Systems:** Ursa Major 8x32 digital reverb, DeltaLabs Elctron ADM 1024 digital delay  
**Other Outboard Equipment:** Eventide H949 Harmonizer, dbx 160X compressors, Valley People stereo Dyna-Mite, Ashly parametric EQ, White 1/3 octave EQ w/active electronic crossovers  
**Microphones:** AKG, Beyer, Crown PZM, Electro-Voice Neumann, Sennheiser, Shure, Sony  
**Instruments Available:** Yamaha CP-80 electric grand, Roland



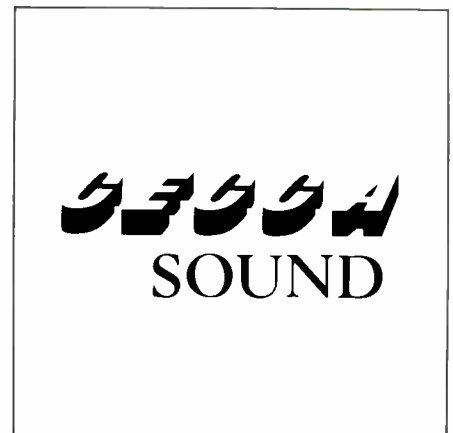
BRASSWIND RECORDING STUDIO, LTD.  
College Station, TX

Juno 60 synthesizer, LinnDrum, Fender Precision bass, Fender Princeton Reverb II amp  
**Video Equipment & Services:** Audio post-production for video Adams-Smith 2600 SMPTE synchronizer  
**Rates:** Discounts available upon request - 30 track \$140/hr - 24 track, \$85/hr - 8 track \$45/hr - 2 track \$30/hr - audio video lockup (24 track) \$150/hr - 8 track \$95/hr

••••BROOKS BROTHERS PUBLISHERS  
 115 East Idaho Ave., Las Cruces, NM 88005  
 (505) 524-1889  
**Owner:** Emmit H. Brooks  
**Studio Manager:** Emmit H. Brooks

••••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:** Drew Townson, Perry Lancaster, Bob Gentry  
**Dimensions of Studios:** 30 x 26 x 13, isolation booth and widely variable acoustics



CECCA SOUND  
Dallas, TX

••••CECCA SOUND  
 3198 Royal Lane, Dallas, TX 75229  
 (214) 350-6945  
**Studio Manager:** Bob Pickering  
**Engineers:** Bob Pickering, Kraig Pride, Ed Johnson, John Mayfield  
**Dimensions of Studios:** 20 x 30  
**Dimensions of Control Rooms:** 28 x 16  
**Tape Recorders:** Analog MCI 24 track, MCI 14" 2 track, MCI 14" full track, MCI 14" 2 4 track  
**Mixing Consoles:** MCI 548 D 38 32  
**Monitor Amplifiers:** UREI, Crown  
**Monitor Speakers:** UREI, JBL, Visonik  
**Echo, Reverb, and Delay Systems:** Lexicon 224, Lexicon 200, (3) Audience plates



Film Scoring, Video Sweetening, Album Jingle Production



Control Room A



Studio A



Studio B-Video Sweetening



Projection Room



Film Editing



Film Screening

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*To sound good is not enough  
when you dream of sounding great.*

**DALLAS**  
SOUND LAB

Four Dallas Communications Complex • Suite 119  
6305 N. O'Connor • Irving, TX. 75039 • (214) 869-1122

Other Outboard Equipment: Prime Time Space Station; Mar shall time modulator; EXH Aphex AD vocal stressor (2) 1176 limiters, LA 3A limiter, dbx 165 (2), dbx 162 (2), (2) stereo Dynamiacs, Amber spectrum analyser, Dolby & dbx NH

**Microphones:** Milab, Sennheiser, AKG, Beyer, Shure, E.V. Neumann

**Instruments Available:** Baldwin G concert grand, LinnDrums Pearl maple shell drum kit, Poly Kora

**Extras:** Specializing in records, films and custom commercials, record producers, film scoring & postproduction is available. Credits include the film score for "Ellie" and record work with Charley Pride, Atlanta, Dennis Ivey, Stella Parton, Diane Medlin, Chuck Haney

\*\*\*\*CEDAR CREEK RECORDING  
5012 Brighton Rd., Austin, TX 78745  
(512) 444-0226

Owner: Austin Media Productions, Inc.  
Studio Manager: Fred Hemmert

Engineers: Ron Rogers, Fred Hemmert, Travis Hemmert

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 JH1105 1/2 track, Technics 1520 2 track, Sony 14 track, Technics RS-M 85 cassette (others available)

Mixing Consoles: MCI JH636 w/Automation, 26 x 24



CEDAR CREEK RECORDING  
Austin, TX

Monitor Amplifiers: Crown PSA 2 (mains), Roland SPA 1/0 (references)

Monitor Speakers: JBL 4430 bir (mains), JBL 4401 (references), Bose 301 (references), Auratones, ECI 2 way mini-speakers

Echo, Reverb, and Delay Systems: Lexicon Super Prime, (2) Lexicon 224 reverb, Eventide 949 (delay)

Other Outboard Equipment: Orban 622B 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 G grand, Oberheim OHX A polyphonic synthesizer, full Tama studio drum kit, Gibson electric guitar, BVI, bass guitar, Ovation acoustic, Takamine acoustic, Mesa Boogie Mark II B amp

Rates: \$50/hr plus engineer and tape

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 production and the availability of the best musicians in Texas for sessions

Direction: As many as we can do in. Clients include: Freeflow Productions, 14K, James Anderson, Steve Mendioli, Private Lives, many others

\*\*\*\* CEDAR RIDGE STUDIOS  
also REMOTE RECORDING  
110 Berry Rd., Houston, TX 77022  
(713) 691-4500

Owner: Cedar Ridge Music Inc., Bob Swannum, president  
Studio Manager: Fred Lundy

Engineers: Randall Myers

Dimensions of Studios: Main room: 24 x 22, Piano room: 13'7" x 10'7", Vocal room: 9 x 9, Drum room: 17 x 8

Dimensions of Control Rooms: 14.4 x 11.4

Tape Recorders: Analog: Otari M1H 90 24 track, Tascam 144 4 track cassette, Tascam 15 4 track 1/2", Ampex 2 track, 1/2 track

Mixing Consoles: Tangent 4216 24 24, Tascam 15 16/8

Monitor Amplifiers: McIntosh 250, Tapco eq 120", Crown DC150

Monitor Speakers: JBL 4311 Auratone S-1  
Echo, Reverb, and Delay Systems: Master Room reverb, Eventide Clockworks Harmonizer, Delb Lab DDL 4

Other Outboard Equipment: Lofl blanner, UREI 1176 limiters  
Microphones: Electro-Voice BE 20, DS 35, RE 16, BE 55, Sennheiser MD 41 4U, MD 421, Neumann U 87, KM 861, AKG C 414, D 1900 E, D 150, E 195, D 2009, D 20000

Instruments Available: Fenner professional bass, Gibson FS 435 Yamaha grand, Tama drums, assorted percussion instruments, Poly Kora synthesizer, Mini Kora synth, ARP Quarter Roland Trilogy, Marshall amps, Poway amps, Synclairs, Tama drum synthesizer

Services: Full mastering equip ment in pressurized

\*\*\*\* CHATON RECORDINGS  
also REMOTE RECORDING  
5625 E. Nauni Valley Dr., Scottsdale, AZ 85253  
(602) 991-2802

Owner: Ed & Marie Haversrott  
Studio Manager: Steven F. Moore



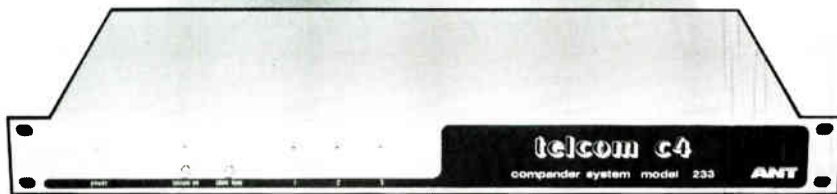
CMG STUDIOS  
Nuevo Leon, Mexico

\*\*\*\*CMG STUDIOS  
Privada Alamo 3310 Nte., Monterrey, Nuevo Leon, Mexico 64530  
(83) 51-47-45

Owner: Cesar M. Gomez I.  
Studio Manager: Cesar M. Gomez I.  
Engineers: Cesar M. Gomez, Antonio Cuevas C., Sergio Garza R.

# The Battle ... is won

Most of today's 1" type B VTRs are equipped with **telcom c4**



Users already selected telcom c4 as the most suitable NR System for type C VTRs. The new telcom c4 units are now designed to improve the sound of type C VTRs. telcom c4 creates lower distortion from tape, better crosstalk attenuation, improved headroom plus a 25 dB gain in dynamic range. No line-up procedures. telcom c4 units for VTRs

are available for 1, 2 (stereo) and 3 channels, for simultaneous encode/decode and automatic switching. Furthermore, telcom c4 is used in connection with ATRs, line and satellite transmission. Don't you also need super sound for stereo or copying? Just contact us for further information.

Contact:

Solway Inc., P.O. Box 7647,  
Hollywood, FL 33081  
Phone (305) 962-8650, Telex 467257

Authorized Dealers: Commercial Electronics Ltd., Vancouver, B.C., Everything Audio, Los Angeles; Hy James, Michigan; J-Mar Electronics Ltd., Toronto, Ontario; Martin Audio/Video Corp., New York, NY; Milam Audio, Illinois; Prof. Recording & Sound, Boston; Sound Genesis, San Francisco; Straight Wire Audio, Virginia; Valley Audio, Nashville

**ANT**

Telecommunications

ANT Nachrichtentechnik GmbH  
Lindener Str. 15 D-3340 Wolfenbützel  
Phone (05331) 83-0 Telex 95651 ant d

**Dimensions of Studios:** 24 x 18  
**Dimensions of Control Rooms:** 18 x 12  
**Tape Recorders:** Analog Soundcraft SCM 760 24 track, w/autolocator, Otari MX 5050 2 track, Technics RS 1506 4 track, Tascam 302-B 2 track  
**Mixing Consoles:** Soundcraft Series 1600 24x8x2  
**Monitor Amplifiers:** Crown  
**Monitor Speakers:** JBL 4411, 4301, Auratone  
**Echo, Reverb, and Delay Systems:** Echoplex (2), Orban 111, Eventide  
**Other Outboard Equipment:** Noise gates by Valley Audio and Symatrix, dbx limiters, Eventide Harmonizer, de-esser, Pioneer cassette decks (2), DeltaLab flanger, Koss earphones  
**Microphones:** Neumann U87, U47, AKG 414, 421, Shure SM77, SM57, SM58; Crown P2M; Shure SM81, Sennheiser MD421, Beyer M201  
**Instruments Available:** Rogers drums, Roland Rhythm Composer TR-808, MicroMoog synthesizer, Precision bass, Fender guitar, Latin percussion, congas Oberheim OBA  
**Rates:** \$30/hr. Day and week block rates available on request

••••COLORADO SOUND RECORDING  
 3100 W. 71st Ave., Westminster, CO 80030  
 (303) 430-8811  
 Owner: Kevin Clock  
 Studio Manager: Monte Robertson

••••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, 1/4 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, 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; Omni Craft noise gates, Audio Control Real-Time Analyzer & graphic EQ, dbx noise reduction, phase & flangers, UREI 1176 comp/limiter, Orban 245E stereo synthesizer, Orban 536A dynamic sibilance controller, Technics SL1200 MKII broadcast turntable  
**Microphones:** Neumann, Sennheiser, Sony, Shure, Beyer, Electro-Voice, Altec, Crown P2M, AKG, RCA  
**Instruments Available:** Yamaha 7-5" grand piano, Rhodes stereo electric piano, Wurlitzer electric piano, Hammond B-3 organ w/Leslie, 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, Korg Poly 61 synthesizer, LP congas, complete percussion/effects  
**Video Equipment & Services:** IVC GX-N704 color camera w/direct access color character generator, Pentax PV R1000A 1/2" VHS stereo video recorder (5 heads)  
**Rates:** 16 & 24 track recording and mixing \$90/hr including engineer and all studio instruments. Discount block and producer rates available

••••CRYSTAL CLEAR SOUND  
 4902 Don Dr., Dallas, TX 75247  
 (214) 630-2957  
 Owner: Merle D. Baker  
 Studio Manager: Keith Rust  
 Engineers: Keith Rust, John Carey  
**Dimensions of Studios:** 32 x 42  
**Dimensions of Control Rooms:** 15 1/2 x 22 1/2  
**Tape Recorders:** Analog MCI JH-24 24 track, MCI JH-110 B 2 track; Ampex 440 2 track  
**Mixing Consoles:** MCI JH 636 Automated 28/24  
**Monitor Amplifiers:** Crest, Crown  
**Monitor Speakers:** UREI JBL 4311  
**Echo, Reverb, and Delay Systems:** Lexicon mod 200 digital reverb, Korg SDD-3000 digital delay, Lexicon PCM 41 delay, Eventide Harmonizer, Audionce plate, AKG BX-20  
**Other Outboard Equipment:** dbx 165 limiters, Orban Parametric, Kepelex, Gain Brain, digital metronome, Orban de-essers, Countryman phase shifter

**Microphones:** Neumann U97, KM84, AKG 414 EB, AKG 451; Sony ECM 33F, E-V R120, RE15, Beyer M160; Shure 57, Sennheiser 441, 421  
**Instruments Available:** Kawai grand, Hammond B3 w/Leslie, Fender Precision bass, Roland jazz chorus guitar amp, misc percussion  
**Rates:** Very reasonable, please call!



DALLAS SOUND LAB  
 Irving, TX

••••DALLAS SOUND LAB  
 Four Dallas Communications Complex, Ste. 119,  
 Irving, TX 75039-3510  
 (214) 869-1122  
 Owner: Russell Whitaker  
 Studio Manager: Johnny Marshall  
 Engineers: Rusty Smith, chief engineer  
**Dimensions of Studios:** Studio A: drum booth - 23 x 14, iso booth - 20 x 11, rhythm area - 24 x 16, scoring area - 44 x 28. Studio B: voice-over booth - 10 x 8. Studio C: Theatre - 38 x 23

# Hear us out.

From full turnkey to budget production studio, we offer an extensive equipment selection equaled only by our technical expertise.

REALLY?

From 24 tracks on down, we specialize in the finest new and used studio equipment — and we've got more of it than anyone else in the Southwest.

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 □ QUAD EIGHT □ TASCAM □ AMPEX □ DBX □

**Dimensions of Control Rooms:** A 23 x 21, B 16 x 14  
**Tape Recorders:** Analog Otari MTR 90 24 track, Otari MTR 10 4 track, Otari MTR 10 2 track, MCI JH114 24 track, MCI JH110B 4 2 track, MCI JH110 1" video layback recorder, Studer Revox B710 cassette Digital Sony PCM F1 2 track, Technics SV100 2 track  
**Mixing Consoles:** MCI (automated) JH 536 28 in out, MCI JH636 24 in out  
**Monitor Amplifiers:** Crown Delta Omega M2000, assorted amps by Yamaha, Crown, Crest, and BGW  
**Monitor Speakers:** UREI 813B, JBL 4333, JBL 4401, JBL 4673, E.V Interface 1, Yamaha NS-10M, Tannoy SRM 12B, Auratone 5 C  
**Echo, Reverb, and Delay Systems:** Lexicon 224, Lexicon PCM 41 Sequential Circuits ProFX Eventide 949 Eventide 910 BAE plate reverb Yamaha RS1000  
**Other Outboard Equipment:** Compressors limiters expanders EQ by UREI Allison dbx, Valley People Dietz  
**Microphones:** Full array of mikes by Neumann, Sennheiser, AKG, RCA, F.V. Crown, Beyer, Shure, and vintage tube mikes by Neumann, AKG, and RCA  
**Instruments Available:** Steinway 9' concert grand, Yamaha DX 7, Yamaha CS 50, Yamaha CP 70B, Sequential Circuits Prophet V and 1005 Sequencer LinnDrum Hammond B-3 Hohner clavinet Mini Moog, Roland bass line and drumatic  
**Video Equipment & Services:** BTX Softtouch computer interlock system Audio Kinetics Q-Link 310 interlock system JVC 8200 34" VCR JVC 8250 34" VCR MCI JH110 1" video layback recorder, Sony monitors NEC projector system, 35mm and 16mm high speed projectors, dubbers, and master recorders by MTM  
**Rates:** Call for quotes  
**Direction:** Dallas Sound Lab is designed to meet the complete needs of clientele dealing with any aspect of audio production including simple voice-over jingle work, stereo and album production and complex interlock recording for video or film. Studio A: Up to 48 track recording capability with video or film interlock. Services include 40 piece capacity orchestra scoring to picture ADH, SFX assembling, video sweetening, and album/jingle production with tie lines to three sound stages (15,000, 6,000 & 3,000 sq ft) for live TV shows, concerts, etc. Studio B: Up to 24 track recording capability with video or film interlock. Services include ADH, SFX assembling, video sweetening, voice-over work, and laybacks to 1" masters. Studio C: Film theatre for 16mm or 35mm interlock screening and transfers.

••••DARCI SOUND RECORDING STUDIO  
 also REMOTE RECORDING  
 2736 W. 11th St., Beaumont, TX 77703  
 (409) 898-4556  
 Owner: Ray Murphy  
 Studio Manager: Ray Murphy

••••DIGITAL SERVICES RECORDING  
 REMOTE RECORDING only  
 2001 Kirby, Suite 1001, Houston, TX 77019  
 (713) 520-0201 (24 hours)  
 Owner: John A. Moran  
 Studio Manager: John Moran  
 Engineers: John Moran Trent Burns, various independents  
**Dimensions of Studios:** 80' 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 ADI 4311 & Auratones  
**Echo, Reverb, and Delay Systems:** Sony DRE 2000 digital reverb MICMIX Masterroom 400 ADH complete Stamp 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 Festival, Thomas Conroy, Dionne Warwick, The Krayolas, Dr. Hook, Barbara Mandrel, T.G. Sheppard, Barbara Streisand, Talking Heads, Neil Diamond, lots more.

••••EAGLE AUDIO, INC.  
 911 So. Main, Fort Worth, TX 76104  
 (817) 877-4338  
 Owner: Mike McCollm, Curtis Butts, David Pelouche  
 Studio Manager: Mike McCollm



EAGLE AUDIO, INC.  
 Fort Worth, TX

••••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:** Studer A-800 24 track, Otari MX5050 4 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 90, 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 1602, 165, UREI 1176  
**Microphones:** Neumann U87, AKG 414EB, D202, 707, Sennheiser 421, Sony ECM 22P, ECM 21P, F113, Crown P2M, Shure SM81, F.V. 664, Beyer, MB  
**Instruments Available:** 9' Kawai, Hammond BF100 w/Leiste, Mini Moog, electric guitar, electric bass, Wurlitzer electric piano  
**Video Equipment & Services:** 3 machine SMPTE Interlock w/BTX SMPTE reader, generator video display (Cypher), 34" JVC, Ampex VPR-20 available for extra charge  
**Rates:** Audio for Video \$120/hr, 24 track \$95/hr, 4 2, mono \$70/hr



EDENWOOD RECORDING STUDIOS  
 Dallas, TX

••••FAME PRODUCTIONS  
 also REMOTE RECORDING  
 7146 S. Braden, Ste. 200, Tulsa, OK 74136  
 (918) 494-6817  
 Owner: J. Chad Welling, Bret E. Teegarden  
 Studio Manager: Bret E. Teegarden

••••THE FOURTH CREATION  
 907 McCall St., Conroe, TX 77301  
 (409) 756-6861  
 Owner: Carey Wise  
 Studio Manager: Jeff Rhoades

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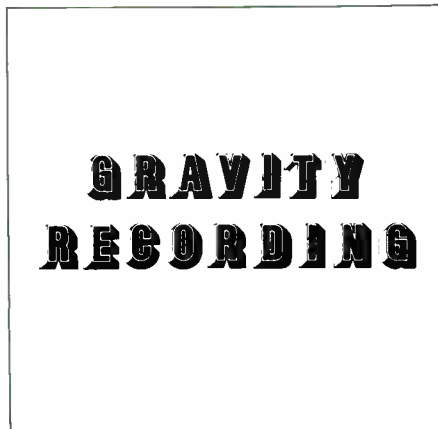
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••••GILLEY'S RECORDING STUDIOS  
 also REMOTE RECORDING  
 P.O. Box 1242, Pasadena, TX 77501  
 (713) 941-7193  
 Owner: Mickey Gilley Sherwood Cryer  
 Studio Manager: Bert Friot

••••GOLDUST RECORDS  
 115 E. Idaho Ave., Las Cruces, NM 88001  
 (505) 524-1889  
 Owner: Emma H. Brooks  
 Studio Manager: Emma H. Brooks



GRAVITY RECORDING STUDIOS  
 Nogales, AZ

••••GRAVITY RECORDING STUDIOS  
 141 Spur Place, Nogales, AZ 85621  
 (602) 281-1746  
 Owner: Miguel Crisantes  
 Studio Manager: Miguel Crisantes  
 Engineers: Miguel Crisantes, Mike Hyde  
 Dimensions of Studios: 19 x 39 drum booth 9 x 14  
 Dimensions of Control Rooms: 19 x 23  
 Tape Recorders: Analog Otari MTH 90 24 track Otari MTH 10  
 2 track TEAC 45 2 track Technics 88 2 track Technics M95  
 cassette TEAC 122 cassette  
 Mixing Consoles: Soundcraft 2400 28 24 w Spectrum analyser  
 and automation  
 Monitor Amplifiers: UREI 6500 with UREI filters, McIntosh 2200  
 w Soundcraftsman filters  
 Monitor Speakers: UREI 811 Tannoy's Auratones, F.V. Cen-  
 tury  
 Echo, Reverb, and Delay Systems: Lexicon 224 w/all pro  
 grams Echoplex by Sound Technology Deltalab DLI, MXH  
 doubler  
 Other Outboard Equipment: 949 Harmonizer, Lexicon Prime  
 Time, Valley People noise gates dbx 162, dbx 165 UREI 1178,  
 Aphex Aural Exciter, EXH Exciter, G14 noise gates Symetrix  
 noise gates MXH flanger, FH vocoder, MXR dual 15 band  
 graphic EQ 8 channels of dbx NR, Scott Graphic Analyser  
 Microphones: Neumann U89, U87, KM 45, Beyer 500, AKG  
 414, Sennheiser 421, F.V. RE16, RE20, Shure, Sony  
 Instruments Available: 6'9" Kimball grand, Tama drums  
 w/paste cymbals, ORB keyboard, Prophet 5, ARP strings, Linn-  
 Drum w/extra chips, Hammond B3 w/Leslie, Fender Rhodes  
 Simmons drums, assorted Fender, Gibson guitars  
 Video Equipment & Services: Equipped for video sweetening  
 full line of VCR available  
 Rates: Please call for rates

••••HENDERSON RECORDING STUDIO  
 3849 S. Cravens Rd., Ft. Worth, TX 76119  
 (817) 451-7247

••••HUDDLESTON'S RECORDING STUDIO, INC.  
 1119 W. Garland Ave., Garland, TX 75040  
 (214) 487-8120  
 Owner: Gene Huddleston  
 Studio Manager: Paul Hill

••••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, Chris Smith, Buz Smith  
 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 JH: 10 2 tracks  
 1/4", MCI JH110 1/2" 2 track  
 Mixing Consoles: MCI JH576-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/limiters, ADR  
 Vocal Stressor, parametric equalization, Dolby noise reduction on  
 all equipment, automation  
 Microphones: Neumann U47s, U87s, KM84s, KM86, AKG 414,  
 452s, Sennheiser 421D, Beyer, Sony, Crown PZM, Shure SM56,  
 SM58s, SM85, Telefunken U 47 tube, Electro-Voice RE-16,  
 RE-20  
 Instruments Available: Yamaha grand piano, Fender Rhodes,  
 Clavinet, Music Man guitar amps, Pearl drums, Poly 6, Prophet  
 T 8, Yamaha DX-7, LinnDrum comp  
 Rates: On request



JANUARY SOUND STUDIOS  
 Dallas, TX

••••JANUARY SOUND STUDIOS  
 also REMOTE RECORDING  
 3341 Towerwood, Suite 206, Dallas, TX 75234  
 (214) 243-3735  
 Owner: January Sound Studios, Inc  
 Studio Manager: Dennis Lowe  
 Engineers: Linda Adelfoff, Tom Adler, Larry Wallace, Chris  
 Green, Dennis Lowe, Russell Alvey  
 Dimensions of Studios: Studio A 30 x 36, Studio B 15 x 15,  
 Studio C 1" 8 track prod  
 Dimensions of Control Rooms: Studio A 15 x 20; Studio B  
 16 x 24  
 Tape Recorders: (2) MCI 24 tracks, MCI 16 track, MCI 2 track,  
 ElectroSound mono  
 Mixing Consoles: MCI 2 automated JH 536 console  
 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, Kepeks; Or-  
 ban De-Esser, Orban parametrics  
 Microphones: Neumann, AKG, Sennheiser, Sony, Shure, Elec-

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P.O. Box 472, Taos, NM 87571  
(505) 776-2268

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tro-Voice, RCA  
Instruments Available: Steinway 9' grand piano, Fender  
Rhodes, Clavinet  
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 (in-  
cluding engineer)

\*\*\*\*KLUDGIT SOUND, INC.  
also REMOTE RECORDING  
Box 171, Cerrillos, NM 87010  
(505) 471-0051  
Owner: Baird Banner  
Studio Manager: Baird Banner  
Engineers: Baird Banner, chief engineer  
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 Bi-Phase, MXR phase, MICMIX  
Other Outboard Equipment: (2) UREI 539 room EQs, UREI  
527 ½ 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, Beyer Dynamic,  
Beyer ribbon, Sennheiser 421 & 441  
Instruments Available: Linn Drum LM2 synthesizer, Kawai  
grand piano; Wurlitzer electric piano, assorted drums and percus-  
sion, other instruments available by appointment  
Video Equipment & Services: Engineers have extensive experi-  
ence 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

\*\*\*\*LIMELIGHT RECORDING STUDIO  
5116 34th St. (P.O. Box 154), Dickinson, TX 77539  
(713) 337-1272  
Owner: Don Westmoreland  
Studio Manager: Don Westmoreland  
Engineers: Don Westmoreland, Don Westmoreland, Jr., Henry  
Westmoreland, Matt Westmoreland, Doug Groover  
Dimensions of Studios: 30 x 26 w/12' ceiling, drum booth 10  
x 8 x 12, vocal booth 9 x 5 x 12  
Dimensions of Control Rooms: 24 x 16 w/12' ceiling  
Tape Recorders: Analog: Soundcraft Series 760 24/16, Tascam  
w/dbx NR 80-8 8 track, TEAC A3340S 4 track, Otari MX-  
5050B 2 track, TEAC A-6100 2 track  
Mixing Consoles: Soundcraft 1600 24 8  
Monitor Amplifiers: McIntosh (tube)  
Monitor Speakers: JBL 4311 B, Auratone cubes  
Echo, Reverb, and Delay Systems: Lexicon 200 digital reverb;  
Master Room XL-305; Ursa Major Space Station, Lexicon Prime  
Time II, MXR digital delay  
Other Outboard Equipment: Orban 622B parametric EQ, (2)  
dbx 163 compressor/limiter, (2) Ashly SC-50 compressor/limiter,  
MXR pitch transposer w/display, Omni Craft noise gates, Tapco  
graphic EQ; Aphex Aural Exciter  
Microphones: AKG 414, 452; Beyer M-500; Sennheiser 441,  
421, Shure SM81, SM53, SM57, Electro-Voice RE-15 655,  
Audio-Technica 813, 811  
Instruments Available: Tama Super Star drums, Yamaha DX7  
synthesizer, Wurlitzer studio piano, Sequential Circuits Pro One  
synthesizer, Fender (tube) bass amp, Fender Precision bass,  
Fender Telecaster guitar, Silverstone (1960) bass, acoustic guitars  
(6 & 12 string)  
Rates: 24 track \$70/hr, 16 track \$55/hr, 8 track \$40/hr, 4 & 2  
track \$35/hr Block rates available

\*\*\*\*LONG BRANCH STUDIOS  
also REMOTE RECORDING  
6314 E. 13th St., Tulsa, OK 74112  
(918) 832-7640

Owner: Bill Belknap, Walt Bantield  
Studio Manager: Gregg Gardner  
Engineers: Bill Belknap, Walt Bantield, Gregg Gardner and  
freelancers  
Dimensions of Studios: 80 x 50 w/40' ceiling Largest studio  
in the Southwest  
Dimensions of Control Rooms: 25 x 30  
Tape Recorders: Analog: Ampex MM 1200 24 track, Ampex  
MM 120 16 track, (3) Ampex ATR 102 mixdown 2 track, Nagra  
#3 and #4 2 track Digital: Technics SV100 2 track mixdown  
Mixing Consoles: Automated Processes Inc 24 in x 24 out  
w/additional 8 channels for mixing (1) portable 8 channel w/API  
parts  
Monitor Amplifiers: McIntosh MC-2300, Crown D-150 Crown  
300-A, BGW 100, Phase Linear 930  
Monitor Speakers: Studio: Altec Super Reds, Control Room: Bq  
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 sibilance con-  
trol, 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, Beyer, AKG, Sony, large selection of each  
Instruments Available: Yamaha 9' grand, Rhodes electric piano  
Jupiter 4 synthesizer, Camco studio drums, various percussion,  
various drum machines, Simmons electric drums  
Rates: 40 track \$100/hr, 24 track \$60/hr, 16 track \$50/hr, 8  
track \$40/hr, 2 track \$30/hr All prices not including engineer  
Film mixing upon request



LONGHORN RECORDING STUDIO  
Clyde, TX

\*\*\*\*LONGHORN RECORDING STUDIO  
206 North First, Clyde, TX 79510  
(915) 893-2616  
Owner: Laurance Gayao  
Studio Manager: Jun Cabus



LUV SOUND & RECORDING STUDIO  
Dallas, TX

\*\*\*\*LUV SOUND & RECORDING STUDIO  
also REMOTE RECORDING  
3784 Realty, Dallas, TX 75234  
(214) 241-7854  
Owner: Kenno Productions  
Studio Manager: Ken Hughes

Engineers: Gary Scott, chief engineer, Kenton Hughes, asst engineer; various freelance engineers  
 Dimensions of Studios: 27 x 18 isolation booth 10 x 12  
 Dimensions of Control Rooms: 18 x 16  
 Tape Recorders: Analog Otari MTR 90 24 track, Tascam 85 16B 16 track, Otari MX5050B 8 track, Tascam 40 4 4 track, (2) Otari MX5050BII 2 track  
 Mixing Consoles: Trident Series 70 28 16  
 Monitor Amplifiers: QSC Series three 3500, QSC Series three 3350

Monitor Speakers: JBL 4430 Auratones  
 Echo, Reverb, and Delay Systems: Lexicon 200 digital reverb, Foxtel model 3180 Spring, DeltaLab ADM 2048 Super Time Line

Other Outboard Equipment: dbx 160 compressor limiter, Valley People 430 Dynamite, FXR EX IV Exciter, Omni Craft GT-4 gate, UREI 537 1/3 octave room EQ, Cassette decks: FUMIG FI-1000, TEAC C 3RX Technics SL 1200 turntables

Microphones: Neumann KM 84 AKG C452, C451, 414 D12 330, E-V RE20, Crown PZMs, Sennheiser 441, Shure, TEAC, Audio Tech, Countryman 85 FET DIs

Instruments Available: Kawai 6 ft grand piano, Yamaha bass amp B 100 Peavey Pro 40 amp Yamaha acoustic guitar

Video Equipment & Services: On request

Rates: On request

Direction: Credits: Bob Wills Original Texas Playboys, Laura Lee McBride 1983 Miss Texas Gloria Gilbert, Ziggyrats, Larry Fargo, Hollie Hughes, Della Records, Oak Records

We consider this studio to be Dallas' "Songwriters Demo Haven" as well as a complete facility for a wide range of in-house studio or live productions

••••LUXURY AUDIO WORKSHOP, INC.

also REMOTE RECORDING

2570 E. Tropicana Ave., #19, Las Vegas, NV 89121  
 (702) 451-6767

Owner: L A W Inc

Studio Manager: Lee Watters

Engineers: Chief engineer: Jerry Hall, Lee Watters, Bill Shostak Independent engineers, Reggie Dozier

Dimensions of Studios: Studio A 1000 sq ft Studio B 18 x 18

Dimensions of Control Rooms: Studio A 20 x 16, Studio B 13 x 13

Tape Recorders: 3M M79 24 track, (2) 3M M79 2 track, MCI JH110 2 track

Mixing Consoles: Studio A API 36x24, 36 in x 24 out, Quad 8,

Spectra Sonics 2624, 26 in x 24 out.

Monitor Amplifiers: Yamaha



LUXURY AUDIO WORKSHOP, INC.  
 Las Vegas, NV

Monitor Speakers: Studio A Lakeside LM I, Auratones, Studio B, JBL custom, Auratones

Echo, Reverb, and Delay Systems: Lexicon 224 digital reverb, AKG BX10, Lexicon Prime Time, Lexicon PCM 41 DDL, EMT 240

Other Outboard Equipment: Kepex II, UREI 1176LN, UREI LA3A dbx 160, ADR Vocal Stresser, Eventide Harmonizer, phasers, flangers, ADR parametric EQ, Gain Brain, Orban De-esser

Microphones: Neumann U67 tube, U47 FET U87, 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: Yamaha 5' grand Yamaha drums, Yamaha amps, Sequential Circuits Prophet 5 Rhodes 88, 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 restaurants 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, Edie Habbitt, Doc Severinson, 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.

ONLY REMOTE RECORDING

2231 E. Division, Arlington, TX 76011  
 (817) 461-2211

Owner: Mike Simpson

Engineers: Mike Simpson, Jim Fitzgerald, Bob Singleton, Don Worsham

Dimensions of Control Rooms: 7 1/2' wide x 2 3/4' long x 7 3/4' tall (interior of control room)

Tape Recorders: (2) MCI JH 24/24 24 track, Studer A810 2 track w/center time code track, Studer A710 2 track cassette, Revox PR99 2 track

Mixing Consoles: Soundcraft Series 2400 52 inputs, 24 - 6x2 outputs, Soundcraft Series 400 26 inputs, 8+3x2 outputs

Monitor Amplifiers: BGW 750 and BGW 250

Monitor Speakers: JBL 4430 bi radial w/White Instruments 1/6 octave equalizers Auratone Model 5C monitors for near field

Echo, Reverb, and Delay Systems: Lexicon Model 224XL digital reverb w/LARC, Lexicon Model 200 digital reverb, MICH MIX XL-305, Master Room spring reverb, Eventide Model H910

# SHAPE IT UP

As a professional you don't have time to fool around. With seven years experience in equalizer design, we know what's needed and how to do it.

Our Model 2700 is a precision third octave equalizer employing a fresh approach in its electronic design. The result is a truly superior sounding filter set non-interacting in its control settings and accurate in its calibration.

Our Model 4200A stereo four-band parametric equalizer is an achievement in tuneable filter design. Its multi-range filter banks provide the engineer with a degree of precision control and range of effects available on no other equalizer today.

