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THE RECORDING INDUSTRY MAGAZINE

Mix

Interview: Women in Media Production

Listings:
**Recording Studios
in North Central U.S.**

**Canadian Recording
Video Production
SMPTE Supplement**

George Massenburg

Spyro Gyra's Studio

Alligator Records

On Tour With Placido Domingo

Computer Graphics

Compact

without Compromise



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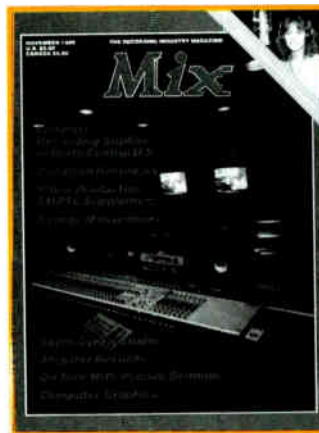
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Cover: Pearl Sound, owned by producer Ben Grosse, is located in the Detroit suburb of Canton, MI. The 24-track facility features a Sierra design with fully trapped ceiling, Sierra/Hidley monitors, Studer recorders, and a custom NEOTEK console.
Photo: Aaron Kiley

He says his ideas are "evolutionary, rather than revolutionary," yet there is no question that **George Massenburg**—subject of this issue's "Lunching" with Mr. Bonzai—has had an enormous impact on the recording world. He is credited with having built the first real parametric equalizer, among other things, and has shown himself to be one of the music industry's true jack-of-all-trades—a master designer, engineer, producer and visionary. Mr. Bonzai uncorks the beaujolais for this illuminating lunch on page 62.



The *Mix* spotlight falls on the **North Central** region this month, with articles focusing on numerous different aspects of that area. Aside from a look at the current state of recording there (page 100) and listings of studios (page 113), we offer a look at Chicago's big **Center City Studios** (page 70); the up-and-coming Chicago-based blues, rock and reggae label, **Alligator Records** (page 97); the role of various **Chicago women in production and video** (page 35) and much more.

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OTARI

CURRENT

Digital Videotape Format Standardized

The fundamental parameters for the first standardized broadcast-quality digital videotape recording format were approved on July 24, 1985 by the SMPTE Working Group on Digital Television Tape Recording (WG-DTTR). The group met in New York and agreed to submit to formal ballot a series of draft SMPTE standards. Because of close cooperation with the European Broadcasting Union (EBU), the new format represents a world-wide consensus and newly approved draft EBU specifications are essentially identical to the draft SMPTE standards.

The new SMPTE format is named Type D-1. It defines a component digital television recording system that will produce high quality recordings of 525-line digital video signals conforming to CCIR Recommendation 601. According to the SMPTE committee, the advantages of the digital recording format include essentially perfect recording and playback through ten to 20 generations, four high-quality digital audio channels, and production versatility comparable to that of the widely used SMPTE Type C analog recording format.

The new format was reached after several years of discussion by an earlier SMPTE study group and 18 months of activity by the WG-DTTR.

The new SMPTE draft standards specify the dimensions of the magnetic patterns recorded on tape, the characteristics of the magnetic tape itself, the design of the cassette in which the tape is housed, the electrical characteristics of the digital audio and video signals placed on the tape, together with specifications for control-track and time code recordings. Testing of recordings made according to the draft D-1 standards, necessary to prove satisfactory recording interchange, will begin under WG-DTTR auspices after the several participating manufacturers have completed their prototype machines. This evalua-

tion process will begin in 1986. Production equipment is expected in 1987.

Membership of the SMPTE WG-DTTR consists of representatives of television equipment manufacturers, network engineering departments, production houses, tape manufacturers, and other experts and interested parties from the U.S., Canada, Japan, England and Germany. The WG-DTTR is a sub-unit of the SMPTE Video Recording and Reproducing Technology (VRR) Committee, the group charged by ANSI and SMPTE with the preparation of standards in the field of video recording.

The WG-DTTR worked in close cooperation, throughout its deliberations, with the Specialist Group MAGNUM of the European Broadcasting Union. (MAGNUM is an acronym derived from the French term for video recorder, *Magnetoscope Numerique*.) MAGNUM has recently approved an essentially identical standard for use with 625-line PAL and SECAM television systems found in Europe and elsewhere. Both the EBU and the U.S.A. will contribute full descriptions of the new format to the CCIR meeting to be held in Geneva, Switzerland, in October 1985. Although some input and output signal processing differences will exist to suit 525-line and 625-line broadcast practices, all video signals recorded on tape by a Type D-1 recorder anywhere in the world will be identical and will conform to the 4-2-2 (13.5-6.75-6.75 MHz) sampling procedure of CCIR Recommendation 601, the internationally agreed specification for component (Y, B-Y, R-Y) digital television signals. Similarly, the digital audio signals will conform to specifications agreed to by the EBU and the Audio Engineering Society.

For additional information, contact Barry Detwiler at SMPTE Headquarters or F.M. Remley, Chairman WG-DTTR, University of Michigan, Media Resources Center, (313) 764-8248.

NCMIE Trade Barrier Project

The National Council of Music Importers and Exporters, a trade associa-

tion made up of over 50 international music traders, has undertaken a project to benefit exporters. According to the NCMIE, the most common trade barrier is the imposition of a customs duty or tariff by almost every country in the world. Through international agreements, rates of duties are negotiated. Other barriers exist, however, to keep out foreign products, and NCMIE wishes to address the issues of standards or specifications on products that effectively eliminate overseas competition and the kind of quotas and red tape that unreasonably penalize overseas shippers.

A dialogue has been started between NCMIE and U.S. government specialists for Taiwan, Korea and Japan, in the first phase of the program. NCMIE is looking for industry input, and maintains an information service bureau at 135 W. 29th St., New York, NY, 10001, (212) 564-0251.

Holding Company Acquires CBS Musical Instrument Companies

Steinway Musical Properties, Inc., a Boston-based holding company, has announced the purchase of four musical instrument companies from CBS, Inc.: Steinway & Sons piano builders with plants in Long Island City, N.Y. and Hamburg, Germany; Gemeinhardt Company, Elkhart, Indiana, flute and piccolo manufacturers; Lyon & Healy Harps, Inc., Chicago; and Rodgers Organ Company, Hillsboro, Oregon.

The four principals of Steinway Musical Properties, Inc., all from the Boston area, are John P. Birmingham, Robert M. Birmingham, James F. Stone, and Bruce A. Stevens. Stevens, formerly international director of marketing with Polaroid Corporation and most recently, president of Robert Williams, Inc., is president and CEO of the newly-formed holding company.

Steinway, founded in 1853 and incorporated in New York City in 1876, was acquired by CBS in 1972. CBS acquired the three other musical instrument companies in 1977.

INDUSTRY NOTES

INDUSTRY NOTES

The *Society for Electro-Acoustic Music in the United States* will be holding its first convention November 8 through 10 at the California Institute of the Arts, Los Angeles, in conjunction with the *New Music America* festival. For information, call (818) 985-9337... The 110th meeting of the *Acoustical Society of America* will be held November 4 through 8 at the Hyatt Regency Hotel in Nashville, TN, with the sessions on studio acoustics scheduled for the 5th. For more details, call (212) 661-9404... *Synergetic Audio Concepts* of San Juan Capistrano, CA, has announced the introduction of the Syn-Aud-Con annual award for Excellence in Audio and Acoustics. The \$1,000 award will be given annually to an individual associated with Syn-Aud-Con either as an instructor or a "grad" who has made a significant contribution to the understanding or advancement of audio and acoustics. The first recipient is *Richard Heyser* for his development of the Heyser Transform... A three-day seminar called "The Second Age of Television," with discussions and demonstrations of new technologies, will be held November 1 through 3 at *Columbia College's* Emma & Oscar Getz Theater, in Chicago. Call (312) 663-1600 for more information... *Bruei & Kjaer* will be holding seminars in Measuring Sound and Basic Acoustics December 3, in Anaheim, CA, and December 12, in Phoenix, AZ. Call (714) 978-8066 for further details... Hollywood's *JVC Cutting Center* is changing its name to *JVC Disc, Inc.* and moving to 1621 Browning Ave., Irvine, CA 92714... *CAMEO* has announced the recent hiring of *Eddie Estes*, who will be promoting the upcoming *CAMEO Creative Audio and Music Fair*, to be held March 15 and 16, 1986 in Los Angeles...

David K. Fibush has rejoined *Ampex Corporation's* Audio-Video Systems Division as product manager for small format systems... *David Talbot* has been promoted to the position of sales manager, professional products at *AKG Acoustics, Inc.*... *Tadishi Susuki* has been named president and chief executive officer of *NEC America, Inc.*, a subsidiary of NEC Corp., Tokyo... *Taylor Phelps*, vice president/chief operating officer of *ScanLine Communications Inc.*, has appointed *Ed Sarmento* president of *Editel/LA.*... *Lea Marie Braak*, formerly with *Electric Lady Studios* in New York City, has joined *F/V Sound Ltd.* as studio manager... *Dick Ober* has joined *Century III Teleproductions* in Boston as chief engineer... *Digital Entertainment Corporation* has announced the appointment of *Adrian Bailey* as manager of the Pro Audio Group's United Kingdom operations... *Chris G. Smith* has joined *Digital Services Recording* in Houston, TX, as studio manager... A new management staff has been brought into *Sound Summit Studios* of Lake Geneva, WI, consisting of *Jo Hansch* as vice president of operations, *Christine Alimanestiano* as studio manager and *Phil Bonanno* as chief engineer... *Lake Systems Corporation*, of Newton, MA, has announced the appointment of *Walter J. Kelley* as vice president of audio-video sales... *Donald E. Rushin* has been named marketing operations and international director and *Joseph L. Leon* sales director, both new positions, in *3M's Magnetic Audio/Video Products Division* for its broadcasting, recording, commercial and educational markets... the *RCA Broadcast Systems Division* has announced recent appointments including *Nick J. Hudak*, director, domestic sales; *Richard J. Boyland*, manager, marketing operations; and *James A. Gimbel*, manager,

marketing programs... *Martin Audio Video Corporation* of New York City has been named Dealer of the Year by *Lexicon, Inc.* for the second year in a row... *Grace and Wild Studios*, in Farmington Hills, MI, has appointed *Victor Vettorello* to the newly created position of video engineer for remote services... This year's *James B. Lansing* outstanding achievement award for sales and new market development was presented to *Dobbs-Stanford Corp.* of Dallas, TX... The manufacturers' rep firm *MBT* has relocated to 3120 Banksville Rd., Pittsburgh, PA 15216... *James L. Schremp* has been appointed vice president-manufacturing for the *Harris Broadcast Group* in Quincy, IL... *Jim Feeney* has been named director of distribution services for *Compact Video Services* in Burbank, CA... *Maria A. Curry* has been promoted to director of marketing and *Andrew G. Da Puzzo* has been named national marketing director at the Magnetic Tape Division of *Agfa-Gevaert, Inc.*... Portland producer, *David Tower*, has announced the formation of *The David Tower Company, Inc.*, at P.O. Box 19645, Portland, 97219, to serve the film and video production industry in Oregon... *Mikey Davis* has formed *Talon Productions*, a complete sound recording service that can be reached at (818) 710-9360... *Jason Danielson* has joined *Positive Video*, of Orinda, CA, as director of client services with emphasis on the Videoptical Division... *Aaron Baron* has been named director of audio post-production at *Matrix Video* in New York City... *Comprehensive Video Supply* has appointed *Adam Greissman* as computer aided video product manager... *Alan Carter* has moved to national sales manager at loudspeaker manufacturer *Frazier, Inc.*...

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World Radio History

SESSIONS

NORTHWEST

At *Triad Studios* in Redmond, WA, former Eagle *Randy Meisner* completed tracking for an LP project with producer *Art Ford*. . . Producer/engineer *Michael Verchiani* finished recording *Bob Gilles'* album at *Calypso Recording Studio* in Novato, CA. Mixing of the album was done at *Fantasy Studios* by *Stephen Hart*. . . At *Russian Hill Recording* in San Francisco, Windham Hill producer *Dawn Atkinson* was in mixing the score for their first feature film release entitled *Attla*. The film score includes original music by *Buffy St. Marie* and early work from *Will Ackerman*. . . At *Bear Creek Studio*, Woodinville, WA, *Eric Clapton* laid down tracks for Lionel Richie's new album. Engineers *Tim Kileen* and *Steve Heinke* assisted Motown engineer *Cal Harris* and producer *James Anthony Carmichael*. . . *George Sams*, *Mike Peterson*, *Herman Eberitzch* and *Tommy Kesseker* were all in San Francisco's *Dave Wellhausen Studios* recording recently. . . In session at *Starlight* in Richmond, CA, was the band *Shadow Talk*, produced and engineered by *Steve DeGrazia* finishing up a brand new four-song demo. Also, *Until December* mixed some of their latest tracks with engineer *Ken Kessie*. . . At *Colorado Sound*, Westminster, CO producer *Dik Darnell* and co-producer *Henry Rowland* finished up an album project with *Alan Ginsberg* and the group *Body House*. They are marrying Ginsberg's unique style of poetry and the band's own "new age" sound. . . Seattle's popular rock groups *Attachments* and *The Cowboys* completed albums at Steve Lawson Productions in Seattle. Engineer and co-producer for both albums, *Terry Date* also went to *Mastering Lab* in Los Angeles to oversee the mastering of both LPs. . . At *Montage Recording Studio* in Newark, CA, activity included finishing touches to *Jeff Wood's* project with *Future Stream*; *Jamie Bridges* was the engineer.

NORTH CENTRAL

Phil Collins' horn section, *The Phoenix Horns*, were at Paragon Recording Studios in Chicago recording horn overdubs for *Ronell Powell's* new demo. *Vince Willis* produced, *Bob Kearney* engineered the session. Also, *Ben Sidran* was in putting finishing touches on his new song with Mac Rebennack (Dr. John) titled "Up the Lazy River." *Marty Feldman* was the engineer for this project. . . At *Ironsides Studio* in Branson, MO, producer *Bob Millsap* completed projects for *Roy Clark*, *Tommy Overstreet*, *Rodney Dillard*,

The Foggy River Boys and *Jenny Spencer*. Another current project underway at Ironsides is the *Sons of the Pioneers*. . . The *Music Factory*, owned and operated by Sweetsong Productions in Parkersburg, WV, has upgraded from 8-track to 16-track with the installation of a Tascam 85-16B recorder and a Tascam M-16 recording console.

SOUTHEAST

At *The Terminal*, in Jackson, MS, *The Windbreakers* recently completed their new album for D.B. Records, engineered and produced by *Mitch Easter* and *Randy Everett*. . . Jazz fusion group *Forth* completed their first album *Audio Massage* at Memphis State University's *Commercial Music Complex*. The project was produced by *Bob Salley* and *Mike McCarroll* and engineered by *Daniel Pfeifer*. . . *JBS Studio* in Atlanta finished work on a 45 for *Dura Hale* that was produced by *Ronald LaPread* of The Commodores. *Richard Wells* engineered on this project. . . Four of rock and roll's founding fathers—*Johnny Cash*, *Jerry Lee Lewis*, *Roy Orbison* and *Carl Perkins*—recorded an historic reunion album at Memphis' legendary *Sun Studios*, the site where each made their initial splash in the music world in the 1950s. *Chips Moman* produced. Engineering the sessions was *David Cherry*. . . *James Cannings*, has been on the Caribbean island of St. Maarten recording an album for *Tounka & Friends*. He is the chief engineer of *Bronese Recording Studio*, St. Maarten's first and only 24-track recording studio. . . At the *Music Mill* in Nashville, *Harold Shedd* produced *Alabama*, who were in doing overdubs mixing their new Christmas album. It was engineered by *Jim Cotton* and *Joe Scaife*. . . *New River Studios* in Fort Lauderdale, FL, recently completed tracks for the upcoming *Peter Frampton* album for Atlantic Records. The album was produced by *Pete Solley*, with *Trevor Hallesy* engineering. Assisting duties have been shared by *Ted Stein* and *Teresa Verplanck* of the facility. . . At *Sound Check Studios* in Fort Myers, FL, *Rick Webb* started tracks for his first LP project in 20 years with producer *Jim Becker*, and engineer *Alan Knapp*. . .

SO. CALIFORNIA

Motown legend *Smokey Robinson* was in at *Mama Jo's* in North Hollywood mixing his upcoming release with producer *Dennis Lambert* and *Jack Joseph Puig* at the controls. . . Allan Holdsworth, Neal Schon, and Ray

Gomez are playing guitar on the new *Jon St. James* LP on Enigma Records. The LP, which features a version of "Crossroads" with all three guitarists soloing, was recorded at *Formula One Music*, La Habra, CA. . . At *Capitol Recording Studios* in Hollywood, *Pat Benatar* was in with producer/husband Neil Geraldo, and engineer *Joe Chiccarelli* working on overdubs. . . Producers *Michael Wagener* and *Neil Kernon* brought the *Le Mobile* remote truck to a warehouse behind Warner Bros. Amigo studios in North Hollywood to record drum tracks for a forthcoming *Dokken* album. While his truck was tied up by the Dokken sessions, *Le Mobile* owner/engineer *Guy Charbonneau* flew to San Francisco to engineer live recording of *Santana* using the Record Plant mobile unit. Producer Wagener also worked recently with Christian rockers *Stryper* at *Smoke Tree Recording Studios*. . . *Michael Omartian* was in *Lion Share Recording* producing several cuts for *Jermaine Jackson's* album on Arista Records. Engineering the dates was *Terry Christian*, with assistance by *Laura Livingston*. . . At *Music Box Recording Studio* in Hollywood, producers *Al McKay* and *Clarence McDonald* worked with *Durell Coleman* (*Star Search* Grand Champion of 1985) on his album. *Paul Dobbie* engineered. . . Ex-Code Blue artist, *Dean Chamberlain* cut two sides at *Eldorado Recording* for Famous Music. *Carmen Rizzo* and *Tom Root* assisted on all projects. . . *The Blasters* were in *Encore Studios* for Budweiser, with *Craig MacGowan* and *Mark Price* producing, *Mikey Davis* and *Jim Dineen* engineering. Also, *Glen Ballard* and *Cliff Magness* mixed Qwest artist *Siedah Garrett*; and *David Leonard* was in with *Oingo Boingo* for MCA. . . A&M artist *Joyce Kennedy* was in LA's *Skip Saylor Recording* doing overdubs for an upcoming LP with producers *Glenn Murdock* and *Gary Taylor*. *Skip Saylor* was behind the board with *Tom McCauley* assisting.

NORTHEAST

At *EARS*, East Orange, NJ, *Ken Sim*, has been working on an album project. . . *Boy George* and *Marilyn* have been aboard the new *Aura Sonic Ltd.* mobile unit with *Michael Rudetsky*, *Steven Remote* and *Man Parrish*. Fairlight CMI programming/arranging and pre-production work for a remake of the Norman Greenbaum tune "Spirits in the Sky" was done on the truck. The Fairlight program disks were then taken to the *Hit Factory* to be recorded and mixed digitally. Engineer at the Hit Factory was *John Dabenport*. . . At *Nibor Recording Studio*, Hurley, NY, *John Sebastian*

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recorded his contribution to Leon Redbone's upcoming album. John has also been working on new material for TV and film. **Bob Leinbach** of the *John Hall Band* was in the studio along with **Larry Hoppen** and **Eric Parker** cutting tracks for a solo effort from Bob... At *Quadrasonic Sound Systems* in NYC, **Peter Tosh** was in mixing his new album which he is also producing. **Dennis Thompson** was behind the board, with **Tom Gonzalez** assisting. Also at Quadrasonic was **Garland Jeffreys**, working on a new project engineered by **Matthew Kasha**... At *Frankford/Wayne Mastering Labs*, NYC, engineer **Herb Powers Jr.** wrapped up the new **Diana Ross** (featuring Michael Jackson) 12-inch and engineer **Tom Coyne** completed the LP Compilation *The Quiet Storm* for Capitol Records featuring such artists as the *O'Jays*, **Bernard Wright** and **Stanley Turrentine**... Megaforce recording artists *Overkill* have been recording their next LP at *Pyramid Sound Studios*, Ithaca, NY, with **Carl Canedy** producing, **Alex Pericalas** engineering and **Peter Bombar** assisting... At *Celestial Sounds* in NYC, **Barry Eastmond** was in producing **Jonathan Butler's** first American release for the Jive/Zomba label. **Hugo Dwyer** engineered with **Larry Decarmine** assisting... At *Planet Sound Studios* in Manhattan, **Rick Derringer** produced **Mason Ruffner** for CBS Associated Labels with **Tom Edmonds** engineering and **Tim Purvis** as second engineer... At *North-eastern Digital Recording* in Boston, PCM-F1 digital safeties of masters were done for two bands produced by **Ken Goes: Throwing Muses** and **Rash of Stabbings**; and owner **Toby Mountain** edited and mastered a new CD release by The Musical Heritage Society of Rossini and Gershwin favorites played by New York's *Saturday Brass*... Motown legend **Junior Walker** was in *Power Play Studios* (L.I.C., NY) recording four tracks for his upcoming LP. **Julian Herzfeld** engineered, **Matthew Buccheri** assisted... At *Greene Street Recording*, NYC, **John Robie** produced a single for Warner Bros. artists **New Order**, **Dave Harrington** engineering. Also at Greene Street, Epic recording artist **Lovebug Starski** cut his album with producers **Rod Hui**, **Kurtis Blow** and **DST**; Hui engineered, assisted by **Dave Stillman**... At *Highland Studios* in Delmont, PA, **The Bullys** have finished mixing their first album, produced by **Steve James** and **Troy Cramer**, engineered by **Gary Popotnik**, assisted by **Karen Gustafson** and **Peggy Lovell**... **Ed Ashworth** has been at *Normandy Sound*, Warren, RI, mixing a new album with engineer **Tom Soares** for Dog Star Records... At *Battery Sound* in NYC, **Powerman** completed its latest LP, *One Peace at a Time*. **Mark Freedman** produced and engineered. Also in were the *Love of Life Orchestra* for CBS Masterworks, **David Van Tieghem**, **The Limits**, and **Junior Walker**. **Eric Liljestrand** engineered, **Psquani Frates** assisted... The *Music & Sound Design Studio* in Bridgewater, NJ, completed projects for *Image Innovations*, *Allied Stores Marketing*, *Graphic Media*, and *Michael Sodano Productions*, among others... **Paul Schafer** of

The David Letterman Show was at *Sound Heights* in Brooklyn laying down DX-7 keyboard tracks for producer **Tisziji Munoz**. **Vince Traina** engineered, **Abdu Malahi** assisted... **Fareed Abdul Hagg** was in NYC's *Beethoven Studios* doing guitar overdubs on a **Patti Labelle** project, with **Steve Griffin** at the console... Activities at *Rawlston Recording Studio* in Brooklyn included, **Ralph McDonald** doing a digital mixdown on his latest album for Polygram Records; **Kendell Brown** engineering and **Cirland Noel** assisting. **Ralph McDonald** also was in with **Eric Gale** producing "Calypso for Africa," a fund raising effort to benefit Africa. Engineering was by **Kendell Brown** assisted by **Randy Pippis** and **George Mayers, Jr.**... At *Bearsville Studios*, (Bearsville, NY), **Joey Lynn Turner** completed his new Elektra debut album with **Roy Thomas Baker** producing, and **Ian Taylor** engineering. **Ken Lonas** assisted the project.