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AUDIOARTS® ENGINEERING  
 5 COLLINS ROAD, BETHANY, CT 06525 (203) 393-0887

Circle #051 on Reader Service Card

harmonizer, Lexicon Model 95 Prime Time II digital audio processor

**Other Outboard Equipment:** 24 channel "TTM" noise reduction system (Dolby, dbx or Telcom), dbx series 900 frames equipped w/model 903 compressor/limiters, 904 noise gates, and MICMIX Dynalex/Exciter cards, RTS 3 channel/dual listen intercom system, Clear-Com 2 channel intercom system and elaborate cue/talkback system all interfaced with full duplex fm business band and motion picture service radio system, RTS 4 channel IFB system, 10 line on board Key telephone system, and RCC and Cellular mobile telephones

**Microphones:** AKG C-414 EB P48s, Neumann U89s, Sennheiser MD 441Us & MD421s, Beyer M69s, M88s, M500s, M201s, Shure SM58s, SM57s, Crown PZM GPP 309s & 2LVs, Ceteq Vega hand held and lavalier wireless microphones available at extra charge

**Instruments Available:** Transmission equipment interface and accessories, RTS model 414 & 416 distribution amplifiers, custom 1 x 1 buffer/distribution amplifiers capable of driving +28 dbm, Telco interface via 50 pair punch block to dedicated patch panel, each pair w/separate resistive termination and/or capacitive coupling (4) RDLs on board for auto answer program feeds, 400' power cable and 42 pair snake on DC motor driven reels

**Video Equipment & Services:** BTX Soltouch, Cypher and Shadow Time Code editing and synchronizer system interfaced to our JH 24 24s or our Studer A810. We also carry a Sony VO-5800 U-Matic 4" video recorder/player, a Sony CVM-1900 monitor/receiver, (2) 9" B&W monitors, (2) CCTV cameras and a 10 input synchronized monitor switcher. Up to 8 external video input sources via humback coils

**Rates:** \$2400/day for 2 machine recording, \$1800/day for single machine recording, \$155/day for live video mix or 2 track (rates based on 10 hour production day, \$1.35/mile over 50 mile radius from Dallas Fort Worth)

**Direction:** Credits: Stars Salute the U.S. Olympic Team, NBC TV Special, Hodaq Country Music Festival syndicated special from Rhinelander, Wisconsin, "Country Crossroads" series for ACTS Network, Southern Baptist Convention "Silverwind", and "The Imperials" in concert live and 24 track for Word of Faith/Sparrow Records, Word Records, "Caravan of Dreams" Ornette Coleman live album, CBS TV 25th Annual Grammy Awards, Gatlin Brothers Band, Oak Ridge Boys, Alabama at the "Stars for Children" Concert, Miss Texas USA Pageant, "Brave Combo" live 2 track from Dallas Tango

Midcom's 48 track remote audio facility specializes in on location audio recording for video and teleproduction requirements.

Equipped with state-of-the-art gear, Midcom offers the finest remote truck and crew to be found in the Southwest. Midcom's on board BTX Soltouch editing and synchronizer system allows the client sweetening and audio post production either on location or, later, at the video post facility of their choice

••••**DALE MULLINS RECORDING STUDIO**

also **REMOTE RECORDING**  
8377 Westview Drive, Houston, TX 77055  
(713) 465-6554

Owner: Dale Mullins  
Studio Manager: Doug Monson

••••**NATIONAL RECORDING CO.**

also **REMOTE RECORDING**  
1614 Hampton Rd. (I-30 at Summerhill), Texarkana, TX 75503

(214) 793-4116

Owner: V.E. Howard

Studio Manager: Chuck Richardson

Engineers: Chuck Richardson, Ken White, Roland Pollard

Dimensions of Studios: 36 x 20

Dimensions of Control Rooms: 12 x 15

Tape Recorders: Analog: MCI w/auto correlator JH-124 24 track, Ampex 440B 8 track, Ampex 440B 4 track, (2) Ampex 440B 2 track, Ampex 440B full track

Mixing Consoles: MCI 638 26x24x2, Yamaha PM1000 16x4, Stephenson 8x4

Monitor Amplifiers: Crown PSA-2, BGW 250-D

Monitor Speakers: JBL 4335, JBL 4320, Minimus 7, Auratones

Echo, Reverb, and Delay Systems: AKG BX20-E, Lawson Plate LP-1, Lexicon Prime Time

**Other Outboard Equipment:** (2) UREI LA-3A limiters, (2) Kepex, (2) Gain Brains II, (4) UREI 527-A 33-band Graphic EQ, UREI dual 10-band Graphic EQ, Eventide Harmonizer, Eventide instant flanger, BGW headphone amp 26 channels dbx 180, 8 channels dbx 158, Sennheiser phones, Beyer phones, Sony duplicators

**Microphones:** Neumann U-67, KM84; AKG 414, 451, Crown PZM, Electro-Voice RE20, RE16, RE15, Beyer M201, M101

**Instruments Available:** Kawai baby grand, ARP Odyssey, ARP string ensemble

**Rates:** From \$35 to \$85.



**OMEGA AUDIO & PRODUCTIONS, INC.**  
Dallas, TX

••••**OMEGA AUDIO & PRODUCTIONS, INC.**

also **REMOTE RECORDING**  
8036 Aviation Place, Box 71, Dallas, TX 75235  
(214) 350-9066

Owner: Paul A. Christensen

Studio Manager: Curtis Drake

Engineers: David Buell, Marvin Hlavicka, Phil York, John Carey, Bob Singleton, Tom Adler, Curtis Drake, Perry Lancaster

Dimensions of Studios: Studio A: 35 x 40, Studio B: 12 x 15, Remote Recording Truck: 8 x 15

Dimensions of Control Rooms: 22 x 20

Tape Recorders: (2) Otari MTR90 24 track, (2) Otari MTR10 2 1/4 track; Otari MX5050-E 2 track; Studer/Revox A-77 2 track;

Emig 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

audio video  
Sync...



**STAR TRACK RECORDING STUDIOS, INC.**

5840 S. Memorial Suite 210

Tulsa, Okla. 74145

918-622-6444



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

**Echo, Reverb, and Delay Systems:** Lexicon 224X digital reverb w/LARC remote control, LP140 reverb plate, Echoplex II, Master-Room reverb, ADA stereo tapped delay, DeltaLab DL2 digital delay

**Other Outboard Equipment:** BTX 4600 5 machine controller w/Shadow interlock, BTX 5100 time code generator, Eventide H-949 Harmonizer w/DeGlitch Card, Scamp rack w/17 modules, Gotham TTM NR rack w/dbx K9-22 cards, UREI 565T Little Dipper, UREI digital metronome, RTS stereo phone preamp, Denon DP1100 turntable

**Microphones:** Varied selection of over 70 mikes including Neumann U87, U47; AKG 414, 451, CK8; 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, Hammond 34BV organ, or full range of instruments available by special arrangement

**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 \$110/hr, 48 track \$175/hr, audio/video interlock 24 track \$135/hr, 48 track \$200/hr; Remote recording \$1,800/day for 48 track, plus 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 (Silvo Caranchini, producer), CBS-TV (Joseph Cates, producer), MTV (Gowers, Fields & Flattery, producer, PBX-TV (WNET), Commodores, Russ Kunkel.

◆◆◆PANTEGO SOUND STUDIO  
2210 Rapier Blvd., Arlington, TX 76013  
(817) 461-8481

**Owner:** Charles Stewart

**Studio Manager:** Jerry Abbott

**Engineers:** Jerry Abbott, Jerry Hudson

**Dimensions of Studios:** 30 x 20 plus drum & vocal booths

**Dimensions of Control Rooms:** 20 x 20

**Tape Recorders:** Analog: MCI JH 114 24 track, MCI JH 114 2 track.

**Mixing Consoles:** Custom.

**Monitor Amplifiers:** Crown 300

**Monitor Speakers:** JBL 4320, Auratone

**Echo, Reverb, and Delay Systems:** Plate, AKG BX20, Eventide 910, Lexicon Prime Time, DDL

**Other Outboard Equipment:** dbx limiters, Kex noise gates, MXR flanger, Orban Parasound parametric.

**Microphones:** Lots

**Instruments Available:** 7 Yamaha concert grand, drums, Rhodes, clavinet.

**Rates:** \$85/hr.

◆◆◆PANTHEON RECORDING STUDIOS, INC.

also REMOTE RECORDING

6325 No. Invergordon Rd., Scottsdale, AZ 85253

(602) 948-5883

**Owner:** Dennis R. Alexander

**Studio Manager:** Santo "Tito" Bombaci, Gigi M. Johnson (traffic)

**Engineers:** Steven Excalibur (chief), John A. Meisterheim, Rick Sachs (technical consultant)

**Dimensions of Studios:** Studio A: 48 x 30; Studio B: 30 x 16  
**Dimensions of Control Rooms:** A: 18 x 20, octagonal; B: 15 x 15, octagonal

**Tape Recorders:** Analog MCI JH-2424 24 track; Lyrec TR-532 24 track; MCI JH-16 16 track; Ampex ATR-102 1/2" 2 track, Ampex ATR-102 1/4" 2 track; Technics 1520 1/4" 2 track; Scully 280MS 4/2 track; (4) Nakamichi cassette BX-2 2 track

**Mixing Consoles:** Trident TSM 32/24/24 (56); Amek 2016 28/24/24.

**Monitor Amplifiers:** BGW 750, BGW 100; Spectrasonics;

Crown DC300, Crown DC60

**Monitor Speakers:** (4) 604Es w/mastering lab crossovers, JBL 4330s, JBL 4310s, Auratones, Klipsch Horns

**Echo, Reverb, and Delay Systems:** Quad Eight CPR-16 digital reverb, Echoplex II, AKG BX-10, Orban parasound spring reverb, Lexicon Prime Time.

**Other Outboard Equipment:** (8) UREI 1176, (2) UREI LA4A, dbx 162, dbx 160s, (2) Inovonics 201 limiters, (2) H910 Eventide harmonizers, 8 channels Omnicraft noise gates, (2) White 1/2 octave filters, (2) Pye limiters, (2) Spectrasonics limiters, Roland Vocoder, Orban 3 channel de-esser, dbx 48 channel's, MXR pitch transposer, Sholtz Rockman, assorted flangers, chorus units, analog delays, Conn Strobotuner, digital metronome.

**Microphones:** Neumann, AKG, RCA, Sennheiser, ATM, Shure, Sony, Electro-Voice, Minicube direct boxes.

**Instruments Available:** Fender Rhodes Stage 73 (modified) electric piano, 1936 B Steinway 7' grand piano, 6' Yamaha grand piano, Gretsch rosewood drums, DMX digital drums, Roland Juno 60 synthesizer, Yamaha CS-80 synthesizer, ARP Axse, RMI KC-2 digital synth, Kurzweil 250, various amps, Gibson recording Les Paul guitar, Music Man bass, Rico flamenco guitar, lots of percussion and bell tree

**Video Equipment & Services:** Complete video production services available including remotes, sweetening, and talent upon request. Network 30 — home office

**Rates:** Hourly, daily, and weekly rates including accommodations available for out of town clients in our resort area. Rate card upon request. Flexible producer's commercial rates and block discounts. The nature of our rates can include a free vacation with world-class recording. Please call for more information.

◆◆◆PECAN STREET STUDIOS  
1500 Summit St., Austin, TX 78741  
(512) 443-4567

**Owner:** Stephen Shields

**Studio Manager:** Greg Klingensmith

◆◆◆PLATINUM CITY  
2107 N. Haskell, Dallas, TX 76013  
(214) 826-0762

**Owner:** Arnis Wheaton

**Studio Manager:** Arnis 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 Span

◆◆◆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, Dede Clark, asst engr

**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:** MCI JH 114 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 cut, 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, Elfelectron ADM 245 digital delay, Tapco 4400, tape delay echo.

**Other Outboard Equipment:** UREI 539 room EQ's, (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

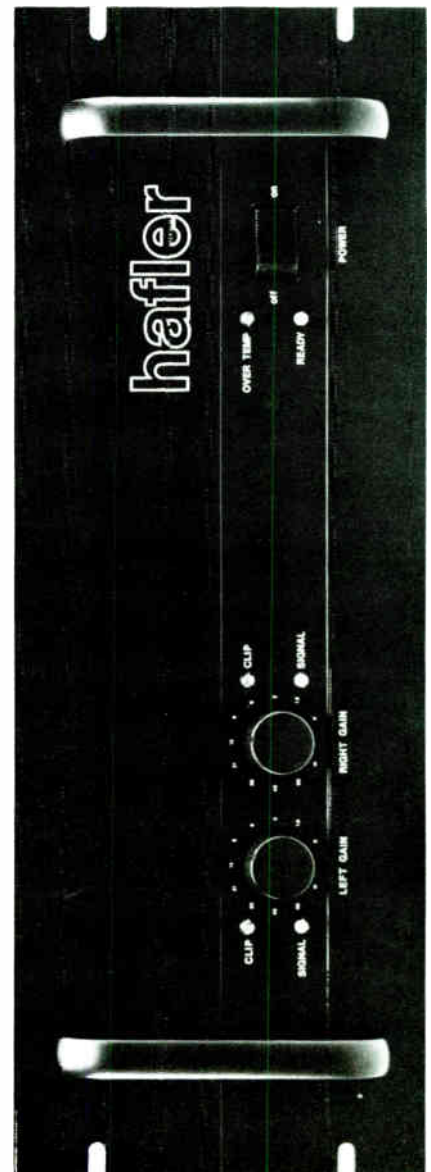
**Rates:** 24 track, \$90/hr, 16 track \$75/hr; 8 track \$50/hr. Call for any current specials.

◆◆◆RAINBOW SOUND INC.  
also REMOTE RECORDING  
1320 Inwood Rd., Dallas, TX 75247  
(214) 638-7712

**Owner:** Bob Dyess, director

**Studio Manager:** Don Jackson, president

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VALUE IN  
PROFESSIONAL  
POWER  
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HAFLER.**



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# Otari just raised the quality of pre-recorded cassettes.

The new DP80 "Faster Masters" high-speed audio duplicating system: **Quality comes up to speed.** The new DP80 Master Reproducer runs 7½ ips masters at an amazing 480 ips. By doubling the old, marginal standard which relied on 3¾ ips masters plugging along at 240 ips, we've just taken the music cassette out of the early seventies and raised its quality to a higher level. The new DP80 will produce the kind of cassettes the discriminating new music buyers of the 80's want.

High production yields are still an essential aspect of the new DP80. This 64:1 system may be expanded up to 20 slave recorders and has been engineered with advanced design electronics and

these important features:

- Normal and chrome tape capability.
- Front accessible, plug-in modular electronics.
- Advanced dual capstan, D.C. servo drive for reduced tape skew and wear.
- Long-life Sendust ferrite heads.
- Status monitoring (optional).

Contact Mike Pappas, Otari Industrial Products Manager, for complete information on the duplicator that can bring your business up to speed — in both product and profits.

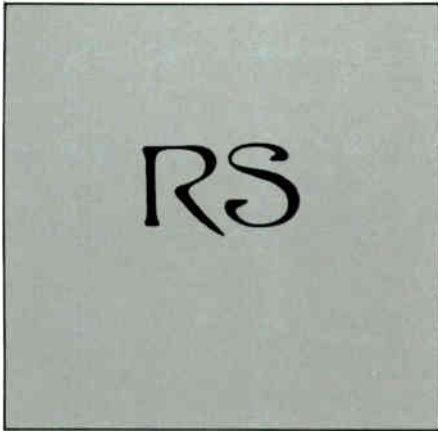
OTARI Industrial Products Division, 2 Davis Drive, Belmont, California 94002, (415) 592-8311  
TWX: 910-376-4890

*The 480 ips Master Reproducer: the heart of the "Faster Masters" DP80 system.*



**OTARI**® Technology You Can Trust

*Audio Tape Duplicators & Video Tape Loaders*



**RAMPART STUDIOS**  
Houston, TX

••••RAMPART STUDIOS  
also REMOTE RECORDING  
6105 Jessamine, Houston, TX 77081  
(713) 772-6939  
Owner: Steve Ames  
Engineers: Steve Ames, Dan Yeane, Roger Tausz  
Dimensions of Studios: 40 x 24 (drum room, vocal booth, iso room)  
Dimensions of Control Rooms: 12 x 18  
Tape Recorders: Analog: Soundcraft 24 track, 3M 2 track, Ampex 2 track, Sony 1/4 track, Technics cassette deck.  
Mixing Consoles: Soundcraft 1624 (16x24x2) 56 channel remix.  
Monitor Amplifiers: All Crown  
Monitor Speakers: JBL 4430s, Auratones  
Echo, Reverb, and Delay Systems: Lexicon 200 digital reverb, EMT 140 plate, Lexicon PCM-41, Lexicon 91  
Other Outboard Equipment: Eventide Harmonizer, Aphex Aural Exciter, Aphex CX-1, UREI 1176 comp/limiters, UREI comp/limiters, Orban Para-EQ, Orban de-esser, dbx Quad-8 and



GT-4 noise gates, MXR flanger, Gold Line RTA, Dynamite exp/comp, Crown SL2 pre amp, Denon T.T.  
Microphones: Neumann U-67s, U-87s, KM-84s; AKG 414s, 451s, Sennheiser 421s, 441s; E-V RE-20s; Beyer 201s; Sony 22Ps; RCA 77s  
Instruments Available: Kawai grand piano, Fender Rhodes, OB-8 synth, Mini-Moog synth, Yamaha drums, Drumulator, Roland, Linn, DX drum computers; Fender amps, LP congas, percussion etc.  
Video Equipment & Services: Scoring, sweetening, etc.  
Rates: Hrrates, Block 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, jingle, and demo projects. Clients include: ZZ Top, Night Ranger, The Judy's, Shake Russell Band, The Dishes, Hey Boy, Random culture, Tokyo, Columbia Records, Atlantic Records, Exxon, 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.  
Dimensions of Studios: 42' tractor trailer. Acoustical design by Tom Hidley.  
Dimensions of Control Rooms: Truck includes control room, lounge and overdub room.  
Tape Recorders: Analog: (2) MCI JH-24 24 track w/SMPTE lock unit; (2) MCI 110-B 2 track; (2) Nikko cassette decks.  
Mixing Consoles: MCI 636LM automated.  
Monitor Amplifiers: Crown.  
Monitor Speakers: JBL 4430, Auratones  
Echo, Reverb, and Delay Systems: Ursa Major 8x32, DL-1, DL-2.  
Other Outboard Equipment: dbx 900 rack, RTS intercom. (4) Dyna-Mites, (4) LA-3s, Jensen 48 input splitter.  
Microphones: E-V, Shure, Neumann, AKG, Countryman, C-Tape, Sennheiser, and direct boxes.  
Video Equipment & Services: Sony color TV system and switcher.  
Rates: Please call.  
Direction: 46 and 24 track remote recording for studio & live albums, TV audio support and radio broadcast syndication. DIR Broadcasting, Westwood One, Patrick Griffith Prod., RKO Network, Epic records, Capital records, MCA, Word, Bensen Co., Savoy, Journey, Triumph, Robert Plant, ZZ Top, Ted Nugent, Fuxx, The Gap Band, Frankie Beverley & Maze, Merle Haggard, Willie Nelson, George Jones, The Osmonds, T.G. Sheppard, Mel Tillis, Dolly Parton, Jay Aaron, Dave Perkins Band, Alabama, Oak Ridge Boys, Loretta Lynn, Amy Grant, DeGarmo and Key, David Meece, Rev. James Cleveland, Farrel and Farrel, B.J. Thomas, Leon Patillo, Billy Squire.

••••RIVENDELL RECORDERS, INC.  
2223 Strawberry Village, Pasadena, TX 77502  
(713) 472-5082  
Owner: Rivendell Recorders, Inc.  
Studio Manager: Chuck Sugar  
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".

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363 Adelaide St. East  
Toronto, Ontario M5A 1N3

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**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) LAS4, (2) 1176 2 dbx 165, (2) ADR Complex limiter, ADR Vocal Stressor, (4) Kepex II, various graphics and parametrics  
**Microphones:** Teletuner: 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, Synclavier II w music print option, Roland Jupiter 6, Drumulator  
**Rates:** Call for information

♦♦♦ R.M.S. STUDIO

4620 W. Blue Diamond, Las Vegas, NV 89118  
 (702) 361-1559  
 Owner: Lou Carlo Joe Carlo  
 Studio Manager: Lou Carlo

♦♦♦ ROBIN HOOD STUDIOS

2200 Sunnybrook, Tyler, TX 75701  
 (214) 592-7677  
 Owner: Robin Hood Brians  
 Studio Manager: Robin Hood Brians



STAR TRACK RECORDING STUDIOS, INC.  
 Tulsa, OK

♦♦♦ STAR TRACK RECORDING STUDIOS, INC.

also REMOTE RECORDING  
 5840 S. Memorial, Ste. 210, Tulsa, OK 74145  
 (918) 622-6444  
 Owner: Rod & Sallie Siane  
**Dimensions of Studios:** A 20 x 34 12 x 9 drum booth 12 x 12 piano room, B 12 x 12 dub booth, C voice only  
**Dimensions of Control Rooms:** A 17 x 22 B 13 x 16 C 9 x 12  
**Tape Recorders:** Analog Otari MTR 90 24 track Otari MTR 10 2 track, (2) Otari MX 5050 B 2 track, Ampex AG 440 2 track, Ampex ATR 100 full track, Otari MK III 4 4 track  
**Mixing Consoles:** AMEC TAC Custom TAC 24 8 2 24 in x 24 out, Custom built TEAC Tascam Model 5 8 in x 4 out  
**Monitor Amplifiers:** Crown D150s Crown D75s Crown Powerline II  
**Monitor Speakers:** JBL 4430 JBL 4313s JBL 4301, Auratone Echo, Reverb, and Delay Systems: (2) Echoplates Lexicon PCM 41 Yamaha analog delay E1010 Eventide delay & harmonizer Orban reverb  
**Other Outboard Equipment:** Roland CPE 800 automation, Eventide Harmonizer Scamp rack EQs compression limiters, Dual de-esser Dynamic filter gates stereo panner 41 dbx 160X, (4) dbx 160 Omni Cratt noise gates Lexicon digital delay EXR Exciter II Effectron IIs UREI graphic EQ  
**Microphones:** U87s KM84s KM83 U89 MC 421s RE 20 414 EB 451s 452s SM5 SM57s PZM C-users  
**Instruments Available:** Kawai: 6 grand piano Fender Rhodes, Pearl 5 piece kit Roto toms tympani Gon Bops Roland Juno 6, Roland Vocoder Roland bol: 60 amp Boss chorus digital, tuner Latin percussion LinnDrum computer  
**Video Equipment & Services:** Adams-Smith 2600 synchronizer, JVC 5550 post video audio synchronization, scoring & mixing  
**Rates:** Studio A 16 24 track \$75 hr Post video audio \$95 hr Studio B \$60 hr Studio C \$60 hr 24 track block rates—down to \$45 hr

♦♦♦ STUDIO CENTRE

4801 Spring Valley Rd., Ste. 105, Dallas, TX 75234  
 (214) 386-6847  
 Owner: The Otis Conner Companies



**Studio Manager:** Les Studdard  
**Engineers:** Ron S Lagerlof, chief engr., Charmaine Hummel, John Carey  
**Dimensions of Studio:** 36 x 34 x 18, w/166 sq ft drum booth & 125 sq ft iso booth  
**Dimensions of Control Rooms:** LEDE 22 x 20 x 16 w/110 cu. ft. machine alcove  
**Tape Recorders:** MCI JH-24/24 track w/AL-III & JH-45/48 SMPTE synchronizer, (2) MCI JH-110B 2/4 track, Otari MX-5050B 2 track, Sony PCM-10 digital mastering processor w/Sony SLO-420 VCR available on request, 32 channels Dolby B noise reduction  
**Mixing Consoles:** Harrison 4832C w/Harrison Autosec computer, 48 input x 32 bus  
**Monitor Amplifiers:** (2) Crown Delta Omega 2000 power amps (mono), Crown DC-300, Crown D-60, (2) McIntosh 2105s  
**Monitor Speakers:** UREI 813B, UREI 811B, JBL 4411, Visoniks "Little Davids"  
**Echo, Reverb, and Delay Systems:** Lexicon 200 digital reverb, EMT 140ST stereo tube plate, Lexicon Prime Time, DeltaLab DL-2, Eventide 1745M & MXR pitch transposer w/readout  
**Other Outboard Equipment:** Aphex Compellor, Aphex Aural Exciter, (4) Dynamite gates, (5) Kepex Is, (2) LA-4s, (4) dbx 160X, Orban 536A dual de-esser, dbx 400 routing switcher  
**Microphones:** (3) U87, (3) KM85, (2) C414, C12A tube, (2) C60 tube, C-452EB, (6) SM57s, SM81, MD421, RE20, M201, (2) M88, M500, RCA 77DX & AKG C24 stereo tube available on request Various vintage tube mikes available for rental  
**Instruments Available:** Mason-Hamlin 9' concert grand piano (circa 1910), formerly at Hyde St Studios, San Francisco, Yamaha DX 7 w/CX-5 music computer, one of two in the states, Minimoog, Prophet 6, ARP, Martin D35 & B C Rich acoustic guitars, available on per session basis  
**Rates:** Scheduled opening date July 15, 1984, call for more information on rates and booking

♦♦♦ STUDIO SOUTHWEST

2611 N. Beltline Rd., Sunnyvale, TX 75189  
 (214) 226-1789

♦♦♦ SUMET-BERNET SOUND STUDIOS, INC.

7027 Twin Hills Ave., Dallas, TX 75231  
 (214) 691-0001  
 Owner: E N Bernert  
 Studio Manager: E N Bernert

♦♦♦ SUNDANCE RECORDING STUDIOS

7141 Envoy Ct., Dallas, TX 75247  
 (214) 688-0081  
 Owner: Rush Beesley, president  
 Studio Manager: Doyle Williams

♦♦♦ SIERRA RECORDING

669 Seminary South, Fort Worth, TX 76113  
 (817) 921-3881  
 Owner: Maximo Corporation  
 Studio Manager: Randy Adams  
**Engineers:** Tony Rodriguez, Randy Adams, Tim Hood, Andres Gamon  
**Dimensions of Studio:** 42 x 30 main room, 10 x 14 iso booth  
**Dimensions of Control Rooms:** 28 x 20 LEDE control room  
**Tape Recorders:** Stephens 821B 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 813, 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, Kepex, Scamp 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, Singerland drums, G&L bass, Guild and Martin guitars  
**Rates:** Available upon request



SIERRA RECORDING  
 Fort Worth, TX

♦♦♦ 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

♦♦♦ SOUND MASTERS

9717 Jensen Dr., Houston, TX 77093  
 (713) 695-3648  
 Owner: Jim Johnson  
 Studio Manager: A V Mittelstedt

♦♦♦ 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: Bud Cunningham  
**Engineers:** Les Williams, J R Kuznar, Tom Pearce  
**Dimensions of Studio:** 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 4430

**Echo, Reverb, and Delay Systems:** Lexicon 224 digital reverb, Echoplite II plate reverb, DeltaLab DL-2 Acousticcomputer/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, Eventide 2016  
**Microphones:** Neumann U-87, AKG C414EB, C-451, C-452, Sennheiser 421, 441, E-V PL-20, PL-77, PL-91, Crown PZM, Shure SM-57, SM-58; Neumann KM-84, U-47  
**Instruments Available:** Yamaha C-7B, 74" grand piano, Oberheim OB-8 8-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 B-3 organ & Leslie speaker, EMU Systems Emulator, Yamaha DX-7  
**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 copyrighting 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 McDonald are among last year's better known clients



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

••••UNITED AUDIO RECORDING  
8535 Fairhaven, San Antonio, TX 78229  
(512) 690-8888  
Owner: Robert Bruce  
Studio Manager: John Whipple  
Engineers: Manus Perron, BS EE, MS EE; Leif Calberg; Robert Bruce, ASCAP, SBE, John Whipple, SAE 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, (2) M79s w/Q-Lock available; 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, Auratones, 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, Eventide SP-2016 digital effects processor  
Other Outboard Equipment: UREI 1178 limiters, LA4 compressors, Universal Audio LA2 compressors, Allison Gain Brains & Kepeck, dbx 165, UREI graphics 1/2 octave, Orban parametric, Orban De-Esser, UREI notch filter set  
Microphones: Neumann U87, U86, U47, KM84, KM88, KM86; AKG C414, E-V RE20, RE16, RE15, Shure SM81, SM77/57; E-V CS15, Sennheiser 441, 421, Beyer, Crown P2M; E-V RE55  
Instruments Available: Baldwin grand piano, Rhodes 88, Baldwin tackler piano, Sequential Circuits Prophet 5 synthesizer, Ludwig tympani, Hammond B3 w/Leslie, orchestra bells and chimes, wind chimes, Bell tree and other percussion instruments, Ludwig drum kit. Other instruments available on request.  
Video Equipment & Services: Ampex VPR80 1" mastering system with computer editing Ikegami HL79 cameras Arriflex film cameras New 45 x 40 sound stage JVC 3/4" recording and manual editing system off-line 1" and 3/4" remote facilities. Our video facility is state of the art and interfaced with both our audio studios. We do music video production.  
Rates: \$85/hr Daily and weekly rates available. With video \$300/hr. Package quotations are welcome. Accommodations are available. All tape at wholesale prices.

••••VINTAGE RECORDERS  
4831 N. 11th St., Phoenix, AZ 85014  
(602) 241-0667  
Owner: Billy Moss  
Studio Manager: Billy Moss  
Engineers: Chief eng., David Brown, Asst. Eng., Paula F T Wolak; Chief tech., Andy Barrett  
Dimensions of Studios: Drum booth, 12 x 8, iso room, 9 x 9, Main studio, 26 x 20, Reception, 16 x 11  
Dimensions of Control Rooms: 16 x 21  
Tape Recorders: Studer A-80 mk II w/updates 24 track, Ampex 104 1/2" 2 track, 1/4" 2 track, 1/2" 4 track, Otari MX 5050 B II-2 2 track; TEAC 122 cassette  
Mixing Consoles: Trident 'B' range (the Davlen Trident) 28/16/24, Studer 189-080 20/8/16  
Monitor Amplifiers: UREI-6500, Crown Dc-300, Crown DC-150, Yamaha P-2200, Hatler Dh-500 (3)  
Monitor Speakers: UREI-813 (original), Westlake Audio BBSM-6, Auratone  
Echo, Reverb, and Delay Systems: EMT plate (tube type stereo), Eventide 1745M w/harm., Eventide H-910 Harmonizer, DeltaLab DL-2 Acousticcomputer, Lexicon Prime Time, UREI cooper time cube, Roland Chorus echo SRE-555  
Other Outboard Equipment: ITI ME-230 stereo parametric EQ, (2) Aengus graphic EQ (2) Klein Hummel UE-100 EQ (tube type), Crown EQ-2 EQ, Pultec EQH-2 (2), Aphex Aural Exciter model 602, Teletronics La2a limiters (orig.), dbx 160 limiters (2), Studer comp/limiters (4), Roger Mayer noise gates (8), Symetrix Hybrid telephone interface CEC automatic 2" x 14" tape degausser  
Microphones: Neumann U67 (2), M49b (4), U47 (2), U47iet, IM64 (6); AKG C12 (3), D12, C451e (2); Sony C37a & 4?, C57, ECM50, C22, RCA 44bx (2), 77Dx (2), 77A (2) 44jr (2), M1-3045, Sennheiser 441 (2), Shure 57 (58 (many)), Altec 633 (saltshaker)  
Instruments Available: Yamaha C7v & "3" grand piano, Fender Rhodes, Hammond B-3 w/Leslie 122rv, Prophet 5, Roland Jupiter-8 synth., '55 Fender Strat., '61 Fender Esquire, Gretsch Country Gentleman, early KAY country western guitar, '64 Rickenbacker 12 string, Fender Vibrochamps, Fender Champ amp (tweed), '71 Marshall 100 1/2 stack, '57 Precision bass (tele style), '59 Precision bass, '64 Precision bass, '64 fretless Precision bass, '68 Tele. bass, Fender Bullet bass, large Gretsch drum set with 10 old snare drums  
Extras: All production services and top quality musicians

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••••WESTWOOD RECORDING STUDIOS  
also REMOTE RECORDING  
964 West Grant Rd., Tucson, AZ 85705  
(602) 622-8012  
Owner: Roger King, Fred Porter  
Studio Manager: Roger King

••••WOODEN STUDIOS  
also REMOTE RECORDING  
7334 Rampart, Suite 102, Houston, TX 77081  
(713) 988-9872  
Owner: Gus Buzbee  
Studio Manager: Gus Buzbee

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# STEVE DOUGLAS REMEMBERS

By Carol Kaye

Recently, I talked to my ole buddy, Steve Douglas. Most of the sax solos you heard coming out of L.A. in the '60s were probably Steve's. He experienced the kind of demand that brought him tons of work and success; he was the number one rock sax player in the studio clique. His past credits include: most of the major Phil Spector dates (Righteous Bros., Ike & Tina, Ronettes, The Crystals etc), key Beach Boys dates, Jan & Dean, Duane Eddy, B.B. King, Bob Dylan, Elvis Presley, Bob & Earl, Little Stevie Wonder, and on and on. Two of his favorite recorded solos are "40 Miles of Bad Road" (Duane Eddy) and "Da-Doo-Ron-Ron," a Phil Spector hit. Steve produced his own share of hits in the '60s including "Queen Of The Road" by Jody Miller. He originally was influenced by such sax greats as Earl Bostic, Clifford Scott and Sam "The Man" Taylor. While he doesn't consider himself a jazz player, he certainly has the same sensitive creative approach to his soloing.

You're hearing him solo on the current Steve Perry LP and the movie soundtrack *Streets Of Fire*. He also is playing on and did arranging work for the new Albert King LP and the most recent J.J. Cale album. Douglas had a hit on the West Coast Jazz Charts with his *Hot Sax* (Fantasy Records) LP in 1983, which he considers rock and roll and blues mixed with jazz. His new Fantasy LP is *King Cobra* and it should do very well for him, too. Players on this LP are Robin Sylvester (bass and guitar), Brad Bilhorn (Drums), Tim Gorman (keyboard) and solo cuts by Duane Eddy and Ry Cooder.

Here's some of what Steve says about recording.

"Get your music together by learning basic skills and playing along with records. Then to create records, you can forget the rules and play spontaneously. Ear training and



imagination are more important than 'rules.' It's very important however to learn horn harmonies and what has gone on before. A good example was what Brian Wilson had going as he produced his dates. One time guitarist Tommy Tedesco argued with Brian, saying that a certain chord wouldn't work, but Brian stood his ground and said 'please just play it anyway.'" Steve said he was amazed when Brian overdubbed the string parts — the "funny" chord worked beautifully! It's very important to have faith in your ears and to dare to do something different.

Steve also insisted that hiring the best players with great imagination and taste is a great asset, too. Hal Blaine and Glen Campbell were doing a lot of dates and were in terrific demand not only for their fine playing abilities but for their creativity. It's wise to take a chance on unknown

players if they have their "studio chops" together. We were all unknown at one time.

Steve also stressed that pre-production is very important because it saves studio time and money. Pre-arranging, rehearsing and having a demo tape or record or something close to the sound and/or style of what you're going to lay down helps. Being prepared helps to ward off "studio rot."

Phil Spector was another subject of conversation.

Steve and I spent many nights with Phil recording — "It was a good month last night." "Phil was the first producer to spend three hours or more on one song. He worked with three and then four tracks, with not much overdubbing. Maybe just the singer. The band was live and Jack Nitzche was the arranger for most of the dates."

We talked about the playback

at high volumes (still don't know why), the many hours, the prepared arrangements and the creative lines that players spontaneously came up with. (Steve still uses a lot of spontaneity on his direct-to-digital Fantasy LPs.) We talked about all the echo that Phil got from specifically designed chambers that Dave Gold of Gold Star Recorders built. It must have had something to do with the bathroom though, as you could tell on the playbacks as you used the can.

Steve feels that even the few dates that Phil did at United and A&M produced his "sound," but I differ with him there. Some of the magic started disappearing when Phil started to switch studios. For one, we didn't have our pal, Stan the engineer, kidding and smiling. There are a few other great engineers but people get close when they work together a lot. Phil's last big hit in the '60s was Righteous Bros. song done at United "A". It made No. 9 on the charts but what a let-down for a producer who knew only No. 1 records for so many years.

Steve Douglas and I really didn't talk about the times when Phil would be having Hal Blaine play marathon for a drum mix (usually for one hour) at Gold Star. The band would play chess, read *Playboy* or draw naked ladies on the wall for a dart game. For you lady musicians, here's what I was thinking of:

I liked all the guys as brothers. Once I established that I was dedicated professional and "hands off," everyone treated me as "one of the guys." I knew I was a top-flight musician and overlooked a lot of stuff as I just let the men be men.

Other memories of Phil: One time I got into an argument with a guitarist who thought we should use the Union Pink Slips (fink sheets) to report minor infractions. Phil had the rest of the band take a break while he recorded the hour-long fight. I bet he still gets a big laugh over it — he probably misses us like we miss him.

I remember when I had a big party at my house and miked the new bidet I had installed. Brian Wilson and his wife came, several musicians, Gene and Lois Czerwinski (my friend, the speaker man) and several producers. We were all having fun, eating, drinking, dancing, but turning up the amplifier when somebody used the toilet and cutting up over the sounds that Stan was mixing from the bathroom — just good clean fun. I remember Phil walking in and seeing all that carrying on. He headed for the food and spent his time talking to my kids who enjoyed him immensely, as we all did.