SOUTHWEST

Recent activity at *Goodnight Dallas* included former **Uriah Heep** songwriter, vocalist and keyboardist **Ken Hensley** in recording and mixing tracks for his upcoming solo album. British producer **Ashley Howe** directed the sessions with **Ruben Ayala** engineering... **The Velcros**, a band from Syracuse, NYC, completed recording six songs at *Martin Recording Studios*, El Paso, TX. The session was produced and engineered by **Howard Steele**... Activity at *Planet Dallas Studio* included guitarist **Robert Lee Cobb** recording a 60-second spot with engineer **Doug Hall**, **Leesa Bowman** assisting... MCA Record's new hot act *New Edition* known for their hit, "Mr. Telephone Man" were recently in Omega Audio's 24-/48-track studio in Dallas to record overdubs...

STUDIO NEWS

Pearl Sound Studios in Detroit recently accepted delivery of an Emulator II, UREI 809 monitors, API 550 EQs, AMS digital delay/sampling system, Klark-Teknik DN780 digital reverb, Emu SP-12 sampling drum machine, a Yamaha TX7 FM synth expander, and a Roland SBX80 sync box... **Gnome Sound**, Detroit's sophisticated facility for MIDI-based music production, recently added a SMPTE to MIDI interlock, 24-track video mixing, state-of-the-art MIDI drum machine and sequencing gear, and a new 32-input board... **MetroGnome, Inc.**, the Nashville-based computer consulting firm that specializes in business management software for the music industry, announced that **Bullet Recording** of Nashville has installed MetroGnome's recording studio management system, Sessions Plus. **Bullet** will be running the program on their IBM PC-XT computer in tandem with Labels Plus, MetroGnome's reel-to-reel

and cassette tape label generation program... **Marc Dimmitt**, former chief engineer with Paul Libman Music/Imaginiers, has joined the engineering staff at *Sound Impressions*, Del Plaines, IL... **Dave Wellhausen Studios** have added a new Lexicon 224XL digital reverb with Lark Command and all the latest software... **Long View Farm** in N. Brookfield, MA, has re-designed their Studio B with a new Sound Workshop Series 34 console w/ARMS automation; an MCI 24-track; Studer A80 2-track; Lexicon 224XL digital reverb, Super Prime Time, PCM 42; DeltaLab DL2 and DL4 DDL's; UREI and dbx Limiter/Compressors; Ashley Noise Gates and much more... **Sound Check Studios** in Fort Meyers, FL, now is an Otari 8-track and MCI 24-track studio. Acoustic design by Gary Gladstone, using Brian Cornfield's (of Everything Audio) basic design ideas, in both the control and main rooms... **Westrax Recording Studio**, NYC, has completed a major update, with the addition of an Otari half-inch mastering tape deck; the IBM PC/AT computer which allows the use of the sequencer plus software from Octave Plateau; and a TX216 with four additional TF-1 modules have been added to the Yamaha DX-7... **Steve Bramberg**, manager of *Bearsville Studios* in upstate NY, announced the installation of a new Solid State Logic 48-channel 6056E into their Studio B complex... **Music Factory Enterprises**, of Oaks, PA, has completed its new 16-track studio, with a 24-track Allen Heath Brennel console. Other additions include the Yamaha DX-7 digital synthesizer and Yamaha RX-11 digital drum machine, as well as new digital DeltaLab delay lines... Recording and mixing engineer **Chuck Irwin** has recently joined the staff of *ServiSound, Inc.* in NYC... **Grog Kill Studio** of Willow, NY has recently completed a major upgrade of their studio facilities. In addition to expanding the control room, **Grog Kill** has installed a new, 36-input Harrison Raven console fitted with Audio Kinetics' Master Mix disk-based mixdown automation. Two new Otari tape machines were also installed, an MTR-90 MkII multi-track and an MTR-12 MkII two-track for 1/4-inch or half-inch mastering; dolby noise reduction is available for both machines... **Rawlston Recording** in Brooklyn, NY recently has updated its outboard rack, with an AMS DMX 15-80S digital processor, Lexicon 224-XL, also one Lexicon 224, two dual Drawmer noise gates, one AR 300 tape eliminator, a 1745 Eventide digital delay, Lexicon PCM42 and an Emulator II... **Fig Tree Productions** in Aptos, CA, is making their MIDI-based composing and recording studio available to songwriters and musicians for developing arrangements and recording demos of their compositions. Until now, this one-year-old studio has been used primarily for **Fig Tree's** own in-house productions. The heart of this keyboard-oriented studio is a powerful 36-track sequencing/editing software which runs on the Commodore SX64 computer... **Goodnight Audio** in Dallas, recently purchased a Neve 8128 console equipped with Necam 96 automation through Midcom, Inc. **Goodnight** also purchased a Lexicon 224-XL digital reverb and an Otari MTR 90 24-track tape recorder...

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AUDIO-APPLICATIONS

Clearly, the storage potentials of the audio CD are still open for some highly interesting, creative, and profitable applications.

by Ken C. Pohlmann

Now that the Compact Disc has enjoyed a two-page spread in *Time* magazine, we can reliably conclude that it has entered the mainstream of American consciousness, such as it is. According to *Time*, "the sound is as pure and compelling as a siren song, and consumers seem powerless to resist." A lawyer is quoted as saying, "I can't tell the difference anymore between recorded and live." They even went straight for the really profound stuff by quoting from my review of Sony's CD ghettoblaster: "It has enough rock 'n' roll power to digitize everyone on the bus." In short, the Compact Disc has

able applications. The secret to CD's next big coup is a few bits of unused information within each CD data frame.

All data on a CD is arranged into frames, as shown in Figure 1. By definition, a frame is the smallest recognizable section of data on a disk. The frames are used to distinguish between audio data, parity, the synchronization word, and a field of bits called the subcode. A complete frame contains 588 bits (called channel bits), and most of it is used for audio information. The 27 bit sync word, both 96 bit data words, both 32 bit parity words, and two of the subcode bits are all used to make music.

The eight bit subcode of user bits is contained in every frame and are designated as P, Q, R, S, T, U, V, and W, sometimes referred to as the PQ code. Only the P and Q bits are used in the audio format. Since the number of bits available in each frame is small, the entire number of subcode bits available from 98 frames is collected to form a subcode block, complete with its own synchronization word, instruction and data, commands and parity. The P channel designates lead-in, play, and lead-out areas on a disk; binary 1s are lead-in, 0s are play, and alternating 1s and 0s are lead-out. The Q channel contains information for track numbers, index numbers, elapsed time within a track in minutes, seconds, and frames, and elapsed time since the first music track. PQ subcode editors are used to encode this information on the master PCM cassette prior to disk mastering.

However, every audio Compact Disc contains unused data capacity in the guise of the subcode bits. The other 6 bits, which account for about 20 megabytes of 8-bit storage, are available for video information. For video applications, the data is collected over thousands of subcode blocks to form an image. A CD holding a full program of audio data can hold hundreds of still video images, drawing a new image from the disk every few seconds, all from those six extra bits in each frame. All synchronization, error correction, and video data is self-contained in the subcode field. Only appropriate editors will be required to encode the information onto the master PCM cassette. Where did these extra bits come from? The original disk designers guessed that a little spare room of unspecified space might come in handy someday. Their intuition will soon be appreciated.

The possibilities are varied for such a

CD SUBCODE VIDEO

passed the magic threshold where hype and trivialization take control, thus inspiring mass acceptance. Even *Time* appears to realize this fact; as the article states, current projections should "make the CD player the fastest-growing machine in home-electronics history." Transistor radios, color televisions, cassette tape recorders, video cassette recorders, move over. Ironically, that statement itself is already history, because CD's biggest story is perhaps yet to come.

Thanks to EFM modulation and CIRC error correction techniques, more than 5 billion bits of audio data may be stored on a Compact Disc. The result is 74 minutes of full fidelity music. However, that same medium is available for other types of data not limited to audio applications. Still color images, liner notes, libretti, or other material may be stored in the read-only format, and delivered as a video signal as opposed to an audio signal. For example, *in addition* to a full music program, more than 700 pieces of graphics could be placed on one audio Compact Disc and displayed on a television monitor while the music plays. Clearly, the storage potentials of the audio CD are still open for some highly interesting, creative, and profit-

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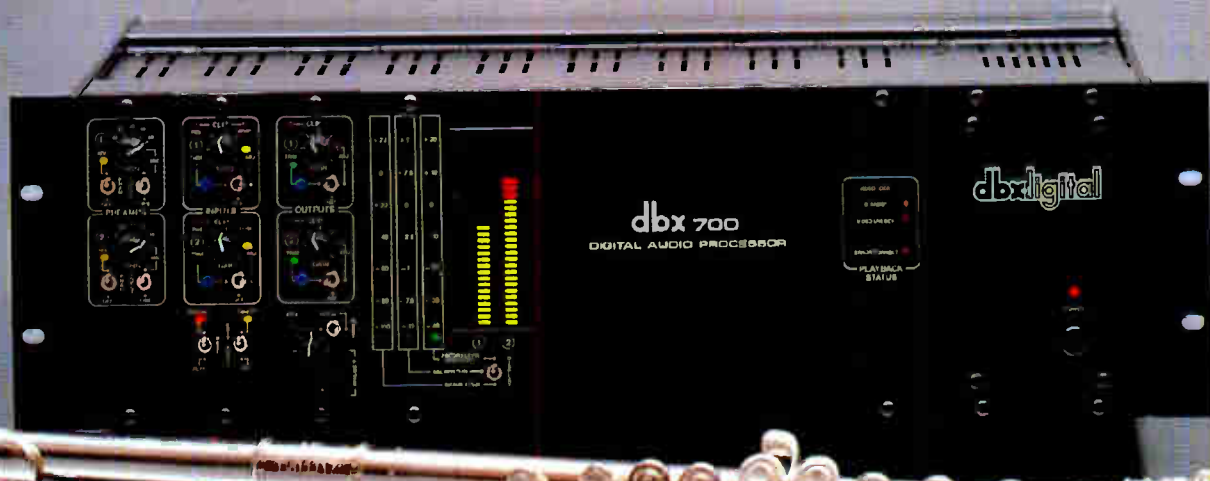
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CD format; still pictures relating conceptually or directly to the audio material could be displayed, as could liner notes, lyrics, or other alphanumeric information. Either still video camera images or computer-generated images can be stored on the music disk. A Top 40 disk might have pictures of rock and roll stars, a classical disk might have shots of the various selections of the orchestra prominent in the score; an opera recording could display storage action, with translated libretto. A children's disk could tell a story, play music, and show pictures. Or maybe your travel agent will give you a travelogue disk, with music and narration, and panoramic snapshots of some tropical

paradise. Of course, the audio-with-video subcode disk soon rubs elbows with a bonafide CD-ROM disk in which the audio storage space is sacrificed for other types of information. For example, Philips is demonstrating a video CD-ROM disk with a 5 kHz audio bandwidth for spoken narration, which runs for 30 hours. The talking book, and educational possibilities are apparent. Recording studios equipped for video work, and with some photography connections as well, should prosper greatly.

While the CD-ROM will require a special reader, the CD with video subcode will be compatible with most existing CD audio players. By using an I/O port on the CD player and connecting

the player to a television, the images are viewed as the music is reproduced. Of course, to hook-up a player to a television will require some kind of decoder/adaptor box which accepts the subcode signal from the player, and converts it into a modulated video signal suitable for the TV.

There are also a few obstacles; prior to finalization of the subcode format, manufacturers started putting subcode output jacks on their players of all different kinds of configurations. Some have DIN connectors, some have 7 pin D-type connectors, others appear to have single pin serial outputs. The point is that some incompatibility presently exists. For awhile at least, each player manufacturer will have to honor its choice of output connector. Hopefully, there will soon be a consensus on connectors. Thankfully, the subcode format itself has reportedly been agreed upon; your subcode disk should play on any player (with a subcode output).

When will subcode video appear? Hopefully, by the time you read this, CDs with full subcode information will have already been released. Reportedly, Windham Hill delayed release of their subcode CD, awaiting firmer manufacturer support for decoder/adaptors. While most major manufacturers have prototyped and demonstrated decoders, to this reporter's knowledge only Sony has pre-production or production units in the U.S. Are manufacturers afraid that a "different" kind of CD will confuse the consumer with misconceptions between laser disks, video disks, audio disks, etc? Are software manufacturers, already hard-pressed to deliver audio-only CDs, reluctant to create new market demands? Or are both merely reticent about rocking an already hugely successful enterprise?

Once initial tentativeness has disappeared, and hardware/software is available, the hook-up will be simple. All you need is the subcode decoder/adaptor and a television set, and of course, a CD player with a subcode output jack. There is every indication that CD subcode video will only further accentuate the success of the CD. The trend is clearly toward literal visual associations for music, and the subcode will provide that for CDs. It could also put the final nail in the LPs coffin—black vinyl never showed you pictures, and never will. In short, the subcode CD will accelerate the acceptance of digital audio, create greater public demand for all-digital recordings, and bolster retail CD sales in general.

What? You *still* haven't bought a CD player? Well, when you're out shopping for a player, just make sure it has a subcode output jack. What good is "Like A Virgin" without a picture of Madonna to look at? ■

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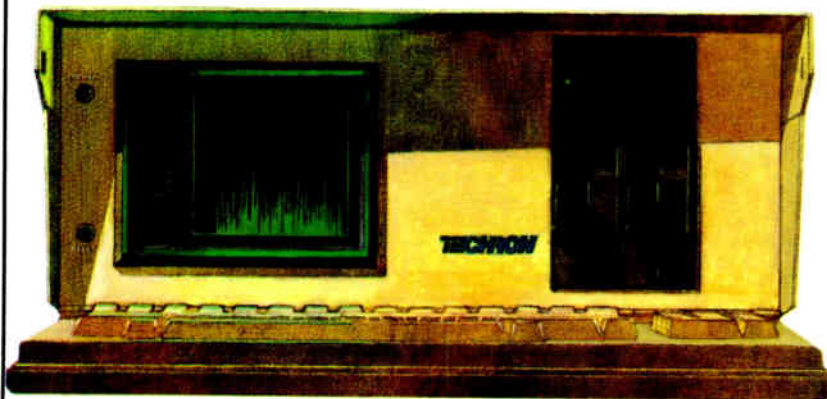
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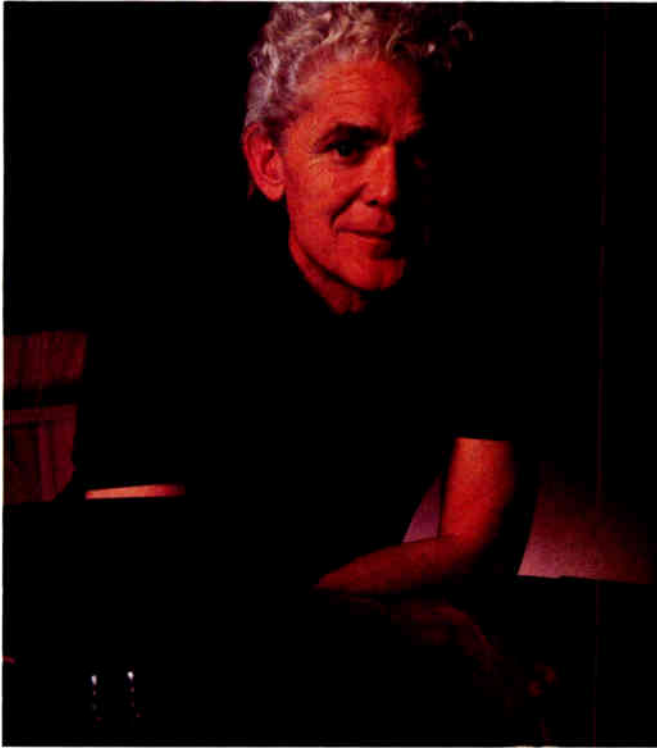
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"TAD MAKES THE BEST SOUNDING COMPONENTS I'VE EVER HEARD."

But for Tom, that's all frosting on the cake. "At the end of the day," he says, "it's what comes out of that speaker that determines success or failure. No matter what it measures, it all comes down to what it sounds like. TAD makes the best sounding components I've ever heard."

If you're in the market for professional speaker components, for yourself or a client, we hope you'll seriously consider what Tom Hidley has to say about TAD.

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LEVEL METER
L R
IN OUT

HPF
400 10K
200 8K
100 6K
50 4K

REV. TIME (R/T)
2.6 sec
MID-LOW

HPF
ON

DIRECT
ON

E/R MODE
1 2 3 4
5 6 7 8

ROOM SIZE
E/R NUMBER

EARLY REFLECTION
ON

REVERBERATION
ON

MASTER
ON

REV. MODE
1 2 3 4
5 6 7 8

LIVENESS
E/R DELAY 1 (D1)
40 ms

REV. DELAY 2 (D2)
58 ms

PRESET
1 2 3 4
5 6 7 8

PANEL
P EDIT AUTO

MEMORY
67
M STR RCL

FUNCTION
R/T D1 D2 M

7 8 9
4 5 6
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And the sound itself is far superior to any other digital reverb. The REV-1 uses specially developed Yamaha LSIs to create up to 40 early reflections and up to 99.9 seconds of subsequent reverberation. So the effect can be as natural (or unnatural) as you want it to be.

We could go on about the REV-1. Tell you about its 44.1 kHz sampling rate that provides a full 18 kHz bandwidth to prevent the natural frequency content of the input signal from being degraded.

How it has a dynamic range of more than 90 dB for the delay circuitry and more than 85 dB for the reverb circuitry.

But why not take a closer look at the REV-1 at your authorized Yamaha Professional Audio Products dealer. Or for a complete brochure, write: Yamaha International Corporation, Professional Products Division, P.O. Box 6600, Buena Park, CA 90622. In Canada, Yamaha Canada Music Ltd., 135 Milner Ave., Scarborough, Ont. M1S 3R1.



"EARLY REFLECTION" display mode showing room size and relative level and time of discrete reflections.



"REVERB DENSITY" display mode showing level and relative time of subsequent reverberation.



"REVERB TIME" display mode showing difference in reverb time in each of four frequency bands.



"MEMORY TITLE" display mode showing the titles of internal ROM memories.



YAMAHA





*Exterior of Beartracks' facility in Suffern, N.Y. (Right)
The studio's vaulted ceiling and loft creates an open,
airy feel.*

SPYRO GYRA'S **BEAR TRACKS**

by Bruce C. Pilato

"From the very beginning, we knew the studio had to be the absolute best, or else we weren't going to compete with the very good studios that are right in Manhattan," says Jay Beckenstein, leader of one of America's best-known fusion ensembles, Spyro Gyra, and co-founder of Bear Tracks Recording Studios. At that exact moment, as if to question Beckenstein's statement, a huge burst of thunder and lightning comes crashing out of the heavens. As Mother Nature provides the previously tranquil countryside with a much needed thunderstorm, Beckenstein sits in his office at the studio, watching the rain fall across the window.

"People that use us are people that want an environment that's really relaxing and beautiful, 'cause that's what we've got. If you want intensity and craziness, then record in New York City. But our place has got everything that the best studios in New York have, but it's also got a beautiful farm, a swimming pool, and a really gorgeous atmosphere. I mean, we can't give 'em sushi at 3 a.m., but other than that..."

Located in Suffern, NY, near the New York-New Jersey border, and just 45 minutes from Manhattan, Bear Tracks Studios has grown considerably since its inception in late 1982. Built into a reconverted granite barn in the remote countryside, the complex and its surroundings are indeed breathtaking.