## If You Want To Know What Sounds Good . . . Ask The Pros. We Did!

**Rick McMillen**, the Sound Engineer for Jeff Lorber's Fusion says, "The Hi-Energy System provides me with the best drum sound that I have ever encountered. Even with blaring monitors and a 115 DB noise level onstage, the Hi-Energy Mics cut through with an amazingly true drum sound. The kick drum is punchy with great transient response and a solid low end without boominess."

**Gary Mullen**, concert sound manager for McCune Audio/Visual says, "We tested the Hi-Energy Miking System for over a year, live, on tour, in all situations against every mic on the market. All of our sound engineers raved about the great sound, compactness, convenience and durability of the system. For drum miking, no other mics come close."

**Chet McCracken**, veteran drummer of hundreds of recording sessions with groups like the Doobie Brothers, America and Rare Earth says, "There are no phasing problems with the Hi-Energy System because all of the mics are the same. This eliminates a number of problems for the drummer and the sound engineers. And the kick sound is so solid I am truly impressed."

**Rik Shannon**, Sound Engineer for the Hollywood Palace, Tina Turner, Berlin and others says, "I can get a great drum sound in minutes instead of hours. If the drummer tunes his kit properly, the system does the rest, and every drummer has loved the fact that there are no mic stands to get in the way."



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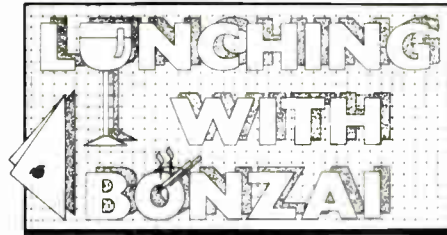
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# BOOKER T. JONES

## The Original Mr. T



PHOTO: MR. BONZAI



by Mr. Bonzai

When I was contacted for a lunching with Booker T. Jones, I had to admit I wasn't very up to date on his career. I began my homework with last year's *Without a Song* (Willie Nelson, produced by Booker) and Carlos Santana's recent *Havana Moon*. Booker's smooth hand is evident in both albums, either on keyboards or at the producer's desk. The Santana album is a multi-path excursion through blues, country, and latin material.

Carlos Santana writes on the record sleeve: "On a crazy afternoon in the studio when things were getting out of hand, this song ("One With You") was born out of sheer necessity to just play without resorting to verbal communication. (In other words, I suggested we put masking tape on people's mouths, so we could all listen to Booker set the mood and get to the heart of the song.)" By great coincidence, the morning after hearing the album I was on a plane to San Francisco, and Carlos himself was also on board.

I took the opportunity to introduce myself and asked Carlos about the sessions with Booker. He told me that he found it "very inspirational" working with him and then completely cracked up while telling me about the album's producer, Jerry Wexler. He said that everyone knew when things were going well, because Wexler would get up and dance. "He dances around like John Huston in *The Treasure of Sierra Madre* — you know the scene where the old prospector discovers gold?"

This seemed to be a good place to begin lunching.

**Mr. Bonzai:** Carlos mentioned that Jerry Wexler dances a bit . . .

**Booker T.:** It's the funniest thing in the world to see Jerry Wexler get up during a session and start dancing — he does this wild New Orleans style dance.

**Bonzai:** How did you run into Carlos?

**Booker:** Well, he's always been my favorite guitarist. I toured with him in the early '70s when he was playing with Neal Schon, Mike Shrieve, and Greg Rolie. A lot of top musicians were first with Carlos. It was their training ground.

**Bonzai:** What were the *Havana Moon* sessions like?

**Booker:** Sessions with Carlos can become very spiritual, if you're sensitive to it. He just walks in and sets up an attitude. If you pick up on it, it dictates what kind of music you should be playing. I really can't explain how it works. If you look at a scene or a picture, you get a feeling and it means music to you. It was like that, an interpretation of a certain way that you feel, or the way someone else is feeling. The communication is that everyone — the percussion players, the people in the control room — everybody is part of the same thing.

**Bonzai:** Was there a point as a child when you knew for sure that you were going to be a musician?

**Booker:** My parents sang and my mother played the piano, and I was always asking for musical instruments. I got a clarinet when I was ten and then I got a real ukulele — a baritone ukulele — I thought that was the greatest instrument. You could get low tones that would actually rattle your belly. What resonance. It was a hobby, but I knew that I either wanted to be a musician or a physician. I just did much better in music than I did in chemistry.

**Bonzai:** How did Booker T. & the MGs come about — and what does MG stand for?

**Booker:** Memphis Group. I had another band in high school. We recorded "Green Onions" just before I entered Indiana University. I knew it was getting popular, but I didn't know it was going to be a big hit. I didn't know how I was going to pay for my education, and "Green Onions" paid for my first year of school. We had just recorded it; it was all part of making the 10 and 15 dollar gigs.

**Bonzai:** Who discovered you as far as making that record?

**Booker:** David Porter, the guy that used to write songs with Isaac Hayes, took me to Stax Records with my baritone sax. He had seen me at some gigs — I was in the 11th grade — they let me play on a song and paid me for it.

**Bonzai:** Who produced that first record?

**Booker:** The members of the band, and Jim Stewart. At that time they weren't putting producer's credits on the records. We were all at the studio for another session and the artist didn't turn up. We decided to use the time and recorded some songs that Steve Cropper and I had been working on. We did "Behave Yourself," a slow blues ballad. I played the organ like I did at the clubs. Jim Stewart was trying to start the record company and liked what we did. "Green Onions" was the B side. We took it down to the radio station in Memphis and the disk jockey, Dick (Cane) Cole, played the flip side and people started calling in. We were just having a good time. We thought at best we could make ten or fifteen bucks out of the session — that was good enough.

**Bonzai:** Was that an unusual record to make it as a hit?

**Booker:** It was a change; it was one of a new breed of instrumentals. The very first of the Stax-type records was "Last Night" by The Mar'Kees.

**Bonzai:** Is there a consistent musical identity in your life's work?

**Booker:** There has been something that I have strived for. I don't know if it was there in "Green Onions," which is a basic 12-bar blues. But what I have strived for over the years was to find things that were musically out of the ordinary — slightly more interesting than other things you might be hearing at the time. It might be a change of melody too soon, or sooner than expected — I've tried to inject things like that into my music. In many records that I'm hearing now, people are doing things like 7/4 phrases. When we started, the norm was 12 bars. Music came in 8 bar phrases, or 16, or 32. You didn't find fives, nines... people are innovating now. The music I grew up listening to was more predictable.

**Bonzai:** Who were your early musical heroes?

**Booker:** The first records that I bought were Roy Hamilton, Chet Atkins, Johnny Ace, B.B. King — and on the streets in Memphis I could go down and hear the blind blues singers who were sitting on the corner at Fourth and Beale Street. I heard a lot of good, but structured music. When I started recording, we began to change things

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PHOTO MR BONZAI

around a bit. Dave Brubeck and the Modern Jazz Quartet were doing innovative things, but in popular music we were one of the few trying to do things differently.

**Bonzai:** How did you meet Willie Nelson?

**Booker:** I met Willie in '76. He was a friend of Kris Kristoferson, who at the time was my brother-in-law. I was helping Kris with *A Star is Born*. Willie dropped in, and about a year later he moved into the apartment underneath mine in Malibu. We just started fooling around with songs at night, playing guitar and hanging out together. We got pretty serious about the music and went into the studio to do the *Stardust* album. Last year we did *Without a Song*.

**Bonzai:** How did that album do?

**Booker:** Not bad — it went to number three on the country charts and was certified gold.

**Bonzai:** What's it like working with Willie? I've heard that he's really quick in the studio.

**Booker:** It's all according to what the situation is. If he feels that something isn't right, he works at it and works at it until it's right. Sometimes he gets it right the first or second time and he really *is* fast. Some things require work. He worked on the vocal with Julio Iglesias all day long — we ended up leaving the studio about three in the morning.

**Bonzai:** If you could be any woman, who would it be?

**Booker:** What?... hmmm... my goodness. Just off the top of my head, I would probably want to be Wilma Rudolph. It must have felt so good to win at the Olympics. I think it was the 440 — an event that took a lot of stuff.

**Bonzai:** Do you have any idiosyncrasies that the public doesn't know about?

**Booker:** You mean how crazy am I? I like popcorn a lot — probably like it too much.

**Bonzai:** Any particular brand?

**Booker:** Yeah, I like Orville Redenbacher's.

**Bonzai:** Is there anybody in the world you would like to meet?

**Booker:** I regret not meeting Elvis Presley. I felt like I blew it when he died. We lived in the same city. I could have gone over at any time, but I always took it for granted that he would be there and I would get a chance to meet him. I felt close to him — he was from Memphis, and I felt what he was doing was close to what we were doing at Stax. I always felt that he wanted to come over and say hello, but that he was too shy. We were right around the corner from him, but never got together.

**Bonzai:** Is there anybody else you'd like to meet?

**Booker:** I'd like to meet Ray Charles. I've admired him so much for so long. The way he played the piano and the organ meant so much to me. It was the deciding factor in determining what I was going to do with my life.

**Bonzai:** Do you have any business advice for musicians?

**Booker:** I would say, if you get your hands on any money, to invest in your instruments, because it's an investment in yourself. I've always spent my money that way — first came my piano, next came my organ, then came my guitars, and then synthesizers. But it's paid off. I would say to the musician to invest in yourself.

**Bonzai:** Who is your best friend?

**Booker:** Right now, it's my manager, Bill Leopold.

**Bonzai:** Was he your friend before he became your manager?

**Booker:** No, we've become friends since then, because he hasn't endeavored to manage me from a selfish point of view. He's just been there, and he's been consistent, and he's been a springboard. He's somebody that I can really trust. He knows exactly what's going on — he's a reality check.

**Bonzai:** Can you remember any particularly ridiculous recording sessions in your career?

**Booker:** I remember my first real recording session, which to me was ridiculous because I thought I was totally out of place. Jerry Wexler and Ahmet Ertegan had called my sister's house in the early '60s. I was in high school and had come out to California for a visit. I rode out on the bus with my mother. They told me to come down to Sunset Sound for a session with Bobby Darin

[laughs] and The Blossoms — there was a big horn section, two drummers, a piano player and I was to be the organ player. I just thought, "Good God, I'm way out of my league." I must have been 15 — I was scared to death.

**Bonzai:** How did they hear about you?

**Booker:** From the people in Memphis. Anyway, there I was, music in front of me. I had *charts*. I had not really seen charts before. I knew music theory and I knew notes, but I didn't know they wrote it down like that. Gene Page was the arranger and it was just one, two, three — go!

**Bonzai:** How'd you do?

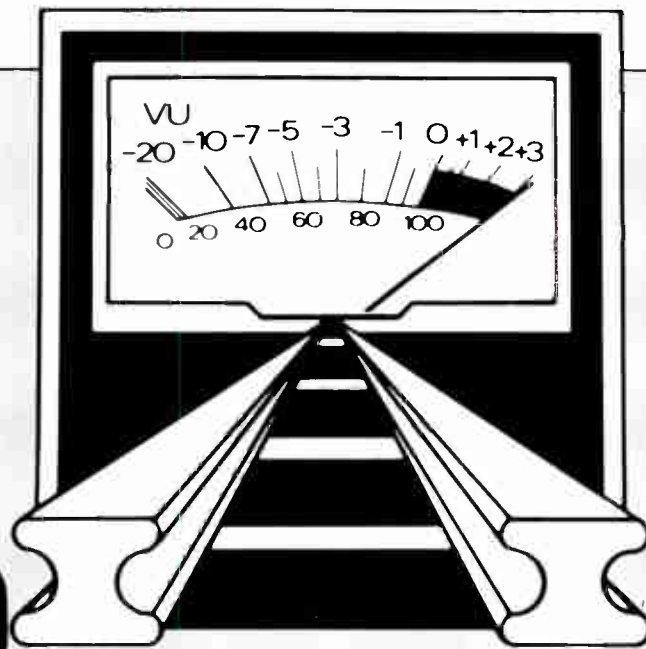
**Booker:** I guess I did alright. They called me back. It was like somebody putting you in a new car and you don't know how to drive. And not only that, but when we walked outside after the session, there was a man sitting on the corner with a submachine gun. The Watts riots broke out that day. I couldn't get back to my sister's house. One of The Blossoms took me home that night and saved me. I'll never forget that day — I was scared in more ways than one.

**Bonzai:** Who is the funniest musician you've ever met?

**Booker:** Probably Duck Dunn, the bass player with the MGs. He was Irish and he was always looking for a joke. I've worked with some funny people. Another funny guy is Mac Rebennack. I didn't even know that he was Dr. John until I met him. I thought Mac Rebennack was a songwriter from New Orleans and that Dr. John was the Night Tripper. We worked together on a project with Levon Helm. I was in a limosine with Dr. John, and Levon's manager had to make a phone call and left us double parked for about three hours in New York. I heard his entire life story and it was great. He's smart as hell and he plays more different kinds of piano than anybody I know. We rode from New York to Woodstock and he kept me rollin' the whole time. The funniest thing about that guy is: you haven't seen anything until you see Dr. John dance. When you've seen him dance, you've really seen something. He's got this slow shuffle that he does — it's something like the Jerry Wexler dance.

\* \* \*

Booker T. has stepped out of the '60s limelight, but the writer responsible for such classics as "Soul Man" and "Ain't No Sunshine" is still hard at work, always striving for something a little bit different. He is currently working on the soundtrack album and film music for *The Songwriter*, starring Kris and Willie, scheduled for fall release. ■



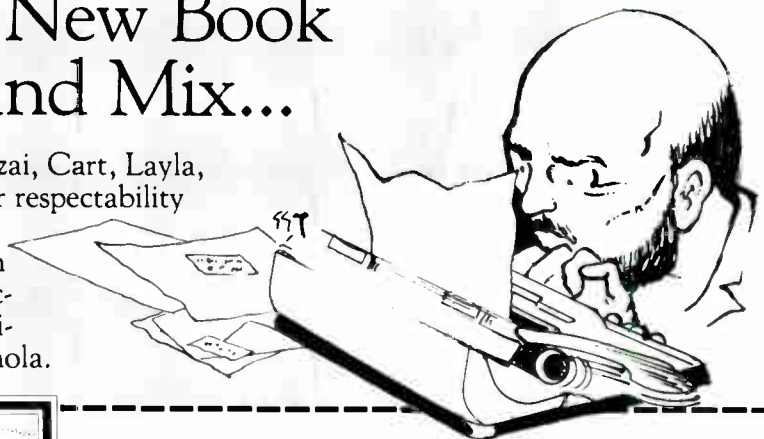
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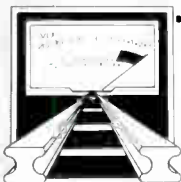


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# PREVIEW



## "Smart" Crossovers™ and Array Series Enclosures

At last month's NAMM Show in Chicago, Renkus-Heinz unveiled their "Smart" Crossovers and matching Array series enclosures, which utilize microprocessor electronics to control compact speaker systems, yielding excellent sound at an impressive 134 dB SPL output.

In addition to an 18dB/octave variable frequency crossover, the "Smart" SWG II electronic processor provides complete amplitude and phase correction at both ends of the frequency band, fail-safe woofer and driver protection, variable intelligibility enhancement and time coherent acoustic output. Wedge shaped enclosures allow coupled array design for uniform coverage of any size venue.

Three different matching speaker systems are offered. All are two way designs using R-H 15-inch low frequency drivers, SSD 3301 2-inch compression drivers, constant directivity horns, and are available with a flying hardware option. Model FRA 2552-CB uses two low frequency drivers and the 60° x 40° CBH 500 horn for mid and long throw applications. Model FRA 1582-CB has a 90° x 50° dispersion pattern for shorter throw and wider coverage. The SMS 1582-CB stage monitor combines smooth response and even artist coverage.

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## Agfa PEM 469 Mastering Tape

The Magnetic Tape Division of Agfa-Gevaert, Inc. has introduced PEM 469, a standard bias mastering tape compatible with others on the market. PEM 469 is available in 1/4-inch and 1/2-inch reels and hubs, 1-inch hubs and 2-inch reels. It is also priced comparatively to PEM 468. The tape was designed for the studio, jingle, and broadcast markets where the need for a bias-compatible tape is a key concern. The company has no plans to convert users of PEM 468 to the new tape.

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## Active M-S Matrix Decoder

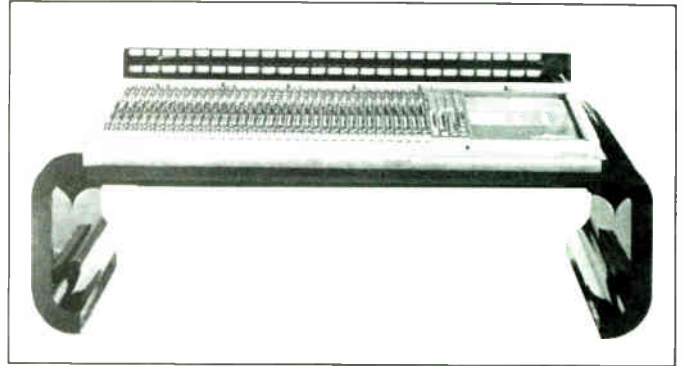
The MS-38 Active Matrix Decoder from Audio Engineering Associates is a transformerless, single-control device which provides simple, high quality decoding (matrixing) of Mid and Side (sum and difference) signals into conventional left and right stereo. From monaural to super-wide stereo, the integrity of the sonic image remains constant, without shifts in channel balance or level.

Differential inputs accept line level signals from the M and S microphones placed between the microphone pre-amplifier and the input channel controls (i.e. in the pre-fader/EQ patch loop) for maximum flexibility. If the original tape was made by recording the M and S signals separately, the output of the playback machine may be fed directly into the MS-38 for decoding into conventional stereo.

The compact (2-3/8 x 5-1/4 x 8-1/2 inch) decoder operates on 120/240 VAC and a Switchcraft D4M connector

is provided for connection to an external DC power source for remote or field applications.

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## Quad Eight/Westrex Westar Console

The Westar, from Quad Eight/Westrex, is an affordable "world class" console that is field expandable and features up to 60 inputs, eight sends, 24-48 track interfacing, dual-path I/O modules, grouping controls and reversible main/monitor line trim. The Westar also features modular I/O modules which have interchangeable faders, equalizers, and mike preamps. With the initial offering of three different equalizers, seven different plug-in amplifiers, and three fader systems, the user can design a console to fit any specific requirement.

According to the manufacturer, the Westar will accept any current or future VCA unit from any of the major suppliers, as well as the Quad Eight/Westrex digital faders, allowing the choice of any commercial automation system, or the new microcomputer/hard disk automation system from Q.E.W. This totally new automation system, is available as hardware/software, or as software-only for use with most popular personal computers.

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## Otari MX-70 Multitracks

Recently unveiled at the NAB Convention, the Otari MX-70s are a new line of one inch, 8- and 16-track recorders which will be available sometime late in 1984. These machines feature switchable 15/30 ips speeds, return-to-cue, +4 or -10 dB operating level, external VSO capability, and a standard connector for interfacing with any SMPTE-based video editing system, machine controller or synchronizer. Options include RS-232C or RS 422 interfaces, and a 1/2-inch eight channel conversion kit.

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# More Bass, More Output, More Value. The New KLIPSCH KSM-2.

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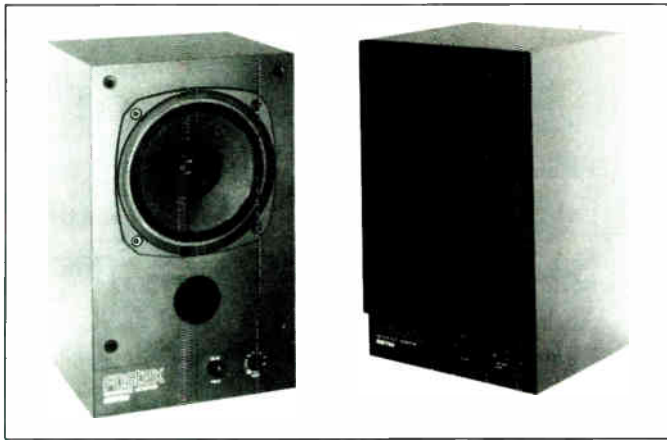
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## Fostex Pro Sound Reference Monitors

The Pro Sound Division of Fostex Corporation of America has introduced a new line of compact, point source reference monitors, RM 765/780/880, which use the Fostex "Regulated Phase" technology. The essential idea of the RP transducer is a flat, thin film diaphragm onto which the voice coil is printed; this assembly is then suspended between magnetic circuits arranged on both sides of the diaphragm, with the same polarities facing each other and the opposite polarities adjacent to one another. Under this arrangement, the entire surface of the diaphragm is driven uniformly, thereby avoiding phase anomalies.

The RM Series consists of three coaxial models, all using the patented RP tweeter. Model 765 has a 6-1/2 inch double spider woofer; model 780 has an 8-inch double spider woofer, and both models have a unique "field adjustment" switch for rack/wall/soffit mounting (2 pi) or free field/console mounting (4 pi). The third model in the series, the RM 880, is currently under development. It is a 12-inch 3-way system with the 8-inch coaxial assembly and a 12-inch edgeless woofer with true linear motion of one full inch, peak to peak. Models RM 765 and 780 are available now at Fostex Pro Audio Dealers and are priced at \$438 and \$598 per pair, respectively. Production models of the 880 are expected this fall.

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## Solid Support Industries' Stands

Solid Support Industries, of Los Angeles, California, manufactures a range of keyboard, mixer and rack mount stands for stage and studio use. Keyboard stands come in a variety of configurations: single height, adjustable height, double stack, and a multi-stack kit is offered—all have continuously variable width adjustments to hold 37 to 88 note instruments. Three rack mount stands are available: 22-inch high half-size, full-size, and full-size with casters. All SSI stands use 1-1/4 inch heavy wall, square steel tubing and have a black matte finish (chrome, brass or colored stands can also be ordered).

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## 1984 SIE Buyer's Guide

SIE Publishing, of Newbury Park, California, have just released their new 1984 Buyer's Guide, which lists thousands of audio products with photos, features, specifications and prices. The 1984 edition also includes an editorial section featuring a guide to selecting the right equipment for the job, as well as cross-referenced indices with product names and manufacturers' addresses. Price is \$14.95, plus \$2.00 for shipping and handling.

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## M.P.C. Sync Track

The On-Site Music Group, Lake Success, New York, is distributing the Sync Track synthesizer/drum machine synchronizing unit made by M.P.C. of Cambridge, England. The Sync Track, priced at \$90, will interface instruments and sequencers, and can also furnish a click track trigger for keyboards with arpeggio clock inputs.

Using the Sync Track, a stream of pulses can be recorded on a multitrack, and in the playback mode the unit can trigger both the starting point and tempo for a wide variety of rhythm machines, keyboards and synthesizers, either individually or together. Such tracks can then be altered and/or changed entirely during the recording process, and two Sync Track units can be driven simultaneously for even more flexibility.

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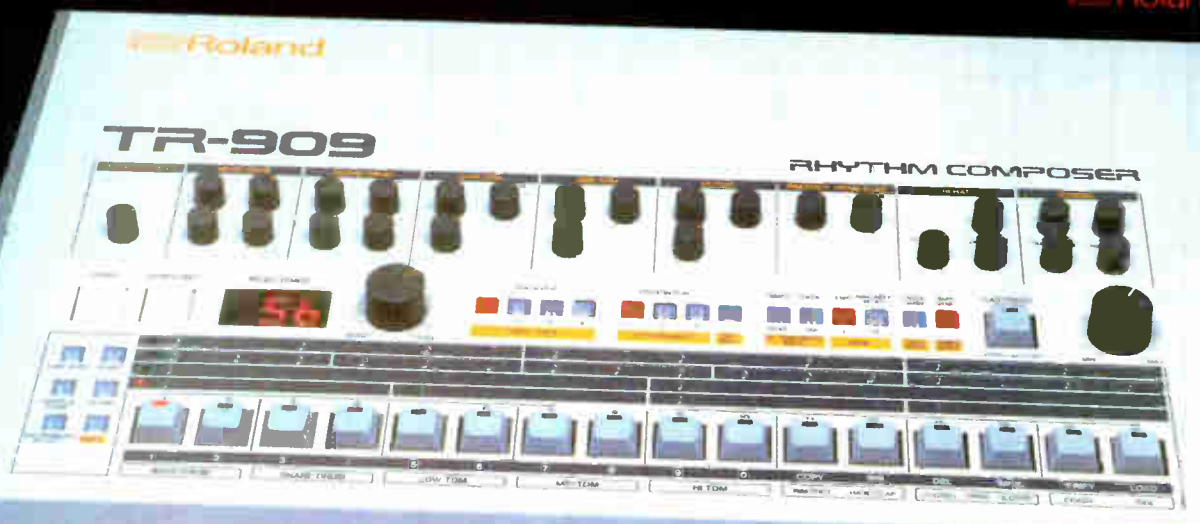
## Sony "Dash" Two Track Recorder

The Sony Professional Audio Division has introduced the PCM-3102, a two-channel digital audio recorder based on the DASH stationary head format. The recorder offers a modular design that enables transportable, console and rack-mount configurations, and utilizes 1/4-inch tape on reels up to 12-1/2 inches. The machine allows two consecutive hours of recording/playback and its cross interleave code can correct errors caused by drop-out or contamination on the tape. A cross fade function smoothes the transition at electronic editing points and by incorporating an analog track, the PCM-3102 accommodates razor-blade editing. Other features include a spooling function which protects tapes while in the fast forward or rewind modes, a "rec-inhibit" that guards against accidental erasure, and a time code track for synchronization and auto-location applications.

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# DIFFERENT DRUMMER

We don't call the TR-909 a drum machine for some very good reasons. True, it's a machine that makes drum sounds, but that's the end of any similarities between run-of-the-mill drum machines and the **TR-909 Rhythm Composer**. In fact, playing with the TR-909 is more like playing with a real drummer than anything else. Here's why. **The Best Sounds**. We start with digital recordings of real drums, then through a 3-D waveform analysis, re-create the sounds through a hybrid digital/analog process. Not only does this provide the best drum sounds, but also the most flexible. Change the snap of the snare, the decay of the bass, you call it. The sounds you get are the sounds you really want. Even better—in addition to the 11 internal drum sounds, add up to 16 more drum sounds (digital and analog) through external sound modules. That means 27 drum sounds with no major surgery. **The Best Programming**. Program a roll on most drum machines and you'll see why they're called machines. That's why the TR-909 gives you the choice of Step Programming (highly visual and accurate) PLUS the additional spontaneity of Real-time Programming. The TR-909 also gives the most expressive and easily programmed dynamics. **The Most Flexibility**. Think of any way to interface, and you'll find it on the TR-909. MIDI, Sync-24, Tape Memory Save/Load, RAM-Pak Program storage, they're all here. So what does this mean? It means that years from now, when other drum machines are sitting in the closet gathering dust, your TR-909 will still be on the job. Hook up the TR-909 through MIDI to a personal computer (like the Apple II or IBM PC). Only Roland has the Hardware and the Software to make it possible. **The Most Expression**. Compare the results you get from the TR-909 Rhythm Composer with any drum machine. Because why would you want a machine, when you can have a Rhythm Composer? RolandCorp US, 7200 Dominion Circle, LA, CA 90040.



## Roland Makes It Happen!

# FIELD TEST

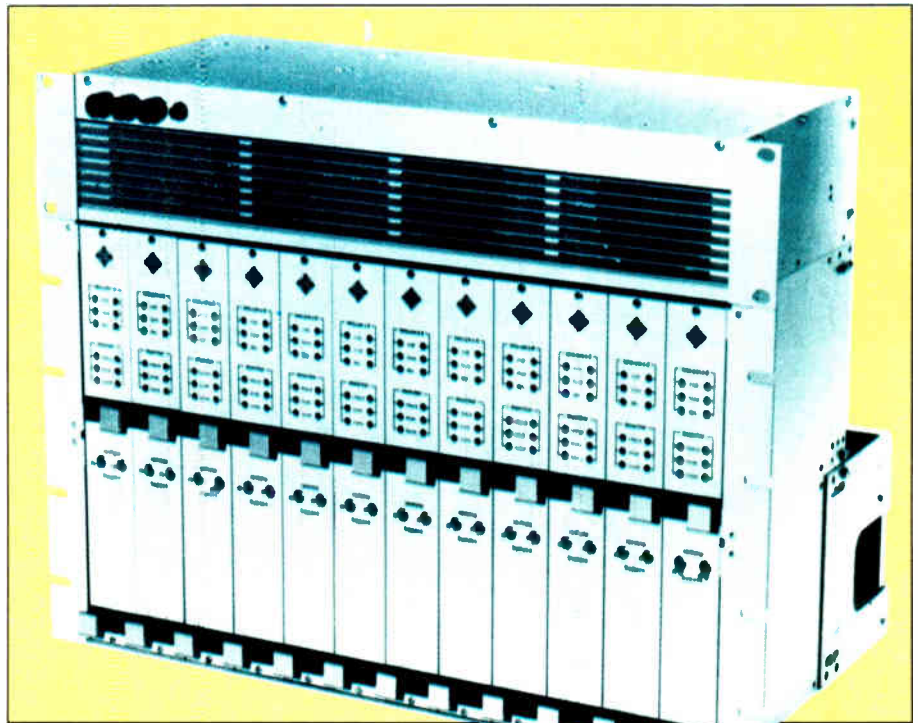
By Karen Ensor

ANT Telecommunications offers a noise reduction system which is a viable alternative to Dolby A and/or dbx noise reduction systems, the AEG-Telefunken Telcom C4DM system, a four-frequency band, companding device. Comparisons between these three systems have shown Telcom to be more effective in some specifications. Manufacturer's specifications show Telcom as being superior to Dolby A in noise voltage reduction and test results demonstrate that Telcom does not have any noise breathing effects inherent in some noise reduction systems. Telcom is the standard noise reduction system of West German radio stations and is also standard equipment in BCN50 video tape recorders in Austria and Germany. The Telcom system is soon expected to be the European VTR standard. Other European countries utilize this system for audio, video, and broadcasting purposes as well.

## BASIC DESCRIPTIONS

The Telcom C4DM standard noise reduction board weighs 410 grams and is 155mm by 15mm by 191mm. The circuitry is cased in a protective outer metal layer which in turn is protected by a main frame. The frame does not necessarily need be a Telcom frame, as the Telcom compander boards are fully plug-in compatible to the Dolby CAT22 system's main frame.

Telefunken's specifications claim the maximum possible noise voltage reduction of the Telcom unit after encoding and decoding to be 28dB. The Telcom system also increases headroom through compression. Thus the Telcom system has a maximum possible dynamic range gain of approximately 33dB and 104dB of total dynamic range. This surpasses the dynamic range gain characteristic of Dolby A but not quite that of the dbx system. The compression/expansion ratio of the Telcom system is 1:1.5 and is dB linear over a wide dynamic range due to the arrangement of the voltage controlled amplifiers and peak-sensing rectifiers in each control band. Because of this linearity, no level alignment is required. The Dolby tone generator, used for level adjustment during use of the CAT22, is replaced by Telcom's own identification tone (550Hz to 650Hz, plus/minus 0.5dB nominal output level) while in the Dolby CAT22 main frame. The Dolby tone push-button activates the Telcom identification tone's oscillator.



*The Telcom ESF integrated 24 track system uses the same technology as their C4DM cards.*

# TELCOM C4DM noise reduction system

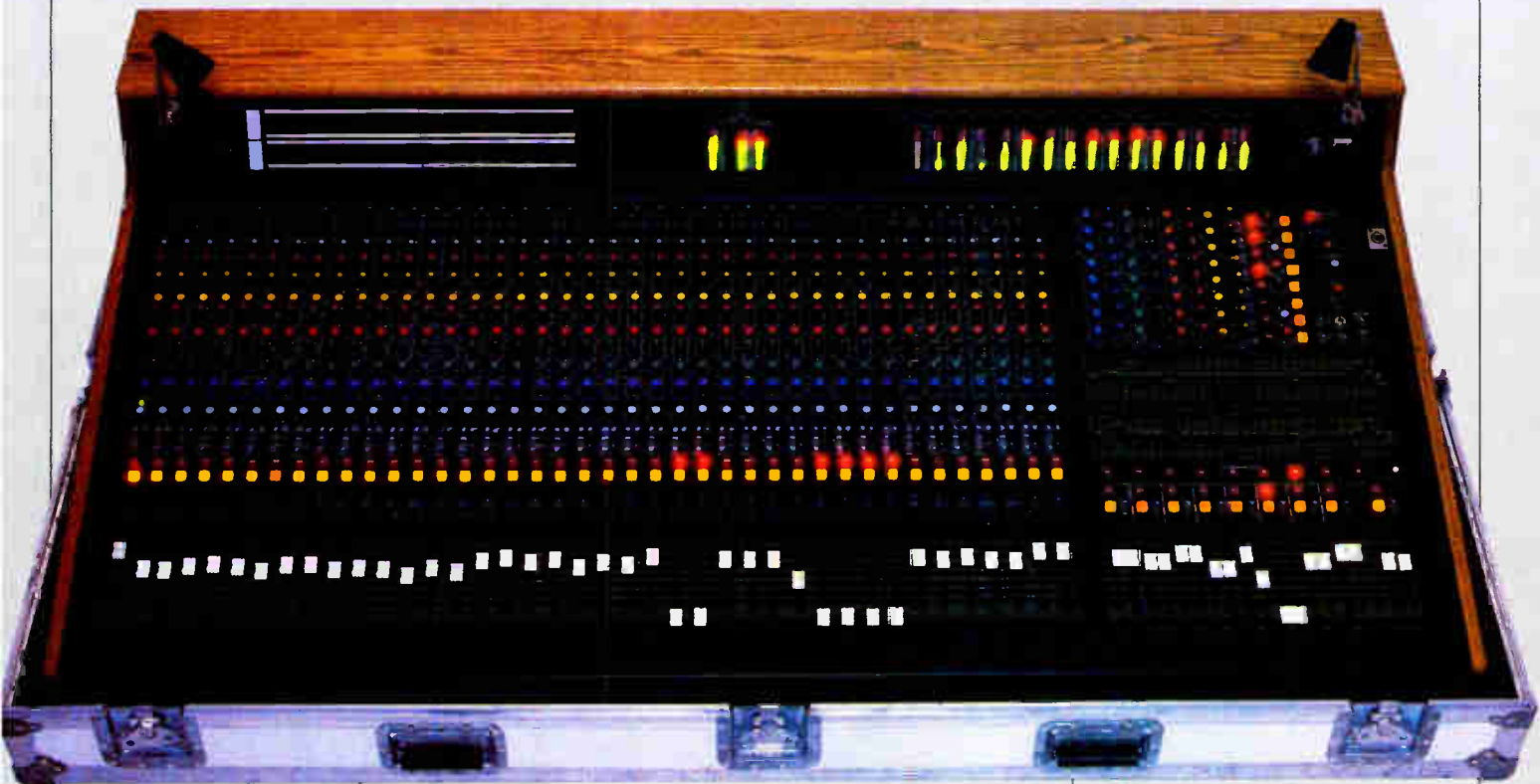
The frequency response of the Telcom unit is 30Hz to 20kHz (plus/minus 0.5dB) with distortion at nominal level (after encoding and decoding) 0.2% or less (at 30Hz; 0.5% or less). There are four frequency control systems with the following cutoff/crossover frequencies: 20Hz to 215Hz, 215Hz to 145Hz, 145Hz to 4800Hz, and 4800Hz to 30kHz. Each of these bands has a completely independent control circuit. Each one is filtered separately with a 6dB/octave filter, creating an overlap between the bands. After being filtered, they are fed to separate voltage controlled amplifiers and into adders which produce the noise reduction signal to be added during coding and subtracted during decoding. Dolby systems also utilize this split-band arrangement but

different cutoff frequencies are used and the signal is not separately filtered. The Dolby noise reduction signal is added to the input signal while coding and subtracted immediately after being split.

The masking effect created by band-splitting eliminates noise breathing which may occur during noise reduction. The combination of filters in the band-splitting circuitry defines these control bands precisely, attenuating signals outside the control bands.

Fast attack times are essential during noise reduction. The system must be capable of detecting the portion of the signal requiring compansion quick enough for the processor to respond. The Telcom C4DM offers rapid transient times in each frequency band. The transient times for the four control systems at

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+130dB level transition are 350us, 53us, and 8us with respect to the four frequency bands previously mentioned. At -30dB level transition, the transient times are 2200ms, 320ms, 50ms, and 16ms respectively.