Earlier this year, its beauty was exposed to millions of TV viewers as the setting for Julian Lennon's first two videos, "Vallote" and "Too Late for Goodbyes." Lennon also recorded and mixed much of his multi-platinum debut album at Bear Tracks.

At 1,700 square feet, the split level studio is large enough to house an orchestra. Its 36-foot-high cathedral ceiling has a unique design that allows it to be adjusted from 27 to 14 feet. The inside of the studio was constructed by using a combination of stone, oak and cedar, and is further enhanced by alternating wall panels that allow for both live and dead settings. In addition, there are five large view windows.

Bear Tracks is also unique in that it



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pared to rent one for the album, and that's going to cost me \$20,000. That's a downpayment on buying one, so we're very much on the borderline.

"The main thing that worries me is the fear of buying a piece of technology that is going to be obsolete in a week. And the kind of expense we're talking to upgrade the studio means you're always taking the risk that what you're gonna get is going to cost half as much and be twice as good next year. I guess a great example of that is our neighbor Todd Rundgren," says Beckenstein, "who spent \$2 or \$3 million on a video studio, only to have every piece of



equipment in it become obsolete in less than six months!"

Swist adds that one way the studio has avoided such obsolescence is to rent a lot of outboard gear, as opposed to buying it. "Since there's been such a rash of new devices, what we're doing all the time is renting just what we need for a particular project. Everyone has a different pet piece of outboard gear or digital reverb or whatever. Instead of

MULTIMIX

16:2:1 12:4:2:1 16:4:2:1

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Our place has got everything that the best studios in New York have, but it's also got a beautiful farm, a swimming pool, and a really gorgeous atmosphere.

putting a lot of money into all the new and exotic stuff, we simply rent it. I think it's the only effective way to do it these days."

Both Beckenstein and Swist feel that Bear Tracks will remain simply an audio studio, staying away from video production. And even though the Lennon videos were shot there, they intend to keep "the focus here on music."

With the rapid success of Bear Tracks and a recent major personnel change in the group, rumors have circulated that Beckenstein might be ending the band to concentrate fully on his commitment to the studio and producing.

"No," he says, "my list of priorities as an individual runs roughly like this: I'm a saxophone player, first; I'm a writer, second; and I'm a producer, third.

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SYNC SOUND

by Dan Daley

TEACHES

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Tenth Avenue is inspirational any way you look at it. Running like a pocked time code along the edge of Manhattan, you can almost spit into the Hudson River from it. And in this part of town, on the fringes of New York's notorious Hell's Kitchen, the river will just as often spit right back. Gentrification, that benign plague, is slipping into the area, pioneers with hammers and check-books easing the street life ever closer to the dilapidated piers.

There is another, more intricate sort of pioneering going on at the corner of 56th Street, however. In a low, unassuming building is Sync Sound, New York's (and possibly the east coast's) first facility specifically designed for high quality audio-to-video mixing.

Sync Sound is the built-from-the-ground-up brainchild of Ken Hahn and Bill Marino, two veteran music engi-

neers who got a taste of video and film work doing stints at Regent Sound in New York as studio manager and chief engineer, respectively.

"It really did start at Regent for me," says Hahn, the garrulous and congenial main engineer and co-owner. "I did records there, and then the studio did video work as a result of the jingle work it did." But along the way he discovered that, in many cases, "A studio was either a recording studio with a video machine hooked up, or else the other way around: a video facility with audio machines plugged in. It always looked so makeshift," he adds, "with a television sitting on top of some rack they

wheeled in. My concern is how functional things are, and something that temporary can't be functional."

In the year and a half the studio has been in operation, it has garnered several awards for its staff of 11, including the Videotape Production Association's nod for Best Sound Mixing in a Documentary, Best Sound Mixing in a Music Video (Billy Joel's "Keeping The Faith") and an Emmy Award for mixing for Lincoln Center's 25th anniversary gala.

Hahn and partner Marino set out to design an electronic and acoustic environment that was both utilitarian *and* aesthetic. They have achieved both goals in a unique manner, one that in general reflects their approach to problem solving.

The 8,000-square-foot, \$1.5 million plant is laid out like a flow chart. Two control rooms, the spacious B and the cozier C, are on opposite sides of a



Bill Marino in the equipment room.

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The most frightening thing is that The Stereo Nightmare strikes when its victims are wide awake. The syndrome is all too real. And as it spreads, the industry's loss in man-hours and production costs has become staggering.

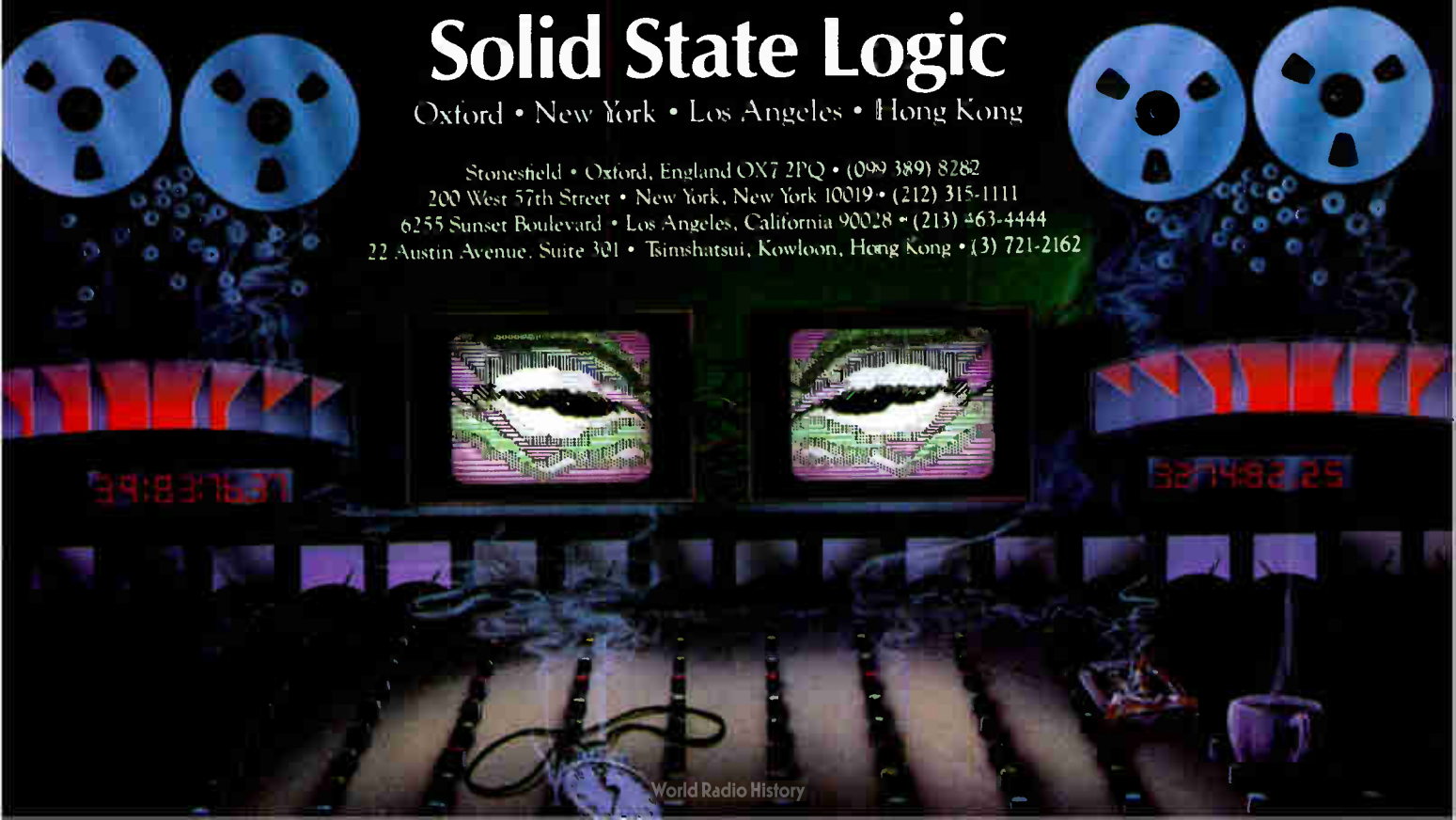
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corridor. Each has a console (an SSL 6000 and a Soundcraft 2400, respectively), a full array of outboard equipment, and video and audio monitors. What they don't have are multi-track machines. Instead, all the recording machines—from the Sony digital 24-tracks to the 8-tracks to the video decks—are centrally located in a main engineering room that crosses the "T" of the corridor. The flooring throughout is computer-type, panels that lift out for easy access to the tie-lines that connect the recording room with the two control rooms. The control rooms are client-friendly with desk space and tele-

phones apart from the console, and handy for the engineer—all outboard racks are directly behind the console, and an intercom system keeps the operation virtually assistant-free.

(There is another space, larger than the other two, optimistically referred to as Studio A. It currently houses a workshop but its high ceiling and stone walls make it a potentially excellent recording space.)

Marino, the avuncular head technical engineer, designed the triple keypad on the consoles to be as user-friendly as possible. "The entire system is broken down into its respective

parts, and each part can be controlled from the board," he says. "Each tape machine has at least two microprocessors, and all the software was written by us and for us."

The SSL board is the standard 6000 Series with one slight modification. According to Marino, "The only thing we asked SSL to do was to add an extra 13 inches in the middle of the board so we could insert our keypads. It's all hooked into our Motorola 6809 microprocessors and it works on a ring network. We can control up to 94 machines at one time, on-line synchronized." This enables them to avoid generational duplications. "All machines are instantly available, and all their start up parameters, ballistics and so forth are programmed onto disks," he points out.

The separate environment for recording machines works for a number of reasons. Elissa Kline, another Regent Sound alumnus and currently Sync's studio manager, says, "With our system, the engineer can switch to any machine



"We don't have every type of machine available, but we can interface across a broad spectrum. You have to be comprehensive."

instantly by just pushing a button." Another advantage, according to Kline, is that this arrangement frees up machines that aren't being used to do transfers and setups for other sessions and preparatory chores.

The brightly lit recording room has a wide variety of equipment on hand. "When we started out, we knew we needed to be able to handle a wide range of formats," says Hahn. "Maybe we don't have every type of machine available, but we can interface across a broad spectrum. You have to be comprehensive."

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9	10	11	12	13	14	15	16
SYNC A Dialog FX	SYNC B	SYNC C	V.O. mono	SOT A	SOT B	INTERV. A mono	INTERV. B mono
17	18	19	20	21	22	23	24
AUDIENCE GROUP A LEFT	AUDIENCE GROUP A RIGHT	MUSIC GROUP A LEFT	MUSIC GROUP A RIGHT	AUDIENCE GROUP B LEFT	AUDIENCE GROUP B RIGHT	MUSIC GROUP B LEFT	MUSIC GROUP B RIGHT

Multi-track sources were mixed to tracks 19, 20, 23 and 24. Tracks seven through 24 were then reduced to the submixes on tracks one through six, which were then further mixed to stereo.

One recent project provides a good illustration of how comprehensive a facility Sync is. Julian Lennon's feature-length video of his American tour was completed at Sync Sound in August, and is slated for release this month. Producer Martin Lewis (whose other credits include Lennon's first two videos, and *The Secret Policeman's Other Ball*) set out to make a quasi-documentary portraying Lennon's first live performances ever. "The idea is that it looks at Julian from his earliest days in rehearsal right through to the end of the tour," says Lewis.

It was a sizeable undertaking and was divided into three parts: the actual mix of the music, the mixing of the documentary and interview segments, and the final assembly. The problem, according to Lewis, was that there were so many disparate elements involved: various video formats and tape sources that included 8-track, 24-track and 48-track. "We started to shop around to see where we could take all those different elements under one roof," says the British producer.

Lewis had worked previously at Sync, doing some audio sweetening of Lennon's "Jesse" video there, so it was one of the first places he approached. How-

Above: Track assignment chart for the production of the feature-length Julian Lennon video project. Tracks from a variety of sources were transferred or pre-mixed onto Sync Sound's Sony 3324 digital multi-track for the sweetening process.



ever, due to time and financial considerations, the music mix was initially started elsewhere. But according to Hahn, "They wound up calling us for advice a few days later." The other facility had been experiencing technical problems and, in Lewis' words, "Sync literally jumped in, in the nick of time, and we became a round-the-clock operation there for about seven days."

The audio sources were myriad on the video. "The music was on 24 tracks at 30 ips analog," says Hahn. "There were some overdubs that were done on another 24-track machine. [Live recording was done in Toronto, Ontario, by Record Plant's mobile unit with

Lennon's engineer, Brad Leigh, at the board.] Also, there was some rehearsal material cut on 8-track half-inch done on various formats in Texas. There was also additional rehearsal footage done on (Sony PCM-) F1 and on VHS Hi-fi. The interviews and voice-overs were done on Betacam."

The videotape came in completely edited, as is usually the case (Sync Sound has no video editing capabilities. "Nor do we want to," says Hahn.) They made several work cassettes from the master to save wear and tear on the original, which facilitated using both control rooms simultaneously. "That was the beauty of it," says Lewis, "to be able to do the documentary and music mix at the same time."

Studio C was assigned the assembly of interview and documentary segments, and Studio B handled the music mix. The final music mix was allocated to four tracks on the 24-track digital machine, with other tracks taken up by audience sounds, interviews, voice-overs, sound-off-tape, and sync tracks available for effects. This last was particularly useful when, during one performance, a girl from the audience rushed the stage and embraced Lennon, knocking away his microphone and interrupt-



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ing the vocal. Hahn lifted a corresponding section of the same song from another night's performance and inserted it seamlessly over the disturbed section, keeping audience ambience tracks consistent.

All these various elements were then mixed down to six tracks (see sidebar)—separate stereo mixes of music, dialog and effects. These were subsequently mixed down to stereo on the Sony 1610 digital 2-track.

"It took about three and a half days to do the music mix, and another two and a half to do the documentary and the interview footage," says Hahn. The final mix assembly took another two and a half days. Hahn notes that by sending what analog material there was to digital right from the start, "the sound quality remained excellent throughout."

Lewis is more effusive with his remarks. "The acid test was the playback I had a few days later in my apartment to as critical an audience as I could possibly have had: Phil Ramone (Lennon's producer), Julian, and Carmine Rojas, Lennon's bandleader. And on the first listen we got a universal thumbs up. They were thrilled with the results."

"The way we do things here," says Hahn as he looks over the multi-track master sheet, "didn't happen this way because this is the way the industry has always done it. It happened after countless sessions of doing it other ways; not necessarily the wrong way, but not always the best or most efficient way. It takes a lot of trial and error to get to this point," he says, pointing to the sheet before him.

While the technical end is being further refined, Hahn is not overlooking the artistic aspects. He regards the pacing of video projects as the real art form as far as his work is concerned—keeping the pacing and sequence of events interesting and seamless so that regardless of how much effort is expended, the final result always looks effortless. One of the attentions to detail on the Lennon project was the use of stereo simulators on the sound effects tracks to maintain the excitement and the audio consistency.

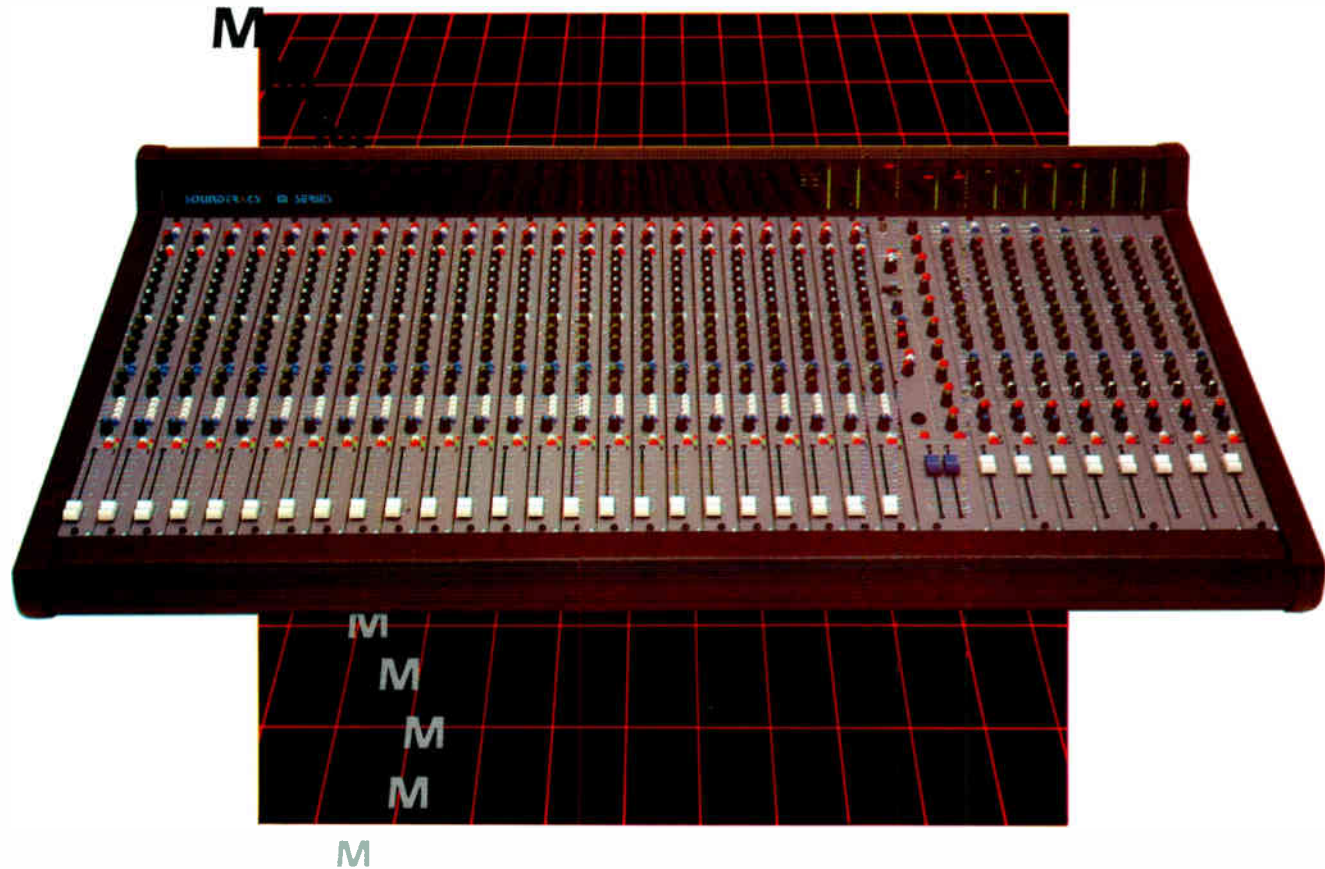
Hahn and his partners see an optimistic future ahead, not only for Sync Sound, but for the field in general. The technology is improving daily, notes Hahn, and more and more people are moving into it. But, he cautions, "It looks very attractive to everybody; every video studio thinks it can do audio if they wheel in a 4-track machine, and every audio facility thinks they can do video with a 3/4-inch deck." And even if the level of technology is more sophisticated than that, he concludes, "Having the facilities is one thing, but knowing what to do with them—that's the hard part." ■