In certain respects, the Telcom C4DM noise reduction unit appears to be a few steps ahead of both Dolby and dbx. It characterizes the best of both worlds with the utilization of band-splitting techniques (Dolby) coupled with a linear compander slope (dbx). As technology heads towards the digital domain, the Telcom system may offer a viable analog alternative.

## DIGITAL VS. TELCOM

The Telcom C4DM may be priced higher than either the Dolby A or dbx system, but it could prove to be a more economical solution than paying for digital apparatus. According to the report delivered on June 23rd and 24th, 1982 at the APRS in London, by AEG-Telefunken concerning the Telcom C4D systems, "many tests that can be repeated by you have proven that with Telcom C4, recording quality can be as good as with digital technology, and even better in some aspects." During the "Tonmeistertagung" in Munich, six different recordings were presented

to 158 Tonmeisters (recording engineers). Not one of them could absolutely distinguish between recordings made utilizing the Telcom C4 or digital technology. Also, some studios transfer their digital recordings to tape machines using the Telcom C4 for editing before being copied back into digital form.

## TESTING AND EVALUATION

Actual comparisons proved the Telcom C4DM to be quieter than either the Dolby CAT22 or dbx 216 units. In our tests, seven-year-old recordings (originally made without noise reduction) were rerecorded using each of the three noise reduction systems available — Telcom, Dolby, and dbx. The tapes to be duplicated were of a live studio orchestra and contained several instruments whose dynamic range is inherently wide, such as string instruments, woodwinds, acoustic piano, and various percussion instruments. The dbx reproduction seemed to yield the greatest noise reduction. This result coincides with Hugh Ford's findings published in Studio Sound in his article entitled "dbx K9-22, Dolby CAT22, and Telcom C4D noise reduction systems." He recorded tape without any input signal and found that

during playback the A-weighted RMS noise reduction value was 29.5dB for dbx, 10.8dB for Dolby, and 24.7dB for Telcom. (These statistics were achieved with the Dolby mainframe being adjusted to 185nWb/m on an Ampex ATR-100 tape machine biased for the 3M Scotch 206 tape being used). Even though the dbx unit performed well, noise breathing effects were clearly audible. No breathing was apparent on either the Dolby or Telcom reproduction. Also of interest was the fact that the high frequencies sounded much brighter on the Dolby version of the rerecorded tape whereas the Telcom units improved the clarity of the lower frequencies. The dbx system also offered a brighter high end but not quite as much as Dolby.

While the Telcom units may be inferior to dbx in terms of noise reduction, and to Dolby in high frequency clarity, the sound quality of Telcom was by far the best of these three systems. In fact, the signal processing of the Telcom unit appeared to enhance the sound quality of previously recorded tapes; noise resulting from deterioration of the tape after a long period of time in storage appeared to be reduced after encoding and decoding using the Telcom boards.

Although the Telcom C4DM companding noise reduction boards may be priced above Dolby or dbx, the quality may be well worth the money. Gain in dynamic range of more than 30dB is just one of Telcom's advantages. As stated before, these boards are plug-in compatible to the Dolby CAT22 noise reduction system. This enables any recording or broadcasting facility to easily switch between Dolby and Telcom. Optimal short attack times as well as increased headroom reduce the chance for overmodulation of tape. The gain in dynamic range is very high. Therefore, Telcom modulates the tape at lower levels to reduce tape saturation problems. Telcom recommends a maximum tape flux of 320 nWb/m at peak. Four frequency bands split the spectrum and process accordingly to provide a more accurate representation of that spectrum. This processing yields a more natural sound, resulting from the inaudibility of the compansion operations.

Currently the C4DM is compatible with any of the following systems: Fabec TTM 202B, Fabec TTM 124, Dolby A 360, A 361, Dolby CAT22 (Dolby multitrack), Bosch VTR BCN 50/51, Bosch VTR BCN 20, Future F.P. IVS, and Stellavox ATC. Along with these multitrack and VTR applications, the Telcom C4DM is also used in various transmissions from mobile unit to studio, satellite transmissions from ground stations to distributor link stations plus cable transmission applications. All are enhanced by the use of Telcom technology during transmission. ■

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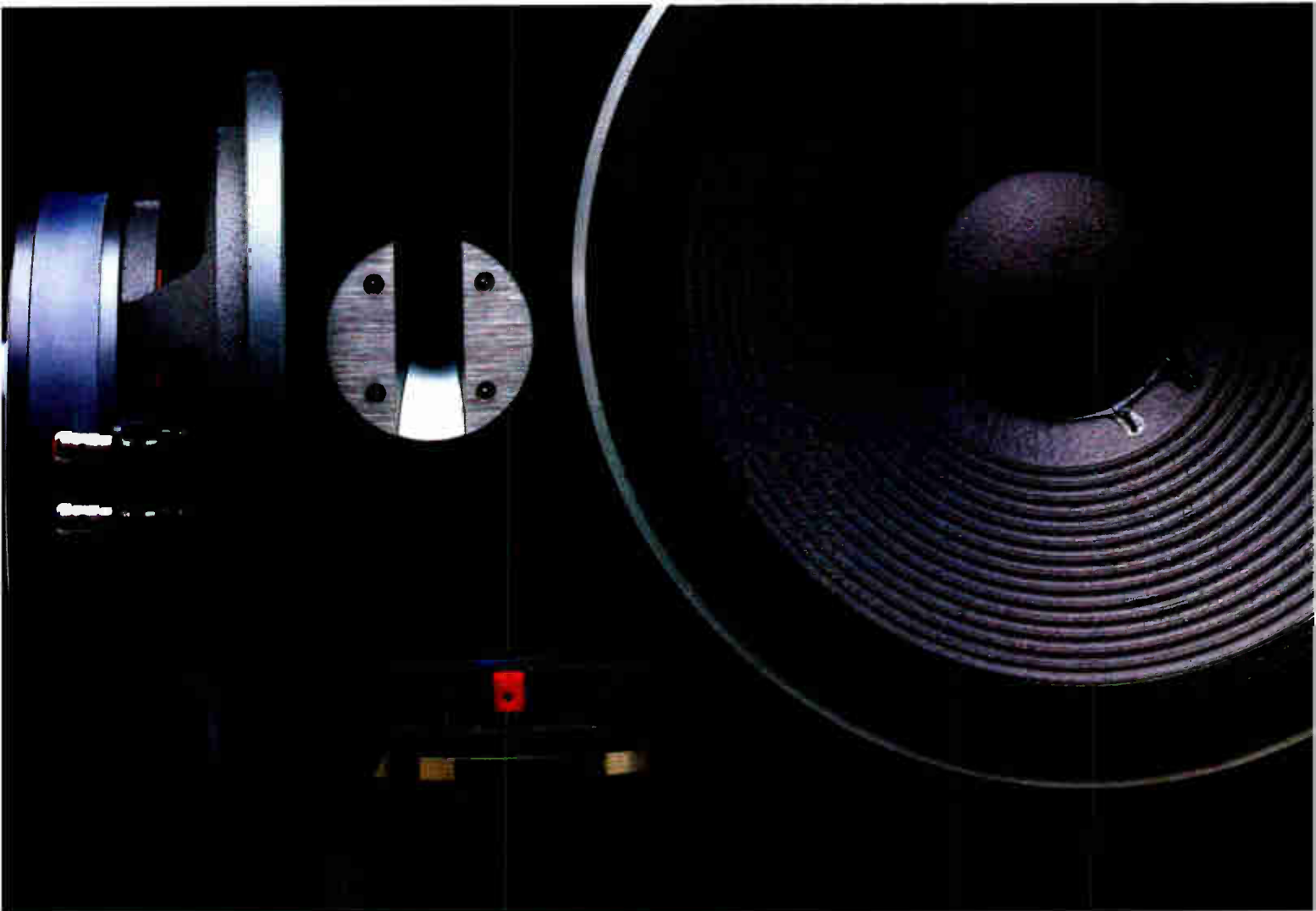
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# Mix

## VIDEO PRODUCTION SUPPLEMENT



PHOTO: DREDDALLES

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# VIDEO NEWS

By Mia Amato

## YOU'RE IN GOOD HANDS

Occasionally action sequences in a rock video shoot involve some peril to the performers involved. **Ozzy Osbourne** accidentally swallowed glass during a "special effect" sequence, and of course, **Michael Jackson's** hair was set alight by fireworks on a Pepsi shoot. These and other mishaps have sensitized rock video producers to the unglamorous but important role of insurance.

Meet **Ron Cohen**, insurance agent to the stars—at least those behind the camera. His company, Cohen Insurance, specializes in entertainment coverage and recently devised a new policy to fit the special needs of video music producers, playing that important behind-the-scenes role on such clips as **Billy Joel's** "Uptown Girl," **Randy Newman's** "I Love LA," "Girls Just Want to Have Fun" for **Cindy Lauper**, and "Authority Song" for **John Cougar Mellencamp**.

Cohen says promo productions have special insurance requirements because liability is so concentrated. "Unlike commercial production, music video clips frequently require intense action scenes, and are usually shot with extremely tight budgets and time schedules," he says. "The budget for a video may be \$50,000, but involve the one or two day rental of over a million dollars worth of equipment."

For producers, the greatest potential liabilities lurk beyond the successful wrap, when bad film or tape stock or a fire in the telecine room prevents delivery of a clip on schedule. In Cohen's new policies, the base rate for work done on video is lower than for one shot on film. "There's less processing involved," Cohen explains. "Video does have its own problems as a magnetic medium but doesn't have to go into a lab where there may be problems with developing or printing." Most of the claims in TV and film work, he notes, involve equipment failure of some kind, rather than injuries to cast or crew.

For production companies, Cohen offers an annual policy, which pro-



PHOTO: HOWARD SHERMAN

Cohen Insurance president  
Ron Cohen

vides automatic coverage for all work done throughout the year. Most producers and directors have some type of policy of this kind; in fact, it's almost impossible to rent film and video equipment without it. Cohen also creates short term policies for individual shoots.

"When estimating a production budget, a good figure for insurance would be two percent of the total cost," he states. "Typical insurance premiums are between one-and-a-half percent and two percent of the production budget. "A \$50,000 shoot may have a premium of \$1,000. But for a production with a \$500,000 budget, spread out over a year, insurance might cost \$7,500."

An all-risk policy protects the production company in the event a shoot may be cancelled or postponed, "For any reason beyond your control," Cohen adds, "illness of the performer, bad weather, a fire in the studio you booked time in...airport closed because of snow." Working with the mercuric record industry, video clip producers find such policies a useful safety net to recover the cost of unreturnable deposits for the reservation of studio space or special gear.

"Everything in production is always last minute," says client **Mark Pines of Bristol productions**. "During our 'Lawyers In Love' shoot for **Jackson Browne** in LA, Cohen responded immediately to last-minute special requests, express-mailing the insurance certificates we needed to begin shooting." Pines is currently shooting a **Ron Wood** special, and for work done in London, Cohen Insurance was able to extend international coverage via a rider to Pines' original policy.

Cohen represents "the third generation" of the Cohen Insurance Agency, with 30 years in the firm currently celebrating its 100th anniversary as specialists in theatrical and entertainment coverage. The company is the exclusive insurer for several Hollywood companies such as **Tri-Star** (*The Natural*, *The Last Dragon*) and, according to Cohen, serves "about 50 percent of the independent commercial producers in this country." To keep abreast of technological developments in the industry which may affect liabilities, his staff routinely "sit in on" location shoots to observe the action.

"Most of our music video clients are people that have come from advertising agencies, such as Tim Newman and Jay Dubin, who worked in agencies already working with us," he adds. "But music video production is really developing, and we're getting referrals all the time."

## DISC DEJA VU?

The buzzword for summer '84 is definitely **videodisc**. As in disc-based video editing systems unveiled by **Convergence**, **Ampex** and **Montage**, which store raw footage on laser disc where it can be retrieved with great speed by computer, ending tedious shuttle and preroll in postproduction. As in Direct-Read-After-Write (DRAW), a recording technique which rather economically presses single copies of laser discs for a variety of purposes, including music video.

**RCA's** decision to stop manufacturing its consumer CED video disc player caught many by surprise, including **Mark Bunzel of Compuvision**, whose San Jose company had planned to market a video jukebox using CED player technology. His firm already makes a random-access point-of-sale kiosk which uses video to promote software products in computer stores. Unlike existing "video jukeboxes" which use two videotape players to minimize shuttle time between songs, the Compuvision model, using disc, could randomly-access any song in sequence and supply full stereo sound.

"Having to go with laser player instead of CED will cost us about \$600

more in manufacturing costs," Bunzel explained, "but the Pioneer industrial player, which also has stereo, will fit in perfectly."

The best idea Pioneer has had in years is *Ray Charles'* testimonial TV commercial extolling the stereo sound quality of the laser videodisk player. No, disc is far from dead. Yet another application discussed is limited-run pressing of laser discs, perhaps through a DRAW videodisc recorder, of video clip compilations shipped to nightclub VJs via video pool services. Again, the advantage is random access. The VJ, using two laser players, will be able to segue quickly among the cuts, with no shuttle, allowing for more creativity in matching videos with the mood and the crowd.

### CARS PUT CHARLEX ON THE MAP

Approximately eight hours of post-production were expended for each three seconds of the finished video for the *Cars'* clip, "You Might Think," the neat bit of pop animation which transforms lead singer *Rick Ocasek* into a submarine, a fly and even King Kong. The clip was created by *Charlie Levi* and *Alex Weil*, whose Manhattan firm *Charlex* specializes in TV commercials for such companies as *Exxon*, *Kodak*, *Clairol*, *Atari* and the *National Enquirer*.

According to Weil, "You Might Think" employed drawings created on Quantel's Paintbox, animated with ADO special effects. The soft, seamless matting of the live action was accomplished with Ultimatte and a variety of motion-control recording techniques.

"Heavily processed images read 'trick photography' and people turn off," Weil says. "Our goal was to invest each scene with as many details of reality as possible while expending the minimum number of generations." Each of the many scenes required painstaking setup but the results—Ocasek's face flattened onto a swinging coat hanger, twisting up from a lipstick case in a woman's hand—achieve a continuity, a kind of quirky grace well suited to both the song and Ocasek's vocal style, as they flash by on screen.

*Mingo Lewis*, percussionist for *The Tubes*, *Journey*, and *Chrome Dienne*, plans to launch a solo career with a video for "99.09," in which he and a pair of teenage breakdancers are abducted by a group of aliens—young ballet students in foam costumes—a la "Close Encounters."

"They looked like little calamaris, with six arms," recalls director *Pat Kriwanek*, whose friend *Kim Carrier* choreographed the alien dance scenes to the artist's synthesized rhythms. The clip was shot on 16mm film "using only prime len-

ses and very carefully lit" and edited on video at *Positive Video*.

Kriwanek echoed the sentiments of many as he described his decision to cut out most of the break dancing in the final edit, "It's really been overexposed," he commented, "and it really dates a clip, which will make it less attractive to play two or three years from now."

### STUDIO TAKES

The Carnegie Hall performance of the *Orchestre National de France* was videotaped by *Matrix Video Services (NY)* for a French television simulcast. *Dave Griffiths Associates* produced and *Dirk Sanders* directed.

*Ardent Teleproduction* (Memphis) captured the glamour of Beale Street for four TV spots for *Malone & Hyde*; other recent TV spot work includes a pair for radio stations *KIX-FM* and *WMC-AM*, the latter involving an elaborate set with giant glowing call letters and country artist *T.G. Sheppard*. In San Francisco, *Western Video Tape* has added two CMX on-line and off-line edit suites. San Antonio's AV rental house *Donald L. Smith Co.* has expanded its services to include 3/4-inch and half-inch video editing systems for off-line work. The Panasonic and Sony packages include time-base corrector and character generator.

*Unitel Video* signed a five-year lease with *Paramount Pictures* for a building on the movie firm's back lot. United president *Herb Bass* says he'll be installing a \$3 million postproduction facility to be operational by September 1.

*MovieLab* introduces "Video-prints" for film directors screening dailies at its NY facility, who may then walk away with 3/4-inch or half-inch dubs videotaped as the material appears on screen. *Peter Cardasis* says the lab will even ship the video dubs cross country to assist the harried producer who'll be rough-cutting on tape in a tight time schedule.

Also in NY: *Manhattan Transfer* has initiated a special no-overtime night rate for its new Rank Cintel MKIII-C 16mm and 35mm film to tape transfer and color correction suite. *A Cut Above* has opened its doors on West 40th Street, with partners *Bob DeRise* and *John Montelione* launching their film edit business with a bang: one of the first month's jobs were the *Michael Jackson* Pepsi-Cola TV spots.

*Sidegraphics Inc.* has added video animation via DEC computer software to its four production centers in San Diego, Tulsa, Phoenix, and Oklahoma City. The system provides high quality animation sequences recorded directly onto 3/4-inch or one-inch Type C videotape, with additional movement capability for rotation, frame-in, color changes,

and panning. *AcmeCartoon* (Dallas) designed and produced the broadcast ID for cable's *Learning Channel* as well as the 3-D opening for "AM-TV," a syndicated clip show. Music for both projects was created by sister company *Little Dog Music*. The animated opening for *Top 40 Videos*, another syndie series, was completed by *The Post Group* (Los Angeles).

### ROCKIN' THE WALDORF

Don't forget: *Rockamerica's* second Video Music Seminar on club video promotion and video music production is August 10 at New York's Waldorf-Astoria, and especially valuable for those in the promotion end of the clip business. For more info call (212) 475-5791.

### TECH REPORT: RHODESYSTEM II

Music scoring for TV and film moves further into the computer age with a handheld math machine designed especially for scoring work by New York composer *Roger Rhodes*.

The device is a Hewlett Packard hand computer preprogrammed with software to manipulate and conform time units with a click track. Feed in a range of acceptable click track tempos and the computer will figure and print, on its attachable printer unit, a "hit list" with each hit and its corresponding beat number. An even more useful function is its ability to convert drop-frame or non-drop frame SMPTE time code, film frames in any speed, film feet, minutes and seconds interchangeably, freeing the arranger from arithmetic duties and synching errors.

Jingle composers who've used the device, claim it virtually eliminates charts and enables arrangers to find cue points quickly and easily. Says Hollywood composer *John Bahler*: "It was high time someone developed this tool. I can store all of the hits in all of my spots, go into a session, call and lock the video start point into my program, and read out all my hits in timecode. It's invaluable."

The HP-41CV with RHODESYSTEM II programming and HP-82143A printer costs \$1495. For more information call (212) 245-5045. Inventor Roger Rhodes is, of course, best known for his engineering work with the late *Duke Ellington*, and more recently for the scoring of TV miniseries *Race to the Pole* and *Holocaust*, as well as numerous commercials. We at *Mix* are curious to know if anyone else out there is developing helpful computer tools for synchronizing sound and picture elements—particularly if using "off the shelf" electronics. Drop us a line. ■

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Practices for Digitally Controlled Equipment." Which means the interfacing problems between video, audio and film equipment will be problems of the past. This Sony "Sync Master" synchronizer has a built-in distributed intelligence network that makes it able to talk to an entire universe of diverse machines developed by diverse manufacturers.

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# THE ORIGINS OF VIDEOTAPE RECORDING

By Peter Hammett



*The VTR development team poses with their Mark III prototype machine and the Emmy Award Ampex won in 1957 for videotape recording. Team members from left to right are: Charles Anderson, Ray Dolby, Alex Maxey, Shelby Henderson, Charles Ginsburg, and Fred Pfost.*

## AN INTERVIEW WITH CHARLES GINSBURG

Practical videotape recording is a thoroughly American invention. Ampex Corporation of Redwood City, California unveiled the world's first practical videotape recorder at the NARTB (now NAB) convention in Chicago in April of 1956.

A committee of Northern California engineers perfected the major concepts that make video recording possible, whether quadruplex or helical scan: the rotating video head, FM video recording, the processing amplifier, time-base correction, and electronic editing.

Ampex called their original VTR R&D program the "television recorder," or "TVR" project. Before 1954 engineers had no name for the videotape recorder.

Charles P. Ginsburg served as team leader of the TVR project from 1952-1956, acting not only as chief engineer for the program but also shepherding the team through some precarious moments. Ginsburg had majored in mathematics and engineering at San Jose State University near San Francisco and while in college, had gotten interested in electronics and radio wave propagation.

Ginsburg sought out a young Redwood City company whose engineers had pioneered magnetic recording in the U.S. from 1947-49. By 1951, three people at Ampex were involved in the earliest conceptualization of the videotape recorder: Alexander Ponia-toff, company founder and chairman; Walter Selsted, chief engineer; and My-



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ron Stolaroff, senior engineer. The three men agreed that a fixed head with fast-moving tape, like some sort of super audio recorder, was impractical. Rapidly spinning heads could be the answer to achieve the high writing speed neces-

cago to visit Marvin Camras at the Armour Research Institute, now the Illinois Institute of Technology. [Camras had perfected the practical use of AC bias with magnetic recording before the war, with numerous post-war magnetic re-

*In the television industry, people were excited about the idea of somehow or other being able to record television on tape. The reason for this interest was the television recording methods then available were awful. All used film transfer methods, and the results were just terrible.*

sary for video's broad bandwidth.

Ampex engineering management were impressed with Ginsburg's personality and broad theoretical background, and hired him in early 1952 to begin work on a new, secret project: recording television signals on magnetic tape.

The following is excerpted from a videotaped interview recently conducted in the Ampex Museum of Magnetic Recording in Redwood City, California.

#### The VTR Embryo

**Mix:** How did Ampex engineers originally approach recording the television image on magnetic tape before your arrival at the company?

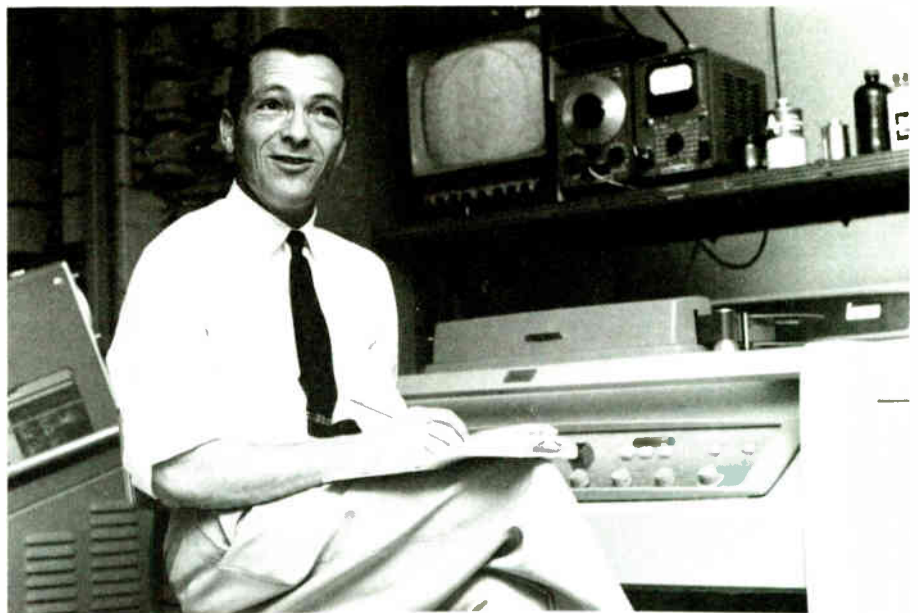
**Ginsburg:** There were a number of disagreements among Poniatoff, Selsted, and Stolaroff as to how to approach the job of putting television on tape. In mid-1951, Ampex sent Stolaroff to Chi-

cording patents.) Camras had mounted three heads on a rotating disc, which described accurate sweeps across the tape as the tape proceeded. Camras had successfully recorded high frequencies in the range of what we needed for TV recording, so that later gave some hope to the method of my work.

Stolaroff came back to Redwood City and discussed Camras' ideas with Selsted and Poniatoff. The company agreed to put up some money to embark on an approach which would use 2-inch wide tape, a drum roughly 2-1/2 inches in diameter with three heads mounted on it.

**Mix:** In 1951, what was Ampex's motivation to begin videotape recording experiments at all?

**Ginsburg:** Well, I think because their success in breaking into radio with the Model 200 recorders had been such a major step forward for the company. The Models 200 and 300 led to other



*Charles Ginsburg sitting next to the Ampex VR-1000 videotape recorder, the production version of the first VTR.*



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things, including the greatly expanding field of instrumentation recording. In the television industry, people were excited about the idea of somehow or other being able to record television on tape. The reason for this interest was the television recording methods then available were awful. All used film transfer methods, and the results were just terrible.

**Mix:** Like what?

**Ginsburg:** Kinescope recording, which consists essentially of just pointing a camera at a picture tube.

**Mix:** Were you aware when you started the video tape project of dissatisfaction within the television industry with kine-

scope recording?

**Ginsburg:** I knew that the television industry felt that it badly needed a better method for recording, and that some other parties were pursuing the development.

**Mix:** Who else was working on TV recording?

**Ginsburg:** Bing Crosby Enterprises, with Jack Mullin, who were definitely friends of Ampex, were pursuing a VTR approach using fixed heads and high tape speeds: the longitudinal recording method, like audio tape, which they demonstrated publicly in the spring of 1952. Their machine caused a good deal of excitement. Then in the spring of 1953,

RCA gave a big demonstration for the press and the film industry of their longitudinal video recorder. RCA, and later the Crosby people, demonstrated color television recordings.

**Mix:** These machines used fixed heads. What was the difference between these pre-Ampex approaches and what you were doing?

**Ginsburg:** We were using rotating heads. We achieved the velocity necessary to record television's very high frequencies by having the heads write very narrow tracks and rotate at very high velocities. We finally wound up with a velocity of about 1500-inches per second, as compared to the speeds used with stationary heads in the RCA and Crosby Enterprises approaches, which ranged from about 100 or 120 inches per second in the case of Crosby, and up to as high as 360 inches per second with the RCA recorder.

**Mix:** Where you aware of the BBC's research in London on magnetic video recording?

**Ginsburg:** It was 1955 or possibly early 1956 before we were aware that the BBC Research Department were pursuing their own approach.

**Mix:** Tell me about General Sarnoff's birthday present.

**Ginsburg:** I believe it was at Sarnoff's birthday party. He was the chairman of the board of RCA, and by his birthday in 1953, there were three things he wanted his engineers to devise for his 65th birthday, one being a television tape recorder.

**Mix:** That must have been a pretty well-publicized thing. Did RCA's increased VTR research worry you?

**Ginsburg:** Oh yes, it worried us in engineering more than management. We wanted to beat RCA to the punch. We wanted to bring out a television tape recorder before RCA did. We already knew that RCA was working on a television tape recorder, but when Sarnoff underlined his strong desire by saying it was one of the birthday presents he wanted, then we were concerned.

**Mix:** How did the awareness of the early competition — Crosby and RCA — affect how you conceived the project, how you went ahead, how much money was allocated, so on? Was there a sense of competition or urgency?

**Ginsburg:** Well, there was on the part of us working on the project. I'm not sure to what extent upper management thought about the competitive aspects of it. I think probably not until we gave a demonstration for the Ampex Board of Directors three years later, in early March 1955, did management really believe we had a winner.

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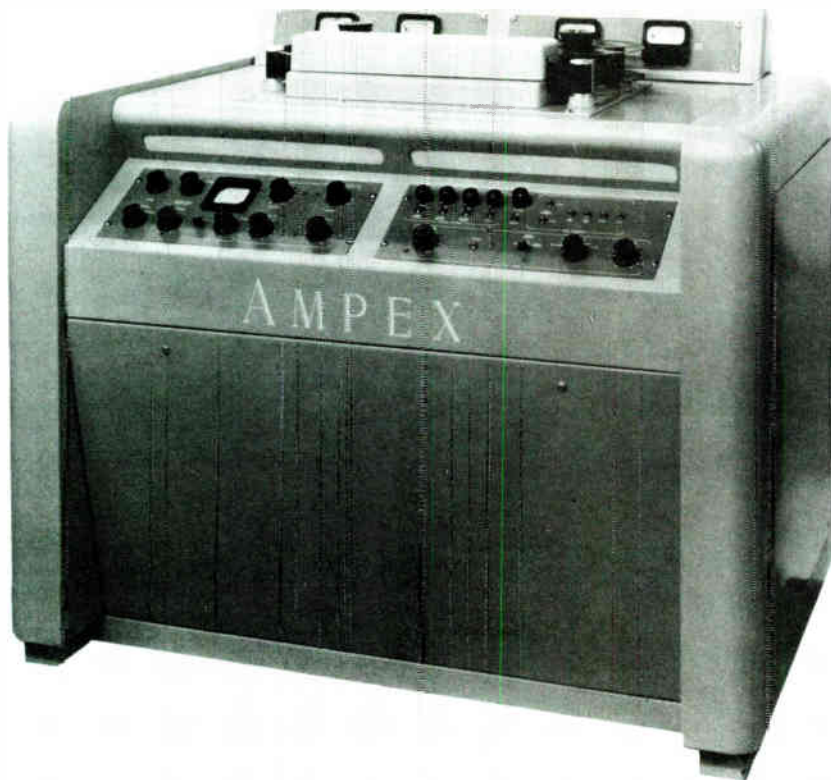
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*The Ampex Mark IV prototype which caused quite a stir when it was unveiled at the NARTB (later shortened to NAB) convention in Chicago in April of 1956.*

#### *Early Ampex Management and the "TVR" Project*

**Mix:** An important role you played as team leader from '52 to '56 was dealing with middle and upper management to ensure the project's success. How did management perceive the original "TVR" project? Were they sure you were going to deliver a product?

**Ginsburg:** Oh, no. There was no way. We gave our first demonstration to management in October of 1952. I told Poniatoff that we had recorded a TV program, a Western, from one of the local stations, and we would now play it back. He and the Ampex patent attorney witnessed this playback. It was a pretty bad picture, but it was recognizable, sort of. He said, "Wonderful . . . which is the horse and which is the cowboy?"

**Mix:** Did management then believe in videotape recording?

**Ginsburg:** At that point Poniatoff couldn't be sure we were going to make it. We gave another demonstration for a very restricted management group in early March 1953, with a much-improved system . . . the picture was far better. But even then it wasn't good enough for anybody to decide that we had a successful approach to video recording.

**Mix:** Did management immediately see your video recorder as a product?

**Ginsburg:** They didn't have any idea as far as I know about making a product until we gave that demonstration for the Board of Directors in March, 1955. Following that it was decided that we would shoot for showing a product at the annual convention of the NARTB 13 months later in April, 1956.

**Mix:** I've seen some of the photos of the early VTR images. With the problems you had, why did you think you could have a product prototype to show in only 13 months?

**Ginsburg:** I think the secret is we just didn't know how much we didn't know. The magnitude of the problems I think, if we had fully appreciated them, might well have stopped us cold. We had to come an awful long way from where we stood at the time of the demonstration for the board in '55 until the 1956 NARTB showing.

#### *The Genesis of the Ampex VTR Team*

**Mix:** When you were hired in 1952, you had only a part-time machinist and draftsman at your disposal, but at first you were the only engineer. What led to the creation of the 6-man videotape R&D team?

**Ginsburg:** The first full-time addition to

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the team was Ray Dolby. He was an 18-or 19-year-old part-time employee (during summer vacations) at Ampex at the time. Alex Poniatoff had originally met Dolby when Poniatoff had asked Sequoia Union High School to send him a projectionist to show a film for the Mental Health Society, I believe. Dolby was the projectionist, and he and Poniatoff hit it off immediately. That was around 1950, before I came to Ampex.

After I had been working at Ampex for about 4 months, Dolby stopped, introduced himself, and said that he had heard that I was working on a TV recording project. He wanted to know how I was going about it.

**Mix:** How did Dolby join the video recorder program?

**Ginsburg:** My research was interrupted for a period of about three to four months when a very special, one-of-a-kind audio project came along. Dolby and I were assigned to work together, and we shipped it ahead of schedule and it met all specifications. That was unusual, even for those days. At the end of that project we had gotten to know each other very well, and we both decided that the thing to do was for him to quit college and join me on the videotape project.

I went to Poniatoff and told him I needed Ray to work on the TVR project with me because he was very smart and very capable, and should get an increase of \$50 a month, to \$350 a month. That was a pretty steep increase, but Poniatoff agreed. Ray and I worked together from about August 1952 on, until

we gave a demonstration of the first system in October and the second system in early March 1953. Then, Ray was drafted into the Army, since he had lost his student draft deferment.

**Mix:** There were four more team members. When did Charles Anderson join you?

**Ginsburg:** In May, 1954, Charles E. Anderson came to work for Ampex. Soon, he and I got our heads together and decided we both had a great interest in video, so I put in an authorization for four man-weeks of work. Before the authorization was even granted, Anderson and I had done the work and were ready to demonstrate again.

By this time, about mid-1954, we had an Ampex man from the field, Phil Gundy, come to Redwood City. He became the manager of the Audio Division, of which the video project was a part. Phil was all in favor of having a television tape recorder, so we gave a demonstration for a fairly large management group, and from then on it was clear sailing.

The next person to join the group, while Dolby was still in the Army, was Fred Pfost, who was already employed at Ampex. Alex Maxey, who was also working at Ampex, came to talk to me and we took him into the group. So by this time we had a fairly good sized crew, four people or so, and five including the model-maker, Shelby Henderson. When Dolby got out of the Army, in December 1954, he rejoined the group. He was only working part-time, but he really made a contribution with his 10 hours a week.

**Mix:** What were Anderson's contributions?

**Ginsburg:** Most notably, his work on FM recording. Originally Dolby and I used an amplitude modulation system. In fact, we gave 3 or 4 demonstrations to management with the AM system, but Anderson, who by himself conceived and reduced to practice the use of FM for video tape recording, produced a real breakthrough. He actually started work on the FM system on January 3rd, 1955, and had a whole system working within three weeks. The first pictures we made with them were astonishing in their improvement over the previous pictures. So, a few weeks later we gave the demonstration for the board of directors, and that put us on the road that didn't stop.

**Mix:** Without Anderson and FM you guys might still be experimenting today.

**Ginsburg:** Well, you can say that about all of us; not to downgrade Anderson's contribution, it was major. But without Dolby, we wouldn't have made it in the first place. The basic block diagram of a quadruplex recorder was the same when

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# FROM BIG BANDS TO SOUND-FOR-PICTURE

By Gregory A. DeTogne

Chicago's Rush Street is probably most famous for its collection of nightclubs and the cross-section of humanity that parades up and down its sidewalks almost every night. From the first glimmer of starlight until the wee hours of the morning, a silent observer can stand aside and witness a cast of out-of-town conventioners, high-priced hookers, the nouveau riche, celebrities, common snort-heads, and revelers of all description pass by on their way from place to place.

Situated right in the center of this maelstrom, across the street from the fabled Faces disco, and within a stone's throw of the city's only nightspots that feature nude female dancers, is Universal Recording Corporation. Self-described by president and majority owner Murray R. Allen as the "largest one-stop audio service in the country," Universal occupies the second floors and parts of the lower levels of four buildings on the northeast corner of Rush and Walton.

Steeped in a rich history that spans nearly four decades, Universal continues to prosper today, in spite of setbacks which have included industry slumps, changes in ownership, and periods of general turmoil. Originally founded by the legendary guru of the recording industry, Bill Putnam, along with Bernie Clapper and Bob Weber, Universal was born in 1946 on Chicago's North Side. The first mainstay of the studio's business was in time-delay broadcasts from New York City, which were recorded on giant records (there were no tape recorders as we know them today) and played back over the air an hour later. Under the careful guiding eye of Putnam, the original studio grew, changed to larger locations a few times, and eventually became well established by doing PSAs, small radio commercials, and live Big Band recordings and air checks from local ballrooms like the Aragon.

By 1952, Universal was doing



*A film scoring session in Studio A.*

all the recording for Mercury Records, and had a reputation as *the* place where the Big Bands and the famous held their recording sessions.

Putnam moved to Universal's present home at 46 E. Walton in 1956. At this point in time, Universal had three studios (A, B, and C) with a control room upstairs that contained a 12 input console with rotary pots, two stereo machines, three mono machines, and a closet full of spare parts. By 1961, they had a three-track recorder, and major artists like Ellington, Basie, and Sarah Vaughan were beating the doors down to get in.