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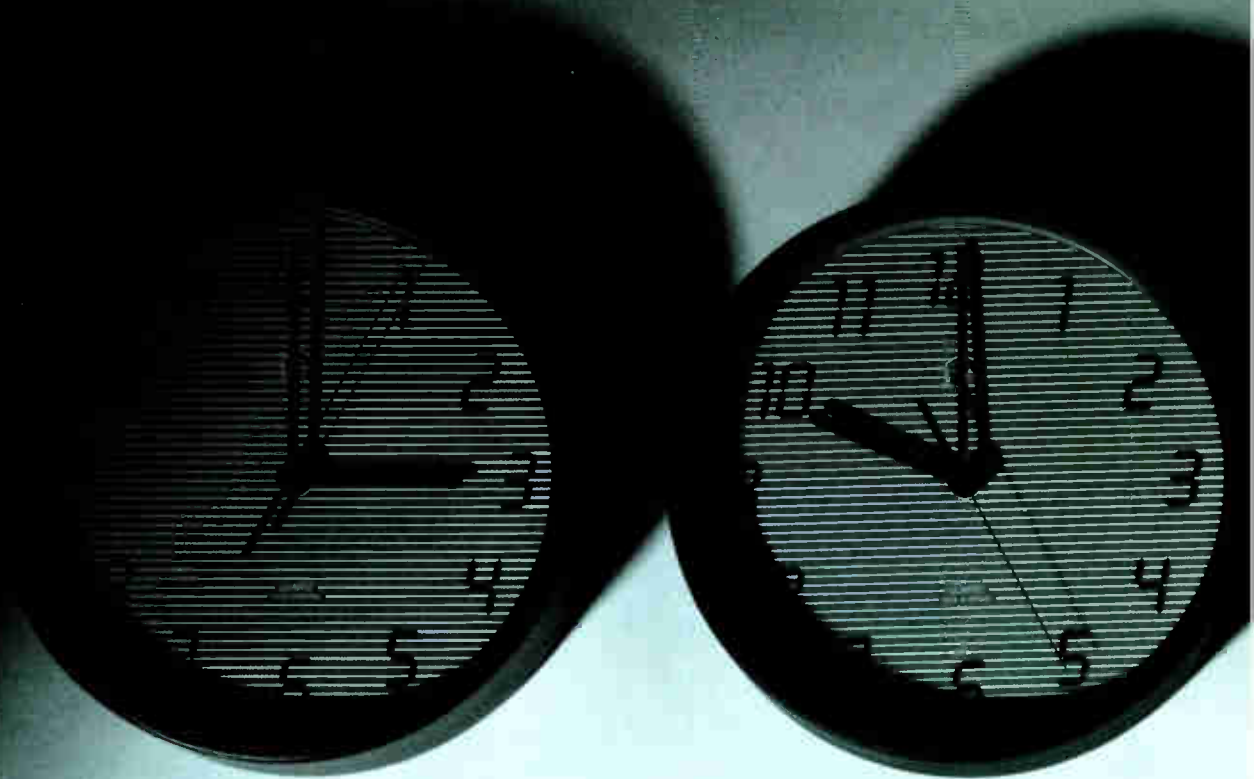
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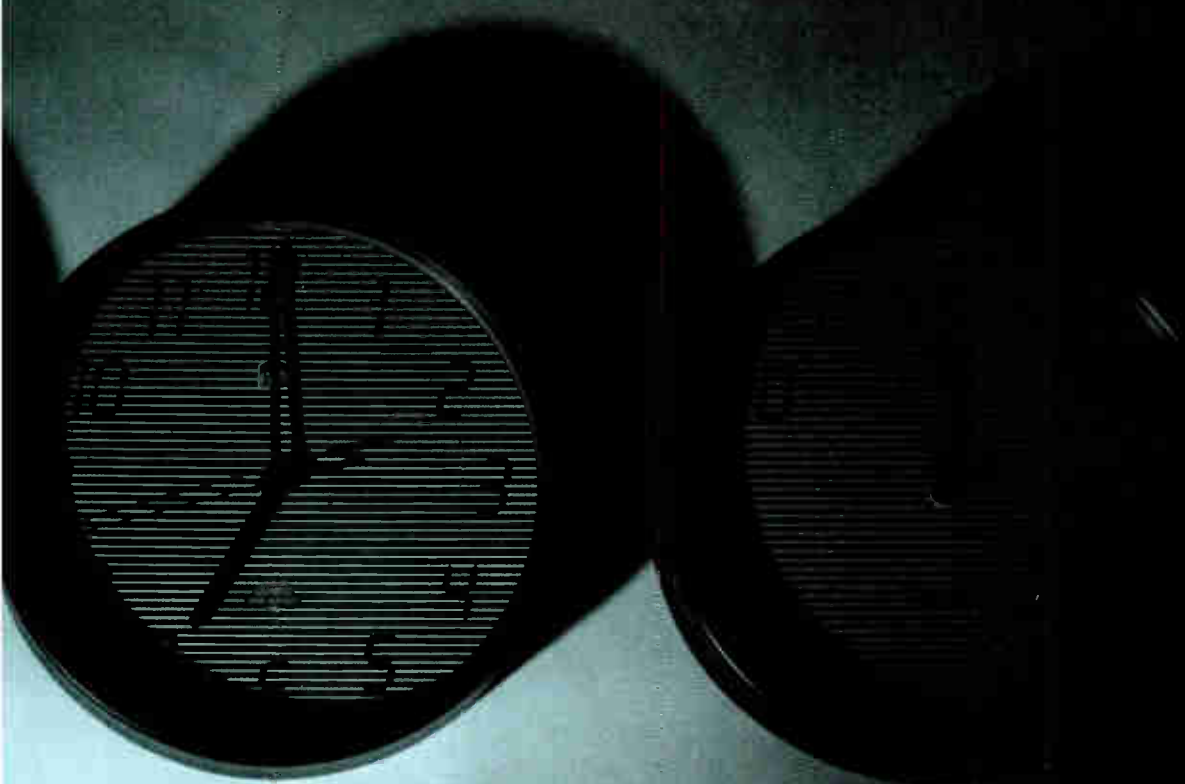
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IN MUSIC AND VIDEO PRODUCTION

SEVEN · SKETCHES

by Gregory A. DeTogne

Back in what now seem to be prehistoric times, a woman's place was in the home. Today, in Chicago (and the rest of the country for that matter), more and more women are taking up residence in the rapidly expanding world of music and video production. Bringing with them new perspective and savvy attitudes that have gained the respect of their male counterparts, the seven

women who are the subject of this article are multi-talented individuals ranging from a recording studio manager to an avant-garde "video artist." How they relate to their lives in this formerly male-dominated arena is unique.

• • •

Foote Kirkpatrick starts out each day by trundling through the early daylight hours of Chicago's Rush Street toward the upper floors at 46 E. Walton. As studio manager for Universal Studios,

heaping magnitudes of responsibility and problems come flying at her as soon as she opens the door to her office: A client on the telephone pleads for an education in what he really needs for his video sweetening project, the air conditioning has gone amok in Studio A, and there's a stack of billing that has to go out in the afternoon mail. No one claimed that management was an easy job, but for the past 12 years, Kirkpatrick has handled the chore at Universal like a benevolent den mother bent on seeing each of her Cub Scouts go on to make Eagle.

She has always been involved in music. As a singer with big bands in the late '40s, she went on to marry a musician, and gave birth to two daughters (Shelley and Lela, who are also coincidentally involved in the biz). After raising her children, she decided to get a job, so it was natural to want to get back into music in some way. Kirkpatrick showed up on the doorstep at Universal and asked President Murray Allen for a job—any job.

"The first thing I did was clean out the stock room," she remembers. "I started at the bottom and worked my way up, doing all sorts of things along the way. I had my eyes set on management the whole time, and here I am, a little more than a decade later."



Foote Kirkpatrick



PHOTO: JEFF STELLA

Katherine Hughes

Kirkpatrick is known city-wide for being more than a manager who simply schedules the studio's time and makes sure the bills get paid. She subscribes to the notion that good management inspires those around her and requires extensive knowledge of the studio. "As this business gets more complex, it's impossible for the clients to keep track of all our capabilities, especially with a studio as large as Universal," she says. "That's why I feel an overriding need to know everything I possibly can about what goes on behind these walls. If a client calls with a problem, I don't want to be in a position where I have to say 'Just a moment I'll let you talk to an engineer', I feel it's my job to know - my staff and I are the problem solvers. Doing our job this way has given Universal a certain reputation. It's gotten to the point where many clients are calling not to book time, but to have us help them with a problem, and I find that very rewarding."

Having come up through the ranks the hard way, Kirkpatrick has been campaigning as of late to establish a full-scale apprenticeship program at Universal to make things easier for those seeking to enter the business.

The recording industry has never been aggressive about recruiting talent from colleges, she points out. In most cases you have to start at the bottom like I did and work your way up. Every thing is learned by doing, which is often a time-consuming effort with hard lessons along the way. For that reason,

I've instituted an apprentice program here at Universal of which I'm very proud I work directly with music engineering departments at universities to have students intern here during their senior year. They find it very profitable because suddenly they're in a very serious situation they could never find in a classroom. The program gives them a head start on the game, and in some instances, I've hired from among these students. I guess it's kind of a maternal thing I love this business, that's why I'd like to see others just beginning have the best opportunities possible."

Far removed from the heady maelstrom of studio management, Katherine Hughes is a 26-year-old violin virtuoso who was formally educated at Chicago's Roosevelt University. She refused to be pushed into an orchestral position upon graduation, however, and so Hughes turned to freelance work of all description: sessions, chamber music, rock bands, and jazz all do their part in helping pay the rent. To further broaden her experiences, she recently made a video in conjunction with filmmaker Peter Babakitis and Rick Santangelo. Her creation, entitled "TV Sages," is far from average. Shot on a shoestring budget of \$7,000, the production stars Hughes, who wrote the accompanying music, played violin, developed the story line, and had a hand in producing it as well. Distributed solely by City Video Productions, Inc., "TV Sages" is currently appearing throughout the U.S. and in Italy on television and in nightclubs. What is probably most remarkable about the video is that it received no record company funding, and isn't backed by the obligatory vinyl disk. Despite these drawbacks, it continues to gain in popularity, and made its debut on MTV's *Basement Tapes* on August 11th.

So what's "TV Sages" about? Perhaps Hughes herself can best answer that question: "It's about the passive nature of television viewers who are being fed information without really considering the one-sided nature of the medium and its effect upon their lives." Set on a futuristic space station where an experimental colony of air-headed "video slaves" are hooked up via giant umbilical cords to video monitors, a government inspector (Hughes) arrives to find the slaves interacting with one another for the first time after a saboteur destroys their video images. Government troops are called in to snuff the culprit, who also turns out to be Hughes once her protective helmet is removed. Throughout the video, Hughes' haunting, orchestrally influenced rock adds to the ethereal texture of the five-minute tape.

Is there a message here—should we all pitch our TV sets out the window and take up macrame? For that answer, Hughes pleads ambivalence, claiming that the appearance of both the pro- and anti-video characters is symbolic of television's ability to carry false and accurate messages at the same time.

Having returned recently from the Greek island of Santorini where she was playing in a trio at a local nightclub, Hughes is already dreaming up another video venture, which will be an opera-like treatment on violence and its alternatives.

Like Katherine Hughes, cellist Barbara Haffner turned her back on orchestral life in favor of something more diversified. "I was a member of the Philadelphia Orchestra for seven years," she relates. "One day it struck me that I was sick and tired of doing the same thing day after day, so I packed my bags and moved to Chicago."

Since she wasn't the type to cultivate an overwhelming interest in TV video productions, Haffner set out to tackle the studio scene. Within a few years she had elevated herself to a position where she was on first call lists across the city.

In addition to her studio work in commercials (you can hear her solos on NutraSweet and Metamucil ads, among others), she's also showing up around the city with the University of Chicago's Contemporary Chamber Players, and the Rembrandt Quartet, which besides her cello, contains sounds of the flute, oboe, and harpsichord.

Haffner is single, has no children, and has always been career-minded. "I decided early that I wanted to like where I lived and what I was doing before I settled down and didn't have a choice anymore," she states emphatically. "I'm glad I found studio work here in Chicago, because it has given me that opportunity. I also have a large degree of independence in my work. In the summer, it's even possible to take a few weeks off to concentrate on whatever I feel like doing. [This past summer she played chamber music at The Grand Teton Music Festival.] During the rest of the year, however, I'm involved in more traditional things."

One could safely say that Haffner leads a somewhat charmed life, doing what she likes best in a city she loves to be in. "For a cellist who dislikes the tedium of section work with orchestras, session work is an alternative worth looking into," she adds. "All it takes is recognizing that the work is there, which is sometimes difficult to see, since string players are trained from the beginning to be soloists and orchestral musicians. Along with the advan-

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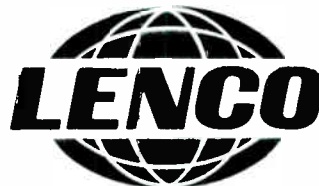
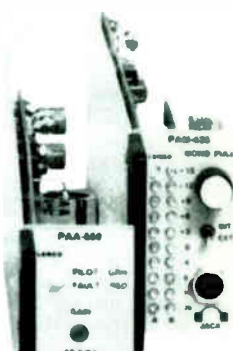
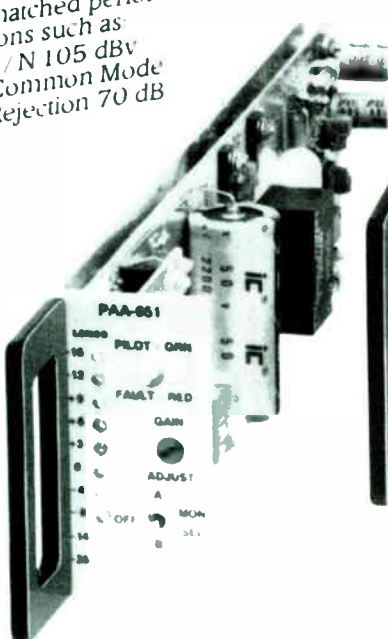
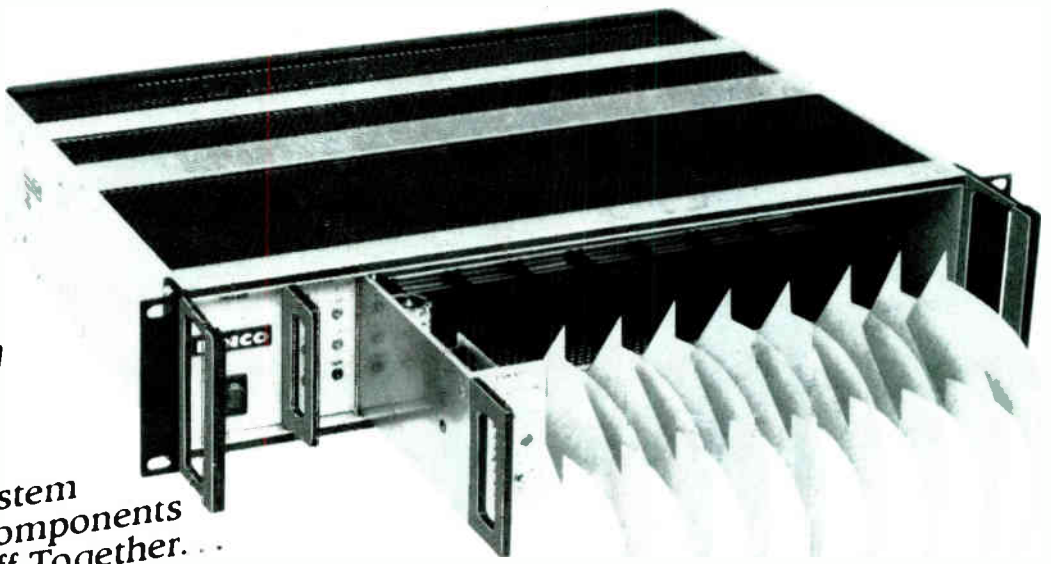
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tages of this life, there are a few pitfalls too: There certainly isn't a big demand for the cello out there, and when there is, often it's just for one person. As a result, cellists on second-call are getting only 25 to 30 percent of the work first-call people are getting. For the beginner though, if he or she has the talent, ambition, and personality, plus the will to stick out the lean times, they will eventually break into the business, which I have personally found to be the most challenging area a string player can make a living in."

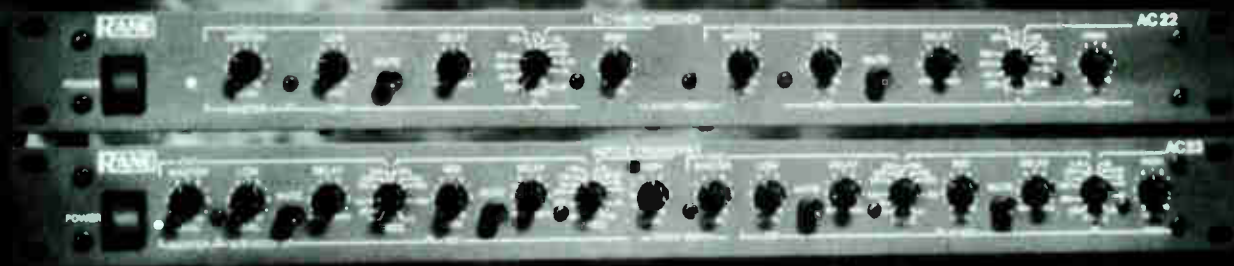
Thanks to our consumer-oriented society, we are all bombarded by commercial messages every day of our lives. Advertisers have long relied on catchy slogans and jingles to create interest and imprint our minds with their products' names. Many times, the jingles we hear are so effective that they stick with us for hours and maybe even days after hearing them. Anyone who has walked around with an uncontrollable Budweiser jingle ringing through his or her head like a gong has Bonnie Herman to blame.

Herman, who is described by many as one of the best in jingledom, was snatched up by a local producer in Minneapolis while she was performing in a campus production at the University of Minnesota. Before she could blink, she wound up in Chicago under the tutelage of musicians Ralph and Doris Craig, and was soon singing jingles in studios around town. Her work is everywhere: She's the voice behind such famous ad campaigns as State Farm's "Like a good neighbor, State Farm is there," countless McDonald's spots and numerous Sears, United Airlines, beer, shampoo, and toothpaste ads.

"The studio is my way of life," she says in her mellifluous, instantly recognizable voice. "I see myself as a professional musician who shows up each day at the studio to get a producer's ideas across both musically and aesthetically. I take his work off the page, so to speak, and put it on tape. America never sees my face, but they certainly have heard my voice."

During her well-established career, Herman has had many opportunities to move in other directions, but she claims she isn't a star-struck type of person. "My parents were in show business, so I was well aware of what a young woman could do as a singer. I hated being on the road, and the nightclub circuit wasn't pleasing to me either. The moment I got into the studio though, I felt like I was right at home. Artistically, I've wanted to do things other than jingles, but I've been able to satisfy that need by becoming involved in other projects like the Singers Unlimited [a vocal group led by Gene Puerling that

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recorded 16 albums in Europe, nominated for many a Grammy), and occasional stage appearances. My focus though, will always be on studio work. There I can have the best of both my professional and personal life at home

PHOTO: PHIL MOLOTIS



Jo Belle Yonely

with my three children. If you want your name to be known, there's only one way to go. I myself don't really care about notoriety, so I chose another route that's self fulfilling."

When asked if it's true that she's one of the most recognizable jingle voices in the country today, Herman is modest. "No, no," she says laughingly. "I don't know who the people are who keep saying that. There are many fabulous voices in jingles, and not all of them are women, either. Our profession is an elite corps, but I'm just a working musician who does, however, appreciate the nice compliments."

Jo Belle Yonely is a singer who got into jingles in a rather backward fashion. A Chicagoan since 1977, she got her start in jazz clubs along Lincoln Avenue, and then "sort of drifted onto Rush Street" before winding up at Andy's jazz club at 11 E. Hubbard, where she still performs on Thursdays from 5 to 8 p.m. with a six piece band.

While singing on the club circuit (she goes simply by "Jo Belle" on stage), she impressed an ad exec named Lenny Fields, who suggested her for an ad spot her agency was working on. She walked into the studio without a demo tape, sang the lyrics, and everything snowballed. As her jingle workload increased, she also began doing voice overs. Yonely is

currently the voice on the new Diet Sunkist soda ads, and the voice of the little girl who screams "Help! Help!" while being dragged away by the ape in the Donkey Kong cereal ads is hers as well.

While Bonnie Herman is shy about performing in public and prefers centrally locating herself around the studio homefront, Yonely thrives on combining her studio work with her nightclub gig and as many other projects as possible. Overflowing with an omnipresent kinetic energy and effervescence that seems to engulf her entire being, Yonely proclaims, "I like having balance in my career. In fact, I go out of my way to diversify. For the past few years, I've been singing jazz and jingles, and have also been with a Brazilian band called Chizil. We do all original material, and have completed an album we're trying to sell now. On it, I get a chance to sing in Portuguese, which I had to learn especially for the occasion."

Tommy Shaw, of Styx fame, has also enlisted her assistance on his second solo album and an MTV special, which adds rock to Yonely's repertoire. "The versatility outside of the studio is beneficial in the long run," she says. "It gives me the experience to go into the studio and do a spot for the American Dairy Association that has a country flair to it, or anything else from a jazzy McDonald's commercial to something rock and roll for a shampoo. For me, the studio is a place to put all the styles I'm capable of singing to work."

Ecstasy Unlimited: The Interpenetrations of Sex and Capital - that's the title of the latest 60 minute video from Laura Kipnis, who describes the tape as "left political video art," and herself as a "video artist."

"The tape is about the industrialization of sexuality, and ideologies of sexual liberation toward an \$8 million a year sex industry that structures and determines personal life," Kipnis says.



Laura Kipnis

in one breath. Overall, she spent about a year writing, researching, and producing the video, which is theoretical in nature, and can best be classified as a written essay in video form. In its analysis, *Ecstasy Unlimited* combines documentary footage (i.e., an interview with the manager of a porno shop) with acted, narrative, scripted, and musical sequences (there's a music video parody in the middle about psychiatry and sexual liberation).

Ecstasy is multi-dimensional in that it covers both male and female interpenetrations between sex and society. There are depictions of male strippers at work before a female audience, as well as instances where women are objectified.

Funding for *Ecstasy* came from a federal grant, while the video is distributed by The Museum of Modern Art, Electronic Arts Intermix (NYC), and The Cinema Guild. You can catch this magnetically-taped tome only at galleries, museums, conferences, and universities. "This and all of my other videos are really quite long for broadcast," Kipnis admits. "They're too political as well."

Women's studies classes have been big fans of *Ecstasy*, along with classes on cultural criticism and photography. Kipnis made the tape not for financial gain, but as an educational tool and a way to introduce herself into the academic world. In the latter case, it worked, because she recently began teaching at the University of Michigan, and signed on with a fellowship for the next three years. She also writes socio-critiques, and is putting a new video into the works called *A Man's Woman*, which will attempt to explain how women locate themselves along the political spectrum, or as she simply states, "How Phyllis Schlafly became Phyllis Schlafly and not Betty Friedan."

Not everyone in video is locked into a battle to get on MTV or produce material of a nouveau art description. Catherine Whitney is one of Chicago's freelance video producers who enjoys working with the established order of corporate training and industrial video, along with TV sitcom pilots and other entertainment projects. One could also call her a production agent, as producers will consult with her, book her facilities, rent her equipment, use her production personnel, or even have her write, direct, and edit. In the field, you can find her crawling around with a camera in a chocolate syrup factory, hanging out with classical musicians while producing a video subscription series for college level music students, or any number of equally interesting and strange places.

"I can be called in to produce something from start to finish, or I can be

enlisted to merely make sure a job comes in according to budget," Whitney says. "I like that aspect - it keeps

PHOTO: THE LEWELLYN STUDIO



Catherine Whitney

an even strain on things."

Originally, Whitney wanted to use her graduate work in International Economics and Latin American Studies to land a good-paying job in the State Department. Once she got a closer look at the bureaucratic jungle, she decided to scrap those plans and emigrated to Chicago, where she tried to "forget about world problems for a while by getting a job as a singer in a band." On-stage one evening, she became fascinated with the workings of a mini-cam crew that came to the club she was appearing at to film a news segment on the band. Her curiosity led to her becoming a freelance camera operator, and finally, her current role as producer.

Like Bonnie Herman, the best thing Whitney has found in her independent career is that she has the perfect balance between her personal and professional life. "I have two tiny production assistants at home who need a great deal of supervision, and my schedule allows me to be with them when they need me most. As far as my marriage is concerned, my husband's career is in the automotive industry, so his working hours are very steady, which enables him to help with the kids when my life gets really hectic in the evenings. Actually, I think that because our lines of work are so unrelated, it works out to our advantage and well-being. If both of us were trying to produce video, there would be no sanity to our existence, our working hours would be constantly changing, and the kids would suffer. Believe me, every day is a challenge now, and sometimes it's hard, but then again so is everything else."



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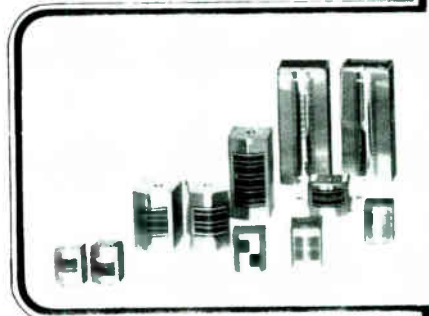
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Cliff Colnot (foreground) and Terry Fryer at work.

COLNOT-FRYER

CHICAGO'S POTENT SYNTHESIZER SYNERGY

by Gregory A. DeTogno

Ask Terry Fryer how he teamed up with partner Cliff Colnot to create Colnot-Fryer, Chicago's hot-property electronic musical workshop, and he'll point toward a fateful evening in 1981 when the pair got together to lament their mutual disgust with their lots in life. Over dinner, Colnot revealed that he was ready to quit his job and move to New York. Fryer, on the other hand, related that he was burnt to a crisp from life as a studio musician who had logged too many hours in more than 3,000 nearly identical sessions. The conversation followed along these mournful lines for awhile, and then led to a vociferous exchange of personal angst.

"Well, what are you going to do?" Colnot asked in a threatening tone. "Loaf your way through another 6,000 sessions and then retire to tend sheep in Wyoming? Why don't you get off your ass?"

"Tend sheep!" Fryer shot back. "All

you're going to do is pick up your stuff here, move to New York, and find yourself doing the same damn thing that you were trying to get away from!"

Before the dialogue heated up to a point where there wouldn't be a subject for the article I'm writing, Colnot and Fryer were struck simultaneously with the idea of combining their extensive talents and ending their ennui by starting their own full-blown production workshop specializing in producing advertising music.

Today, a mere four years after their inception, Colnot-Fryer basks in the limelight of success from high atop their 38th floor office/studio at 30 East Huron Street on Chicago's Gold Coast. Having provided the musical ingredients for national ad campaigns on behalf of United Airlines, McDonald's, Anheiser Busch, Kraft, Doritos, Levi's, Pizza Hut, Kellogg's, Sprint, et al., their combined efforts are now firmly ensconced in everyday American life.

Fryer was introduced to music via the piano at the age of 6. By the time he had finished his stint as a music

education major in his undergraduate years of college, he was well-versed in countless other instruments, and had gotten hooked on synthesizers. Grad school saw him studying theory and composition at Northwestern, and ending a career on the road with a rock and roll band that was an early incarnation of what would later become the group Survivor. Next, Fryer started doing sessions as a keyboardist. He worked around Chicago with the likes of Smokey Robinson, Natalie Cole, Peabo Bryson, and The Blues Brothers. As the record industry took a downturn, he began doing jingles, and also signed on as a clinician/consultant with Moog and ARP. At home, Fryer had turned his living environment into a complete 24-track studio.

"Everywhere you'd walk, you'd be tripping over mike cables," he recalls with a bearded grin. "I had it all figured out, though. One bedroom had a particularly good sound for snares, the main hallway was great if you closed both doors and situated a guitar at one end and a Marshall at the

other, and so on throughout the whole house. Those days were great for experimentation to see how many weird sounds I could make, and I had the time and money from my work as a session musician, so why not?"

Back at the studio, Fryer was rapidly closing in on his burnt-out 3,000th session turning point, and Cliff Colnot was working as a writer/producer with Dick Marx. While Fryer had been brought up through the ranks dripping with rock and roll and techno skills, Colnot was more rooted in areas that were on the other side of the studio glass. Both men shared vast experiences in the classical realm while studying in college, but when Fryer became wrapped up in synthesizers and contemporary music, Colnot hunkered down and continued his studies of "serious" music. He played bassoon in symphony orchestras, and taught in public schools while enrolled in Florida State University, the University of Miami, and Northwestern, where he earned a PhD and became a member of the faculty before teaming up with Marx.

After finalizing their battle plans for what would become Colnot-Fryer, they adopted a philosophical stance for their fledgling enterprise. Rather than merely produce material they knew would sell because of current trends, they committed themselves to the proposition that they should always do what they thought was right in a given situation. That way, regardless of whether the clients loved them, hedged upon their ideas, or never worked with them again, the two could go home at night knowing that they didn't second-guess themselves.

Fryer's home-brew 24-track studio came in handy as Colnot-Fryer officially opened for business on August 17, 1981. "We were afraid at first that we would be branded with an image of being unapproachable techno whiz kids," Fryer said. "That's why I didn't bring all of my toys to the studio right away. We wanted to be looked upon as two writers, arrangers, and creative talents who could come up with solutions to ad campaigns."

As the team attracted more ad agency clients and became busier, Colnot and Fryer began to specialize in their respective roles. They both could score film, but since Fryer could do it quicker with his computers, he got the job. Both could also write orchestral parts, but since Colnot could do it with more speed and precision, he took on the chore. Out of necessity, the division of labor evolved into what it is today: a oneness of thought and action that is the progeny of two different minds.

"The writing process we have has developed its own language over time," Fryer is quick to point out. "The way it works helps us push one another to our potential. I know I'd be tempted while working with nobody around to let some things slide, but when there are two people watching over what's being done, you have a tendency to always hold out for the best you can do."

From a standpoint of where Colnot and Fryer once stood, producing music for advertising is worlds away. "Sometimes, it's like living on the edge compared to my sessions days. Now, we have clients come in and ask us to do a 30-second spot overnight that utilizes a particular contem-

porary sound. In a circumstance like that, what takes someone else months to do in the studio, we have to come up with in 24 hours. That's where the Colnot-Fryer synergy comes into play. Since I have a technical background, I can instantly list off the instruments necessary to create the material. Cliff, on the other hand, is the same way with orchestration. He'll sit there and say 'yes, this section has so many of this, and that section has so many of that.' Between the two of us, we can come through, but it definitely keeps us on our toes."

Colnot-Fryer's workload generally centers around three requests. First, a client could call up with a concept for

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“If I've learned anything in twenty years in this industry, it's this: In any studio installation, quality gear is never the whole story. The quality of the sound. . . . that's the bottom line.”

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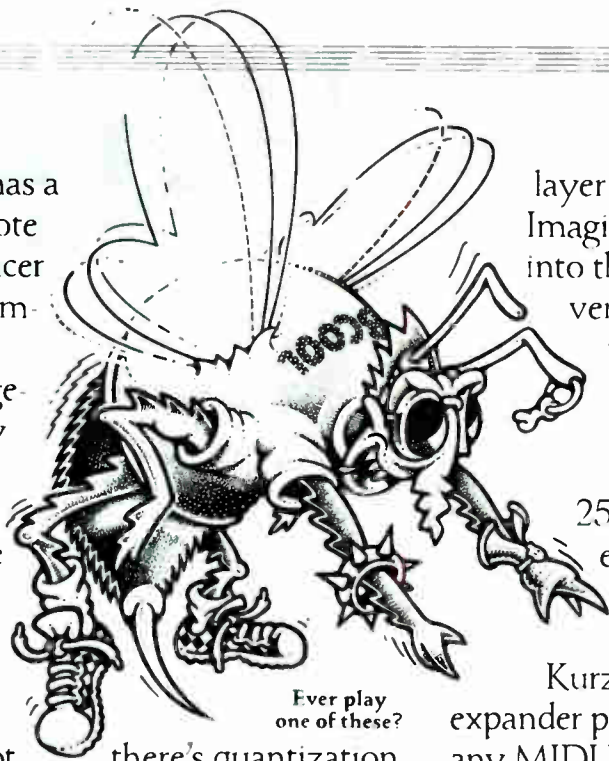
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Ever play one of these?

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JOHN HILL RECREATES THE OLD SOUNDS FOR NEW PRODUCTS

by Dan Daley

At first glance you might think it's a Chuck Berry video: the sounds of his hit, "No Particular Place To Go" blare from the set as the King of Three Chord Rock stands amid color-enhanced cars on the screen. But it's actually Volkswagen's latest ad campaign featuring Berry and his famous paean to the automobile. But even before the VW logo appears, the sound quality tips you off—it's too good to be the original.

"You can't play something with nothing over 6 kHz and not have it sound bad," says John Hill, producer of the spot, adding that the public's ears are far too sophisticated these days to accept Berry's original recording.

Hill ought to know—he's based a large part of his prosperity on adapting original tunes for jingles, in addition to writing new ad tunes for Maxwell

House, Avis, Pepsi, and Clairol. (He also adapted "Let The Good Times Roll" for Scott Towels.) The New Jersey native claims a "spiritual" kinship with Philadelphia where he began his career as a guitarist on Delphonics records. As a teenager he combined music, an electronics bent and a dollop of entrepreneurial talent by writing, recording and selling his own records. He moved on to a staff writing position at April Blackwood and also worked as a staff producer for Columbia Records. Then he landed at Screen Gems Music, where he penned tunes for acts like The Partridge Family.

His first encounter with jingledom came in an appropriately off-beat manner. A novelty number he had written called "I Love Onions" climbed the charts in 1970. At the same time, Frito-Lay had a new product called "Funions." Their advertising agency tracked

down the song's publisher, April Blackwood, and they in turn suggested that Hill produce the spot. The incident forged a connection in Hill's mind between jingles and popular songs. Lightning struck twice when Hill co-wrote and produced "Are You Ready" for Pacific Gas & Electric. American Tobacco also licensed the copyright for a year at a lucrative fee for one of their campaigns. "I also produced that jingle," says Hill, "so I was twice the beneficiary by being the songwriter."

There is a clear trend in commercials lately to employ pop tunes, not only for their recognition quotient but also because of the emotional associations implicit in them. They're excellent vehicles for advertisers to penetrate the burgeoning and lucrative Yuppie market.

"It's not a truly original idea on my part," admits Hill. "It's been going on in the industry for awhile." He says that he's been more successful at it than others, though, because of his background in publishing and record production. "There are all these publishers who take their catalogs and say, 'We're gonna make a million dollars by selling them to advertisers.'" For example, he says, "They have a song they think would be wonderful for Kodak and they go to Kodak not knowing that they have to go through ten people whose livelihoods depend on telling Kodak what's smart and what isn't. And they might be coming in during an ongoing campaign. Every publisher is going to try it sooner or later and they're very naive about it. The way it works is the advertiser comes to the publisher, not the other way around."

Hill adds that advertisers and publishers don't generally have established relationships and that advertisers tend to shop around. As a result, there is no standardization of licensing fees for songs for jingle use. "It's not like compulsory licensing of records," he said. "It's all negotiation."

Hill has had the Volkswagen account for the past two years and is already in the planning stages for the next one. Each of the campaigns has included a commercial involving a previously released song. "The first year was 'Little GTO' by Ronnie & the Daytonas," recalls Hill. It was sung in German, by the way. "That was the joke," he says. "It was called 'Kliener GTI' with an English voiceover. We had to get American

singers since it was an American campaign. The idea was to sound like the Beach Boys in German, so they got a vocal coach and Rory Dodd, Eric Troyer, me and Jim Ryan to sing it. But that wasn't even the first song suggested for the spot; the first one was 'Fun, Fun, Fun,' but it was determined that the Beach Boys had a deal with Chevy, so we went on to 'GTO.'

"One that was suggested for the next year was an arrangement of 'Route 66' and we did a sort of Dave Edmunds-type version. Eventually they decided on 'No Particular Place To Go' because it had car allusions in it."

Hill was not involved in the negotiations to get Berry to do the spot, but considers his presence crucial to the success of the ad. "Everyone agreed it was important to get Chuck Berry to record it," he says. "Chuck wanted to do it at his studio, Berryland, in Missouri, where he has an MCI 24-track which hadn't been used very much. He didn't want to come to New York or L.A. and everybody wanted to accommodate him."

The Berryland session was a real hands-on operation, according to Hill, with Chuck himself running wires and placing mikes. Since the studio had no resident engineer, Hill's former confederate Glen Kolotkin agreed to head out a day early to get familiar with the studio.

No one was quite sure what they were walking into. "Chuck hired the band, and we didn't know what we were going to get," says Hill, "but they turned out fine. That was one of the production problems. The other was getting the confidence of a substantial talent within a short period of time. It's a recurring problem other than when you're working with a regular jingle session crew. You have to let them know that you know what you're talking about."

"It was a little of a psychological problem because he was one of my real heroes. I remember being a little kid and listening to those tunes on the radio and thinking they were magical. So we ran the tune down and at one point I made some specific comment that the tempo had gone up in the third bar and Chuck turned to me and said, 'You got good ears.'" From then on a rapport was established between artist and producer.

"Berry is very facile, musically," Hill says. "You can talk to him in any musical language. Keys were no problem and format was no problem. He played his own guitar solos and they were different every time and good all the time. And the vocal licks were all good and different each time. It was really a trip working with him."

It is a point of honor to Hill to main-

tain the integrity of the original recording, and in pursuit of this fidelity he listens often and hard to the records. "The arrangement was pretty much conceived with the record, even the tempo," he says. In listening to the record, "I wanted to hear the placement of the instruments and also the nature of that Chicago echo that they had. It's a real acoustic echo that is presumably somebody's bathroom. I guess it was a live chamber that they recorded in, and it's a very unique sound. It's that real 1958 echo, not like the Sam Phillips tape-slap echo."

"In the recording process we tried to get zero level on everything and not have it be distorted, and that's about it. It

"There is a clear trend in commercials lately to employ pop tunes, not only for their recognition quotient but also because of the emotional associations implicit in them."

was pretty straight ahead. We mixed it at Eras in New York because there wasn't enough outboard gear at Berryland. We had a lot of surplus stuff on the tape, extra guitar parts and vocal parts, so there were a lot of mutes involved. It was really a matter of getting the echoes right and trying to be faithful to that early echo sound without being dull sounding. We used a Lexicon 224, a couple of PCM 42s, a PCM 60 and an AMS. We had to stagger delays and reverbs. And the mix was mono so we didn't have to worry about stereo.

"The point is to be faithful to the record but for different reasons—not because there's any intrinsic reason to adhere to that, but because advertisers are paying a lot of money for the memories, so it's really an issue to have it sound like the record. And recreating it is quite a bit more complex than simply getting an arranger to do a chart that he imagines is what's on the record. The record is not just an arrangement; it really is where the horns are placed and so on."

On the other hand, while a song could be grist for Madison Avenue's mill, it could also be a touchstone in someone's life, recalling personal memories and moments, and using

that magic to sell cars or chewing gum might seem sacrilegious to some. On that point, Hill is honest and straightforward: "It depends on what the song means to me. If it means a lot to me, then I'm more interested in it than if it puts my kids through college. That's what it comes down to. I suppose I react negatively to other people doing it to my favorite songs, and I react less negatively to me doing it to their favorite songs."

Manipulation of emotions is nothing new to advertising, nor to the music industry as a whole; looked at objectively, it thrives on it. However, exploitation is another matter, and Hill acknowledges it takes place. "There's a real issue involved and it's a legal issue," he says. In the case of tunes he's adapted for advertising, "At least the people involved with the copyright get paid for it." But, he adds, "If Chuck Berry had not written that song [but still recorded it and made it famous] and we got somebody who sounded like Chuck Berry to do it, the issue would be that it was Chuck Berry's persona that everyone identifies with and he was the one who made the thing famous and it is really his memory you are stirring up and trading on. There is a legal issue involved which is using the persona someone has created for your own commercial gain without compensating them."

Hill goes further, stating, "What I don't like to see is someone who says they want something that sounds like this or something that sounds like that but they're unwilling to compensate the original creators," mentioning that both the Beach Boys and Michael Jackson have had their sounds copied to some degree for jingles. "If someone asks that of me, I can't tell them that they're not going to get sued, because you *are* going to get sued. That functions as both a pragmatic and a moral limit."

Besides, he says, "I'm uncomfortable with the general instruction, 'Make it sound like something else,' largely because I don't want to rip something off; I want to do something original or at least that poses a little bit of a challenge, like a historical duplication of something—like the Chuck Berry song—where you pay for it." ■

John Hill has an office/studio complex in a brownstone in New York's fashionable Murray Hill district. The equipment he uses in preparing jingles includes: an Audio-Tec 2-inch 16-track machine; Sound Workshop Logex 16 board; Lexicon 200, PCM 60, (2) PCM 42; Tapco 440; Valley People gates and limiters; Publison; Yamaha DX7, RX-11, and PF-15; MIDI-ized Prophet 5; Korg Poly 800; and a DMX drum computer.



MAGNETIC RECORDINGS:

A PHOTO ALBUM

PART II: PROFESSIONAL VIDEO

by Peter Hammar, Consulting Curator, Ampex Museum of Magnetic Recording, Redwood City, CA

[Special thanks to Don Ososke of Ampex Corporation, Redwood City, CA, John T. Mullin of Santa Barbara, CA, and video historian Albert Abramson of Van Nuys, CA.]



Last month, in honor of its 50th anniversary, we looked at some of the high points in the genesis of audio magnetic tape recording, 1935 to 1985. This month's history photo album will cover just a few important milestones in the early development of the professional videotape recorder, the VTR, anticipating next year's celebration of three decades of commercial video magnetics, 1956 to 1986.

Electrically and historically, all magnetic recording stems from related sources. The development of audio magnetics is intertwined with that of video and data recording. Or, to borrow a line from a national politician, "If you've seen one magnetic domain, you've seen 'em all!"

Remember the audio magnetic wire recorder? Recently, I heard the true story of an Indiana inventor in the late 1940s who decided that he could magnetically record television pictures. Although some of his electrical theory was probably sound, he certainly chose the wrong magnetic medium: he tried to make a "VWR," a video wire recorder!

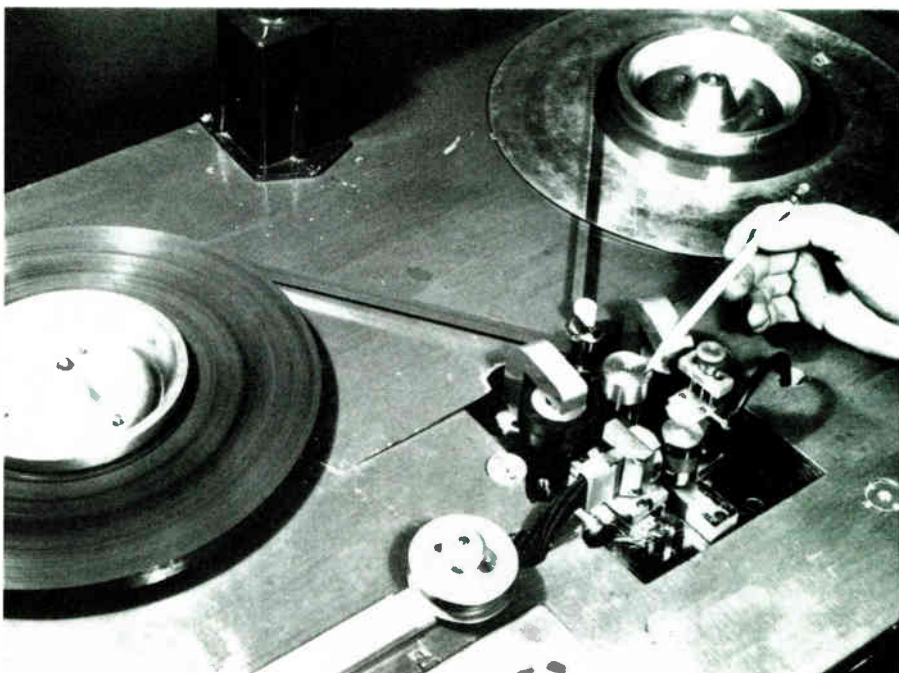
BING CROSBY AND THE FIRST PROTOTYPE VTR:

Bing Crosby's chief engineer on his ABC radio shows was John T. Mullin, the man who introduced Ampex and Hollywood to audio magnetic tape recording in 1946. In 1950, Mullin and his associates suggested to Bing that they could build a machine that would record television on magnetic tape. The 1951 Crosby prototype VTR used the first closed-loop capstan tape drive, later employed on Mullin's 3M Mincom M-series audio tape recorders.