Unbeknownst to hardly anyone during this period, today's aforementioned owner of the studio, Murray Allen, was spending his evenings toiling away with his saxophone in a nightclub located below Universal. Allen, who had been on the road with the likes of Glen Miller and Bobby Sherwood since 1947,

was not only a talented musician, but was well-versed in the various aspects of the recording world as well. To supplement his nocturnal gig, Allen began making daytime appearances as a sideman at Universal. One thing led to another, and soon he was not only making music, but helping out with the recording chores at Universal too. Eventually, he started his own studio venture, which by Murray's account, surpassed Universal's popularity "purely by accident."

As Murray's business escalated beyond his wildest dreams, Universal's sagged. The time was 1970, and Putnam had left Universal long before in 1959 to establish his West Coast empire. Those in charge at Universal read the handwriting on the wall, and offered Murray the opportunity to buy the place out over an extended period of time, with complete ownership being transferred by 1975.

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Universal has undergone great changes since its humble beginning. It can be said without exaggeration that everything about Universal is state-of-the-art and then some. The studio has been digital for four years. They were involved in video sweetening as early as 1972, before there was even such a thing as established codes. There are facilities for just about anything, and the latest 24 track, video, and film equipment to do it with. Something is happening almost around the clock in just about every corner of the building.

While collecting the information for this article, I toured the studios on a Sunday morning, with Murray himself acting as guide and welcoming committee. From the inside, Universal is a labyrinth of dark tunnels and stairwells that lead to the various studios, production rooms, and theaters. It takes a ring of keys like the kind prison guards carry just to get around. Even Murray had a hard time finding light switches at times.

Like in the days when Bill Putnam walked Universal's corridors, studios A, B, and C still handle the bulk of the work that passes through the structure. Studio A, where The Police recently held a recording session, measures 45x54, and has a 28 foot ceiling. A Neve 8048 mixing console with 32 inputs and Necam automation occupies part of the control room, along with 3M 32 track and four track digital recorders. Some of the permanently-installed synchronization equipment on hand includes a BTX Softouch Controller, which interfaces with two Shadow synchronizers. The digital equipment in Studio A can also be patched into Studio B, which is outfitted with an SSL 6000 console (32 inputs and 32 outputs), and additionally equipped with another set of Softouch Controllers and Shadow synchronizers. Studio C is a popular place for client demos, and has a 16 track Tascam at its heart.

On the outer fringes of Universal's floor plan, next to a storage room that contains finished jogs and a shipping area, lies "The Backroom." The Backroom houses a complete video sweetening facility, with two 24 track recorders, and a unique Ampex 1200, which can be fitted with different headstacks ranging from 24 and 16 track to a C-format video audio only. The house synch generator is also kept here, right next to Universal's jam-synch generators. On the other side of the glass, a small music studio was built containing an iso-booth and several cue systems that are controllable by the artist.

Production rooms on Universal's lower levels, next to the film transfer division, where optical transfer takes place (optical transfer on film is the equivalent of mastering on records). The last stop in the complex is at the twin mixing theaters, where up to 24 tracks of audio



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(dialog, sound effects, or music to name a few) can be mixed onto magnetic film stock.

Even a casual glance at the gear listed above tells you that Universal is seriously locked into the sound-for-picture field. Presently, their business is split 70-30% between sound-for-picture and straight audio recording. Ad agencies are Universal's major clients, with prominent names like Leo Burnett and Foote, Cone, & Belding heading up the roster. Starting with ad spots for Marlboro Cigarettes that came out in the early '60s, an impressive array of commercials have all relied upon Universal for their sound: McDonald's, Coors, Hyatt Regency Hotels, Raid, Pillsbury, Amoco, Union 76, Anheuser-Busch, Kellogg's and Federal Express are but a few.

Films have also passed through Universal for their sound treatments, *The Blues Brothers* being one of the most notable (both the dialog and the music for the movie were done here).

Universal shifted heavily toward sound-for-picture about three or four years ago, when the record industry dropped into a long slide that culminated at the beginning of this decade. "Records used to be our bread and butter," Murray related while we both sat in his office after my guided tour. "It got to the point though, where people in the rec-

*Bill Bradley with a client in the Neve-equipped Studio A.*



ord business started wanting rock-bottom prices and sweeter deals that just weren't profitable for us anymore, so I decided to switch my emphasis to sound-for-picture."

Undoubtedly, others have felt the same way, but Murray has a word of caution for anyone who goes out and buys all the necessary gear for video before thoroughly researching their market: "In New York or Chicago, there's naturally a big market for commercials, just like there's a huge market for television and rock videos out in L.A. Corporate sound-for-picture is a major area too. We've done sound for many industrial presentations, but the business world doesn't pay as well as the other

two. Usually, the corporate honchos will spend a ton on the visuals and the actors, so by the time they get down to the sound, they've blown most of their budget, and just want the bare essentials in audio. It's true that making money in sound-for-picture can be done anywhere, you just have to make sure that you have a market. I can't over-emphasize how important it is to find out if you have a client base or not before you run off to invest in synchro equipment, video monitors, and all the other stuff."

To help illustrate his point, Murray gave me a hypothetical example: "Say you're in a small town like Grand Rapids, Michigan, and you've got a nicely equipped studio, but you can't get

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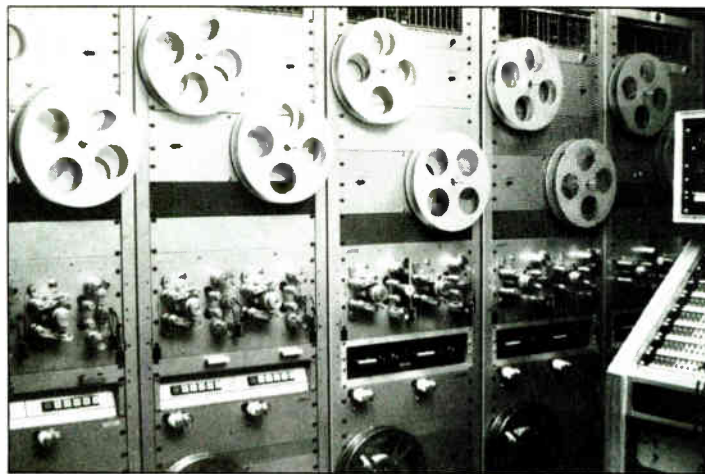
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your rates up past \$75 an hour. If you look around and find out that there's a number of local merchants who are recording television commercials over at a nearby station, you could approach them with the idea of having your studio tweak up their soundtracks to make them more appealing than what the TV studio could do with its less sophisticated gear. For instance, say you went to work for a used car dealership. The dealer could bring in his video tape, and you could take off the voice and make it clearer and stronger, add background music, special effects, and whatever else. Suddenly, if the market is right, you could find yourself making \$125 an hour for four hours of the day instead of the usual \$75."

What does one need in the studio to take on the sound-for-picture business? I posed that exact question to Murray, who gave me a rundown of what the basic essentials are: "To begin with, you'll need a 3/4 inch video tape recorder," he said. "A Sony U-Matic is a good one. Although a client may shoot with one or two-inch tape, 3/4 inch is your standard working size. When you're using the U-Matic, you won't be working with the master, so if you mess up, you can always make another. Make sure your U-Matic records in stereo, and has a separate time-code channel—it'll save you a lot of aggravation farther down the road.

"Next, you'll need some kind of lock-up (synchronizing) device. In effect, what this equipment does is lock your audio tape recorder to your video tape recorder so they both run backwards and forward in synch. We use BTX Softouch Controllers, which are interfaced with Shadow synchronizers. The Shadow synchronizers are the actual hardware, and the Softouch is the controller. The two together can move either tape individually to adjust synchronization, or simply play both tapes in synch. If you have a computer wizard around, you can save a few bucks by having him do the same thing as the Softouch with a home computer."

Murray continued: "Most importantly, a studio contemplating sound-for-

picture will need a house-synch generator. This device is the Godfather to all your synch speeds throughout the studio. Any unit that is working with video in-house must be looking at the same source, or else nothing will be in synch. The house-synch generator is that source.

"To complete your package, you'll want a time-code generator of some sort, and time-code readers. A ballpark figure for all of what I've mentioned would be around \$30,000."

Most of the equipment used at Universal for sound-for-picture cannot be adapted to straight audio, except for the Shadows, which can lock two 24 track recorders together to provide multiple 24-track recording. In closing our interview, Murray also cautioned those considering a move in the direction he took to be ready for a change. Instead of dealing solely with musicians, you may find yourself dealing with businessmen, so be prepared to wear a tie and get to work at nine in the morning instead of two in the afternoon.

The most important factor though, is the fact that sound-for-picture is a completely different world from recording sound by itself. In fact, it's like a different language. The engineers I talked to at Universal, as well as Murray himself, all told me the same thing: there are different priorities in sound-for-picture. Nuances are important, and transitions must be well coordinated between the picture and the sound. Unlike vinyl, on tape or film, the source of the sound must be considered. To be realistic, as a man in a commercial walks closer to the camera, his voice should change in intensity. Timing is critical as well, and anyone first making the transition to sound-for-picture will most assuredly be met with a thousand-and-one other surprises as they get used to the change.

All-in-all, audio can greatly help sharpen and define picture, as well as bring on new perspectives. Recording engineers for the most part are just now beginning to realize this, and that will certainly make the future worth watching. ■

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**VM-41 Cardioid:**  
For acoustic instruments, overhead percussion, cymbals, snare and brass. Close to medium range PA and ENG work.

**DC-96B Studio Cardioid:**  
For all studio and line recording use. Low noise, high output. For instruments, narration or choir. Close or distant work.

**XY-82 Coincident Stereo Cardioid:**  
Top of the line dual cardioid stereo/mono with separate outputs. Two single membrane condenser capsules, smooth on and off-axis frequency response, two separate preamps, two separate output signals. Unmatched fidelity and versatility.

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For live hand held vocals, drums and amplified instruments. Built-in "pop" filter with LF roll-off. Close to medium range studio or outdoor work.



LC-25



DC-63



DC-21



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DC-96B



XY-82



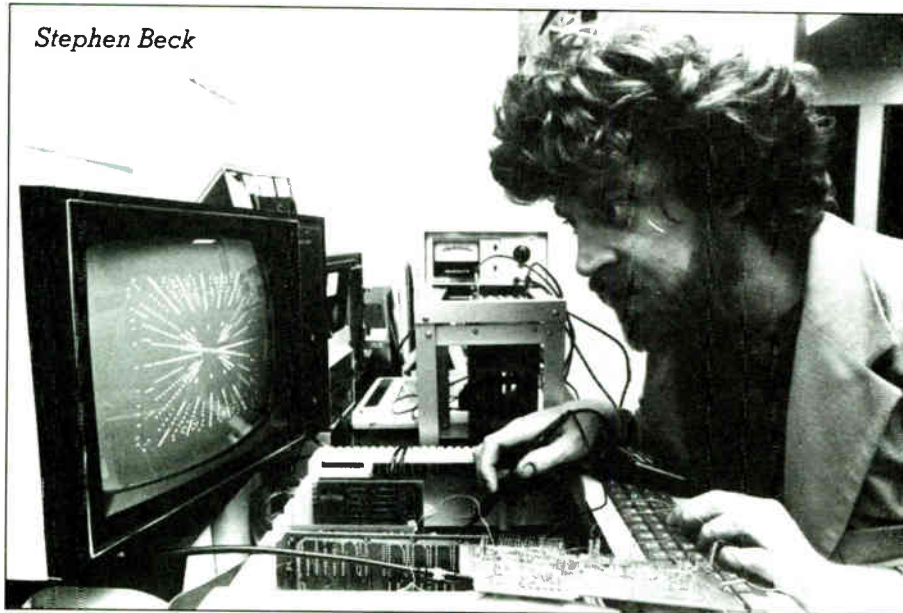
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Stephen Beck

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After graduating from the University of California with a bachelor's degree in electrical engineering and computer sciences, Beck knew that he wanted to work in the world of computers. In 1968, he invented one of the first analog-digital video synthesizers. Later that year, in Champaign, Illinois, he presented his first performance with music and dance. Two years later he became artist-in-residence in San Francisco's PBS affiliated KQED. Beck taught himself BASIC and created his own programs and hardware systems "to visualize the symbolic, ideographic, and non-objective modes of images which originate internally from the mind's eye."

He went beyond the image processing of camera input images (keying and coloring) and scan modulation, which are essentially image distortion techniques, to "a compositional instrument that generated electronic images direct to tape or display in live television performance." In 1970, Beck met Nam June Paik at one of the first "video art" exhibitions at the Whitney Museum. Beck's Direct Video Synthesizer incorporated the use of voltage to position converters for horizontal and vertical location of color, form, motion and texture in interactively controlled electronic building-block modules.

After working at the Xerox research laboratories and lecturing at The University of California, he used Bell Laboratory's Max Mathews Music 5 program on The University of Illinois ILLIAC computer. "At first I worked with standard sine, triangle, and square electronic wave forms. Later I developed the technique of using phase locked-synchronous oscillators to get horizontal detail from 15,000 cycles up to 4.2 megahertz. Composition with this greatly expanded range lies in the circuit design and programming of the instrument."

Videola, a video and optical sculpture show, was performed at the San Francisco Museum of Art in 1973 and was viewed by over 50,000 people. In 1974 he collaborated on the creation of Anima, a video dance piece with Katie McGuire. Soon after, he created Cycles, a videofilm with filmmaker Jordan Belson. In 1975 he found out about microprocessors and developed a 12 bit digital computer capable of generating 4096 colors with 256x256 pixel digital color resolution. Working with Fred Ralston

# VIDEO ART

By Lou CasaBianca

*Lou CasaBianca visited Beck-Tech/Electron Video Creation's headquarters in Berkeley, California, to talk with its president, Stephen Beck. As the inventor and creator of a number of innovative video devices and video art productions, Beck has been recognized as one of the first people to explore the possibilities of video as a creative and performance art form.*

It's a bright sunny day outside the Hotel Claremont headquarters of Electron Video Creations when Steve Beck comes out to greet me. I follow him through the hotel's cavernous crystal chandeliered lobby, down astro-turf carpeted hallways, past rooms filled with engineers, designers and wall-to-wall electronic gear, to his warmly lit corner office. Quite a contrast to our first meeting six years ago when I visited with him in his Berkeley Hills apartment to talk about video art—there were computers in the living room, video synthesizers in the bedroom, we were completely surrounded by home brew technology. So Beck's world of magical devices laboratory environment is no surprise to me.

Well nothing's changed, only now Stephen Beck, video artist, has become Electron Video Creations, a video music and computer game software pro-

duction company. As Steve puts it, "One day back in '79, somebody asked me what my next video project would be, and I said my next project will be a company, and I formed Beck-Tech." He is relaxed, the mood is casual and both the people and the computers are humming. "It's not like we didn't try to take video art and music out there, but there just weren't enough machines," he says off-handedly. It's a critical summation from an artist-inventor who fought the early music video wars. We both smile at the thought of the video artist wearing a computer executive's hat. "Now there are something like 10 million machines out there and the market has been primed by MTV." It's a long way from the days of the spontaneous and non-directed video music light show dance concerts of the '60s to today's world of bottom-line-oriented satellite music video channels and third wave microprocessor-based high-tech industries. But Stephen Beck, whose personal philosophy was given shape and direction in one of these worlds and form and capitalization in the other, spans the two with apparent ease and success.

Beck is founder of Beck-Tech, a computer research and software development and consulting company, whose software packages include the first Star Wars electronic game by Kenner called

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World Radio History

and a jazz/fusion band called Joynt Effort, he created Video Weaver—an "electronic loom" using the first digital circuits developed for television.

Also in '75 Beck leveraged his knowledge and experience with micro-processors and became a consultant working with National Semiconductor in the development of one of the first crop of video games. As this generation goes into interactive laser disc games like Dragon's Lair, it's easy to lose sight of the significance of the early video games that for the first time allowed the passive video viewer to become an active video participant.

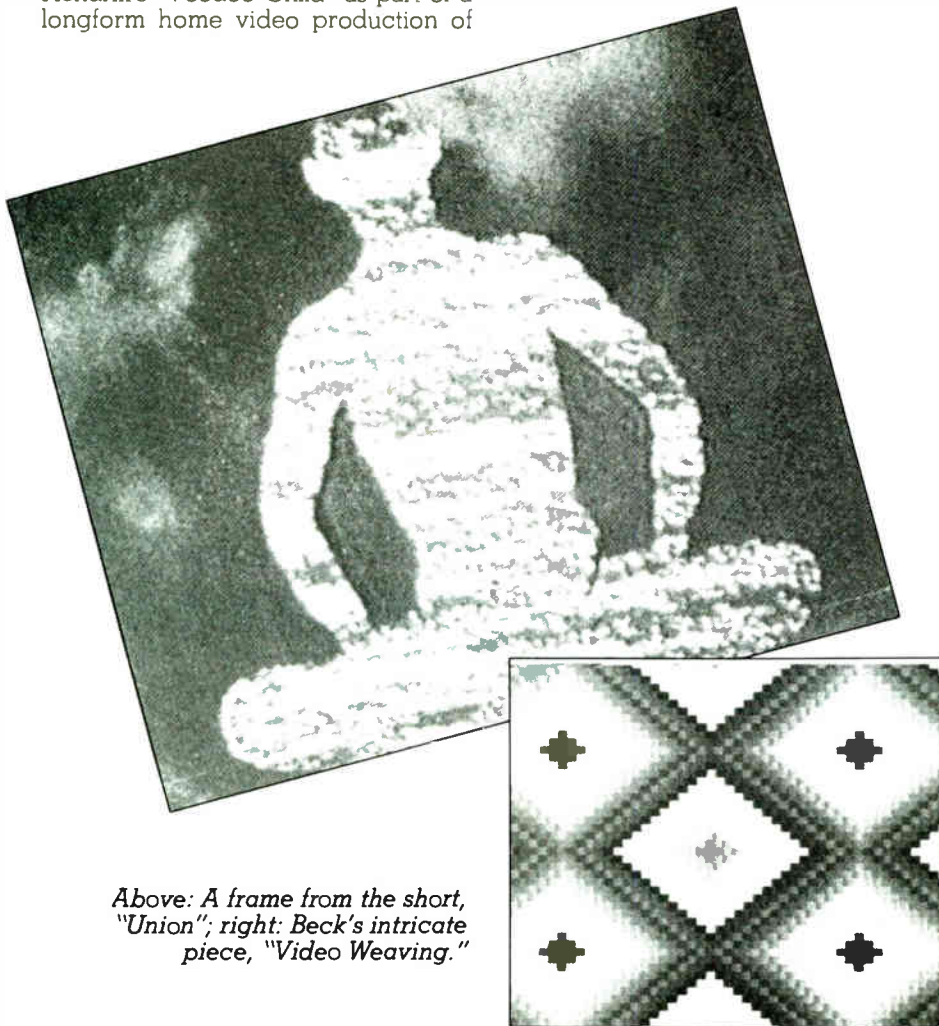
Since forming Beck-Tech in 1978, the company has created video and handheld computer games like Quiz Wiz, Zodiac Horoscope and Melody Madness for Coleco and others. During this same period he formed the Electron Visual Orchestra, and after touring in Europe and Japan, the group performed Union in '79 at the first American Film Institute national video festival. He also composed visuals for the feature film, *Altered States*, directed by Ken Russell, and for the *In Search Of...* television series.

Recently he was commissioned to create a visual interpretation of Jimi Hendrix's "Voodoo Child" as part of a longform home video production of

Hendrix's music. The producers approached a number of nationally known video artists in an attempt to provide an alternative to live concert footage. The results were at best uneven, with Beck's work the hands-down standout of the collection of virtue of its originality. It is by no means a music video, in the sense that the term is generally used. The piece is interpretive rather than literal, and to a degree it requires that the viewer "go with the flow"...there are no rapid fire cuts, no cars, no scantily clad girls as filler. Instead, Beck uses techniques that he's evolved over the years, artfully weaving layers of video feedback and slit scan effects to optically enhance the visceral level of Hendrix's playing. In a very real sense, his visual reflections are the modern version of the kind of light shows that were an integral part of the psychedelic music era.

Beck's most recent production is *Illuminated Music*, a self-distributed home video collection of his work including "Anima," "Video Weaving," "Union," a new piece entitled "Illuminated Music" and the Hendrix piece "Voodoo Child." In *Illuminated Music*,

—PAGE 126



Above: A frame from the short, "Union"; right: Beck's intricate piece, "Video Weaving."

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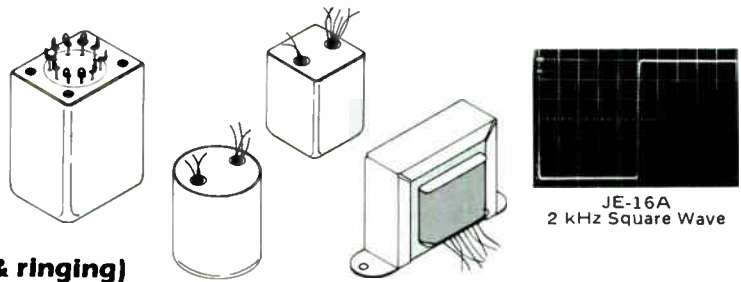
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## INPUT TRANSFORMERS AND SPECIAL TYPES

Model	Application	Impedance Ratio Pri:Sec	Turns Ratio Pri:Sec	20 Hz Max Input Level <sup>1</sup> (dBu)	Typical THD Below Saturation (%) 20Hz / 1kHz	Frequency Response (dB ref. 1 kHz) 20Hz / 20kHz	Band-Width <sup>2</sup> -3dB @ (kHz)	20 kHz Phase Response (degrees)	Over-Shoot (%)	Noise Figure (dB)	Magnetic Shield <sup>4</sup> (dB)	Number of Faraday <sup>4</sup> Shields	Package <sup>5</sup>	PRICES		
														1-19	100-249	1000

### MICROPHONE INPUT

JE-16-A	Mic in for 990 opamp	150-600	1:2	+8	0.036 / 0.003	-0.08 / -0.05	170	-10	<1.75	1.7	-30	1	A=1	63.61	42.49	29.32
JE-16-B	Mic in for 990 opamp	150-600	1:2	+8	0.036 / 0.003	-0.08 / -0.05	170	-10	<1.75	1.7	-30	1	B=2	68.25	45.60	31.46
JE-13K7-A	Mic in for 990 or I.C.	150-3750	1:5	+8	0.036 / 0.003	-0.10 / -0.22	85	-20	<3	2.3	-30	1	A=1	63.61	42.49	29.32
JE-13K7-B	Mic in for 990 or I.C.	150-3750	1:5	+8	0.036 / 0.003	-0.10 / -0.22	85	-20	<3	2.3	-30	1	B=2	68.25	45.60	31.46
JE-115K-E	Mic in for I.C. opamp	150-15K	1:10	-6	0.170 / 0.010	-0.50 / +0.10	115	-5	<7	1.5	-30	1	3	41.48	27.72	21.65

### LINE INPUT

JE-11P-9	Line in	15K-15K	1:1	+26	0.025 / 0.003	-0.03 / -0.30	52	-28	<3		-30	1	1	102.86	68.72	47.42
JE-11P-1	Line in	15K-15K	1:1	+17	0.045 / 0.003	-0.03 / -0.25	85	-23	<1		-30	1	3	39.53	26.41	20.62
JE-6110K-B	Line in bridging	30K-1800 (10K-600)	4:1	+24	0.005 / 0.002	-0.10 / -0.30	75	-15	<1		-30	1	B=1	62.31	41.63	30.56
JE-6110K-BB	Line in bridging	30K-1800 (10K-600)	4:1	+24	0.005 / 0.002	-0.10 / -0.30	75	-15	<1		-30	1	BB=2	70.95	47.38	32.70
JE-10KB-C	Line in bridging	30K-1800 (10K-600)	4:1	+19	0.033 / 0.003	-0.11 / -0.08	160	-9	<2		-30	1	3	40.98	27.37	18.89
JE-11SSP-8M	Line in / repeat coil	600 / 150-600 / 150	1:1 split	+22	0.035 / 0.003	-0.03 / -0.00	120	-9	<3.5		-30	1	4	151.90	101.47	70.01
JE-11SSP-6M	Line in / repeat coil	600 / 150-600 / 150	1:1 split	+17	0.035 / 0.003	-0.25 / -0.00	160	-5	<3		-30	1	5	78.62	52.52	36.24

### SPECIAL TYPES

JE-MB-C	2-way <sup>3</sup> mic split	150-150	1:1	-2	0.180 / 0.005	-0.25 / -0.20	88	-15	<1		-30	2	3	34.08	22.78	17.78
JE-MB-D	3-way <sup>3</sup> mic split	150-150-150	1:1:1	-2	0.180 / 0.005	-0.25 / -0.16	100	-12	<1		-30	3	3	59.57	39.80	31.08
JE-MB-E	4-way <sup>3</sup> mic split	150-150-150-150	1:1:1:1	+10	0.050 / 0.002	-0.10 / -1.00	40	-18	<1		-30	4	1	96.29	64.32	44.38
JE-DB-E	Direct box for guitar	20K-150	12:1	+19	0.096 / 0.005	-0.20 / -0.20	80	-18	<1		-30	2	6	43.04	28.76	22.46

1. Max input level = 1% THD; dBu = dBv ref. 0.775 V

2. With recommended secondary termination

3. Specifications shown are for max. number of secondaries terminated in 1000 ohm (typical mic preamp)

4. Separate lead supplied for case and for each faraday shield

5. Except as noted, above transformers are cased in 80% nickel mu-metal cans with wire leads.

### PACKAGE DIMENSIONS:

	W	L	H
1	1 1/16" Diam.		1 1/16"
2	1 1/16" x 1 3/16"		1 5/8"
3	1 1/8" Diam.		1 1/16"
4	1 1/2" x 1 3/4"		2 1/2" w / solder terminals
5	1 5/8" Diam.		1 3/4"
6	1 1/8" Diam.		1 5/16"

## NICKEL CORE OUTPUT TRANSFORMERS<sup>6</sup>

Model	Construction	Nominal Impedance Ratio Pri:Sec	Turns Ratio Pri:Sec	20Hz Max Output Level <sup>7</sup> across (n) windings (dBu)	600Ω Termination Loss (dB)	DC Resistance per Winding (Ohm)	Typical THD Below Saturation (%) 20Hz / 1kHz	Frequency Response (dB ref. 1kHz) 20Hz / 20kHz	Band-Width -3dB @ (kHz)	20 kHz Phase Response (degrees)	Over-Shoot <sup>8</sup> (%)	Package <sup>9</sup>	PRICES			
													1-19	100-249	1000	
JE-123-BMCF	Quadfililar 80% nickel	600-600 150-600	1:1 1:2	+28	2	-1.1	20	0.002 / 0.002	-0.02 / -0.02	>450 158	-2.1 -4.1	<1	7	87.41	44.17	30.47
JE-123-DMCF	Quadfililar 80% nickel	600-600 150-600	1:1 1:2	+21	2	-1.0	19	0.004 / 0.002	-0.02 / -0.00	>450 230	-1.2 -2.5	<1	8	50.71	33.88	23.38
JE-123-BLCF	Quadfililar	600-600 150-600	1:1 1:2	+32	2	-1.1	20	0.041 / 0.003	-0.02 / -0.01	>450 168	-1.9 -4.0	<1	7	61.30	35.79	24.70
JE-123-DLCF	Quadfililar	600-600 150-600	1:1 1:2	+27	2	-1.0	19	0.065 / 0.003	-0.02 / -0.01	>450 245	-1.2 -2.5	<1	8	39.61	26.45	19.42
JE-123-SLCF	Quadfililar	600-600 150-600	1:1 1:2	+23.5	2	-1.1	20	0.088 / 0.003	-0.03 / -0.01	>450 245	-1.2 -2.8	<1	9	33.48	22.35	15.43
JE-112-LCF	Quadfililar	600-600 150-600	1:1 1:2	+20.4	2	-1.6	29	0.114 / 0.003	-0.03 / -0.01	>450 205	-1.2 -3.2	<1	10	25.48	17.01	12.49
JE-123-ALCF	Quadfililar	66.7-600	1:3	+26.5	3	-1.3	8	0.125 / 0.003	-0.04 / +0.06	190	-4.6	<6	8	42.14	28.15	19.42
JE-11S-LCF	Bifilar w / split pri.	600-600 150-600	1:1 1:2	+30	1 (sec)	-1.7	63	0.058 / 0.002	-0.02 / +0.01 -0.02 / -0.05	>10MHz 155	+1.1 -4.1	<1	8	42.14	28.15	19.42

6. Multifilar construction has no faraday shield.

All specifications are for 0Ω source, 600Ω load.

7. Max output level = 1% THD; dBu = dBv ref. 0.775 V

8. Source amplifier - 3dB @ 100kHz

9. Output transformers are horizontal channel frame type with wire leads, vertical channel frames available.

### PACKAGE DIMENSIONS:

	W	L	H	Mounting Centers
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8	1 5/16" x 1 15/16"		1 5/8"	2 3/8"
9	1 1/8" x 1 11/16"		1 3/8"	2"
10	1 1/16" x 1 7/16"		1 3/8"	1 3/4"

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Beck was one of several artists to work on video interpretations of Jimi Hendrix's music. Shown here is a moment from "Voodoo Child."



Beck creates transparent archetypal shapes and forms that at one moment undulate delicately and then metamorphose into symmetrical patterns and sequences that impel the viewer to create his or her own scenarios. The program runs about 45 minutes and includes a bonus segment, "Tune Your TV," designed to help viewers fine tune their sets.

Electron Video Creations is a video art and music label, and will eventually distribute work created by other artists and producers. *Illuminated Music* could be called "Stephen Beck's Greatest Hits" as it contains the most well known compositions of one of this country's pioneer video artist.

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## Iasos' Inter-Dimensional Music

"Crystal Vista" is a 30-minute concept music video piece created by Iasos, a self-described "new age" musician and composer. He records and performs his one man music light shows under the name of Inter-Dimensional Music. Drawing on the air brush artwork of a number of nationally known artists, he has designed "Crystal Vista" to be a kaleidoscopic journey through mid-earth to the metaphysical realms of inner consciousness. Iasos' instrumental music is both evocative of ancient modes and futuristic at the same time, a blend of classical themes and electronic music similar in scope and dynamics to the works of Vangelis or Tomita.

"Crystal Vista" was a collaborative effort, with Iasos directing a large team of video and special effects people. The image basis for his visualizations was the eclectic paintings of Andrew Annenberg, Steve Austin, Dean Burns, Gaspar Carvalho, Geoffrey Chandler, Don Davis, James Fields, Richard Fields, Brian McGovern, Joseph Parker, Gilbert Williams, and Bernard and Barbara Xolotl. Iasos makes extensive use of image processing and feedback building on their artwork, enhancing and highlighting aspects of the images as part of the visual narrative.

The computer graphics were created by Michael O'Neil of Astral Vision, NASA/JPL and G.G. Aries of Echo Effects, Unlimited. Live action footage was shot or provided by Don Davis and the US National Park Service and by Don Davis. Other video effects were created by Ken Jenkins, Dixie Quinlin and Dean Cutler of Immediate Future. Andy Neddermeyer and Clark Higgins served as video consultants. The production was directed and edited by Iasos.

—L.C.

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# COMPUTER TOOLS



LON McQUILLIN

## COMPUTER-AIDED VIDEO

By Lou CasaBianca

The invention of the first Apple computer truly qualifies as a key historic event in the development of technology, and in a broader sense, in the evolution of society. The computer has become an invaluable tool in the audio and video production and postproduction environment. Virtually every key device, from tape recorders and mixing consoles to cameras and editing systems contain or are controlled by microprocessors.

Recently several companies have developed software specifically for film and video production. The range of software available goes from relatively inexpensive handheld calculator programs that will convert film frames per second to SMPTE timecode, to main-frame programs that will project and monitor the hundreds of line items involved with the production of a major motion picture.

Not long ago we met with director/writer/producer/editor Lon McQuillin to discuss his development of software specifically for budgeting (The Associate Producer), and editing film and video projects (The Edit Lister). McQuillin has been involved with over 100 commercials, industrials and entertainment programs. His background in film and television is quite extensive and he has won a number of major awards at international

festivals. He also has presented seminars and workshops for ITVA (The International Television Association) and Video Expo. He is the author of *The Video Production Guide*, an extremely pragmatic handbook covering the video production process.

**MIX:** How did you get involved with computers?

**LM:** I originally bought a computer to write the book because I knew it would speed up the process. In 1979 I was one of the editors on a PBS show called *Don't Bother Me, I'm Learning*, all about kids in computer classes. One of the statements made in the show was that if you didn't know computers in five or ten years you basically would be functionally illiterate. I like gadgets and had a number of projects going, so it made sense to buy a computer at that time.

The computer paid for itself the first month and rather than buy a word processor I wanted to buy a personal computer because it could do other things. So I bought an Apple because it seemed to be a nice friendly machine, it was inexpensive and it did the job that I wanted. I suddenly found this could be useful in a business too. The first thing I did was start a budget program. It was real cumbersome but it showed me that it could be done so I started revising and learning about the computer at the same time.

Eventually I developed an earlier version of the existing budgeting program for the Associate Producer and started using it.

I don't pretend to be a computer programmer. I'm a producer and a director. My real love is directing and editing as well and I happen to have discovered a certain talent for being able to write programs. When it gets into the real hard core hardware of computers that require esoteric programming techniques, I work with a programmer.

In the Associate Producer every program was designed to speed up a particular part of the production process and to provide more control of money as a budget factor. The Edit Lister is another example of this kind of roundabout process, whereby the software came into existence. That started initially because in working with paper off-line lists it was always a pain adding and subtracting timecode. Initially I just wrote a little program to do the math with timecode. Then I got curious and wondered how much of the operation of a CMX editor I could emulate using a microcomputer. I started out at the time with a CMX 50 and so the first version of the software was called Apple 50. It had a total capacity of 50 events and no list management capabilities whatsoever. It was primitive, and yet it proved that the concept was basically valid.

**MIX:** How does it tie-in with the software from Comprehensive?

**LM:** Comprehensive is marketing it as part of their package, in other words they want to be a single source for as much of the production software market as possible. The Edit Lister is designed to create a CMX list. The original purpose was to do off-line editing using window dubs on a very inexpensive controller to create a decision list for a standard CMX format. I had two main purposes in mind. One is the time savings in typing it into a computer as opposed to writing it down on paper. The other is more utility. For instance, if you're doing a base edit and a lot of inserts, defining where those inserts are supposed to be in a paper editing situation can be really painful. If it happens to hit right at the start of an edit or at the end of a base edit that's not too difficult, but if you need to straddle a base edit or have a whole series of inserts in a row you need to be able to define where they will fall. On paper that's painful.

On the Edit Lister using the computer, it's a piece of cake because it's just the way the CMX works. In the final version of the actual operating software that's out



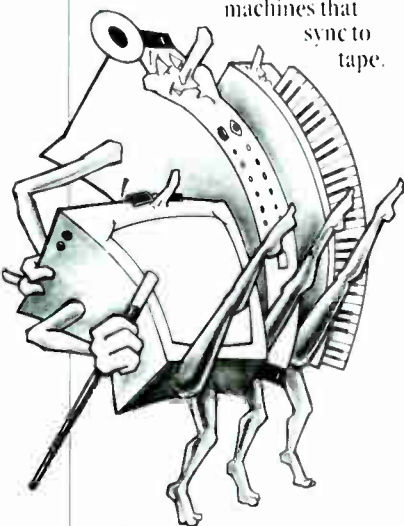
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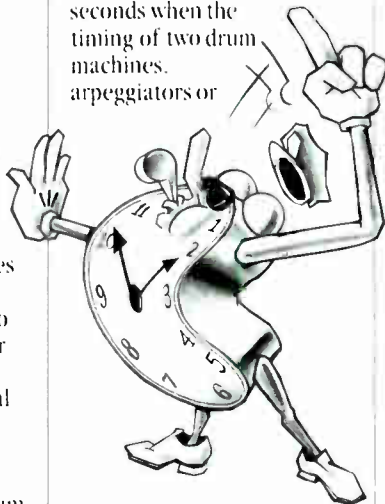


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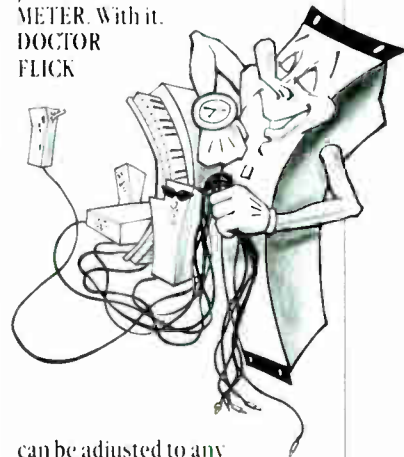
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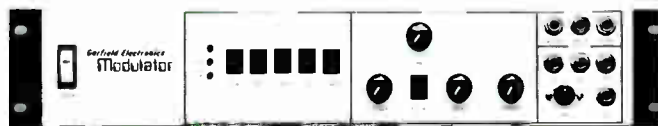
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on the market, it simulates exactly how the CMX 340 operates. It's designed for a serious editor. At Video Expo in N.Y. there was this guy sitting at the computer building a list. There was no manual available at that time. It turned out that he was a CMX editor at WNET. He sat down and saw a little question mark that said "help." He pushed the questionmark and got the help screen up. He figured it out in about two or three minutes and he was sitting there building a list. He had intuitively taken to it. That's why it was designed to emulate a CMX. There are simpler editing systems and we're going to be coming up with other software.