The Crosby people built only a handful of their longitudinal scan, fixed-

head, wide-band recorders, mostly for government instrumentation work. But news of Crosby video motivated Ampex and RCA to begin working on videotape recording. Like the Crosby machine, RCA's 1955 color VTR used a fixed head and a 30 feet-per-second tape speed for four minutes per reel. Mullin's machine pulled tape at 100 inches-per-second for 16 minutes of color video. The BBC, with their Vera recorder, used a similar fixed-head, high-speed recording method.

There just *had* to be a better way to record the video signal on magnetic tape.



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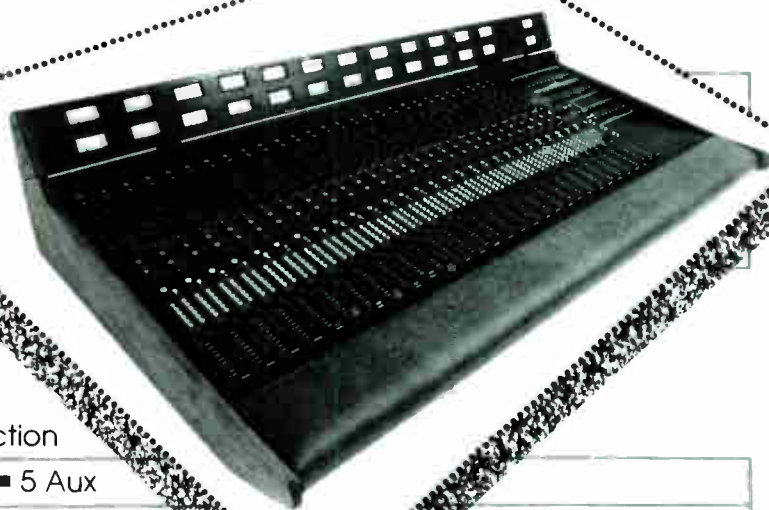


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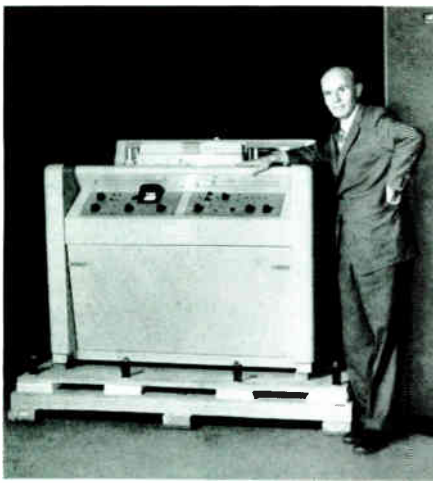
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THE FIRST PRACTICAL VTR:

Between 1952 and 1956, Charles Ginsburg led a six-man team at Ampex that found the answer to TV recording. Ginsburg's team consisted of Ray Dolby of Noise Reduction™ fame, Charles Anderson, Alex Maxey, Fred Pfost, and Shelby Henderson.

Instead of muscling the tape at high speeds past a fixed head, the Ampex

group used a rotating head principle suggested by magnetic recording pioneer Marvin Camras in Chicago: multiple heads mounted on a rotating drum were spun at 14,400 rpm past wide, slow-moving tape. The final configuration was four heads mounted perpendicular to the tape path, scribing 16 2-inch long magnetic scan lines per frame, producing a writing speed of 1,500 inches per second. The format is sometimes called "quadruplex" or "quad", referring to the four spinning heads.

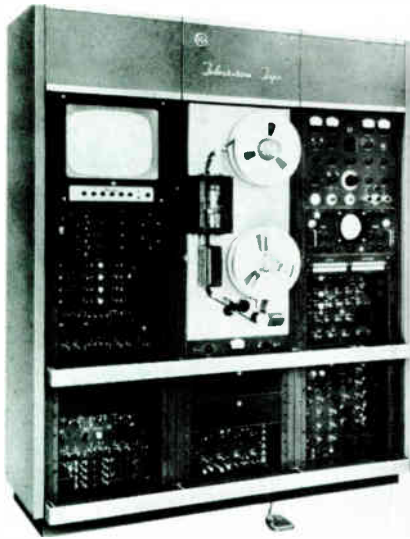
Unlike fixed-head VTRs, the new recorder had audio-like tape handling, with a 10-inch reel of 2-inch wide, 1.4 mil tape lasting about 45 minutes, later extended to 66 minutes on a 12.5-inch reel.

During the Ampex VTR development, several tape makers provided the Redwood City engineers with samples, including Audio Devices and Reeves Soundcraft. The most successful tape development came from a 3M team under Dr. William Wetzel. It was a roll of 3M tape that Ginsburg's engineers

used when they unveiled their machine at the NARTB (now NAB) in Chicago in April of 1956. A similar tape formula became the well-known Scotch #179, the video equivalent of Scotch #111 audio mastering tape.

The first commercial VTR, the Ampex VRX-1000, went on the air as a time-delay device at CBS Television City in Hollywood on November 30, 1956, premiering on the "Douglas Edwards and the News" program. (The photo shows the VRX, with Ampex founder Alexander Poniatoff, just before shipment to Hollywood.) For the first time, west coast audiences were seeing recorded television and most didn't realize the fact. That first practical, commercial VTR profoundly changed television broadcasting for program producers, directors, actors, and the viewer at home. Live network TV programming became increasingly scarce.

Ampex built 16 VRX-1000s, the production prototype of the famous VR-1000, which came out in 1957.



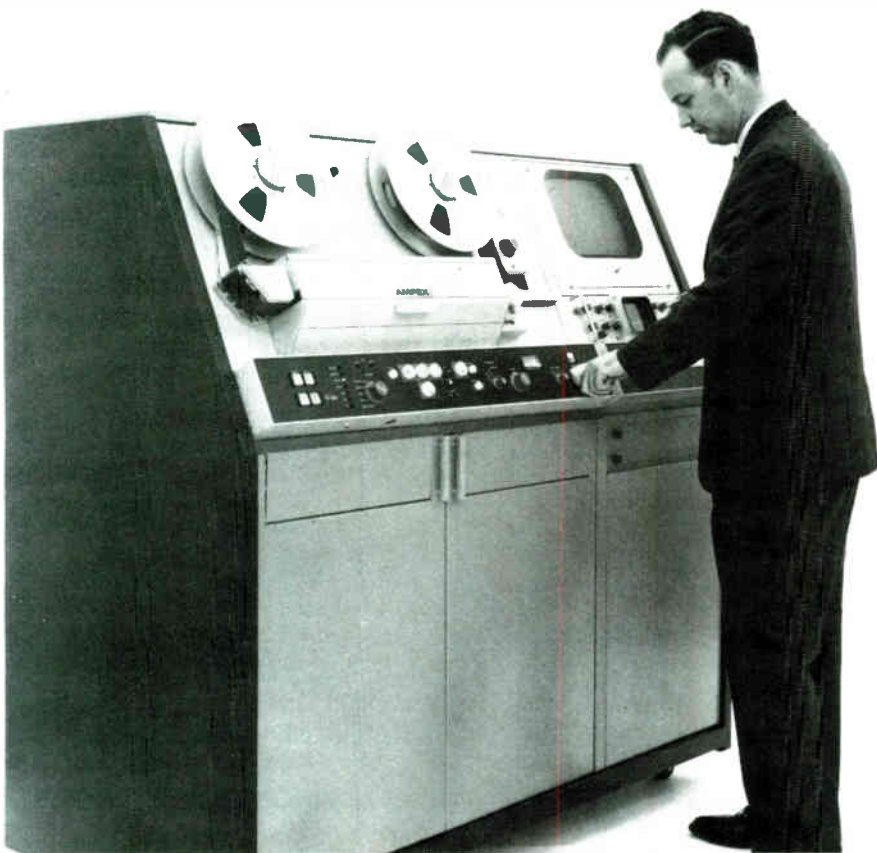
THE SECOND VTR:

With the advent of the Ampex VTR in 1956, Crosby and RCA dropped their longitudinal VTR development. The Ampex machine was monochrome, while the other VTRs would record color. RCA held an early lead in color technology, while Ampex owned the important rotating head, FM recording, and processing amplifier patents, among others. In 1957, in an unprecedented move for the industry—today's small format video manufacturers should take note—the two companies swapped patents for the benefit of both. The result was the 1958 RCA TRT-1 AC VTR, shown here, and an Ampex color update kit for the VR-1000.



SOLID-STATE VIDEO:

Vacuum tubes formed the mainstay of professional video up to 1961, when RCA surprised the industry with this machine, the TR-22, the first all-transistor broadcast VTR. For the first time, engineers were freed from the regular, tedious task of re-biasing dozens of tube-amplified circuits. Without tubes, the VTR rooms at TV stations and networks lost their desert-like heat. Like the Ampex VR-1000 and RCA TRT-1, the TR-22 was a low-band recorder, with a band pass of around 4 megahertz.



HIGH-BAND VIDEO:

Solid-state design didn't improve picture quality, but did make life easier for video maintenance engineers. In the evolution of video recording, this high-band Ampex VR-2000 was the next step, exceeding 5 megahertz. In 1962, the British Broadcasting Corporation had asked Ampex to build some special VTRs that would record their new 625-line video standard (the U.S. and Japan's NTSC system is 525 lines). If high-band recording worked well with 625 PAL, the European color standard, the format would also make NTSC look better. The BBC development catalyst led to the introduction of the VR-2000 for NTSC and PAL in 1964. With high-band, recorded color video lost its soft look and set a picture quality standard exceeded only 15 years later by the Type C one-inch helical VTR.

While helical scan VTRs are replacing them, high-band transverse scan recorders are still in use around the world. In addition, the basic 1956 technology continues in the RCA TCR-100 and Ampex ACR-25 "quad" cassette recorder/player used for short commercial TV spots.

SLOW-MOTION AND STOP-ACTION:

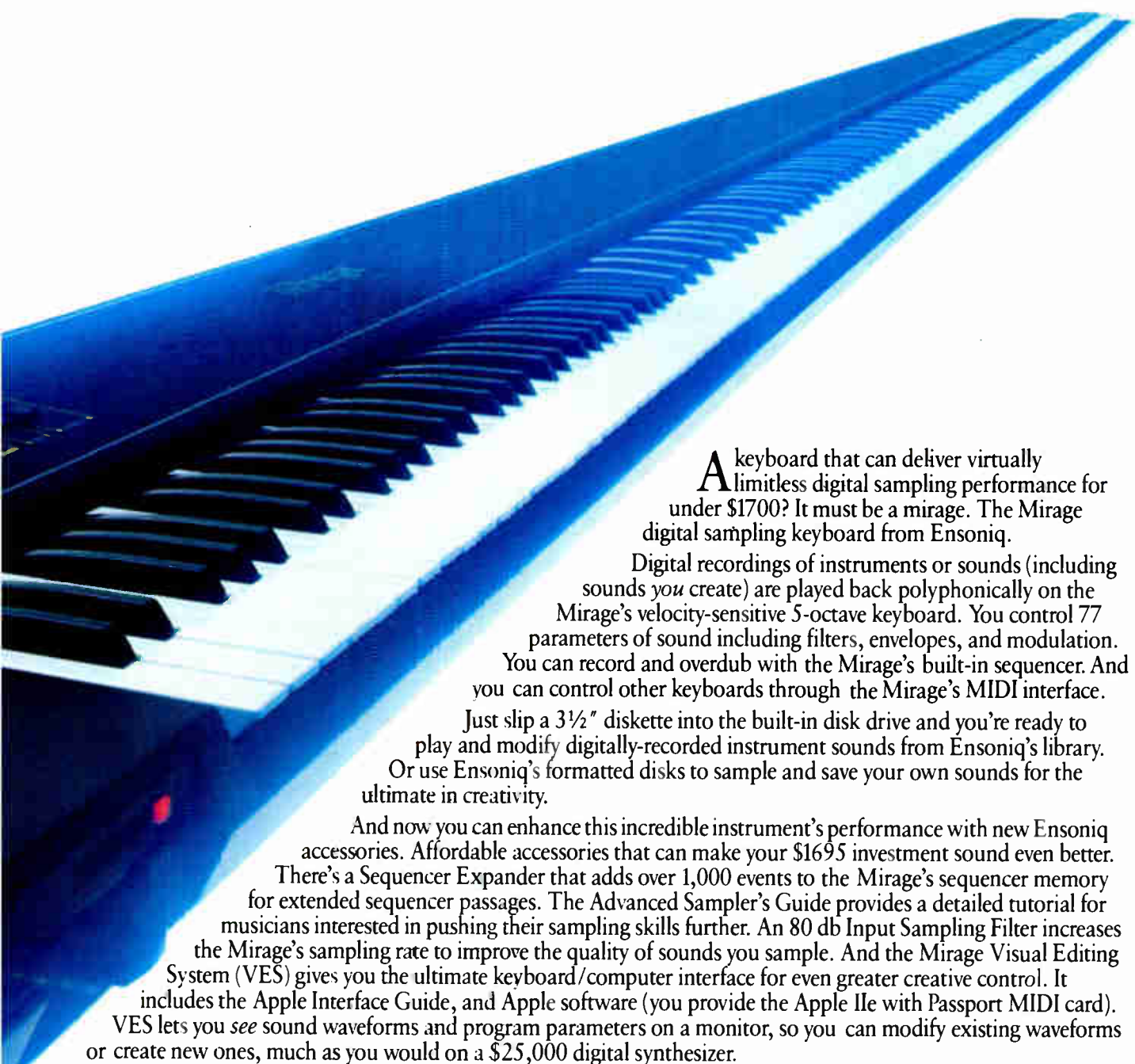
In 1899, the inventor of the wire recorder, Valdemar Poulsen, developed a magnetic disk recorder for audio. The 19th Century machine used exactly the same magnetic recording principle as the 1967 Ampex HS-100 color slow-motion, stop-action video disk recorder. Shown is the controller for the machine. The record/playback heads move on a horizontal guide past a rapidly spinning metal disk, magnetically scribing a continuous spiral.

The first commercial magnetic video disk recorder was the Machtronics MDR-10, a monochrome unit that CBS first used on the air for sports instant replay in 1964. While few MDR-10s were sold, the machine awakened the industry to the possibilities of slo-mo. The commercially-successful Ampex HS-100 in 1967 was the first unit with the necessary three capabilities of color video, slow-motion, and stop-action. It was the widespread use of the HS-100 that turned everyone in the world into armchair experts in calling sports plays.



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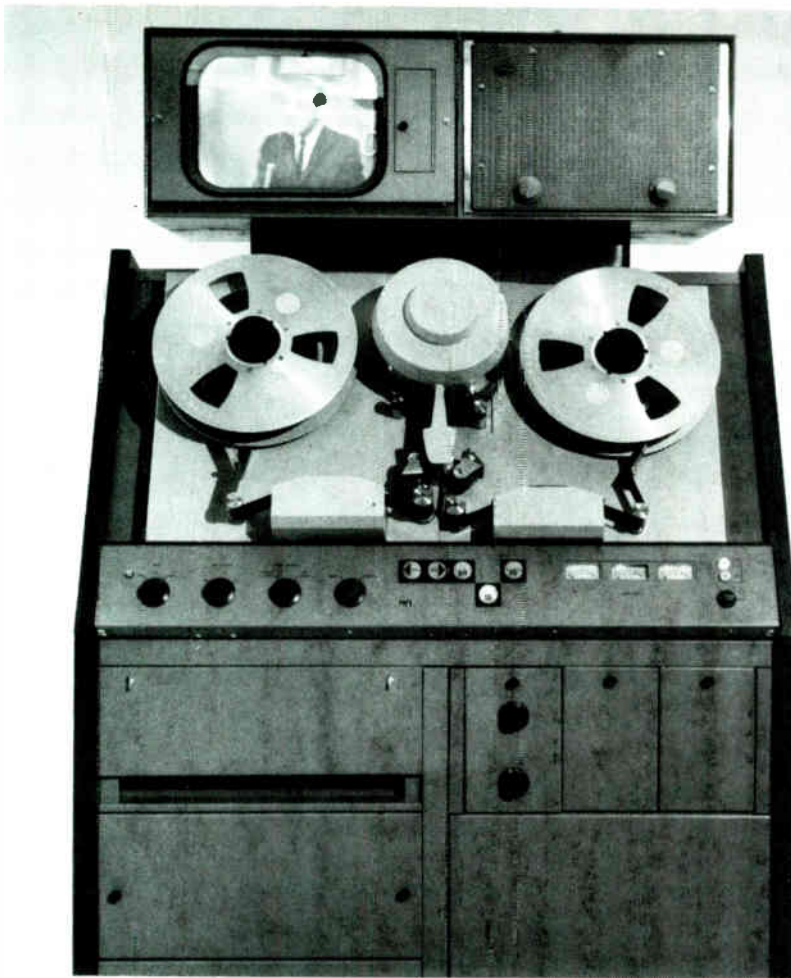
The technical term for the DOD SPII projector is "psychoacoustic audio processor." Yes, the SPII is a very sophisticated piece of electronic handiwork. It is not a limiter, equalizer or compressor. The SPII's unique circuitry is designed to "shape" sound specifically for the human ear without distortion, without irritating sibilance, ... without noise.

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THE HELICAL SCAN VTR:

Helical scan video is the basis for all state-of-the-art VTRs and videocassette recorders today. Helical is simplicity itself: one continuous, slanted scan angled across the tape produces one field or frame of video. Helical scan patents—for audio—go back to the 1930s. RCA's Earl Masterson received the earliest video helical patent in 1950, although as far as we know, RCA never built a working machine.

The Japanese, including Dr. Norikazu Sawazaki at Toshiba, had begun helical video experiments in the early 1950s. JVC and Toshiba offered early commercial versions of their VTRs in 1961. The Japanese Victor machine actually reproduced low-band color video. The Sony, Toshiba, and RCA helical machines that appeared later that year were black-and-white, like the first Ampex helical.

One of the original VTR team members at Ampex, Alex Maxey, began working on helical scan in the mid-1950s, even before the successful "quad" transverse scan VTR was unveiled in 1956. In January, 1961, Ampex became the first VTR maker to offer a helical scan recorder in the U.S., the VR-8000, pictured here. The VR-8000 used 2-inch wide tape, with the same head-to-tape writing speed as the quad VR-1000.

SMALLER-FORMAT HELICAL VTRs:

After World War II, Sony introduced the first consumer audio tape recorder in Japan, and in the late 1950s saw similar possibilities for consumer video. Toward the end of 1961, using both Ampex and Japanese patents, Sony followed Ampex and JVC into the helical VTR market with their SV-201 recorder. Like the Ampex helical machine, the 201 used 2-inch wide tape. Machtronics in Palo Alto, CA, built the first one-inch helical VTR, with Sony following the one-inch path the same year with the unit shown in the photo, the EV-200. Later, the 1965 Ampex VR-7000 one-inch helical VTR became known as "Type A" video, one of the predecessors of today's "Type C" professional video recorders.

Sony's development of the low-cost helical market led to their TCV, CV, and AV series open-reel half-inch recorders. These "industrial" VTRs ultimately led to a very important machine in video history, the 3/4-inch U-matic™ videocassette recorder (VCR), first commercially introduced in the U.S. in 1971 as the Sony VO-1300. The 3/4-inch format quickened the growth of the video production industry, as well as helped develop the ENG or electronic news gathering technology that has largely



replaced film for television journalists. Broadcast-quality ENG got its start in 1967 with the Ampex VR-3000 color, quad porta-pack.

The U-matic was the parent of the 1976 Sony Betamax™ and 1977 Matsushita VHS™ half-inch consumer VCRs.

About the same time as the original Sony U-matic, N.V. Philips of Holland, developers of the successful audio Compact Cassette™, tried and failed to create a half-inch consumer VCR standard. VCR hegemony was to remain with the Japanese.

—PAGE 209

JVC Digital Audio. The artist's editing system.

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

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

VP-900 Digital Audio Processor.

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



Audio Editor Control Unit.

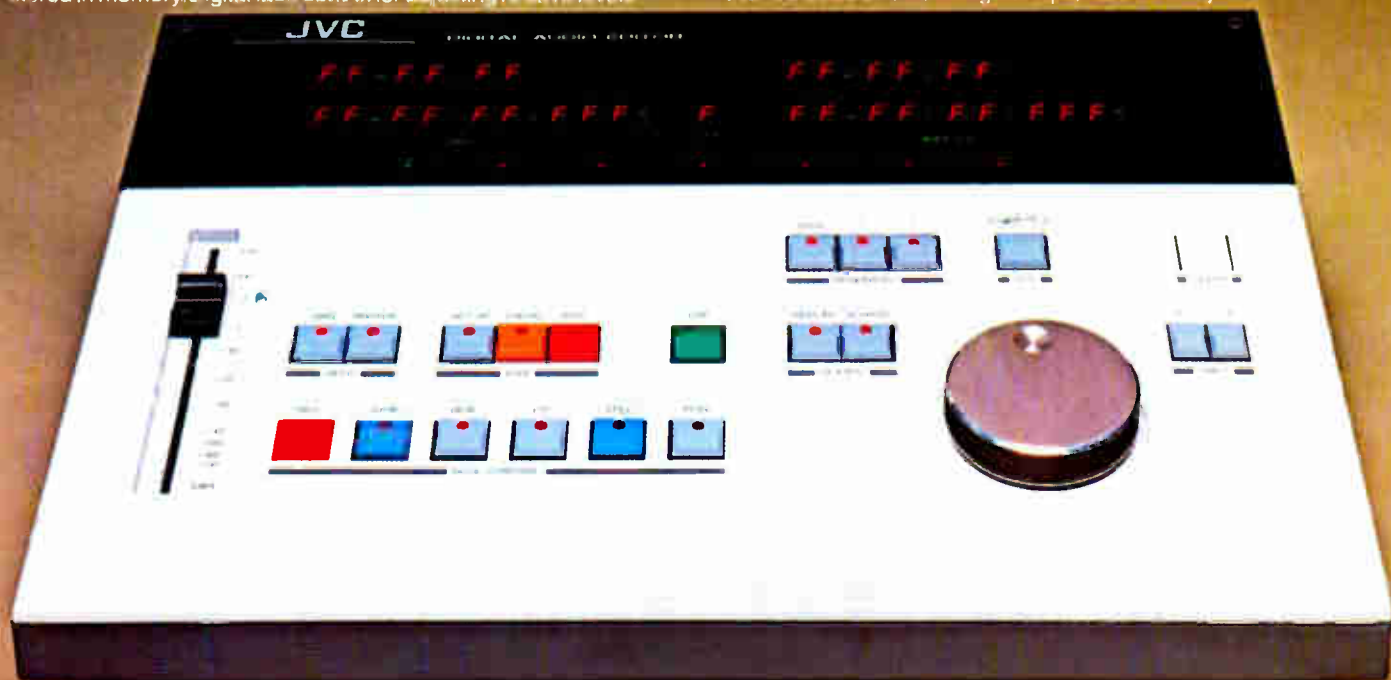
Electronic governor for routing, coordinating, and executing all edit functions, both automatic and manual. All commands, from digital dubbing of original to master for continuous programs, to repetitive point-to-point manual cueing are regulated here.

TC-900V Time Code Unit.

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

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

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



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

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VIDEO PRODUCTION SUPPLEMENT



The Post Group, Los Angeles

PHOTO: RON EISENBERG

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HARDWARE/SOFTWARE



*T-Bone Burnett (center, in profile) with Los Lobos on the set of **The Legend of the Spanish Kitchen**.*

by Elizabeth Rollins

Events to Remember this Month:

The Third International Technology Opportunity Conference on the Future of Optical Memories, Compact Discs, and Videodisks to the Year 2000—November 13 through 15 at the Union Square Holiday Inn in San Francisco. The show is sponsored by Ed Rothchild Consultants (see *Mix*, October, 1984) and will cover topics such as development and markets for optical memory products, the future of optical and magnetic disks, and applications for CD-ROM. For more information, call (415) 626-1133, or Telex 910-350-6063.

Billboard's 7th Annual Video Music Conference—November 21 through 23 at the Sheraton Premiere Hotel in Universal City, CA. Some topics this year include "Video Music: From Promises to Profits" (representatives from home video companies discuss the consumer marketplace), "Future Rushes" (a look at technological advancements in music video), "The Multi-channel Matrix" (a status report on cable, broadcast and syndication),

and "Listening to the Screen" (a discussion about the increased importance of music in film and television). Contact Kris Sofley for more information at (818) 842-1212.

KABC-L.A. Tries Spicy Recipe for Long Form Music Video

"The Legend of the Spanish Kitchen" (air date: November 8) is no bite-sized, deep-fried mu-vid morsel. It's a half-hour TV show that combines dramatic and fantasy narrative with music video stylization. "The interesting thing about it," says producer Erik Nelson, "is that it's basically all music video people who worked on it, doing something not conventionally music video." Some of those names include T-Bone Burnett, who co-directed his first television segment, which features John Doe of X acting, and Los Lobos doing a live set as the house band at the Spanish Kitchen. Hudson Marquez, one of the founders of TVTV, directed with Burnett, and Graeme Whiffler (whose credits include *Devo*, *The Red Hot Chili Peppers*, and *The Residents*) directed another segment in the show. Producer Nelson works on KABC's *Eye on LA*, and also

has a few videos under his belt.

"It's been a next step in music video beyond the conventional long-form package of tacking narrative onto a song," Nelson says. "This is compressing a complex story with a beginning, middle and an end."

The program tells two separate stories which try to explain the mystery of one night in August, 1961, when a popular restaurant on Beverly Blvd., called the Spanish Kitchen, abruptly closed down. To this day, it strangely remains exactly as it was that night; the rent is paid, the tables are set.

"It's a double fantasy—since no one really knows what happened. The show doesn't try to find out—it tries to come up with stories of what could have happened," says Nelson.

The first segment was written by science fiction novelist Robert Silverberg, and stars Lorne Greene as the devil. John Torcassi was director of photography. Lewis MacAdams wrote the second part, which features Los Lobos playing "Anselma" in a big party scene choreographed by Shanda Sawyer. DP was Mike Anderson. Cameo appearances in the audience at the

**COMMENTARY:
MUSIC VIDEO
PRODUCERS MATURING**

According to recent surveys, there are now more than 300 cable and TV shows featuring music video programming. Last year about \$60 million was spent on the production of more than 1,500 three-minute music videos. This year should see a slight increase. Today's average budget is about \$40,000 with long-form videos running from \$100,000 on up. Finally, the industry is no longer limiting itself to Rock and is beginning to see the potential in other kinds of music. Independent producers have an unparalleled opportunity to contribute to and benefit by these new avenues for programming.

Another trend in music video production is the greater acceptance of American directors, on bigger budget projects, by the artists and the record companies. The video smorgasbord of video clips on cable demonstrates the ineffectual quirkiness of many British pro-

ductions, as well as the fact that at the same time some of the most creative and imaginative work is still being done by English producers and directors.

Attracted by the "action" and visibility connected with music videos, and the desire to control the promotional videoclip for their movies, increasing numbers of feature film directors have moved into the field. There seems to be movement in the other direction, too, with music video directors increasingly getting into features. Steve Barron had a near hit last year with *Dreamscape*. Russell Mulcahy is working on his second feature, a \$14 million sci-fi thriller for 20th Century Fox, called *Highlander*, starring Sean Connery. Director Duncan Gibbins (Eurythmics, Wham!, Glenn Frey) has produced his first feature for Paramount Pictures. The \$10 million project, called *Captive Hearts*, is a contemporary love story that was shot in Vancouver, British Columbia. Also, David Bowie, Sex Pistols, and Rolling Stones director Julien Temple is

directing *Absolute Beginners*, a novel by Colin MacInnes.

Split Screen Productions

Some of the most interesting and humorous work being done today has been directed by Jim Yukich. He has directed videos for Genesis, John Waite, Eric Clapton, Kenny Loggins, Philip Bailey and Phil Collins ("Easy Lover," "One More Night," "Sussudio," and "Don't Lose My Number"). Yukich is considered one of the best live performance directors in the business. He is represented by Split Screen Productions, a partnership with former Picture Music International alumni Bob Hart, Jack Cole, and Paul Flattery, and former MTV director of program acquisitions, Chip Rachlin.

Zbig's Visions Ltd.

Polish director Zbigniew Rybczynski is one of the most innovative and inventive music video artists practicing the craft. His first video was for Island Records' *The Art of*

—PAGE 56



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Spanish Kitchen feature Van Dyke Parks and John Abila from Oingo Boingo.

Steady Eddie Banks on Baby Boom

Judging from the tricky camera moves displayed in music videos these days, it seems that 35mm cameras have grown wings. Actually, it's a lightweight, one-man boom invented by Eddie Barber called the Baby Boom that's behind many of these fancy moves.

The 28-year-old cameraman and owner of VideoTeleCom in Arleta, CA, has become the toast of the Los Angeles production community. Barber says business has been excellent since the beginning of the year; rentals are booked continuously, and purchase

orders are coming in faster than he can supply product.

"I shot about 90 percent of the video of 'My House' by the Mary Jane Girls with my boom," says Barber with characteristic boyish enthusiasm. "You see how the camera floats through the house—there's no other boom in existence that could get in that house and do those kinds of shots."

The Baby Boom is different from conventional booms and cranes—it weighs only 75 pounds, can be set up and operated by one person, needs only one foot of clearance to get a shot, and costs only \$10,000 to purchase (although day rental fees are about the same as those for conventional cranes). Barber has done shots off of skyscrap-

—FROM PAGE 55, COMMENTARY

Noise, "Close to the Edit." The clip captures a Felliniesque freakshow quality with distinct Franz Kafka overtones. A small girl acts out the destruction of classical musical instruments in a confrontation with electronic music technology, a symbolic conflict between traditional and new values. He has produced clips for Grandmaster Flash ("Sign of the Times"), Chuck Mangione's "Diana D," and "Midnight Mover" for Accept. In each case he has pushed the envelope of technical video complexity. He has used multi-camera, multi-machine, frame-by-frame, time shift techniques to render his vision of the music. Kris P., formerly national director of video production for Island Records, has joined him in forming Zbig's Visions Ltd.

Michael Patterson & Candace Patterson: Animation One of the most creative videos produced this year is the work executed by animation artists Michael Patterson and his wife, Candace Reckinger for the Norwegian band, A-ha. Warner Bros. Records' vice-president of creative marketing, Jefferey Ayerhoff, brought together the group, the animators and Lime-light Production's director Steve Barron and producer Simon Fields. The concept was to re-create the look of popular English romance comic books of the 1950s and '60s with live-action and animation. While having tea in a London tea shop, a young woman is literally drawn into the plot of a romance comic she is reading. The metamorphosis and rotoscope work in the video is designed around the look of pencil illustration. The mood of the piece is quite captivating. Live-action production was shot in London. Patterson and Reckinger completed the detailed creation of the matching frame-by-frame animation on an Oxberry camera at Jerry Kramer's mc2 studios in Los Angeles.

There is a slow but welcome shift toward higher production values and long-form video projects—productions mounted because of their own inherent entertainment and commercial value, not just as a promotional device for a group's latest single. All things considered, things look good in music video land.

—Lou CasaBianca

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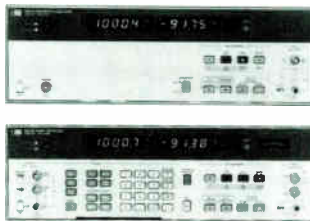
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John Doe of X turns dramatic actor in The Legend of the Spanish Kitchen.

ers, cars, boats, and other locations that would never support the weight of a two ton Chapman crane, for example.

"With our boom, everything is remote controlled with pulleys and cables," explains Barber. "Since the operator doesn't have to ride on the arm, it can be very small and lightweight." That portability came in handy for Wayne Isham recently when he directed a video for the CBS band, Heaven. The location was high atop a rocky plateau in Castlerock, UT, where the crew was delivered via helicopter. "It was great because we just packed up the boom and it went up in the helicopter with no extra trouble. We were able to get those moves—even up there," says Barber, who was the operator on the shoot. Other directors who've used the Baby Boom include Francis Delia, Mark Rezyka and Dominic Sena. NBC in New York has bought four booms, and the network rents in Burbank.

There are three versions of the Baby Boom: the "regular" boom, which carries 16mm film cameras and a few light-weight 35mms; the "35mm" boom, which can support up to 65 pounds (both of these versions can move up to

11 feet vertically); and the "Barber Boom 20," which is designed for 35mm cameras and gives a 20-foot verticle spread. The Barber Boom 20 was used for video coverage during the Tina Turner tour this past summer.

Another invention Barber offers through VideoTeleCom is the Eddie-Cam, a hand-held stabilizer whose name cleverly plays on an industry standard, the Steadicam. "What I did was make a much less expensive version—a counter-balance stabilizer bar that you put the camera on one end of, and the weight on the other end, and you balance the camera back and forth and up and down until it floats at the grip point. Then you just hold it, and you can walk or run or do whatever you want to, and the camera just floats," Barber explains.

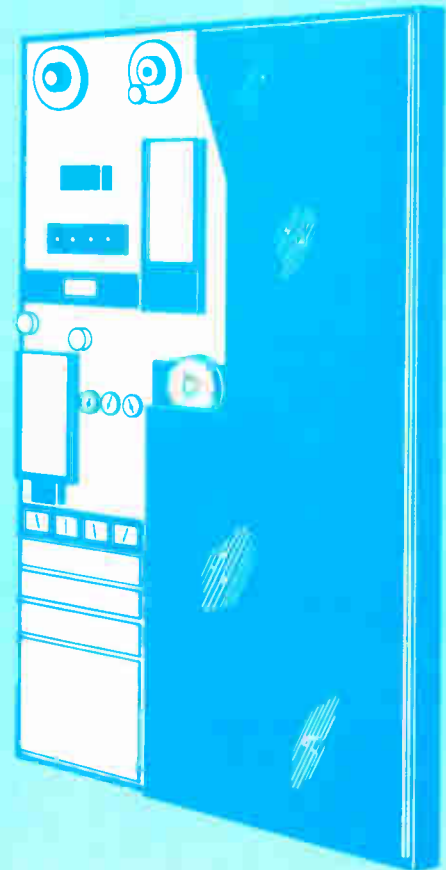
The drawback to the Eddie-Cam, he freely admits, is that it can only be used with cameras that weigh 15 pounds and under. "It's the video assist that really weighs the system down," he says. "Right now, they weigh between five and ten pounds—and that's one-third of the total weight right there! So now I'm working on a one-pound video tape so more cameras can use the Eddie-Cam," says Barber. At \$975, so far he's sold 50 units. ■

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THE
MAKING
OF

JIMMY THUNDER



by Richard Day

Malcolm Morley was walking down the streets of Liverpool one warm evening two years ago minding his own business when, as he passed the infamous nightclub, Eric's, he heard something that he would later describe as "the clean, magical sound of a raw new talent bursting into the world." He soon noticed that it wasn't coming from the club, but rather from the sidewalk in front of it, where a wiry bleach-blonde punk was coughing and heaving into the gutter. But Morley, the whiz-kid manager/promoter notorious for pull-

ing teen sensations from obscurity, knew that "star quality" when he saw it and would not be daunted. A few showers and two bottles of Revlon later, Jimmy Thunder (given name Egbert Diezylspeineznx would certainly not cut it on MTV) was ready to be introduced to the world.

"I realized immediately that Jimmy could be a huge recording star," Morley remembers, "If only I could do something about his voice and complete absence of musical talent." Those having proven to be only minor obstacles as of late, he wrote an album for Jimmy, hired a band, and in short order, had his new star in the studio to lay in a vocal track

(Jimmy plays a guitar in concert, but it's not hooked up to anything. "He just needs something to do with his hands on stage or he'll pick his nose," Morley explains.)

One British engineer characterizes Jimmy's natural voice as sounding something akin to fingernails on a blackboard. He can hit some notes, randomly, but they're all firmly planted around middle C, and as the same engineer puts things, "If his range were any more limited he'd be mute."

But this proved to be only a routine problem for the engineers at London's Edinbourg Studios, who simply processed his voice through a Vocron

Stimulator. The machine augmented and rearranged Jimmy's croaking, distorting it to the point that, while he hit not a single note correctly on any of his tapes, on the finished record he sings with an eery sense of a melifluous electropresence.

The rest is history. Though *Rolling Stone* magazine called Jimmy's premiere album "the single biggest waste of vinyl since plastic saucepans," with the help of heavy MTV airplay and an American public eager for opportunities to express their gullibility, it sold millions, and Jimmy Thunder became a huge success.

Jimmy was not prepared, though, and he used his new-found fortunes on exactly what he once spent the quarters he found on sidewalks, and began an extended binge of drugs and alcohol. He made it through an American tour, but it became obvious when the time rolled around to go back into the studio that Jimmy was in no condition to make another record. He spent six months on the floor of his Los Angeles apartment, standing up only when he felt an urge to trip over something and crash back to the carpet, and he'd done so much cocaine and heroin that he received thank you notes from four different South American governments.

"He really was in sorry shape," Morley admits, "and I felt sorry for him and everything, but, you know, there was money at stake. I couldn't not record another album just because he was in a coma."

So Jimmy was dragged into the state-of-the-art Digitorium Studio in Carumbaba, California, for what will go down as the most engineered session in recording history. The studio contains a QRXZ-8000 Niagra Digiprocessor II, the most sophisticated piece of audio processing equipment available. Correcting missed notes is the most mundane of this machine's capabilities; it can, in fact, with only the finest sampling of a voice, determine all of its identifying characteristics, and with that information synthesize whole lead vocal tracks. Only two of these systems exist, and it is consequently prohibitively expensive to use. But this machine was exactly what was needed for Jimmy Thunder, who for three months had not said a sentence of more than two words, and in most cases could barely even get out anything more than the one-word commands "pill" or "woman."

Jimmy was brought into the QRXZ processing studio, and after he'd found a comfortable spot on the floor, engineers secured a boom mike above him, ready to grab and swallow even the slightest vocal sound. And then they waited. And waited.

And waited.

Weeks seemingly passed. Jimmy had

apparently transcended the point where speaking was important to him; he just lied on the studio floor, breathing occasionally but otherwise inert. "It was really sad. I mean here was an innocent young man who was once vibrant and healthy," Morley says, "lying face-first on a studio floor, broken to the point of no return by the excesses of fame and the music business; he cost me ten thousand dollars an hour, the ungrateful bastard. I could have cried."

Morley tried everything to squeeze a sound out of Jimmy. He asked his star questions, he dangled pharmaceuticals in front of his face, he brought women in the studio. In exasperation, he twisted Jimmy's foot around on its ankle three times and stuck long pins into it, but nothing worked. Finally, Morley decided to call off the session and eat its losses.

Then Jimmy burped.

It was a short burp, not even half a second long and so faint that no one was even sure they'd heard it at first. But it was enough for the QRXZ. The engineers immediately went to work, and soon had expanded the burp and modulated it into another powerful, driving tour-de-force Jimmy Thunder lead vocal track. In no time at all a second album was in the can, pressed, and ready to hit the stores.

But there was still the problem of the video. Making up for Jimmy's incoherence on audio tape was one thing, but problems increased geometrically when the task became getting him to appear on film, standing up, moving his lips, and hopefully looking animate. Director Joe Doe was called in to handle the job, and he immediately hired several of the effects artists who made the Gremlins come alive to help him.

"The fact that Jimmy was unconscious throughout the shoot was a problem," Doe says, "but in a way, it made the assignment more interesting." He and his crew tried several techniques to make Jimmy appear lucid, including one where they laid him on the studio floor and shot him from the ceiling, but they had little success. "Then I remembered the puppet shows I used to put on as a kid," Doe recalls. "It seemed crazy, but it worked."

Jimmy's arms, legs, hands, feet, and head were attached to Ultimab-blue cords which hung from the studio lighting grid. Two professional puppeteers manipulated Jimmy like a marionette from the ceiling, causing him to raise his fist, play guitar, and actually "dance." Blue cords do not photograph and were therefore not visible in the resulting footage, which was then superimposed onto a set filled with choreographed leather-clad women. The problem of Jimmy's catatonic facial expressions remained, though, and in the

finished video he needed to actually lip sync.

Computer graphics experts came on the project, and using the Pantel Quairtbox and other technologies which made so many interesting rock animations recently, Jimmy's face was brought to life. With the Quairtbox, they cropped the star's face from an earlier video, then digitized the image and laid it over the new footage. The computer manipulated his features and thereby "animated" his face into whatever expressions the director desired.

The results look absolutely authentic—Jimmy appears more alive in his video than when he actually was.

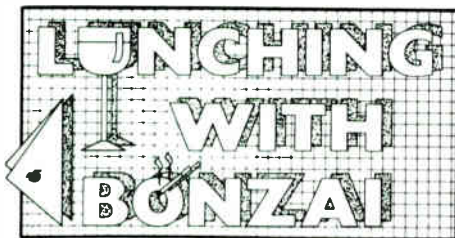
Which brings us to the one controversy surrounding this revolutionary project. Jimmy's follow-up album, upon its release, shot immediately to the Number One slot on Billboard's charts. And his video, after several months in heavy rotation on MTV, is quickly accumulating awards. But at some point during the making of the two, or shortly afterwards, Jimmy Thunder died. Nobody knows or will say exactly when or how, but as a result, Morley's ethics and judgement are falling under fire by certain people in the industry. It is mild, though, for most executives and producers are impressed by such undeniable success no matter how it came about.

So what's next for Malcolm Morley, after this tough act to follow? "Well, there's this Catholic nun choir I'm interested in," the producer says, "if only I can convince them to play bongos and wear shorter hemlines. But first I've got to get Jimmy's next album out." His next album? "Yes, he is dead," Morley concedes. "It's going to be quite a challenge..."



GEORGE MASSENBURG

In Search of the Lost Nanoweber



by Mr. Bonzai

Mention George Massenburg in audio circles and the eyebrows knit, wiggle and elevate. Massenburg: the controversial electronics designer, the multi-platinum engineer, the eclectic producer. George is just your average outspoken renaissance guy, the Complete Audiophile in search of the lost nanoweber.

Such a reputation might conjure up an image of a greying professor, wizened from decades of superhuman effort, but actually, he appears as a beachboy in shorts and T-shirt, with a healthy head of blond hair and just a hint of crow's feet around his eyes to indicate he is pushing 40.

We lunched at The Complex, in West Los Angeles, a hefty recording fortress George designed and partly owns. It is, of course, well-stocked with GML (George Massenburg Labs) products. As I entered the inner workshops, I heard George and his marketing whiz, C.J. Flynn, debating the sizeable expense of modeming a lengthy technical report to Copenhagen. It was a quiet Saturday afternoon and the doors of the studios were closed on private sessions. George pushed aside the papers on



PHOTO: MR. BONZAI

his desk and I uncorked the beaujolais.