**MIX:** Like flight simulation, you're doing edit simulation.

**LM:** Edit simulation exactly, and so our system does virtually the same thing theirs does but at a much lower cost.

**MIX:** Computer Aided Video.

**LM:** Yes, it came out of an essential need that small production companies have. If you have a large staff it's one thing, but when you're running a one or two or a ten person organization, the work seems to expand to fill the available man hours. That's where "computer aided video" comes into its own in that depending upon which program we're talking about, my experience has been that it cuts the amount of time to do any one particular function anywhere from 50 percent to as much as two-thirds. When entering the information into the computer, in essence what's happening is you're using an electronic form, just as if you had a form for budgeting, a form for budget tracking or your run downs and your schedules or what have you.

In my book I talk about the two ways of putting together the budget. One is to not even think about a figure and just put in all of the elements that you're going to need and then see what the bottom line is. The second method is that you have this definite amount that you've been given and you work backwards. I would still tend to use the first process, then you can go back and make changes and that's where you pick up all the speed. Instead of having to erase on the form and refigure your totals and write it down at the bottom and then go for your next item and do the same thing over and over again, you're just making those changes in the computer. It's automatically and instantaneously updating all the totals. So, in terms of cost, you can look at it in terms of manhours saved. There's also an accuracy factor, especially with the way the budget program is set up where you can ask it to prompt you for all these items. You can also bypass that and go directly to the items you want to work with. I generally recommend using that feature which will prompt you because you're less likely to forget something and

you'll end up with more accurate budgets. Then the budget tracker is useful for figuring profit and loss for a given project or figuring whether you're within or above your budget. The historical record can be very helpful as well.

**MIX:** What are the tangible benefits associated with using the Power Script software?

**LM:** The thing with writing either the video format or the screen play format is that there is a lot of mechanical stuff going on—you're setting margins. If you were using the left/right video forms, you'd load the paper in your typewriter and you'd set your margins and you type everything on the left hand side. You'd then reset your margins and you load up again doubling the amount of work and anytime you want to make a change you have to retype everything.

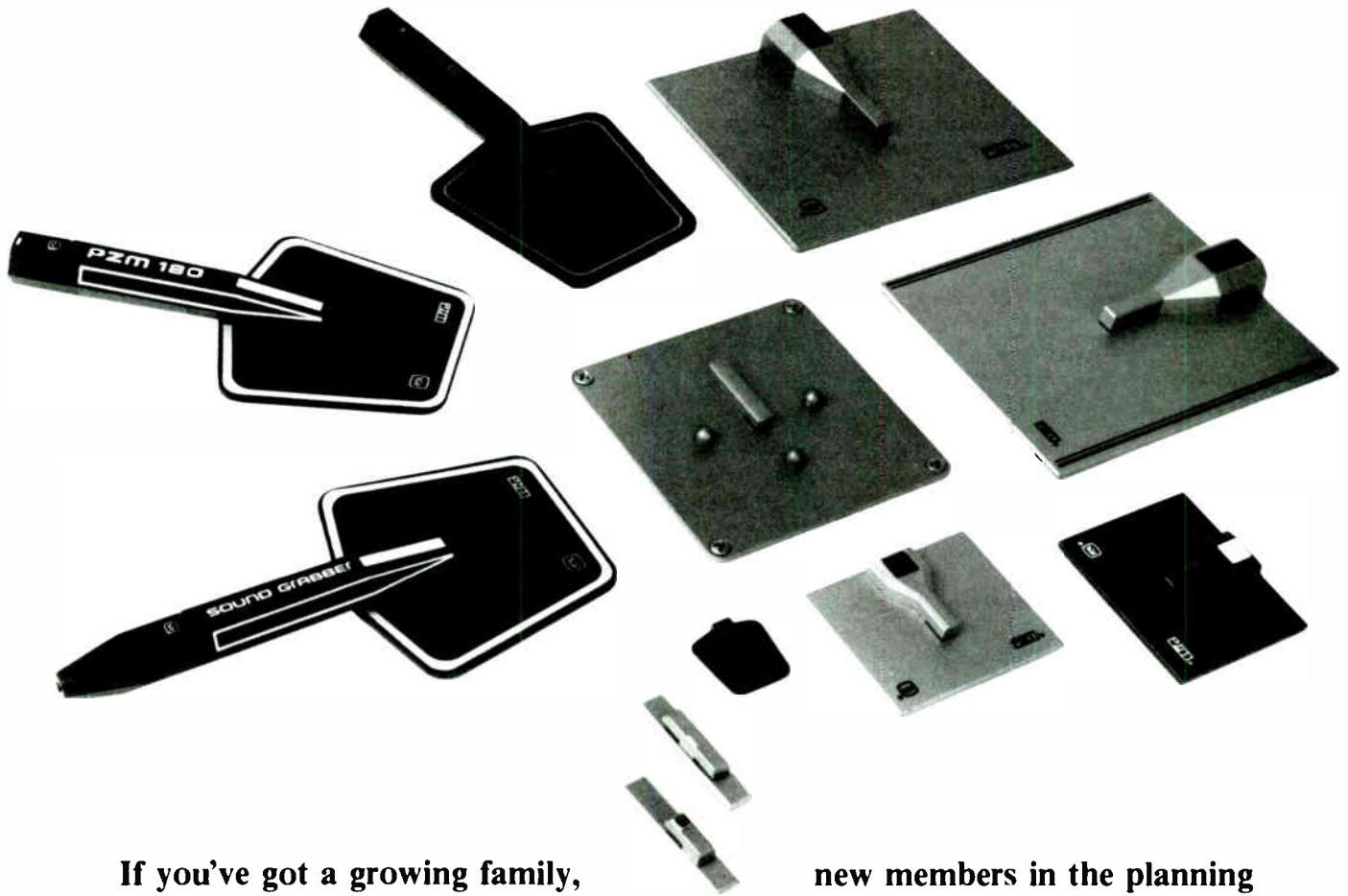
Power Script, which is a custom word processing production software package for scriptwriting, does all of that for you. You simply type on the keyboard and pay no attention whatsoever to where its going to be on the screen. The way it works is quite simple. Anything that's going to be on the left in the video screenplay, you simply precede with a "/" (slash). When using IBM there's a function key you press that automatically types slash one and if you're using an Apple you type escape one. Two key strokes and then you type and you just pay no attention to layout. When you have something to be on the right hand side you simply precede with a slash two. So if you want to add a new scene or dialogue you'll push everything down together to make room for the new addition, or you can take the existing piece add a new scene direction on the left. It's so fast to use and you're thinking in pure creative terms. Something that is an important point with the Associate Producer, Power Script any of these software packages is that it makes management more of a creative function than a chore. You're free to think of the alternatives.

**MIX:** With the pressure of unexpected changes and deadlines, creative development can sometimes be pushed aside because of tedious, mechanical details.

**LM:** Right, the scheduling program is a perfect example. It's more of a producer's function, but it certainly affects the director who often is the same person. When you break down your scripts you can just go through from start to finish and simply throw stuff into the computer. Then you can easily and quickly rearrange the order of scenes to arrive at the most efficient use of cast, equipment and crew. You can Xerox the thing and hand it out to the crew which is hard to do with the production board. With a portable computer and built-in printer you can take it

—PAGE 132

# Family Portrait



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# Video Events Calendar

## JULY 1984

- 5-20 **Filmex** feature film market. Los Angeles, CA.
- 10-12 **Cable '84** conference and exhibition, sponsored by Wembley Conference Center. London, England. Online Conferences Ltd., Ash Hill Drive, Pinner HAS 2 AE, Middlesex, U.K. Tel: (01) 868-4466. Tx: 923498.
- 23-27 **Siggraph '84** 11th annual conference on Computer Graphics and Interactive Techniques, Minneapolis Convention Center.

## AUGUST 1984

- 6-8 5th annual **New Music Seminar**. Hilton Hotel, New York City. New Music Seminar, 1747 First Avenue, New York, NY 10128. Tel: 212/722-2115.
- 10 **RockAmerica Video Music Seminar**. New York City.
- 13-18 **Toronto** (animation).
- 26-30 **Video Software Dealers Association** convention. MGM Grand. Las Vegas, Nevada.
- 27-30 5th annual **Nebraska Videodisc Symposium**. Presented by Nebraska Videodisc Design/Production Group, Nebraska Center for Continuing Education and Cornhusker Center, Lincoln, Nebraska. Ron Nugent, Station KUON-TV/University of Nebraska-Lincoln, P.O. Box 83111, Lincoln, NE 68501. Tel: 402/472-3611.

## SEPTEMBER 1984

- 11-14 **The 2nd Annual Integrated Media Communications Conference** and Exposition (IMCOM) produced by J. Spargo & Associates will be held at the Washington, D.C. Convention Center. The professional program and exposition will focus on the integration of video, computer and A-V technologies for the production and delivery of more effective communications. (703) 425-8590.
- 16-19 **The Radio Convention** combined conventions of National Radio Broadcasters Association and National Association of Broadcasters—radio programming conference. Westin Bonaventure Hotel, Los Angeles.
- 20-26 **The Mill Valley Film Festival's** film premieres, seminars and a tribute to Bill Graham. Sequoia Theatre, Mill Valley, California.
- 21-23 **10th International Institute of Communications Annual Conference**. Berlin, Germany. IIC Tavistock House East, London. Tel: (01) 388-0671. Tx: 24578.
- 21-25 **10th International Broadcasting Convention**. Metropole Conference and Exhibition Center. Brighton, England. IBC Secretariat, Institute of Electrical Engineers, Savoy Place, London WC2R OBL. Tel: (10) 240-1871. Tx: 261176 IEELDN.

## OCTOBER 1984

- 1-5 **London Multi-Media Market**. Gloucester Hotel, London. Karol Kulik, LMMM, 33 Southampton Street, London WC2E 7HQ, U.K. Tel: (01) 240-8676. Tx: 24577.
- 13-17 **VIDCOM**. Cannes, France, Xavier Roy, 179 Avenue Victor Hugo, 75116 Paris, France. Tel: (01) 505-1403. Tx: 630547.
- 27-Nov 3 **SMPTE**. Society of Motion Picture and TV Engineers. 126th technical conference and equipment exhibit. New York Hilton. SMPTE, 862 Scarsdale Avenue, Scarsdale, New York 10583. Tel: (914) 472-6606.
- 30-Nov 2 **Atlantic Cable Show**. Atlantic City Convention Center. Atlantic City, New Jersey. (609) 848-1000.

## NOVEMBER 1984

- 7-9 **Television Bureau of Advertising** 30th annual meeting. Hyatt Regency. Chicago.
- 13-16 **New York World TV Festival**. New York City. Tel: (212) 687-3484.
- 17-20 **AMIP '84, American Market for International Programs** second annual program marketplace, organized by Perard Associates with MIDEM and National Video Clearinghouse. Fontainebleau Hilton. Miami Beach.
- 19 **International Emmy Awards**. New York City. Tel: (212) 308-7540.

## DECEMBER 1984

- 5-7 **Western Cable Show**. Sponsored by California Cable Television. Anaheim Convention Center, Anaheim, California. (415) 428-2225.

## JANUARY 1985

- 5-8 **INTV**. San Francisco, California.
- 10-15 **NATPE**. Moscone Convention Center. San Francisco, California.
- 30-Feb 1 **25th annual Texas Cable Show**. Sponsored by Texas Cable TV Association. San Antonio Convention Center, San Antonio, Texas.

## FEBRUARY 1985

- 15-16 **Society of Motion Picture and Television Engineers** 19th annual **Television Conference**. St. Francis Hotel, San Francisco, California.

Please submit all notices for industry events to:  
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Mix Magazine  
2608 Ninth Street  
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—FROM PAGE 130, McQUILLIN

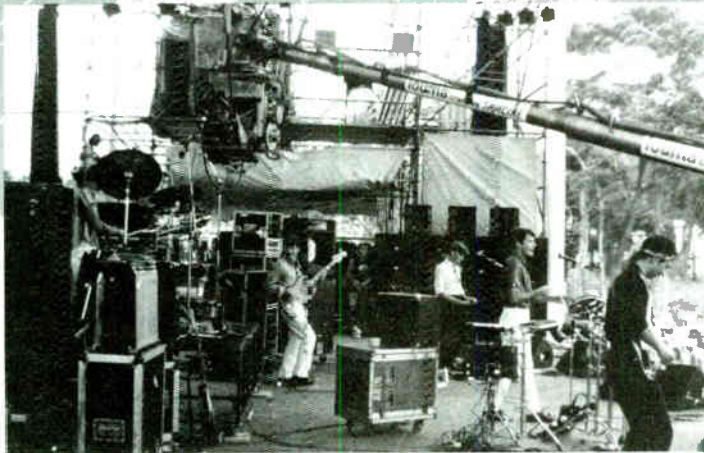
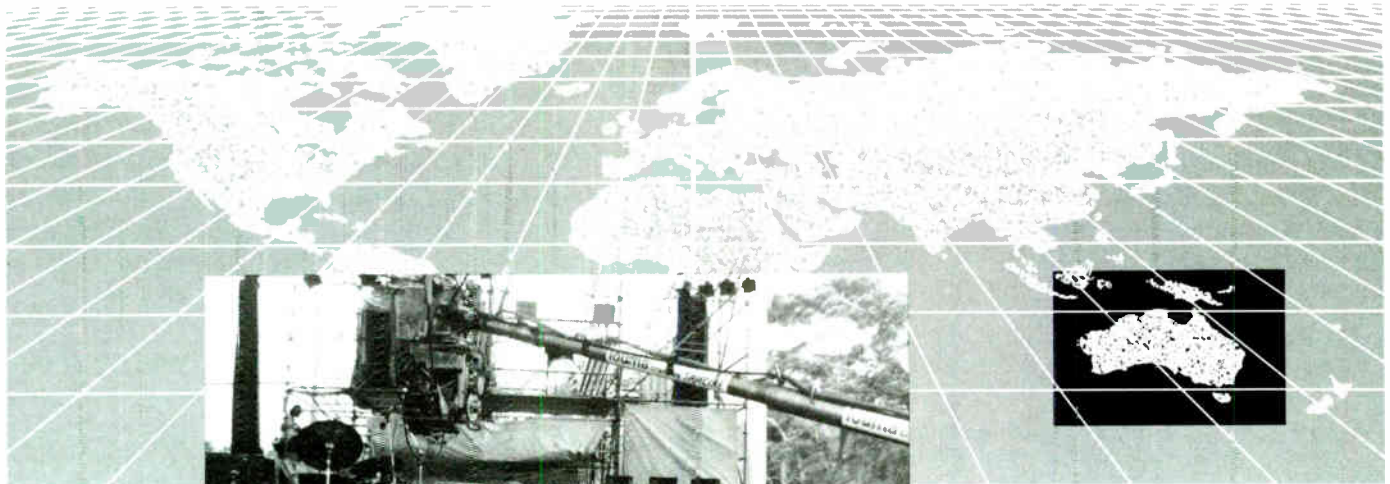
out in the field. It's a faster process still it's an enhancement to the creative aspect. It helps you keep thinking in creative terms. We have discovered some side benefits but the whole idea is to save on line edit time in the studio.

Being an experienced CMX editor, I kept track and also talked about it with other editors and came up with an average of about 15 seconds to enter an edit into the memory of an on-line computer. It takes about 15 seconds of pure keyboard time per edit if you walk in with the paper list. If you're doing a half-hour show that has 250 events or edits, you're spending basically an hour doing nothing but pushing the buttons on the keyboard of the editing system. If you're looking at one-inch editing time, that's about 300 dollars an hour. You can save significant bucks per show by doing all that work offline on a microcomputer at your office. It became real obvious that you could quickly pay for or buy your computer and all the software. Everything you need you can pay for within a very short time or a small number of sessions, and the more work you do the more money you're going to save. It seems such an obvious thing to be using these computers in production.

The beautiful thing about a computer to me is it doesn't really matter which computer it is, whether it's an Apple or an IBM; they all do exactly the same job, they just do it in a slightly different way. But the same machine can do so many different things. When I walk into the office the computer gets turned on in the morning and stays on all day. I use Power Script for script producing. I'll spend an hour or two in the morning doing word processing and I'll pull out my data base and look up some production resource information for the budget I'm about to write. Then do the budgeting. In the afternoon it might be used to develop an edit decision list. It does all these different things and those are really just production related. I do my invoicing using the computer. Every Monday morning I sit down and revise my cash flow projection for the next 30 to 60 days.

So it's an analytical tool for both my business and my own personal life. At the end of the day if I'm really bored I can play a game of Chop Lifter. Using it for music is an area that I'm real anxious to pursue. Microcomputer graphics are starting to come on line. One of the new buzz words is multi-user work stations and local area networks, computers that can talk to each other. I have an old Apple, my original machine that someday will become a household computer. It's going to turn on the lights and start the coffee in the morning and take care of the security and, if I'm real lucky and am willing to spend a few weekends programming, it will mix me drinks when I walk in the door. ■

# Video Music Down Under



A Louma crane hovers above the stage at Navara as ECV tapes the band The Express.

overseas talent. Australian artists almost exclusively do their clips here and an increasing number of major overseas talent are making the trek Down Under for their projects for the same reasons.

One reason is the wealth of professional clip makers who are able to operate within Third World budgets and come up with world-class clips. Then there's the stunning array of landscapes close to the major cities of Melbourne and Sydney. From miles of beaches with soaring cliffs to out-back plains and endless deserts, through ethereal mountain ranges and dazzling rainforest, Australia is a wonder of location variety. Add to this cost-efficient studios with the latest digital and analog gear, plus a gloriously long summer that corresponds to the Northern Hemisphere's winter, and it's little wonder that Elton, David Bowie, UB 40, Peter Tosh, Duran Duran, Kiss and many others are making the journey to Oz. Both Duran Duran and Elton John made their clips, recorded, and started their world tours here for those reasons.

The budgetary inducement is one of the greatest factors in the explosion of clips being made here. Last year, record companies spent nearly \$2 million on local product with average budgets of under \$12,000. In 1983, the highest budget for a single clip of a local artist was in the vicinity of \$30,000 for Little River Band, while 1984's largest dollar clip was for Icehouse's "Taking The Town," which was brought in for \$50,000. Several clips for Real Life, Mi-Sex, and a few other bands have hit the \$20,000 mark, but this sum is usually reserved for major Australian artists.

By Phil Tripp

Australia has captured the ears as well as the imagination of people throughout the world. Australian films and music are the main elements of the impact and the recent boom in Australian pop performers has added new words to the American language like chunder and Vegemite.

But the combination of music and visual imagery embodied in the rash of clips that have been seen on MTV and other outlets, has made the biggest dent in the collective consciousness of US music aficionados. But what may not be known by most viewers is that to a great degree, Australians started the boom in clips and we have a long history of using video to further music Down Under.

Russell Mulcahy, hailed as the godfather of clips, is a fair dinkum Aussie with over 300 clips to his credit and a recent feature film directorial debut with the 'Jaws of the Outback' horror flick *Bazorbark*. His clip credits include most of Duran Duran's efforts, Billy Joel's "Allentown" and "Pressure," Elton John's "I'm Still Standing," "Sad Song," Ultravox's "Vienna," Kim Carnes' "Bette Davis Eyes," and Fleetwood Mac's "Gypsy," among others.

Though Mulcahy may be the most visible director from Australia, there several others who are equally talented but lesser known, like Peter

Clifton who directed Led Zeppelin's epic *The Song Remains The Same* and has done clips for Blondie, The Rolling Stones, Supertramp, and Crosby, Stills, & Nash. One of his earliest clips was "Whiter Shade of Pale" for Procol Harum, and he has alternated between England and Australia in his long career. His latest project is a film on the broad range of Oz rock titled *Australia Now!* which is being released as both a theatrical feature and home video. It soared to #2 in the Australia home video charts in just a few weeks and has the distinction of being the first laserdisc of an Australian film.

Another old line clipper is Peter Cox, who has made many of the seminal clips for Australian bands like Icehouse, Little River Band, Cold Chisel, Mental As Anything, The Angels and INXS. He is currently working on two long-form projects for Captured Live Productions—*Foreign Affair—25 Years of Australian Music*, and the farewell concert for Cold Chisel.

But the director who has made the biggest impact on the world in the last year is Tony Stephes, who with cinematographer John Whitteron, is responsible for all of Men At Work's clips and is teaming with Cox on the two previously mentioned projects.

All told, there are over 40 clip makers in Australia who regularly produce and direct projects for local and

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Director Ray Argall (back to camera) directs *Midnight Oil's "Read About"* clip in Australia's Jenolan Caves.

Most band have their first clips produced for under \$10,000, and this is where the clipmakers' talents for keeping budgets lean have been honed.

Additionally, there is a lack of union hassles and a wealth of locations available without fees being extracted. Lab services, editing suites, transfers, and recording costs are kept to a minimum through the lower rates charged here than one would find in London or Los Angeles.

But perhaps the real key to the advanced state of Australian clip making is the unique music industry that has evolved over the past 15 years. Because Australia is a country with a small population (15 million) a land mass the size of the US and widely separated cities, it has relied on television programming as a primary adjunct to touring for the promulgation of music to consumers.

The major program broadcast nationwide on Sundays for the past ten years is *Countdown* on the ABC, the state owned, non-commercial network. It reaches over one-third of the nation's viewers, many of whom receive no other networks. It has always been the key marketing tool of record companies with the program being given exclusive first runs on all clips. And *Countdown* sponsors the industry's rock awards every year.

Another program that has had a ten year run is *Sounds*, a three-hour program on the channel 7 network broadcast on Saturday mornings. Host Donnie Sutherland also hosts a three-hour late night program called *After Dark* and is soon to release a pilot for overseas syndication titled *Entertainment Down Under*. The program is being produced by Enterprise Color-Video and will run an hour with clips, news segments, and features on film and music from Oz.

Enterprise Color-Video is the country's major production house for video music, with general manager

Steve Priest producing a number of clips for Elton John, Kiss, and several important local artists. ECV is currently assembling a special for overseas broadcast on the Narara Festival, which featured 25 Oz rock bands as well as overseas acts who were not taped, making it this year's Aussie rock spectacular.

Record companies have encouraged video music development in this country through local and overseas programming, extensive productions for their artists geared to an overseas market, and the major investment necessary to accomplish these ends. Foremost among these are Mushroom and Regular Records, the country's two major indie labels.

Mushroom spent nearly \$500,000 last year on clips, and label head Michael Gudinski has been actively involved in programming on a national level as well as making trips to the US to push MTV and other outlets to play his artists' clips. And the results are gratifying, with exceptional rotation of artists like Tim Finn, Hunters & Collectors, Machinations, Split Enz, and Wendy & The Rocketts. Regular Records has the distinction of Australia's largest selling single, a 12" comedy record by Austen Tayshus titled "Australiana" which made #1 on two different occasions and was backed by a video clip of a \$12,000 budget that catapulted it to the top of the charts. Two other Regular acts, Icehouse and Mental As Anything, have also received massive overseas airplay due to their video efforts.

But what are the key factors that make Aussie clips so unique and repeatable? Most industry insiders feel it is the imagery, the raw and uncompromising visual quality, and the lush scenery that capture the eyes, while the tough and unrelenting music itself serves as an excellent base for the visuals. Tony Stevens thinks that humor plays a major part and is one reason why his clips for Men At Work

went over so well. "Clips are meant to be entertaining and there are only so many visual cliches, so much gratuitous violence and sexual denigration that you can throw at viewers before they tire," he says. "Humor is hard to bring off, but it lasts and is non-threatening."

But Midnight Oil, Australia's most popular and politically active band, bars no holds in its clips, and they are frightening rather than humorous. "The Power and The Passion," "Read About It," "US Forces" and their live performance footage feature a bald towering vocalist who sings of nuclear annihilation, ecological rape and corporate plundering against a backing of hard-driving power pop. Their clips may prove a bit hard for American audiences to digest and their speedy cuts and confusing archival footage assault the viewer, but over here Midnight Oil are the ultimate performing and video heroes. Their fans take the apocalyptic lyrics to heart and the band enjoys a rabid following. Their recent tour of the US following release of their *10-1* album showed America just how strong Australian music can be on stage as well as through the glass eye. They are, in words of Chip Rachlin, acquisitions head of MTV, "The next big diamond in the mine of Australian music." And MTV has supported the band in spite of their overly political videos.

Midnight Oil is the exception, though, in their approach to social issues clips. Goanna is another group that questions the societal imperatives, but other groups such as Divinyls, INXS, AC/DC, Olivia, Australian Crawl, and Air Supply take a pop and hard rock leaning in their product.

Looking to the future, there is a second wave of Australian artists ready to reinforce the present invasion. Indie labels such as Mushroom, Regular, Larrikin, Hot, and bands like Australian Crawl, Mondo Rock, Moving Pictures, Celibate Rifles, Altar Ego, Spy vs. Spy, and an army of others currently cutting their teeth on the hard road of Oz touring, are ascending the Australian ladder of success. Also, there are several newer clipmakers like Kimble Rendall, Larry Meltzer, the Rich Kids, Ray Argall, and Peter McLean who are perched on the edge of success with their talents and output. Unlike similar foreign musical trends—the German and British synthpop bands, Canadian one hit wonders, and the Japanese chic movement—Australian bands have the staying power and musical punch to retain their hold on the world's ears and remain a force to be reckoned with. ■



# POWER!

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# HARDWARE | SOFTWARE

## NEWS FROM NAB

The 1984 National Association of Broadcasters convention in Las Vegas had no problem answering the now legendary question, "Where's the beef?" Voice-activated editing systems, digital audio disc and tape recorders, charge coupled devices (CCD) and integrated 1/2" and 1/4" cameras, Multi-event record/playback systems (MERPS), high definition television (HDTV), read-write optical videodisc systems and (everybody's favorite) video graphic, paint and animation systems, were just some of the leading edge technologies that are now available as off-the-shelf items. The 61st annual NAB convention and 38th equipment exposition was a classic case of right brain and left brain symbiosis. The push-pull of the spectacle of Las Vegas was a backdrop for new technology previews and broadcaster politics, contrasted with the soft sell of promotional hospitality suites and hard hitting manufacturer competition on the exposition floor. As many as 30,000 people swarmed through 640 exhibits, jammed into nearly 300,000 square feet of space. The air of excitement about the new equipment was cut by the broadcasters/engineers conservative "show me" attitude. Bells and whistles are one thing, performance capability and built-in obsolescence are another.

The convention theme was the patriotic message "You've Got What It Takes" printed in white reverse except for the letters VOTE, printed in red. The 38th Broadcast Engineering Conference held sessions covering among other subjects: "Stereo Audio Production for Television," "FCC AM Stereo Requirements," "Computer Graphics & Teletext," and "Television Production Engineering." Charles Osgood of CBS News was guest speaker for the induction of broadcast satirists, Bob Elliot & Ray Goulding and Red Skelton, into the Radio Hall of Fame. Paul Anka entertained at the Grover Cobb Award Ceremony. But beyond the spectacle it's clear that the star of the NAB '84 was the wall-to-wall equipment.

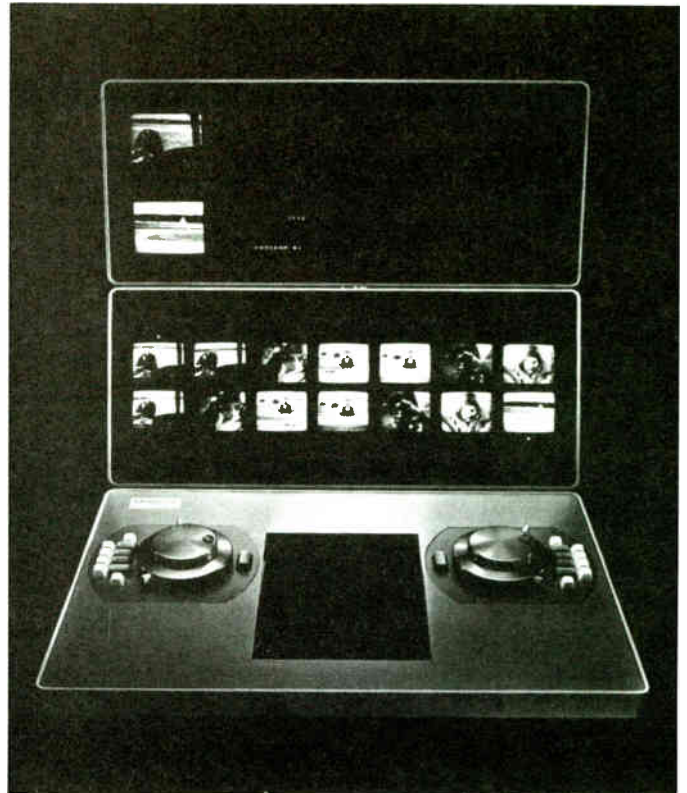


### VOICE AND TOUCH EDITING FOR CMX 3400

"Jelly, roll." With this command, the CMX NAB demo operator instructed one of the one-inch machines to roll tape. "Jelly, edit mark in...mark out." The operator had renamed the traditional machine-A, "Jelly." At no time did he use his hands, and with a few simple verbal commands he was able to make edits while calling in special wipes to drive the point home. The voice feature is highly accurate and generally immune to ambient operating noise in the editing environment. The editor

creates his own personalized 200-word command vocabulary, in any language, on a floppy disk which can be easily transported from one edit suite to another. At one point or another, anyone who has ever spent huge amounts of time editing has dreamed of smart machines that would do what they're told. The new CMX 3400 system offers both voice controlled as well as touch screen editing. An editor can control the system without having to remain at the console or could be rolling audio or other special effect devices. The touch screen feature eliminates keystrokes by permitting the editor to touch the entry he wishes to make on the screen with his fingertip, moving it to another touch of the screen. The touch and voice options extend the creative freedom permitting the editor to concentrate on artistic decision making and spend less time on mechanical functions. Next to direct neuron control, voice activated editing is probably the ultimate user friendly man-machine interface.

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### MONTAGE PICTURE PROCESSING

The Montage Picture Processor was one of the most popular demonstrations at the Convention. The system is a radical departure from the traditional approach to linear/sequential editing systems. Ronald C. Barker, Montage President and the inventor of the system says, "The Montage allows the film or tape editor to manipulate pictures in much the same way you manipulate words in the common word processing program." The Picture Processor is composed of four elements. The picture processing console contains: fourteen 3.7-inch black and white monitors, four 5-inch color monitors and one 13-inch color monitor; picture processing wheels, levers, and keys; console-lock and audio level controls; and connec-



tions for picture label camera, microphone, and electronic stylus "grease pencil."

The heart of the system is the C.P.U. cabinet with MC 68000 processor; (there are up to 19 Z-80 microprocessors involved in the multi-tasking operations); a removable 10 megabyte cartridge disk drive; 80 megabyte Winchester disk drive; power supply, and software, resident on Winchester disk drive, which controls interaction between the Montage console, terminal, source memory module, and central processor functions. Options which may be installed in this cabinet include: work tape machine (1/2") and auto assembly driver (8" floppy disk). The third element is a modified cathode ray terminal with a custom Montage keyboard. And the fourth component is the source memory module with seven beta videocassette machines, seven Montage intelligent interfaces with time code reader/generators, and A.C. power panel. Options for this cabinet are the Montage dissolve/wipe unit with two time base correctors, sync generator and black generator.

The Montage operates on a random access principle, permitting the editor to change the order of program material without ever having to re-record it. All of the final edit decisions are made before they are recorded on tape. Program sections can be opened up, inserting new material or rearranging entire sections at will. A major step forward is the elimination of SMPTE time code numbers to locate material, instead the focus of the system is the visual image. Montage can handle four input sources simultaneously from cameras, tape machines, film-to-tape transfer systems and routing switchers.

Montage sold 12 systems before even getting to NAB. At \$262,000 a copy for the expanded version, it is probably the most expensive turn-key off-line editing system ever offered. Remember the bottom line is that the system is only capable of generating an Edit Decision List. The major production facilities who have ordered one are convinced that the speed and creative freedom will pay off in time saved and greater creative productivity. The Montage will probably become another tool, like ADD and "paint box," in the continuing quest for real time creative control of the postproduction process.

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## SONY SYNCHRONIZER

Sony has introduced a new time code synchronizer designed for the synchronization of audio tape machines, videotape recorders and film systems. Based on SMPTE/EBU studio control protocols, the Sync Master consists of a multi-purpose keyboard/display unit, the AVS-500, and processor

rack, the AVP-500. Up to four machines can be locked together and controlled from a central keyboard unit. The display can be removed from the keyboard and mounted in a remote location. The synchronizer can provide an audio edit decision list with management capability, with the added ability to accept edit lists from CMX compatible video editors. Sync Master is designed to interface with leading brands of professional analog audio recorders, 3/4-inch video recorders, Sony BVH-1100, 1100a and BVH-2000 one-inch format VTRs as well as the full line of Sony digital audio equipment.

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## PANASONIC OPTICAL DISC RECORDER

Panasonic has introduced the TQ-2023F Optical Video Disc Recorder which uses the Panasonic-developed DRAW system (Direct Read After Write) to record and play back up to 24,000 frames (13.3 minutes) on an 8-inch disc. The DRAW system uses a new spiral-writing format which allows packing up to 60 percent more information than concentric systems. The disc provides color motion video recording with horizontal resolution of 300 lines (superior to 3/4"). Two channel audio record and playback are also standard. The quality is assured through FM encoding and dbx noise reduction providing audio specs of 20-20k at 70dB min.

Through the use of either the built in keypad, or the wireless remote control, any frame or sequence on the discs can be accessed in less than a half-second. The playback mode provides normal play, variable rate still frame advance, variable slow and fast motion and disc scan. The recorder has a standard RS232C serial port for interfacing with a computer for complex sequencing of segments or interactive applications.

Other features include an on-screen display showing address frame number, keypad entry number, playback mode, and any applicable error messages. External sync and subcarrier inputs allow parallel synchronized operation. The companion TQ-2024F is a compatible playback-only machine which provides all the other features of the TQ-2023F recorder in addition to front loading.

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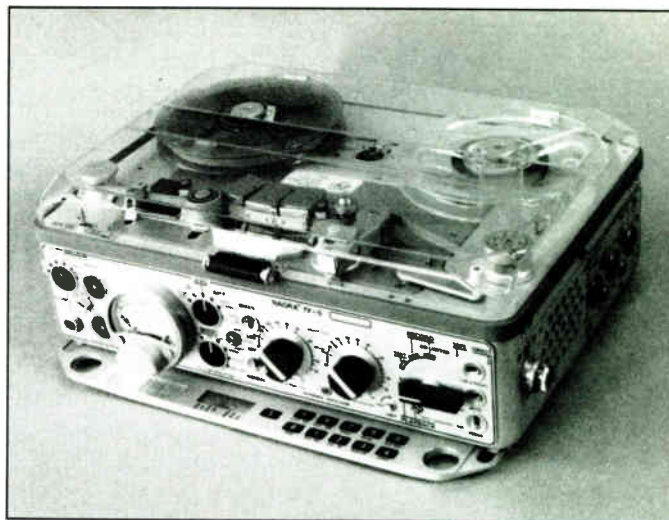
## MITSUBISHI VIDEO PRINTER

Mitsubishi has introduced the P-50U video printer which produces a hard copy printout of any standard video image when connected to any direct composite video output such as a TV, VCR, computer, or videodisc. At the touch of a button on the front panel, it stores the current image on the screen and prints a clear monochrome 3-1/4 x 4 inch picture in less than 15 seconds. The prints are made on special thermo-sensitive paper which will produce approximately 220 prints per roll.

Printouts are reproduced in 16 discrete tones of black, grey, and white with an image resolution of 280 x 234 dots. Features of the video printer include contrast adjustment, wired remote control, positive/negative selection, reverse scanning to print a sequence in the reverse order of selection, and multiple copies select. Video input and output are RCA jacks for NTSC video. The unit also features an 8 pin connector for printout of teletext. The printer is smaller than a VCR and weighs less than 12 pounds.

Prior to the introduction of the P-50U, existing video printout systems were large and costly. The Mitsubishi P-50U Video Printer is the first device on the market to produce high quality printouts in a low cost, highly portable package.

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cuit reads code back at speeds ranging from one-half to 12 times the normal speed, and an error detection/correction system automatically compensates for the first five consecutive frame errors detected and thereafter displays an "error" signal on the LCD display.

The Nagra IV-S TC is now available in the US, and the company reports that a standard Nagra IV-S can also be modified into the time code version.

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### MINI-COMM EDITOR

United Media has unveiled their new expandable "Mini-Comm," A/B roll computerized electronic video editor which is priced under \$10,000. According to the manufacturer, this is the first editing system that allows the buyer to upgrade progressively from control track to SMPTE time code editing and from two to three VTRs with switcher control. Thereafter, the same system can be further upgraded to a Commander II with as many as eight VTRs with switcher and other sophisticated editing capabilities.

In its simplest configuration, the Mini-Comm provides a detachable keyboard, two interfaces for either 1-inch, 3/4-inch or 1/2-inch tape formats, two built-in control track or SMPTE time code modules, 250 events of internal memory and a standard RS-232 input/output port. In addition, the unit comes equipped with list management which includes change, insert and delete events with or without ripple. Changes can be made easily to any event in memory. A floppy disk controller is standard for providing a CMX format compatible disk, a floppy disk unit is optional.

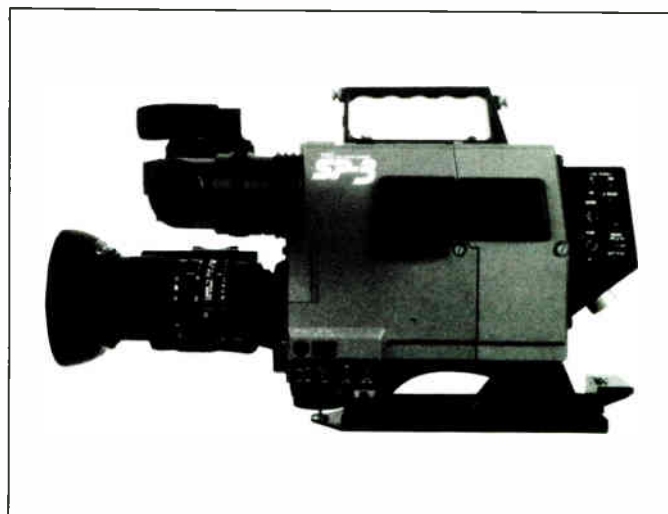
The expandable Mini-Comm is priced at \$9,200 for a basic two-machine control track editor and \$13,600 for the basic two-machine SMPTE control track version.

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### NAGRA IV-S TC

Also exhibited at the NAB Convention was the Nagra IV-S TC, a new version of the popular Nagra IV-S location film/video sound recorder, but also includes an SMPTE/EBU time code generator-reader. The machine utilizes a center track time code head, and four recording standards are available: 24, 25, 29.97 and 30 frames per second. The 29.97 frame setting requires an optional internal crystal.

From the outside the time code recorder resembles a normal Nagra IV-S, the only difference being a thin slide-out panel containing the data entry keyboard and an eight digit readout of the time code and operating status. The reader cir-



### NEC CCD COLOR BROADCAST CAMERA

The SP-3 is NEC's first all-digital, broadcast quality color camera. The unit uses three 2/3-inch Charge Coupled Device solid state chips for imaging: two for the green channel alone, and one for the combined red/blue channel. According to the manufacturer, the dual green system offers better sensitivity and resolution than a conventionally structured R/G/B system, and the CCD technology offers freedom from burn-in, sticking, and comet-tailing. Resolution is rated at over 500 lines, and sensitivity is 200 foot/candles (f 4.0, 3200°K, 60 percent reflectance). Signal to noise is given at typically 55 dB (luminance channel, aperture off, gamma = 1.0).

The camera weighs in at under six pounds without lens. Other features include a built-in low pass filter in the R/B channels to reduce ghosting, and a special image sharpener circuit built into the CCD delay lines to improve vertical resolution. An optical 1/2-inch VTR can be attached to the back of the camera for ENG or other self-contained shooting applications.

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# Why advertise video in an audio magazine?

**A** regular reader of **MIX** may have noticed something different about our covers during the past three years: more often than not, the studios shown on our covers—all 24- or 48-track state-of-the-art audio facilities—have one or more **video** monitors located prominently in their control rooms. There's a good reason for the presence of this new piece of equipment and it has important consequences—both for the studios shown and for **you**, the purveyor of video products or services.

The fact is, a quiet revolution is taking place within the audio and music industries. Studios know from all-too-painful experience that making records alone will not support them in the '80s. While there are still world-renowned super groups and platinum albums for the studio wall, both are getting fewer and farther between. The hot new medium is **video**. MTV is taking off, home VCR's are selling in ever-increasing numbers, and any group worth 16-tracks knows that in order to make it, it must sooner or later produce a "video."

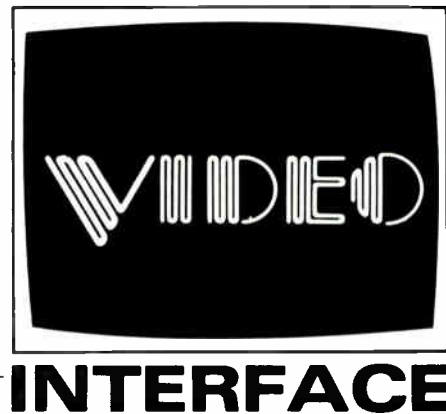
Not only are studios discovering video as a new medium for music, but the video industry is interested as never before in high quality sound for all types of productions, for everything from commercials to A/V presentations. Put these two trends together, and you can see why recording studios are investing in monitors, VTRs and synchronizers to help them do the all-important audio post-production for video programs. And many studios are going even further—buying editing gear, cameras and lighting equipment, building production stages, and hiring video professionals so that they can get a jump on the competition. If you don't believe us, just ask studios like Bullet Recording in Nashville, Criteria in Miami, Soundworks in New York, or Crescendo in Atlanta.

That's right—the video revolution is taking hold of the recording industry, and studios, engineers and producers want information about video production and video products. And what magazine do these **new** video professionals read? What magazine sends over 32,000 copies monthly to audio recording studios, producers and engineers? You guessed it—your new customers read **MIX**, the Recording Industry Magazine.

**MIX** will publish its Fall '84 **Video Production Supplement** this November. **Deadline for space reservations: September 7th.** Call (415) 843-7901 for full details.

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# The Labels' Point of View



However, they are hoping that down the road these videos will be the same gold mine that motion picture companies found in their vaults. The time is now for people on the creative side of music videos to negotiate the same deal on residuals that pays Ronald Reagan more than we taxpayers do.

Obviously, it is not in the vegetarian monster's interests to grant the artist a piece of the future pie. From their point of view, the music video investment has no sure payback, so they might as well reserve all those unsure possibilities for themselves. Even a video's affect on record sales is hit or miss, as any video decision-maker at any label is likely to tell the artist in the midst of negotiations. Examples abound of videos in MTV's heavy rotation that didn't much help the vinyl click; even though examples to the contrary are far more common, it's still an unsure investment.

And those investments have been rising. Even a small label, Island, reports average video budgets going over \$20,000 now. It has been perceived that, for the most part, cheap videos look cheap. However, short cuts are as welcome to the label as to the artist. For example, Video Interface has long been harping on the superiority of shooting on film. From other sources as well, artists have been getting the idea. Chiefly, the public has been giving us all the idea, because film looks better. Usually. The situation has come down to such an impasse that a recent conference of video studios in New York concurred that participants were losing the music video business. One way to hold onto the music video business, the video hardware suppliers and studios concurred also, was to sign multiple production contracts with record labels. This lets the label lower its production costs for videos by the average, not all that powerful artist. It lets the vegetarian monster send the average artist to a production line

anything but hype the vinyl, they *can* expect pressure for a low budget, and they can *never* expect to see any payback from the video itself.

Unless, that is, the act is smart enough to draw up the right sorts of contracts, use the right media to make the video, and, generally speaking, understand the record companies' point of view.

Don't think of the record companies as carnivores, attempting to eat you alive. This is defeatist, and gets you either eaten or out of the game. Think of the monster as a vegetarian. All it wants is the leafy green stuff. It knows you will feed it only if it feeds you. But on the other hand, nobody is yet paying for music videos with real money.

Oh yes, there is a beginning. There are a few dollars rattling around in home video, but the numbers are currently measured in four or five figures. That may just pay for the cost of producing one three minute video, but the home video market demands tapes of at least an hour. So you tag two videos into a concert tape, total cost \$100,000, total income half that if you're already so big on vinyl you're not even paying attention to these small potatoes.

Unless you're Michael Jackson, in which case this column is superfluous, a record company can, for the time being, only hope to recoup the costs of a music video through higher album sales.

By Neal Weinstock

What goes into a music video? Why make one? When, how, and who? We all have our thoughts on the subject, but it's the labels who have to make the decisions and put up the scratch.

Often video decisions fall within the domain of the A & R department. It used to be more often. Now, one label after another has its own video division, wishfully thinking that music videos can accomplish something on their own, not merely perform A & R functions for the old black vinyl. The smaller the record company or the larger the act, the more the video tends to be an interaction of top brass, the band's own creativity, and unlimited swag. Most musicians can't expect that, however. And since most acts can't expect a music video to accomplish

video studio. This, 1) keeps the studios running; 2) gives the artist a video to take to bed at night, 3) gives the label a video in the vault should the artist ever make it big and should the vault ever be worth something.

However, such a production line video doesn't stand such a good chance of helping to sell records now. Who makes the better axe, a craftsman or an assembly line? "We like it when the artist takes a real interest in making the video, from beginning to end," says Ellen Smith of Island. "Our budgets are not high but we give them freedom." Informed freedom makes a better video, and makes more of the leafy green stuff for both artist and vegetarian monster. Beware the multiple production agreement your label may have with a video studio.

Enough of the myth of film versus video. There are other things on the vegetarian monster's mind. Like, lunch. Dinner's too far in the future to worry about. We're past breakfast—for music videos, breakfast was around 1982. A few of the television windows for music videos are beginning to pay for some of their grist. Obviously, videos by unknown artists are always going to be given away. But if you have a name that's worth paying for, it's a name that might be saleable on video, too. Charging clubs for product is a distinct possibility in the near

future, too. Chasing down such possibilities is a full-time job, and so the record companies' video divisions are indeed more than wishful thinking. The video divisions are in charge of setting up the machinery to charge for the free lunch that has been music video programming on TV. However, the *maitre d'hote* has little interest in sharing proceeds with the short order cook. The idea is to position yourself as a master chef.

Okay, let's think again from the restaurateur's point of view. Music video is surely revitalizing the record industry, but things are not revitalized all that much yet. Record sales are only up to mid '70s levels, no higher despite inflation. Employment still stinks. "I think in terms of illegal copying, whether in terms of somebody making a copy for a friend or as an organized business in places like Singapore," says Joseph Smith, former president of Warner Bros. Records and chairman of Elektra/Asylum Records, "25 to 35 percent of our business is gone forever."

The music business fell apart to large extent because of technological change: tape recorders, the spread of printing and pressing technology in the Far East, video games and home video as competitive consumer purchases. Now that technology, in the form of a cable network, video at clubs, and music

video generally has come to the rescue, the vegetarian monster is nervously attempting to assure itself that this technology, too, does not come to naught. Not to mention that the record industry's slump coincided with all those other problems that were either reasons or symptoms or nonexistent, depending on whom you talk with: all of these other possible causes of slumppdom only accentuate the nervousness.

Joe Smith got out of the record business and into the movies last year. The rest of the record business is staying in the record business and also going into the movies. From the vegetarian monster's point of view, this is like a dinosaur trying to adapt to yet another age. And it could turn into another ice age. The only known survivors of the Ice Age were cockroaches.

Therefore, a little tender understanding is in order for those poor little rich kids at the record labels. Is video a brave new world in which they can inhabit new bodies and continue to live? Or will these creatures be betrayed by the very spaceship they've climbed aboard? The problem, from the artist's point of view once more, is that if they are betrayed, so are we. If they are able to live again as videoids, we may still be betrayed. There's a good video in this someplace... ■

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# King Crimson Returns

*...and is once again defining  
Progressive Rock.*

by Bruce C. Pilato



The current line-up (L-R): Belew, Fripp, Bruford and Levin.

Since 1969, when King Crimson first unleashed its musical thunder on the rock world with the powerful and apocalyptic "21st Century Schizoid Man," the group has been in a nearly perpetual state of flux. There have been 13 albums with a variety of music that ranges from the crunch of heavy metal to the softness of a solo violin; four completely different versions of the group with ten personnel line-ups, and five different lead singers. Though the presence of Robert Fripp is the only constant throughout the group's history, King Crimson has always been able to offer its fans a consistently high level of quality in its recordings and concerts. But most important, King Crimson has been consistent in its ability to keep changing itself to adapt to different musical climates. In 15 years, the group has never stopped surprising us.

Its current members say King Crimson is going to be around for a long time. Long live the King.

*The most significant music can be heard in silence. But because silence is too strong for puny human beings, we have to weaken it by giving the silence a form of expression. So, for me, I would have to say that music is the cup that holds the wine of silence.*

...Robert Fripp

*We will always be interested in the vocabulary of the music and what makes it interesting, more so than just pop hits.*

...Bill Bruford

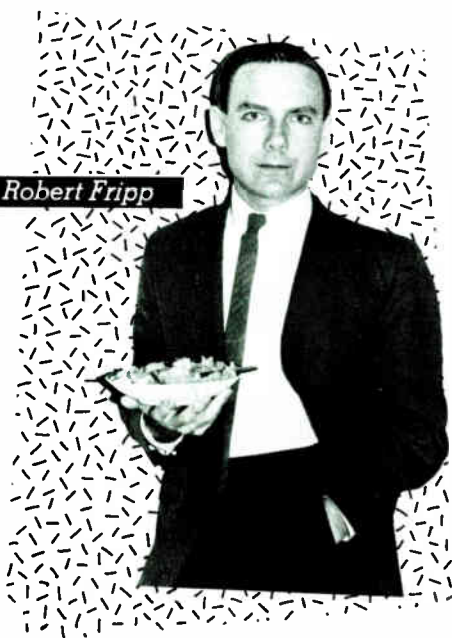
*The more I look at it  
The more I like it.  
I do think it is good.  
The fact is...  
No matter how much I study it;  
No matter how much I take it apart;  
No matter how much I break it down;  
—It remains consistent.*

*from "Indiscipline"  
King Crimson 1981*

It's 12 noon on a breezy Saturday afternoon in Urbana, Illinois, and Robert Fripp, Tony Levin, Bill Bruford and Adrian Belew—King Crimson—are about to embark on a second crammed week of rehearsals. The rehearsal studio is at the home of Belew, and in addition to finding it economical, the group finds it much more relaxing than any place they could rent in New York City.

The band is having fun playing together again, even though they are under extreme pressure to meet a deadline and working ferociously to do it. In the immortal words of David Byrne, "This ain't no party; this ain't no foolin' around." This is discipline—something King Crimson knows very well.

Robert Fripp



"Oh, I'm very busy," says Adrian Belew, trying to squeeze an interview into a schedule that leaves little room for much besides breathing. After almost two years of concentrating on solo projects and vacations, the four have put King Crimson back into active service and as Robert Fripp says, "There is work to do."

The work, this time, is to go out on the road for an exhausting, solid three-month tour to promote their latest album, *Three Of A Perfect Pair*. First they will cover Japan, then the United States and Europe.

"My belief," says Robert Fripp, "is that anything good will always do well. But, it has to be *very* good—not quite good—but, *incredibly* good. And then," he pauses, "you earn a living."

"I go the hog, including the postage," he adds, "I work to my capacity." The same goes for his three bandmates. In addition to thriving solo careers and steady requests for session work, the members make it their priority to give Crimson the proper time necessary.

"When we do see each other," adds Bruford, "we have to work real fast. It's not easy being the group's manager—you have to bargain far ahead."

As grueling as the Crimson experience is, the four members are excited about what the immediate future holds. The new album is their most ambitious effort to date, and initial reaction from critics and fans indicates that it may be among their two or three best.

"It did take quite a while," says Bruford. "As long as any King Crimson album has ever taken. And sensibly so, I think. It's kind of the *fourth* album with this version of the band. You see, we recorded one LP and more or less dumped it. We couldn't quite see the way it was working out."

After spending four months last spring with a mobile unit, the group decided to scrap or drastically re-arrange what they had put down on tape, and opted instead for a long summer break during which Bill Bruford recorded an album and toured with Patrick Moraz of The Moody Blues, Adrian Belew released his second solo album, Tony Levin returned to session work, and Robert Fripp did an album with Andy Summers of The Police.

Last fall when the band came together again (this time in the sleepy retreat of Woodstock, NY) things with the album simply fell into place.

"When we reconvened," says Bruford, "the problems we had just evaporated! Sometimes, time is the only thing you need. Just to get away. And then suddenly the project was on its feet again and we knew where it was going and what to do."

*Three Of A Perfect Pair*, much to the delight of Fripp, marks the first time King Crimson has completed three consecutive albums without a change in its lineup. It also takes the two major forms of music the group specializes in—power-oriented progressive rock and highly experimental rock fragments—and distinctly separates them into two sides.

"The left side is accessible, the right side excessive," Fripp jokes. "Both sides of the record, however, are only one side of the group: the recording side."

"It was Robert's idea to split the sides up," adds Belew. He, along with the other members, are hoping this tactic will keep the old fans happy, while making it easier to attract new ears.

And even though the first single and video from the LP, "Sleepless," has been added by over 120 radio stations, the group still finds themselves in a quandry: they want the exposure that comes with commercial success, but they refuse to make significant compromises in their music.

They all have a common belief, which some in the industry might view as unrealistic or even naive: that which is good shall eventually conquer.

"There are always flukes," says Fripp, "but my belief is that the biggest commercial records are generally the best, such as The Beatles, for example." And perhaps, King Crimson.

"The group, by and large," insists Bruford, "is interested in providing something it feels not only hasn't been covered much before, but entertains all four members of the group. When we do that, we're more or less happy."

"I think we provide good musical return for the public. The person who buys the album gets a lot of music for his or her money."

The band figures that *Three Of A Perfect Pair* should do what they originally set out to accomplish, which is offer the masses an album that is both entertaining and thought-provoking.

"In America, at least," says Bruford, "we feel we've conquered that problem. It is possible to enjoy *Three Of A Perfect Pair* very much, but at the same time you're playing something that is worth listening to."

In the past, particularly in Europe, the group has earned the highest levels of musical respect, yet never attained the kind of mass acceptance that peers such as Genesis and Yes have long enjoyed.

"I think in Europe, it's quite possible that 'Sleepless' would be a hit if it wasn't for the name King Crimson," says Bruford almost bitterly. "King Crimson is associated with being eminently artistic and eminently worthy, but not a band that's allowed to have hits. Very good, very worthy and very artistic, but something that no one will much enjoy. This has always been both a source of irritation and a joke to the group because we enjoy the music very much."

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Adrian Belew

PHOTO: MASAYOSHI SUKITA

However, I point out to the band, they also have the very rare luxury of putting out records that are still spontaneous, experimental and ultimately exciting and artistic in an industry which has become very calculated and packaged.

Adrian Belew, who is responsible both for some of the band's most accessible *and* inaccessible material, is quick to respond: "My business manager, Stan Hertzman, has always said that King Crimson has a license to kill, meaning we can get away with that sort of thing. I've always wondered, how long will that last? And even more so, I've often wondered how long will the musical climate last like this? How long will people continue to buy boring music? I'm waiting, like a lot of other people I know, for something to change in the music business."

With the sounds of the new album, Crimson could be the vanguard. The album's "uncommercial" side, with the pulsating "Industry," frantic "No Warning" and the group's powerful return to a favorite theme, "Larks In Aspic Part III," brings together some of the most adventurous music to be released by a major record company thus far in the '80s.

"The idea to go in and play 'No Warning,' was mine," says Belew. "It was an idea to *not* listen to each other and just play. Not together, but in the same direction. I thought, 'here's a band who really do this kind of free-form playing and reading of each other enormously well, and we *should* do it.'"

"If it's possible, it's done in King Crimson somewhere," adds Bruford. "People buy King Crimson specifically because it deals with things other bands aren't allowed to deal with. I mean, 'Owner Of A Lonely Heart' is a very nice record, but it could have been made by Trevor Horn and anybody yesterday. It's got nothing to do with Yes, as such. King Crimson was always about the way that you do things and what you do, and still continues to be about that. Admittedly, the tools of its trade have changed somewhat; instead of Mellotrons you've got Roland guitars and Simmons drums."

"King Crimson has always been about trying to construct its own musical language that other groups have derived quite a lot of pleasure in borrowing. Genesis, in its early stages, was unbelievably like King Crimson, for example."

Although pigeon-holing King Crimson has been a tough job over the last 15 years, the group is generally regarded in rock history as the founding father of the progressive British art rock movement, which merged technology with rock and roll and spawned such bands as Genesis, Yes, Emerson, Lake & Palmer and Van Der Graaf Generator, to name just a few.



*Bill Bruford*

And even though Bruford refuses to acknowledge it ("The whole art rock thing is an enormous misnomer. King Crimson has never been part of any movement, except the movement known as King Crimson"), Robert Fripp sees the band as being one of the only groups still true to a musical movement that went tragically off course. Being associated with that musical generation now, he says, is an embarrassment.

When the last incarnation of the group broke up in the mid-70s, following endless changes in personnel, it looked as though the split would be permanent. Fripp went into a three year hiatus, during which he studied under noted British philosopher J.G. Bennett and developed his "Frippertronics," using a guitar and two Revox tape machines with tape loops.

He emerged once again, with the help of Brian Eno, on the Bowie *Heroes* LP in 1977. Before he knew it, he was back in the music scene playing with and/or producing the likes of Peter Gabriel, Darryl Hall, The Roches, Blondie and Talking Heads.

After an ambitious solo LP, *Exposure* (in 1979), two more Frippertronics albums, and an album and tour with the all-instrumental dance oriented *League of Gentlemen*, Fripp started thinking about a new group in 1980. His first choice for drummer was Bill Bruford, however, Fripp had no idea if he'd

accept the offer, since Bruford never wanted the last Crimson to split and was upset when Fripp left.

"Did I have any reservations in working with Robert again? No," says Bruford today. "Robert is an extraordinarily honest man. You can come to learn more about yourself and your own musical ability in two months with Robert than you can in two years with most people."

Bruford also said this current version of King Crimson is the most peaceful yet. "Yeah, by and large it's now a more comfortable place to be in King Crimson. It could get very uncomfortable in the last version. Everyone was at each other's throat, but then we were that way in Yes, too. My earliest memories of music from 1969 through 1975 was one long argument in Yes and Crimson. I mean, we made great music but it was always at great pains and much upset and heartache."

With Bruford in his camp, Fripp then approached Belew, with whom he had worked on David Bowie's *Lodger* LP and who he knew through Talking Heads and others. Belew had been a long time Crimson fan and jumped at the chance to work with two musicians he held in such esteem. However, during the initial rehearsals, he says he experienced an intense confidence crisis. He found himself trying to play like Fripp and the music didn't gel. It wasn't until he stopped using a Roland synthesized guitar like Fripp's and grabbed his trusty Stratocaster that things finally fell into place.

Crimson was still without a bass player, however. "Later," says Belew, "when we decided to audition bass players, Robert said his favorite would be Tony Levin, but he didn't think we could get Tony because he was a rather expensive musician [having backed up the likes of Peter Gabriel, Paul Simon, John Lennon and others], so we auditioned about 30 bass players."

No one impressed them enough, so they eventually asked Levin, who accepted instantly.

Fripp had wanted the group to called Discipline. Belew and Levin however, objected. "When it finally was an option that we might call ourselves King Crimson, Tony and I both jumped on it and said 'sure,'" Belew says. It was a much better name regardless of the history or problems that it had attached with it."

Now signed to Warner Brothers/EG Records, the new Crimson has released three LPs, 1981's *Discipline*, *Beat* from '82 and the new disk. Not all have been successful, according to band.

"The *Beat* album had a lot of problems," says Belew. "The band hadn't really found its roles, internally. I think we were sort of directionless."



Fripp agrees, saying *Beat* "failed."

"I feel the *Discipline* album really had the most new ideas," says Belew. "And because it was what we call 'the honeymoon album,' it was actually the easiest album to make because we had so much enthusiasm just playing together. It was all fresh and new."

"I think the energy we have now is a more matured energy and the energy we had in the beginning was more frantic and more boundless. It was bouncing off the wall. You had songs like 'Elephant Talk' and I don't hear much of that in the material we're doing right now. And I think that's not bad—that's just the maturity of the band."

All four members of the band agree they're at their best playing live. According to both Fripp and Belew, the band has never captured their true essence in a studio yet.

"We are essentially a live band," says Belew, "even in the approach we take to recording, which is the band playing all at once. The songs seem to take on a much bigger life when we do them live. Somehow they don't take on the same energy in the studio as in a live performance itself, and that's probably because there's an audience missing. I think it's really valuable to have an audience there; the pressure is really on."

Belew says the group usually takes several months to test material in front of a live audience. As one journalist recently wrote: "Their audience is built on trust—they're willing to trust what they may not entirely understand."

"We don't have a huge market," says Bruford, "but we have a surprisingly large market of people in America who apparently are not allowed to exist according to formatted radio. They, in fact, do exist, because I play to them nightly."

Upon completion of their Japanese, U.K. and U.S. tours, the group will return to their solo projects. Levin will go back to his work with Gabriel and others in the studio; Belew is planning a highly experimental third solo album; Bruford plans to resume work with Moraz; and Fripp, after releasing digital remixes of his solo catalog, will do another album with Police guitarist Andy Summers.

"At this level," Bruford insists, "we couldn't possibly work within the small confines of King Crimson. We feel the solo projects bring freshness to the band."

"It's very good for us to go and get different input and work out other ideas," echoes Belew. "King Crimson certainly is an intense experience in itself and I feel that if we were trying to make that experience a 24 hour a day job and stay together all year round, it would probably blow apart. You've got four very headstrong individuals and probably five approaches to the music."

Although Fripp has a knack of telling people that being a member of King Crimson is "not a pleasant experience" because it's made up mostly of very difficult hard work and a strict musical discipline, it is clear that all four members are pleased with the way King Crimson has evolved.

"I'm as happy as I'll ever be," Bruford told me near the end of our talk. "Because there are some rules and regulations and some things that are preferred and not preferred, that has made life easier in a way."

"We can do anything; most people do nothing. If you are boxed in somewhat then the issue becomes how can you play your way out of the box or around the box. When I was asked to join

King Crimson again in 1980, with it came—and I knew this implicitly even though it wasn't said—the idea that I'd be required to surrender my style: to surrender what it is that you do and you do very well that everyone knows you can do very well, and to make something new."

"With that comes a kind of framework of suggested rules, by which you have to play, and by doing that, you develop a new style of a new personality and you come up with things. That's the general idea."

"I see nothing wrong with that at all. It makes life difficult sometimes," concludes Bruford with a slight pause, "but then again, no one ever said life in King Crimson was going to be easy." ■

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# Berlin: Sex and Synths and Rock and Roll



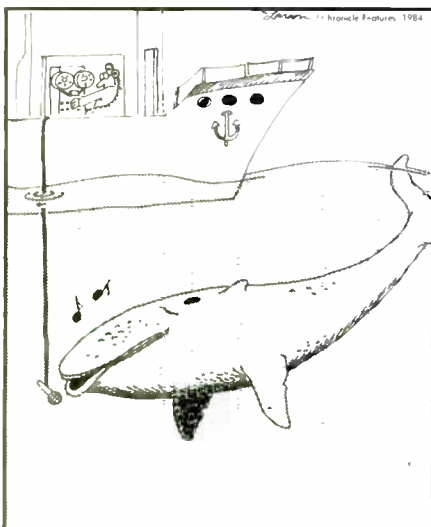
Rock and roll has always been about sex, from those "dirty" lyrics to "Louie Louie" that you could never quite make out to Led Zeppelin borrowing the blues for a song about squeezing lemons to The Knack and beyond.

So why does everyone make such a fuss about Berlin? Just because Terri Nunn and John Crawford get on-stage, simulate a little fellatio and sing "I'm a slut, I'm a bitch, I'm your mother" to a synthesized dance beat?

Isn't that what you wanted?

## THE FAR SIDE

By GARY LARSON



"A Louie, Louie ... wowoooo ... We gotta go new ..."

"Most songs are written about sex," says Nunn, a petite (five-one and a bit, 90 pounds and a bit) Southern California girl. "But it's all toned down for the radio. You don't tell the truth. You don't get out there and say the words you say in bed with somebody."

"We never expected 'Sex' to be played on the air. It was a very un-radical song," says John Crawford, Berlin's chief songwriter. But of course "Sex" was tailor-made for Pasadena's KROQ, the station that defines teen dance-and-masturbation fantasy. When Berlin gave up on playing clubs and decided to record their own EP (which cost them a grand total of \$2,900) because no label would sign them, they took a copy over to the little "ROQ of the '80s."

"We thought they'd play 'Tell Me Why'—nice and light, good hook," remembers Nunn. They didn't. They played "Sex" [actual title "Sex (I'm A...)" ] to death. Berlin went from Madame Wong's club to the Universal Amphitheatre in less time than it takes to moan "love to love you, baby."

Their Enigma EP, *Pleasure Victim*, was rereleased by Geffen, and will have gone gold by time their new *Love Life* starts picking up new fans. The new record cost a little bit more to produce than the last one: \$147,000 more, approximately. They had Giorgio Moroder and Richie Zito at the helm with two tracks ("No More Words," the first single, and "Dancing In Berlin"), and Mike Howlett took charge of the rest. Devo's



Jerry Casale designed their stage show, and they're booked for three midsummer nights at the Greek Theatre in L.A.

Did someone say "sex sells?"

Berlin is easy to take potshots at, but there is more to the sextet than Nunn's black-and-platinum hair and Crawford's leather pants. This is slick stuff, well sung and beautifully produced.

"Musically, we take ourselves seriously," says Crawford. "You have to. What we do onstage, though, is fun. Terri always reminds us not to get too serious about our image. You have to realize you're not that important."

Crawford started Berlin in 1977, but that incarnation fell apart and left only Crawford and the name. Nunn was hired in 1979, soon followed by synthesist David Diamond, drummer Rob Brill, synthesist Matt Reid and guitarist Ric Olsen. They're basically nice suburban kids, most of them from the L.A. area. Diamond is gay, Crawford has this thing about handcuffs, and Olsen claims to have been an undercover detective whose life was threatened by the Mafia. Nice normal kids.

The name Berlin was chosen because Crawford was smitten with the mystique of decadent prewar Germany. The band is usually described as having a "European" sound, a point of view reinforced by song titles like "The Metro."

"It's all about an American kid's fantasy of Europe," says Crawford. "We sell terribly in Europe, as a matter of fact. When I wrote 'The Metro,' my girlfriend at that time was on vacation, and I was imagining her having an affair with a Frenchman—which all American boys are intimidated by. That's what it's all

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## Nona Hendryx Does What She Does

"I'm not afraid to touch something just because it's not supposed to be of my ilk," says Nona Hendryx. "I'm interested in the new and the untried, and I don't mind accepting the consequences."

Hendryx, whose professional singing career dates back to 1961, when she joined Patti LaBelle and the Blue Belles, has taken musical excursions into hot funk, aggressive New Wave, power-punch rock and roll, techno-pop and traditional R&B. She's focused more solidly on the dance market with her last two albums, 1983's *Nona* and the current *The Art of Defense*, which includes the hit "I Sweat (Going Through the Motions)."

Co-produced by Hendryx and Material (Bill Laswell and Michael Beinhorn), *The Art of Defense* leans more heavily on guitars and African talking drums than on synthesizers. "We decided to go for a more percussive approach," says Hendryx. "We went after small rhythms rather than a big, spread-out sound."

In the manner favored by Laswell and Beinhorn, most of the songs on the album were constructed during the recording process—in contrast to the way *Nona* was made. "I had been performing a lot of the material on *Nona* live for quite some time," says Hendryx, "and a lot of people played on the album. With *The Art of Defense*, we went with songs I hadn't performed on stage before and we used a lot fewer people. We were really



Nona Hendryx

trying to get the energy out of the songs."

Hendryx made demos of most of the songs before recording commenced, but almost all of them took on radically different forms once she and the Material men started laying tracks. "The only problem I had with Bill and Michael is that they have certain tastes in musicians and I have certain tastes in music, and sometimes our tastes clash. On

the last album [which also was produced by Hendryx and Material], I thought we had more separate views of music; this time, we were more up front about what we were going for." She's reluctant to call *The Art of Defense* a better record than *Nona*: "There are things about both that I don't like."

Survival is the theme of the album, and it's something Hendryx knows well. Raised in South Trenton, New Jersey, she joined Patti LaBelle and the Blue Belles while still a teenager. In addition to Hendryx and LaBelle, the group featured Sarah Dash and Cindy Birdsong. They had one hit, "I Sold My Heart to the Junkman," in 1962. Birdsong left the group in 1967 to replace Florence Ballard in The Supremes, and the Blue Belles continued as a trio.

In 1970 their new manager, an Englishwoman named Vicki Wickham, shortened the name to Labelle and got the group a recording deal with Warner Bros. Labelle's career peaked in 1975 with "Lady Marmalade," produced by Allen Toussaint, which combined with an emphasis on costumes and theatrics to attract a large gay following.

By 1977, the three singers had grown tired, and they decided to disband. "Labelle's consciousness had to do with black people and oppressed people that was necessary for its time," Hendryx recalls. "But times change, and as a writer I couldn't continue to restate the same things."

While Patti LaBelle and Sarah Dash moved directly into R&B and disco as solo artists, Hendryx plunged into rock and roll. She released a critically ac-

—PAGE 150

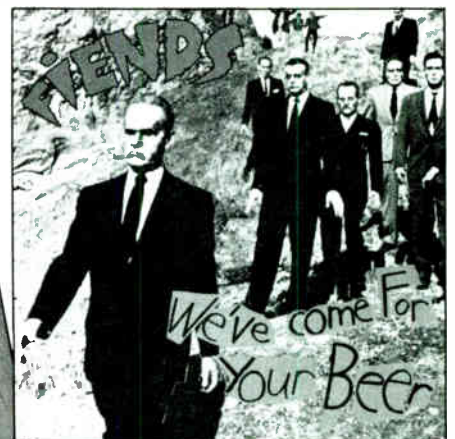
## Commentary

### Judging Records by Their Covers

The recent surge of Heavy Metal records to the top of the charts is yet another plague which can be blamed on MTV. The screaming castrati vocals and flat-out instrumentals are, of course, a matter of individual taste—but along with that stuff has come an unfortunate trend in visuals.

I'm not talking about Ozzy Osbourne here—it's not Jet Records' fault he looks like that, after all—but the leather-and-chrome crowd exhibit an unfortunate tendency to objectify women. Take *No Mercy*, the new album by a German group called Bullet (released by Arista Records in the states). Please. And

—PAGE 154



(Left) this record cover exploits hitchhikers. (Above) "Good clean fun," says our critic.



**Field Test**

**Simmons Clap Trap**

Over the years artists and producers have used numerous methods of creating handclap sounds, ranging from actual people clapping to a variety of bizarre mechanical devices. The Simmons Clap Trap is a departure from previous methods; it electronically reproduces real handclaps which are digitally stored within the unit's memory.

The designers of the Clap Trap analyzed rhythmical hand clapping and broke it down into several controllable parameters, referred to as "clap" and "noise." Each of these has adjustable pitch and decay controls, and a balance control (which blends the two parameters) allows for a wide range of possible clap sounds. A "Humaniser" switch introduces a random element that gives the claps a more human, natural feel.

The Clap Trap can be triggered in several ways. By pressing the "Auto" button, the machine automatically claps at a rate which is continuously variable from approximately 40 to 240 claps per minute. Manual triggering is possible either by pushing the "Trigger" button or by using the momentary-on footswitch which is supplied with the unit and plugs into a 1/4" foot pedal jack on the back panel. I found the trigger button very easy to use, with just the right amount of sensitivity required to do complex patterns with ease, while it took a bit of practice before I felt comfortable with the foot control.

Hand claps can also be activated via audio trigger or synth trigger inputs. The audio trigger is a gating device which accepts either microphone or line level signals (threshold sensitivity is adjustable via a front panel control). By plugging either the supplied pedal or any standard 1/4" SPST footswitch into the "Audio on/off" jack, the audio-triggered claps can be "punched" in and out during either a live performance or mix-down. The Clap Trap I tested triggered very well under several different situations: from a cheap microphone placed

under a snare drum during a band rehearsal; off a recorded click track; and when driven by a LinnDrum. A red LED on the front panel lights whenever a clap is triggered from any source.

One of the Clap Trap's nicer features is that handclaps can be triggered manually while it is also being triggered by either its auto trigger clock or by an outside source. For example, if the unit is clapping in sync with a kick drum playing quarter notes, extra claps can be added (say eighth notes on the second and fourth beats) by also using the manual trigger.

It took no more than five minutes of playing with the Clap Trap's controls to become thoroughly familiar with their use and obtain several basic, believable clap sounds. Two sample settings are shown; in almost every case, the claps sounded best with the humaniser switch in the "on" position.

While the claps sounded fine by themselves, I also found that a better effect could be achieved by adding some outboard reverb and a small bit (say 10-20ms) of delay to the signal. For recorded claps, double tracking the sound

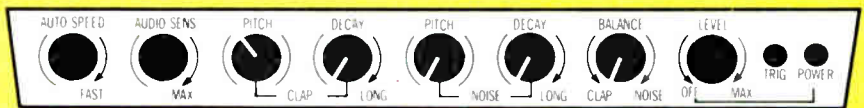
(with slightly different clap settings on each track) proved to be very satisfactory in achieving a realistic ensemble clap effect, especially in stereo.

However, handclaps alone do not a Clap Trap make, as the unit also produces a variety of other sounds as well. Most useful is the noise section, which generates a tuneable noise source which can be used for "fattening up" poor-sounding snare drums. Other effects, ranging from the sound of underwater applause to the clinking of metal balls, can be gotten with a little experimentation.

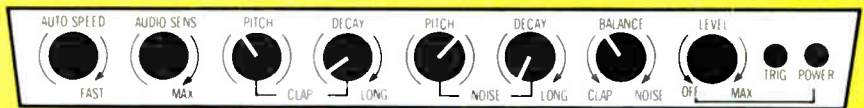
Although the Simmons Clap Trap has limitations as an "all-purpose effects generator," it thoroughly lived up to my expectations as a synthesizer of rhythmic handclaps. The sonic quality and the relative cleanliness of the signal are surprisingly good. At a list price of \$255.75, it is also a very cost-effective solution to the problem of getting a solid handclap sound when you need it, with a minimum of fuss and bother, whether in live performance or during studio overdubs or mixing.

—George Petersen

*SOME SAMPLE SETTINGS:*



*Single Clap*



*Small Ensemble Clapping*

**Eurythmics Are For Real**

When the Eurythmics swung through Los Angeles last summer during a brief, six-city tour, people left the club breathless. Unknown and unheralded, this British band floored paying customers and music professionals alike. It was one of those rare nights when you knew you were witnessing the birth of the Next Big Thing.

Almost a year later, Annie Lennox's crew-cut and David Stewart's omnipresent shades have graced the cover of supermarket rags and their records have graced the top ten. No surprises, now. Will the Eurythmics have any im-

pact left, with so much expected of them? Yup.

The Eurythmics made it clear from the start that exquisite ballads are only the tip of their musical iceberg. Fronting a horn section and accompanied by three female backing singers, Stewart and Lennox made the connection between modern dance music and classic Stax/Volt soul. The majority of the show was upbeat, rousing, powerful stuff: "This Is the House" (from their first album, unreleased in America) and "Tired of Your Wicked Ways" had the audience

—PAGE 154

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—FROM PAGE 147, NONA

claimed but commercially ignored LP, and shortly afterward was dropped by Epic Records. She then decided to concentrate on new wave-funk hybrids with a group called Zero Cool, and began to seek work as a background singer.

From 1979 through 1982 she worked with the likes of Talking Heads, Garland Jeffreys, Rough Trade, Defunkt, David Johansen, Cameo, and Material. Having made a strong reputation—especially with Talking Heads—she was able to get her own recording career rolling again, and in 1982 she signed with RCA Records.

Her contract limits the amount of work Hendryx is allowed to do with other artists, but she has a few projects she'd like to try. "I'd like to work with Brian Eno in collaboration with George Clinton," she suggests. "I think that would be very interesting. I worked with Eno on the *Remain in Light* album and we got along really well. We sang together on 'The Beat Goes On,' and our voices were so similar that it often sounded like one voice."

She recently completed a track for the Rick Springfield movie *Hard to Hold*, and it's given her the idea to do more rock and roll. "I'm under pressure from the industry to do strictly R&B, but that's not the only element I feel in music," she says. "Even with Labelle, there were always other forms."

Whatever kind of music she decides to make next, Hendryx says she'll never allow herself to get pushed into a record, video or image she doesn't feel good about. "I like to do videos that have to do with the song; I'm not going to twist myself out of shape to get anywhere," she says with a defiant tone. "I just do what I do, and in time it will be right."

—Bruce C. Pilato

**Cougar Comes Through**

There's a bumper sticker distributed by the Libertarian Party in the only state where that iconoclastic political group has a foothold. "Alaska," it says, "Land of the individual and other endangered species." John Cougar Mellencamp might want a copy to plaster on his guitar case.

The all-American brat broke every rule in the book on this tour. He insisted on playing 4,000- to 6,000-seat venues even though he could certainly have filled arenas; he wanted the people to be able to see him, he said. He brought along a stage set that consisted of one

white riser and a ladder. Forget the lasers and the light shows; this is rock and roll.

The band came onstage at LA's Universal Amphitheater dressed in tuxedos...and white socks. Cougar wore a sports jacket (soon shed) over his trademark jeans and penny loafers. And he started his show with *other people's songs*.

From a John Cale-paced "Heart-break Hotel" to the Animals' "Please Don't Let Me Be Misunderstood" to the Left Banke's 1967 non-smash "Pretty Ballerina," Cougar went from tactical error to concert gaffe—and it all worked magnificently. This guy even went down into the audience on the *first number*, and, far from peaking too soon, set a pace for the show that never let up.

This Indiana boy stood up there for an hour and a half and showed just how much fun rock and roll is supposed to be. He dragged girls out of the orchestra pit to sing and jitterbug; he stood on a monitor and impishly ruffled the hair of one of the Amphitheater's omnipresent and overbearing security guards—cocky bastard!—and exuded sheer joy from start to finish.

Cougar strapped on an acoustic guitar for "Pink Houses," and dedicated it to construction workers, steelworkers and farmers (is this the Midwest's Lech Walesa?). "Authority Song" came across as a rousing, upbeat rocker. This may have been the last of 40 shows in 42 days, but everyone had energy to spare. Guitarists Larry Crane and Mike Wanchic dashed around the orchestra section, and even imperturbable bassist Toby Myers was caught cracking a smile. Vocalists Caroll Sue Hill and Pat Peterson worked out like they were after Tina Turner's job.

An hour into the show, Cougar decided to break another long-standing rule. He announced that encores were an antiquated bit of hypocrisy and said, "I'm going to run offstage, smoke a cigarette, and come back 'n' play 20 more minutes for you." And that's just what he did.

A strange non-encore it was, too. He started with about the only slow song he's got, "Golden Gates," and then prefaced Richard Thompson's "Shoot Out The Lights" by saying he could never do it as well as Thompson could. (That's open to debate.) He nodded to convention with a vigorous "Hurt So Good," but closed the show with a song off *Uh-Huh* never released as a single or a video: "Jackie O." Not only that, he had the house lights turned up for the last number, and everyone in the band sang along to a prerecorded instrumental track. We're talking major do-your-own-thing here.

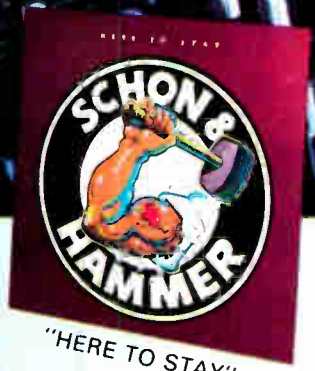
—Ethlie Ann Vare

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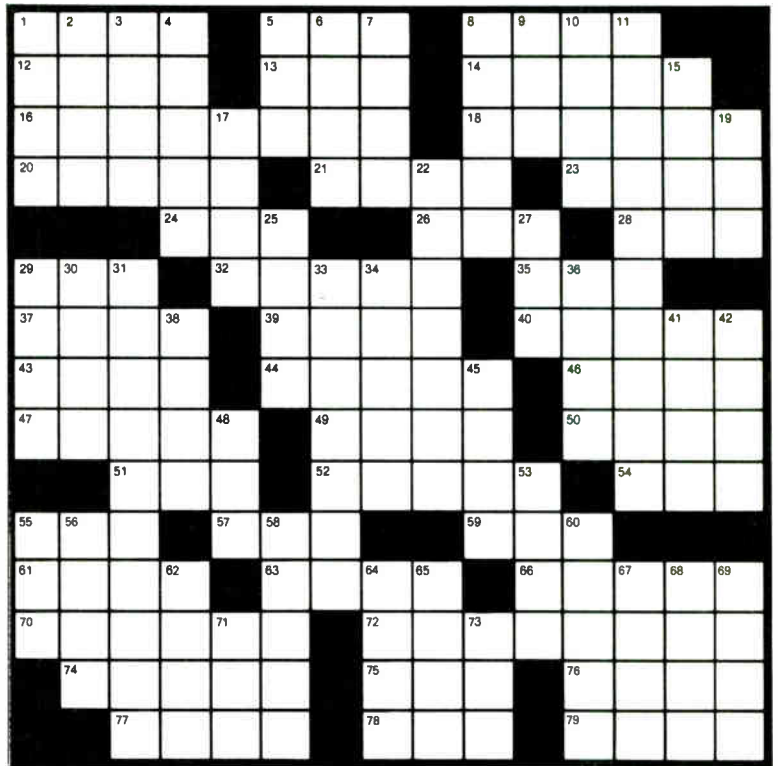
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**MIX WORDS**

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**EYE OF THE HOLDER**

**ACROSS**

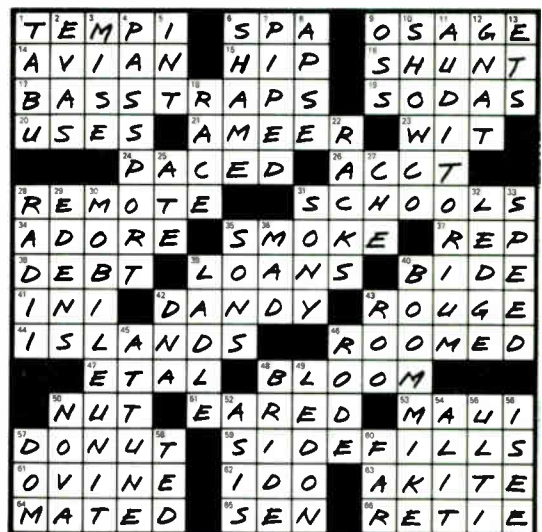
1. Mama \_\_\_\_\_
5. A certain prayer
8. 224x remote unit
12. Date (abbr.)
13. Type of wit
14. Operatic solos
16. Order of events
18. Declared
20. Polar fashion wear
21. Spot on the water
23. Storage building
24. Cleo's little helper
26. Metric measure
28. Can. province
29. Terrycloth word
32. Colorful S.A. bird (var.)
35. South, down south
37. "\_\_\_\_\_ Rhythm"
39. Brewer's need
40. Skirt feature
43. Gloomy
44. French friends
46. Woody's son
47. Sea eagles
49. European river
50. Alliance
51. Tint
52. Hair conditioner
54. Still
55. A food preservative
57. Agency concerned with acid pits
59. Juan's gold
61. \_\_\_\_\_ minimum
63. The doctor \_\_\_\_\_
66. More arctic
70. Pure
72. Synchronization "language"
74. Ham
75. Old French coin
76. Amerind group
77. Caribbean islands (var.)
78. \_\_\_\_\_ head
79. Fly off the handle

**DOWN**

2. What the princess detected (2 words)
3. Roman abbr.
4. Luftwaffe diver
5. Girl's name
6. "vini, vidi, \_\_\_\_\_"
7. Summers on the Seine
8. Digital disc reader
9. Emerson's "jealous mistress"
10. Narrow creeks
11. Essential tube in video
15. Observed
17. "Journey to the \_\_\_\_\_", Hesse
19. Banned insecticide
22. Magic \_\_\_\_\_ (early projector)
25. Cougar
27. Telepathy
29. Disguise
30. "Firebird" creator, to friends
31. Audio for film or video
33. Light-proof boxes with lenses
34. Excuse

36. \_\_\_\_\_ Bator
38. Certain playing card
41. "Der \_\_\_\_\_"
42. Choo-choo sound
45. Tepid attitude
48. Papal \_\_\_\_\_
53. Great Lake port
55. U.K. TV group
56. Laughter sound
58. Wharves
60. Come to pass
62. Madrid verb
64. Roman road
65. Pleasant
67. Greek letter
68. Anthony \_\_\_\_\_
69. Musical notation
71. Plaything
73. Wallboard compound

**Solution to June Words**





—FROM PAGE 146, BERLIN

ways been: the American interpretation. Same with the name of the band: a fascination with the dark side of Berlin. We'd never been there; we hadn't a clue. We'd heard stories, and we were fascinated."

Nunn came to the band from her former career as an actress. She was the youthful murderess who fascinated Joe Rossi in the two-part *Lou Grant* episode called "Execution." She appeared in the disco debacle *Thank God It's Friday*. "Nothing exciting," shrugs Nunn. "It's exciting to me!" counters Crawford, caught up once again in glamorous dreams.

Nunn does allow that acting experience makes for good concert stage presentation. "It makes emoting better," she says, leaning forward and emoting. "allowing an emotion to come out when you want it to. Not faking it, just letting loose. Acting allows me to hit those barriers and *feel it now.*"

Crawford and Nunn meld like a jigsaw puzzle when they defend the band's sound and major instrument. "Synthesizers are just an instrument," says Nunn. "When the electric guitar first became mass-produced, everything was inundated with it. Now the synthesizer is mass-produced, and everyone can own one."

"Financially, the synthesizer has made a place for itself in the music business," adds Crawford. "It simplifies the recording process. If you looked at all the bands you don't call 'synthesizer bands' and then find out how much of their album was actually done on the synthesizer, you'd be amazed. Devo did all the basic tracks for their last record in one day, because they had prerecorded them on their Fairlight and just took this little floppy disk to run into tape. It saves enormous time and money."

Crawford is very soft-spoken, but quick to come to the aid of his instrument, (even though he usually plays bass). Defending synthesizers is obviously something he has to do a lot of.

"The things you can do are amazing," he continues. "Peter Gabriel records the backfire from a car or anything he can think of, and uses it for percussion. I hate to say anything nice about Yes at the moment, but they record guitars on a computer and play them back on a keyboard."

That comment about Yes has to do with an unfortunate break Berlin suffered this season. They were tagged to support the Yes arena tour, which would have given them their largest audience aside from an appearance at the 1983 US Festival. But after Yes set up their equipment and effects, they decided there was simply no room onstage for another band. Berlin was thus replaced by a Bugs Bunny cartoon.

"With the new album, we felt much more confident," says Nunn. "The bigger budget allowed me to do five or six vocals, which was really great. On the first record, it was like 'Get it in two, because we don't have any more tracks for your vocals.' With that kind of pressure, you can't take any chances."

The band is pleased with the way the disk came out (have you ever heard anyone admit they're no:?) and is embarking on a U.S. and European tour to promote it. They have come rather a long way since they booked a studio for a

Sunday afternoon and Terri Nunn told her boss at the answering service that she had to take time off to attend a funeral. Crawford can't quite figure out why this modicum of success came to them so suddenly after all the years of slogging away in bars and sending demo tapes to every record company in the phone book.

"It's all a very strange story," he says. "And if we ever sit down and think about it, we'll probably become religious or something."

—Ethlie Ann Vare



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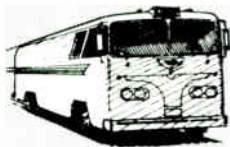
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## MUSIC NOTES

—FROM PAGE 147, COVERS

toss it into the nearest nuclear incinerator. The cover "art" for this vinyl virus is enough to send the most dangerous little pizza-faced misogynist right through the roof. In the foreground is a woman (shown from her shins to, shall we say, mid-torso), bathed in blue light. She's naked except for a length of heavy chain wrapped several times around her waist and thighs—and of course, there's the obligatory medieval padlock hanging in front of (but not protecting) her censorable parts. In the background is some ostensibly castle-ish brick-and-stone-and-mortar wall, on which play the shadows of some people apparently preparing to have their way with the cerulean sylph. Delicious.

It's unlikely that Bullet will make much of an impact on the American scene, but the same cannot be said for *The Pros and Cons of Hitch Hiking*. This is the solo album by Roger Waters, whose records with Pink Floyd (particularly the last few) add up to a brilliantly recorded series of empty suicide threats. The cover of *Hitch Hiking*, designed by Waters and Gerald Scarfe (who helped realize the disturbing and disturbed Floyd film *The Wall*) and executed by Scarfe, depicts a shapely blond woman wearing a red backpack, red high-heeled shoes, and nothing else. And she's got her thumb out, taking Claudette Colbert's schtick in *It Happened One Night* about as far as it can go.

Furthermore, the poor creature seems to be terribly disfigured—to be specific, she's got no face. The picture is a rear view, but Scarfe was careful to show the woman's breast in profile so one would assume that if she had a chin and cheekbone they'd have been visible from this angle.

This record will doubtless sell several hundred thousand, if not more, and thus will this nasty little graphic enter the annals of rock "art." Pity.

On the plus side, we have a handful of low-rent but high-spirited album covers from Enigma, a plucky little label/distributor in Southern California. These records aren't exactly enduring works of art—neither the music nor the packaging—but there's a refreshing lack of pretense and a stubborn refusal to take much of anything very seriously.

My favorite one is from Fiends. The cover is a B&W movie still of half a dozen zombie men in business suits (being followed down a hill by the three Fiends themselves). The name of the album is *We've Come for Your Beer*, and it's on Bemisbrain Records. How could you resist such titles as "Riot in the Men's Room," "No More Drugs," and "You Make Me Sick?" I know these guys must have at least one serious musical

bone among their bodies, because one of them is shown on the back of the LP with a '56 Les Paul Junior (just like mine!) in his lap. And of course, there's a brewski in his paw.

Then there's Exude's sendup of Cyndi Lauper, "Boys Just Want to Have Sex." The covuh aht on this one purports to be a cave painting of a man with a club dragging a woman by her hair in the classic stone-age scenario. Sexist? Not really, just flippant, and completely harmless. Look for it in your neighborhood record store. If you don't see it, ask for it; I'm sure you'll be amused by its lack of pretension. —D.G.

—FROM PAGE 148, EURYTHMICS

pumped up and dancing in the aisles. "Who's That Girl" and "Love Is A Stranger" had the crowd hushed in awe.

Superficial trendiness did rear its glitzy head. Lennox came onstage dressed in a baggy man's suit of green-and-red plaid—which, when she turned around, became a baggy man's suit of zebra-skin print. Later in the show, after an interim costume change or two, Stewart was wearing a green-and-red plaid suit with zebra-print back. (At first, he wore a white Edwardian jacket over a riding habit. On him, it looked like a mad scientist's lab coat over jackboots.) Lennox changed into a white suit with a leopard-skin cape and an actual "leopard-skin pillbox hat." Her thrusting stage movements appeared, at times, overly mannered, like Grace Jones in whiteface.

But those are small nits to pick in a performance this captivating. Lennox's voice is no studio trickery: every soaring high note, every pulsating low note, every vibrato and trill is as perfect live as on vinyl. Stewart is a hot guitar player and, assuming he arranged the band (which is likely), one of the best arrangers going.

Attention was paid to staging, something many American newcomers seem to ignore entirely. A projected backdrop changed from cityscape to cloudscape, from fire to water depending on the song. The backing band changed clothes along with the frontpersons; add Smellorama and the show would have titillated every available sense.

The perfect capper to the evening was the first encore, when the Eurythmics did a song they often perform live: Sam & Dave's "Wrap It Up." Only this time, Lennox called to the wings "Come on out here, Sam," and Sam Moore did his duet with a new, and unlikely, partner. It was so hot the curtain threatened to smoke. The second encore muted the pace, with Lennox introducing "Jennifer" by playing a solo flute piece. To close, the entire group lined up at the lip of the stage for an ensemble bow.

—Ethlie Ann Vare



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## ON MIXING FOR THE BOSS

By David Gans

It's hard to imagine a more carefully guarded and eagerly anticipated release than *Born in the U.S.A.*, the new album by Bruce Springsteen. To say that The Boss isn't one to telegraph his punches is an understatement; the radio stations that sneaked tracks from the new album learned that his management and record company mean business when the cease-and-desist orders came down. But by the time this issue of *Mix* hits the streets, *Born in the U.S.A.* will be out and the speculation regarding its contents put to rest.

Bob Clearmountain mixed the album at New York's Power Station, where about half the tracks were recorded. He is appropriately respectful of Springsteen's privacy, but his experiences in making *Born in the U.S.A.* provide some insight into The Boss' methods.

**Mix:** Springsteen doesn't come across as a really nuts-and-bolts recording person—but on the other hand, I get the feeling nothing gets past him.

**Clearmountain:** I think you're absolutely right. He isn't really technical—he goes by feel and emotion more than anything.

We'll mix 20 or 25 different versions of a song, with very slight changes—a little bit more lead vocal, or a bit less echo on the vocal, and so on—and I'll give him cassette copies of about 15 of them. He says he doesn't really keep track of the technical differences between the mixes; he'll just listen to them on an emotional level and see what feels the best.

**Mix:** It's rumored that he recorded as many as 75 songs over the last couple of years—

**Clearmountain:** There were at least 50 or 60. Bruce is, obviously, an extremely prolific songwriter. He just keeps writing until he picks out the songs that best rep-

resent what he's feeling and what he wants on the album. We ended up mixing 16 of them—15, actually, and while we were mixing Bruce wrote one more, "Dancing in the Dark." He went back over to the Hit Factory and cut it in a couple of nights, and then we mixed it.

**Mix:** Where was the rest of the album recorded?

**Clearmountain:** About half the stuff was done two years ago at the Power Station, and the rest was done at the Hit Factory. I guess he just wanted a change of pace.

**Mix:** Were there any problems in dealing with tapes from two different times and two different places?

**Clearmountain:** No. The album sounds consistent, because Bruce is consistent. Everything was recorded by Toby Scott, and the instrumentation is more or less the same.

The only difference was that for some reason the stuff from the Power Station was quite a bit brighter. That could have something to do with the monitoring differences between the two studios. I did a little more equalization on the Hit Factory stuff to match the Power Station tapes, but everything was recorded very well. It was just a matter of perspectives

—getting the right kind of echoes, the right balances.

**Mix:** What condition were the tapes in? Did they record fairly dry?

**Clearmountain:** Oh, yeah. They don't put any echo on anything. I like that; it's difficult to mix a tape where people have put effects on everything, because you're stuck with those sounds. I like to add all that to the mix myself so I can make it all work together.

**Mix:** How do you proceed when you begin a mix?

**Clearmountain:** The first thing I usually do is push all the faders up and get a real rough balance, just to hear what the song is about. I listen to the lyrics and get a feel for the song before I start working on any sounds or anything.

Then I pull everything down and start working on the drums. I try to work really quickly—I don't dwell on anything, I don't solo the bass drum for half

# PLAYBACK

an hour. I'll solo each thing to make sure there isn't anything bizarre about it, but I do that really quickly.

I try and EQ the drums with all the drum tracks in. Then I work on the bass and the drums together. Then I'll just start pushing things up, and really quickly get things together. I try to get the mix as fast as I can; I find that it's better to look at the mix as an overall sound rather than work on one instrument at a time.

I'd get started about 8:00 in the evening; Bruce would be over at the Hit Factory working on other songs. I'd get the mix to where I felt it sounded right, and then Bruce and Chuck [Plotkin, co-producer] and Toby would come over and sort of pick it apart. They'd say, "That sounds nice, but let's try it with a little different sound on the guitar," and things like that. Usually we'll put the mix that I have on tape.

It's all done with the SSL [Solid State Logic] computer, so once the mix is in there we can change it and just store the different versions on floppy discs. It stores all the real-time fader movements and a static picture of the EQ settings, buss assignments—every control on the board.

Most of it was 24 tracks. He pretty much records the band live. It's stereo piano and stereo organ, one or two synthesizer tracks, six or seven tracks of drums—you start to run out really quick. A couple of times Bruce wanted to do some experimenting, so he hooked up a slave. But he avoided it as much as he could.

**Mix:** Did he do much overdubbing of the vocals?

**Clearmountain:** No. Almost every vocal was live. Sometimes he would sing it again just to see if he could get it better and we'd do a mix with the new vocal. By then the mix would have progressed and he'd say, "Okay, now we like the mix better. Let's try going back to the first vocal and combine that with the mix we have now." With the computer, things like that were easy to do.

**Mix:** Do you mean he recorded a lot of these keeper vocals while he was tracking with the band? And playing the guitar?

**Clearmountain:** Yeah. And most of the tracks used were within the first three takes.

Bruce told me he doesn't even like to rehearse the band any more. He just tells 'em the chords and they just go in there and play it, and get the first couple of takes. He says that after that they start to know it too well.

Usually you don't have a band that's that together, that can play it without tons of mistakes the first few times through. I guess they've been playing together so long that they've got it happening.

That sort of idea is one of the reasons I like working with the computer. I'll turn it on really early and just go for one as if it were the final mix. You capture that early-on feel, and then adjust it from there.

Bruce and Chuck and Toby won't come in until I have it to where I think it sounds pretty good. They'll call and say, "What do you think?" I'll say, "Come by in half an hour," and they'll cruise in and give a listen.

What happens with Bruce is different from most of the people I work with. I'll pretty much go for it sounding like a record, and then they'll come in and pull it apart because it usually sounds too slick to them. Bruce doesn't want it to sound like "a record"—he wants it to sound like a bunch of people just playing instruments on stage, or wherever.

**Mix:** What do you mean by "slick?"

**Clearmountain:** It can get to be sort of smooth-sounding, I guess. I get into real nice echoes and things, for example, and he'll take off a long, smooth delay and have me put on a short, Sun Records slap. He'll have me upset the balances a little bit, just to make it sound a little bit more...almost demo-like.

**Mix:** That's how a record grows on you: You listen to it the fifteenth time, you suddenly hear something in the guitar that you didn't notice before. It's not all there for you the first time.

**Clearmountain:** I think he's absolutely right. At first you kind of get thrown off by it. He *knows* it sounds really good; he just doesn't want it to sound really good.

When [Springsteen, Scott and Plotkin] tried mixing it, they had just the opposite problem: It never quite sounded good enough.

I guess it's really difficult to work on a record for two years and then go in and try to mix it. They just couldn't get any perspective. They needed an outside ear to give it some different sort of life. I guess that's what I added, but then they didn't want it to sound too much like a Clearmountain record.

**Mix:** It must be nice to work with an artist who has such specific and unusual ideas.

**Clearmountain:** Yeah. It points me in another direction, which I really enjoy.

Bruce is one of the most honest people I've ever met in the business. He just wants the best thing. He's strictly going

for a particular type of attitude and feel, and he'll try every different combination he can think of to get what he's going after.

**Mix:** Does it ever get tedious for you, working on the same song for so long with such minute changes?

**Clearmountain:** It could get a little monotonous, but the music is great. And working with him is great. I don't mind at all. I had a great time working on that record.

If it was music I didn't like, or if the artist was a jerk, it would probably have gotten on my nerves. But everything we were doing was totally valid. They were all good possibilities, and it was very hard to tell in a studio control room. It can be a bit clinical there; it's good to get a lot of different versions and listen to them at home on a regular stereo.

**Mix:** How involved were you with the mastering?

**Clearmountain:** Bob Ludwig does all my mastering [at Masterdisk], except for the rare times when he's overbooked or on vacation. Once in a while I'll make a suggestion, but basically he does what he thinks is right. I take the refs home and see what changes should be made, then we go back and do it again. I pretty much depend on Bob Ludwig. He's the guy for me.

Bob had to do the fades manually, because Bruce wasn't sure where he wanted to fade each song until he heard them together in sequence. We wanted to make an EQ'd copy with the fades so Bob wouldn't have to do that every time he cut a set of parts, so we tried three different methods.

The transformers on Bob's board are on plug-in cards so they can be replaced with hardwire bypasses. We cut one set of refs with the transformers and one set without them, at 30 ips on half-inch tape, and one set on the Sony 1610 digital two-track. The one that sounded best was the one directly off the analog, with the transformers in.

The digital added a really strange kind of graininess to the top end; it made it brighter, but it was an irritating sort of brightness. I know digital's not supposed to do that—it could have been the way I mixed it or something. I was totally surprised. I was hoping digital would sound fine, and I was expecting it to sound perfect. The [analog] version without the transformers was a lot brighter than the one with them; it just got a bit too edgy.

We liked what the transformers did, so we went ahead with it. And on each set of parts, Bob had to do the fades manually. ■

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View looking into control room at Studio Centre in Dallas during construction. Large holes in rear wall were later fitted with Quadratic Residue Diffusers.

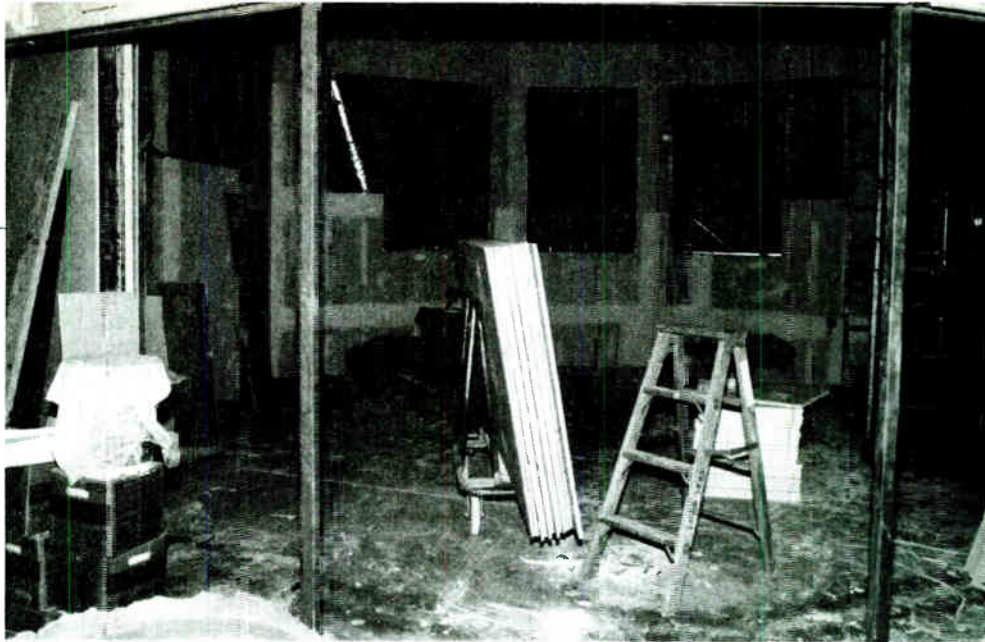


PHOTO: RUSTY GOLD

—FROM PAGE 58, SUNBELT

In Las Vegas, Jenny Watters of Luxury Audio Workshop reports that while the casino strike slowed business somewhat earlier in the year, they are now working on projects nearly round-the-clock, including Gladys Knight, in working on her new LP release with Bubba Knight and Sam Dees, all part of KDK productions. Studio owner Lee Watters has started a production company and is cutting tracks with Odis Coates, (of "Having My Baby" fame) for an upcoming album. Video producer Doug Momary, known for his work with the New Zoo Review, has also been busy at Luxury Audio Workshop, and is recording jingles for Homebuilders, and producing an album with Suzie Allisen.

And at the far end of the sun belt, in Arkansas, Dick Marendt, co-owner of the Audio Recording Corp. of Arkansas, a 16-track studio in Little Rock, says business couldn't be better. "We have a good, strong local music

scene," Dick explains, "and since last August, when the economy came up, jingle and commercial music sessions have been very steady." Recent jingle dates have included: a soul version of the Lone Star Beer song for the W.B. Doner agency of Houston, ads for Hudson's Flavor Fresh Chicken, and 10-15 tractor pull radio spots a week for different markets for SRO produc-

tions. One interesting service the studio's in-house jingle producers have started is an "Emergency Jingle" service, whereby agencies can call ad copy into the studio in the morning, and a jingle will be written, composed, recorded, mixed and sent out that evening for overnight Puroator delivery anywhere in the country. Now that's service. ■

—CONTINUED FROM PAGE 116, GINSBURG

we last sold those machines recently as when we built the machine we demonstrated in March, 1953.

Mix: That was mainly Dolby?

Ginsburg: Yes. Another of Dolby's contributions was the conception of timing of the entire system being controlled by impulses read off a reflecting disc by a photocell.

Mix: What about Alex Maxey?

Ginsburg: Alex Maxey was an old-style inventor, a tinkerer in the good sense. As a boy he pulled Model A's apart, built washing machines. Maxey has a great imagination, and he was the one who discovered all of the magic effects of a stretchable membrane, the tape, compensating for head wear. He worked in the lab at night for hours, when he could have the VTR prototype to himself, and he made all sorts of marvelous discoveries in the electro-mechanical area.

Mix: Fred Pfost?

Ginsburg: Fred Pfost became the head man. We were totally dependent on him, not just to make heads, but to find out how to make heads. Making video heads was a far different thing than making audio heads, because of the high frequencies involved. The nature and ex-

tent of the losses involved in high frequencies were much different. It can certainly be said that without Fred Pfost we wouldn't have made it.

Mix: Shelby Henderson?

Ginsburg: Shelby Henderson was the model-maker. He was very skillful at what he did, and he built some things that were essential to a device that had very tight tolerances, a demanding piece of machinery. The rotary head assembly had parts that rotated at almost 15,000 rpm, and the vulnerability to vibration was extreme. We soon discovered the head assembly's ability to self-destruct. The spinning part could easily fly apart, and it did during the course of development. Fortunately, we anticipated this, and we built in safety measures, so that a bearing disintegrating wouldn't go very far through the protective structures.

Mix: It seems that some people really supported the project, while others were luke-warm, at best, to the VTR project. Can you describe your special relationship to Ampex management between 1953 and '56?

Ginsburg: The key to the relationship between management and the project, I think, was the fact that I had good relationships all the time with the president of the company, George Long, and with the founder, Alex Poniatoff. The company

was small enough in those days, or I thought it was small enough, that I could go to Long or Poniatoff and say, "The guy's impeding progress, this is all wrong."

*The Cost of a Technical revolution*

Mix: What did Ampex spend for early VTR research and development?

Ginsburg: The amount of money that was approved by the Board of Directors in 1951, which was the basis upon which I was hired, was \$14,500.

Mix: What did the whole Ampex videotape R&D project cost from its inception in 1952 until the unveiling in Chicago in 1956?

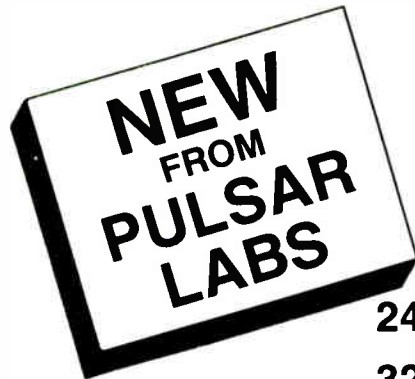
Ginsburg: The direct costs of labor and materials which had been authorized up through the end of January 1956 were \$106,000. We actually spent a total of \$96,000. ■

to be continued . . .  
end of Part I

Peter Hammar of La Honda, CA is consulting curator of the Ampex Museum of Magnetic Recording in Redwood City, CA. He also organizes the design and construction of corporate and other museums, specializing in the history of technology.

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