Bonzai: I ran into Bill Payne about a week ago while he was working on a project with Scott Page over at Grover Helsley's studio. He mentioned that you, he and Russ Kunkel have a production company...

Massenburg: Yes, we've had the company for about a year. Bill is very gifted and it's amazing what Russ brings—he's a brilliant, intuitive drummer. He's also brought to drum machines a great range and a great feel. First, he finds the right tempo for the songs we are working on. I've begun to appreciate how important that is for a tune. He really plays with drum machines, too—programs them to work brilliantly. Jim Keltner is also great with drum machines—you have to hear him play pads. I remember he used to have a bicycle bell on his kit and would reach over once in awhile and surprise people. Now he has programmed some funny things into his Simmons SDS7, like cows mooing and other tweaks of brilliance. Russ does the same with his Dynacord, like a rattlesnake that can be used for a sizzling snare burst (stored explosions performed one-quarter speed).

Bonzai: I've always loved sound effects and unusual instruments. I started engineering at a small studio and we did everything from belly-dancing records to polka albums, which meant oddball instruments.

Massenburg: I started the same way at a small studio in Baltimore. My mother insists that I was electronically

inclined even as an infant, pulling out plugs and playing with electricity. I grew up down the street from Deane Jensen—you've heard of him?

Bonzai: I've heard of his op amp...

Massenburg: He's designed an op-amp that's quite good, but he's best known, I think, as the world's best audio transformer designer. To do *that* he has identified, quantified, and modeled the transfer characteristics and error mechanisms of transformers to a degree not previously considered important. Also, his ACCAP program (a computer circuit modeling program) has become virtually a standard. He's done alot, and all of his work is at least incisive.

Bonzai: Is he older than you?

Massenburg: He's about three years older than me. We grew up on this funny little street in Baltimore. His father, Dr. Arthur Jensen, had moved down to head the Westinghouse research facility. From what I understand, he had one of the first silicon foundries at his personal disposal—furnaces, deposition devices, exotic stuff, you know. He manufactured the early imaging tubes for the Mercury missions, I think.

Dean grew up in a very fertile atmosphere. We spent time together learning about photography, and then ham radio. It was inevitable that one of his friends knew some guys with a 2-track studio in Baltimore. I started hanging out there in 1963 while I was going through college at John Hopkins. I never studied a day in my life and finally dropped out because it got to the point where I really had to commit to cracking open a book. I majored in electrical engineering and could have put in a little effort and made some headway. I didn't feel it was pointless, but I didn't feel it was productive either. I started engineering at this little studio and began making more money than my professors.

Bonzai: Did you have any big artists?

Massenburg: Not until 1966 when I worked with Arthur Connelly. I didn't record "Sweet Soul Music," but I did a few other tunes that came out on Stax. I also must have done about 10,000 commercials for an agency that had clients all over the world. You learn how to edit easily, and get good with a razor blade. I loved it. That's the kind of thing you learn in an off market. We didn't have a big budget, so I built a console and a 4-track machine from old Ampex 300 parts.

Bonzai: Were there 4-track machines available at the time?

Massenburg: Oh, sure, but that would have required a considerable investment. Our console was a tube console

with 12AY7s in cascade with K241D input transformers. It worked pretty well—did good rock and roll.

Bonzai: Did your improvised equipment put you ahead of other studios in town?

Massenburg: Sure, but the hot band was the one that could afford to go to Sigma, in Philadelphia. That old room on 12th Street was the first real rock and roll room that I ever worked in. When I saw that Electrodyne console and that Scully 16-track, I was in heaven. Those old Altec monitors in those utility cabinets—it was a great room. They were doing all the Gamble and Huff stuff back in '66 and '67.

Bonzai: As a child, who were the people you admired?

Massenburg: When I was 14, I met Dr. Curtis Marshall while I was buying parts in an electronics store. He was a neurosurgeon and his son went on to become Steven St. Croix, who started Marshall Electronics.

Bonzai: Were there earlier influences in your childhood?

Massenburg: Well, my parents divorced when I was young, and between the ages of five and ten I used to visit my father in Macon, Georgia. Fifties radio in Macon had the most amazing music I had ever heard. Here I was coming out of a classical background, because my mother is an intelligent, cultured woman and wanted me to listen to the right things. But then I heard early R&B in Georgia. It emanated from conduits like Atlantic—guys went down to juke joints in the backwoods and made deals with musicians who could really play. It was a startling experience for me—real music with a taste of honesty.

Bonzai: Did you have any musical training?

Massenburg: I played trombone in the high school marching band, bassoon in the orchestra. When I started engineering, I moved away from performing.

Bonzai: What are you now?—An engineer, a producer, an electronics designer, a visionary?

Massenburg: Visionary? I'm not so sure, because my ideas are evolutionary rather than revolutionary. But I am most of these other things every day.

Bonzai: What are you most proud of—your equalizer?

Massenburg: Not necessarily proud. I didn't really design the parametric equalizer—I built it. It was an idea that was waiting to happen, waiting for the right kind of amplifier and the right application. What I'm proudest of is the

—PAGE 204

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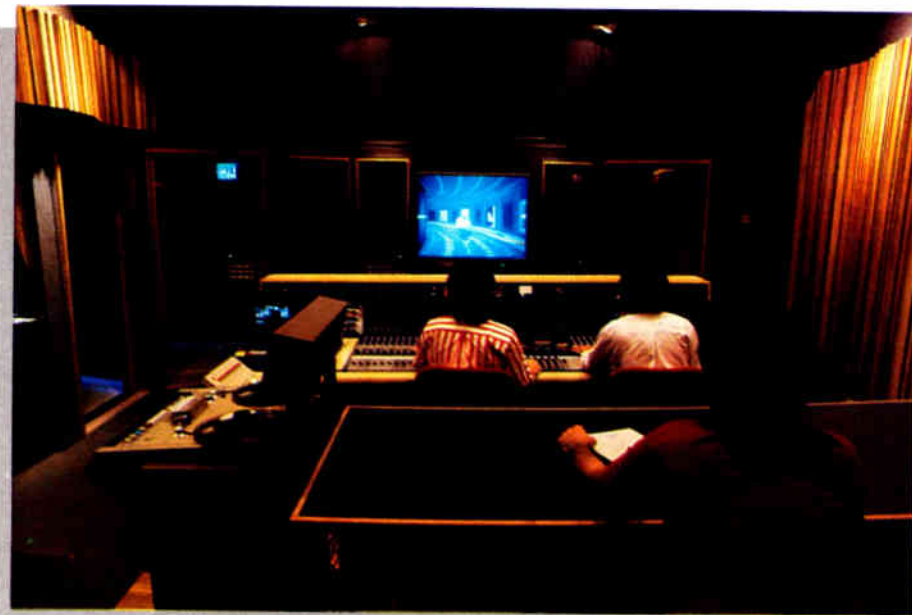
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THE POST GROUP: LIFE IN THE AGE OF STEREO SOUND



The Post Group, Studio A.

by Frank Murray

For executives and producers who have long toiled in commercial TV, the new age of stereo television is a little unsettling. Until recently, there was little reason to think about quality audio: Consumer sets hadn't changed much since Pa bought the Dumont back in '48.

But the ground rules changed last year when the FCC finally bestowed its blessing on multi-channel television sound. Suddenly, commercial TV started thinking stereo: NBC, and a brace of independent and affiliate stations throughout the country have taken the plunge this year into stereo programming. HBO and Ted Turner joined the ranks of the stereo cable networks. None

The first step is for producers and mixers to adjust to the realities of mixing in stereo for television.

of this has been lost on TV programmers, program producers, and commercial mavens, many of whom are moving rapidly into multi-channel production. Most have found, however, that quality sound also gives rise to myriad production and post-production considerations that may be familiar to the audio industry but are new to everyday television.

To examine its impact, *Mix* recently spoke to Tamara Johnson and Peter Cole, two highly experienced TV post-production mixers, and recording engineer Phil Mendelson. The three are the nucleus of the sound department at The Post Group in Hollywood, one of the industry's premier video post-production houses that does audio sweetening for Embassy Television's prime time network sitcoms, as well as syndicated and cable programs, music video and music concerts, and commercials.

Their overall consensus was that TV stereo sound offers all the creative possibilities of any other medium, understanding that sonic images must be scaled to the size of the TV screen and be recorded with the ever-present mono/stereo compatibility problem in mind. In addition, producers should confer with mixers whenever possible and decide in advance what steps should be taken in both production and post-production to assure high quality sound with a minimum of time-consuming and costly audio enhancements.

Probably the first step is for producers and mixers to adjust to the realities of mixing in stereo for television. "It's very strange because you're working on such a small screen," said Tamara Johnson, who has sweetened Embassy's programs for the last six years. "Theaters have huge screens and your peripheral vision is actually seeing action footage, which makes stereo enhancement

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realistic and appropriate. But if you look at a 19-inch screen with full stereo sound, it takes a different technique."

In television, continues Phil Mendelson, Post Group Sound's chief audio engineer and former chief engineer at Village Recorders in Los Angeles, viewers are primed for stereo imaging that goes with their tight picture rather than the broad picture presented at the movies. "I've always thought it's been misused in film," he said. "Often they create a stereo sonic image moving across the screen, and it's incredibly artificial and contrived. The image is too wide. Stuff like that can't work on the small screen."

The task then, added Mendelson, is to create sonic images which offer spatiality, depth, and sharpness of image rather than location. "What's the point of implementing high-tech technology in a transmission medium if not to strive for some greater degree of realism in what you're reproducing? That's what music recording has always meant to me. By the same token, that's what TV audio should be, too."

TV stereo is still too new for broadcasters to have developed any hard and fast rules. Of the Embassy shows being sweetened at The Post Group, the two airing on NBC are moving cau-

tiously into stereo, with music and some limited sound effects being the stereo elements on the initial shows. Later on during the season, one of Embassy's shows will be sweetened in full stereo and in mono, then screened for the network as a demonstration.

Switching to stereo has not come easy to TV production. As an example, shows with audiences have been recorded in the past with simple left/right miking. But stereo imaging has required engineers to hastily string up six mikes to allow mixers to pan the audience in post-production. Furthermore, noted Peter Cole, whose background includes promos for ABC, MTV concerts, HBO specials and scores of commercials, TV audio has not been as finicky as audio in the recording industry. Exact tape head alignment now becomes as critical a problem in TV as it is in other forms of audio recording.

In order to turn out quality audio, the audio track must be turned over to the post-production house in good condition. "We're limited to the original tracks," cautioned Mendelson. "We physically get a one-inch master that may or may not have good audio. They can be cleaned up, of course, with noise gates, equalizers, Foley, ADR... None of that's a problem, but it depends

on what a producer wants to do and how far they want to go with it. Assuming it can be improved, what we have here to do it with at The Post Group is of the highest quality." [Post Group Sound features the Neve 8128 48-input stereo console with Necam 96 automation, all Otari recorders, CMX 340X machine control throughout, and an array of processing equipment including the Quantec QRS room simulator and Lexicon Super Prime Time and 224 digital processors.]

Not all the problems stem from production, however. "It's really more limited by the one-inch [videotape] medium itself," Mendelson continued. By professional audio recording standards, audio on one-inch tape cannot be recorded as hot because of print-through problems. Videotape oxides are optimized for helical scan recording, not for audio recording. And tape runs at 9½ ips as opposed to the recording industry's 30 ips standard.

Another problem which is out of the hands of both the production company and the post-production house is that of audio quality control from program delivery through transmission, where anything can happen due to the number of rerecordings as the show is shifted from coast to coast and recorded

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for different time zones. Johnson recalled recently hearing the mono audio of a show broadcast in stereo. "The whole sound made a swishing noise," she said. "If I'd been that mixer I would have been dying. Once it leaves here it's out of the mixer's hands. The first thing someone knowledgeable would likely say is 'Oh boy, the mixer screwed up.' And it's not the mixer's fault."

Aside from these factors, the biggest problem overall according to Cole is that producers learning the new medium must learn to adapt to the time and cost realities of quality audio. "By the time they're ready to sweeten, they might have spent more time in editing than they had planned or might just be sick of the show and don't want to sit there an extra day. Most of the time they haven't allowed enough stuff in the budget to do a slick audio job."

On the post-production side, mixers are thinking of ways to lay down quality audio, but thinking ahead to avoid pitfalls later on. While some experimentation is going on at The Post Group with recording sound effects in binaural sound, most are being recorded using the M-S technique, found generally in recording classical music, which offers true mono compatibility for stereo sound.

The system is comprised of two mikes (The Post Group uses AKGs.) The mid mike (M) is a cardioid or a hyper-cardioid pattern, the side mike (S) is a bi-directional or figure-eight. Simply put, left and right is the product of M+S and M-S respectively; mono is derived from the S channels cancelling each other out. In effect, the system is the complement to the BTSC sum-and-difference audio standard transmitted by stereo TV stations.

To allow mixers to utilize either stereo or mono, Mendelson has designed a matrix box which decodes M-S into either mono or stereo and controls the degree of stereo spread with a single control (potentiometer).

Aside from its compatibility, according to Cole, one of its advantages is that the mixer can play with the proportion of a sound without locking him into a perspective the way that mikes placed at 90 or 120 degrees on a stereo bar might do. "Let's say that you record an orchestra with M-S," Cole continued. "The fact that you can come back and play with the proportion of two mikes is almost as though you were moving the mikes further back in the hall. If you open the side mikes, you get more ambience."

Recording effects with M-S also gives mixers greater control in setting perspective, arguably one of the major post-production time-eaters. Johnson is concerned about recording effects in stereo that require on-screen move-

ment because there could be time and production difficulties in matching them to picture.

Added Cole, "If you're laying down the sound of a car approaching in stereo, in addition to worrying about where you want to put the Doppler effect, you also have to worry about how quickly the car approaches and recedes. If you're dealing with an effect that was miked in stereo, when you place that against picture, depending on where the mike was as well as where the car was supposed to be, it might sound fine in mono. In stereo it might make too much of a movement from left to right, or present a stalled perspective from left to right."

Johnson believes that to do stereo TV with quality but with speed, decisions should be made about those sounds which are ambient and those which could be mono but given a stereo feel through panning. If a sequence was filmed on a deserted road, the ambient sound would be stereo as would the music. A car passing by would be in mono, but panning would produce a stereo effect. It is easier, she said, than recording a car in stereo at the right speed and at the right distance from the viewer's focal point. Her solution: Establish the setting in stereo, then throw in mono pieces as embellishments.

Johnson and Cole both attempt to pre-lay as many effects as possible. For their shows, they will have alternative sound bites lined up, knowing that the producers will want to try various alternatives. But they have also created a time-coded sound effects library, allowing them to shuttle quickly to alternate effects by summoning it via the CMX.

But producers can do their part in getting ready for a session as well. Johnson noted that some producers have the facilities to develop their own sound effects. These are pre-laid by them onto 3/4-inch videocassettes with time-code. Johnson then lays the original onto the master with ease. "Then we can just mix," she added.

The most cost-effective move for producers to work with stereo audio is for them to do as much preparation before coming to a sweetening session, and to keep the number of "creative" audio passes to a minimum. "What will eat up time," said Johnson, "are stereo pans and other things that require creation of stereo lefts and rights. If they keep it to a real minimum, that will come closest to existing mono budgets."

"It also depends on the creativity of the producer. If a producer wants to listen to 14 cars passing by to choose one, it'll take a lot of time. Many producers these days are taking the time to do it right, and they're not going to complain afterward because we were spending the time being creative." ■

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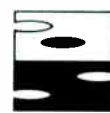
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CHICAGO'S CENTER CITY STUDIOS

AIMING FOR "HOLLYWOOD-ON-THE-LAKE" STATUS

by Gregory A. DeTogne

Ask people what comes to mind when they think about Chicago, and the last thing they'll probably come up with is that the "Windy City" is one of the best spots in the country for producing video. The town is much more renowned for the Cubs, deep-dish pizza, and warring political factions; but if a man named Jeff McGrath has his way, this image will soon be changing...

A one-time program director for WLS-TV in Chicago, McGrath put in 17 years with ABC before winding up as the mastermind behind Center City Studios, one of Chicago's foremost video production facilities. Located in the heart of the loop at 32 W. Randolph Street, Center City stands above what

was once the Oriental Theatre, and occupies 30,000 square feet formerly inhabited by a failing health club. When things at the health club finally got too anemic, Morrie Kalish, the building's owner, decided that the large space would lend itself admirably to television production. There was only one catch—Kalish knew nothing of the business.

Enter our man McGrath, who was called in as a consultant after Kalish had gone through the trouble of making the necessary structural changes, amassing the equipment, and hiring qualified personnel to start the venture. McGrath spent some time studying the fledgling video operation, and reported back to Kalish that he believed improvements could be made in the marketing

of the studio. In his estimation, the studio had aligned itself too closely with producing television commercials, and wasn't living up to its potential as a full-service production house capable of handling everything from sitcoms to video conferencing via satellite.

Kalish was impressed with McGrath's style and his observations, and asked if he would be willing to stop simply giving advice and start rolling up his shirt sleeves for the actual work. McGrath consented, and the present incarnation of Center City Studios was born.

In keeping with McGrath's vision of how Center City should be properly marketed, the studio today can boast that it is the largest of its kind in town, and has expanded its client base well beyond commercial producers to include network executives, independent producers, and corporate and governmental communicators.

Of all Central City's video production studios, Studio A is the largest, measuring 60' x 40' x 20' (it can be expanded if need be to 80' x 60' x 20'). Producers enjoy this studio because its size permits several sets to be constructed and shot at the same time, and because it can also accommodate sizable crowds, which is crucial when shooting something requiring a live audience or holding a crowded video conferencing session. Given its studio-grade audio equipment, which includes more than 60 microphones wired to a 24 x 16 Trident Series 70 console that handles the mixing chores for the entire house (all video recording is done in stereo), Studio A is also an ideal setting for shooting music videos and concert productions.

Center City's Studio C measures 35' x 20' x 20', and features a working kitchen set with all of the goods Julia Child would need to make the perfect *pate de foie gras*. The set for *Paul Harvey Comments* is also a permanent fixture in Studio C, where Paulyne Productions tapes Harvey's video efforts each week, which are in turn syndicated to more than 80 markets.

Either studio can be controlled from the main control room, which is equipped with a Bosch video switcher, Quantel digital video effects, a Compositor character generator, and an Iris still store. Post-production editing suites are additionally available for 3/4-inch and one-inch tape, along with an animatics room.

From his office in the upper level of Center City, McGrath spends portions of each day calculating how he can attract new business and stay abreast of the latest technology. "I decided long ago that I wanted this place to be the best video production facility in Chicago," he says with conviction. "Just like in the beginning, we're still strong in the area of producing commercials,

Studio A's control room.



but now we're also beginning to challenge Hollywood by demonstrating to clients that they can have everything here that they can get out there, only with a big savings in price. Other studios may well be able to do the same things we do, but our unique selling point is our spacial dimensions. Because of all the room we have available, we are more efficient, and as a result, the savings is passed on to our clients. All of the necessary gear vital to today's production needs is always on hand, because we've got the room to house it. When a client comes in to start shooting, he doesn't have to look around and see that we rented everything and are charging him higher rates as a result. Here, we have a slick operation that can turn things around with a snap of your finger."

International satellite transmission capabilities have also given the studio added punch within the marketplace. "I look at our satellite capabilities as being divided into two distinct areas," Howard Smogor, Center City's production manager says. "One is interactive, and the other is more or less one-way in nature. An example of our interactive satellite capabilities takes the form of video conferencing, while our one-way satellite transmissions merely go from our studio to another via up and



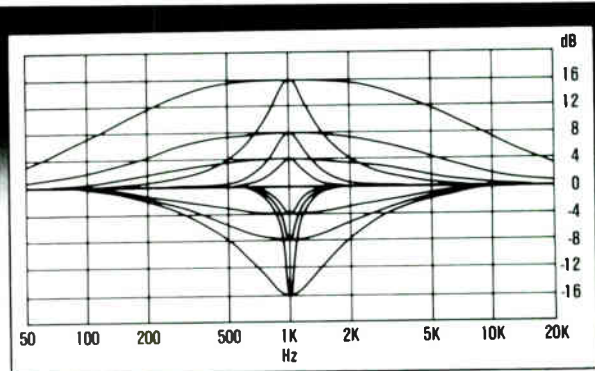
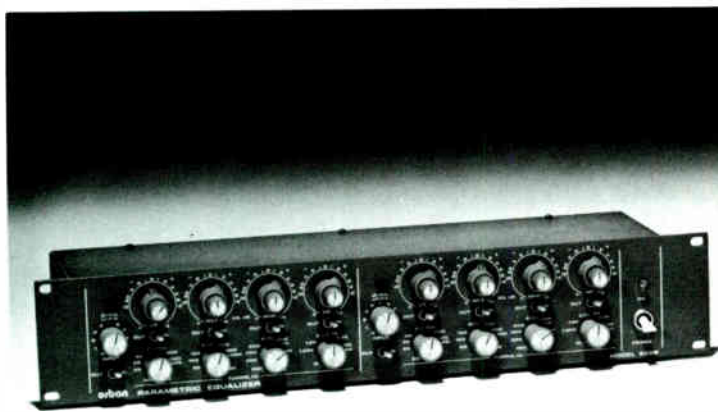
Jeff McGrath: Vying to become Chicago's video production kingpin.

down links with any of a number of satellites."

Corporate clients are by far the biggest users of video conferencing, which is a communications system that allows multiple locations to see and hear each other through a satellite hook-up. Politicians also utilize video conferencing to rapidly reach large blocks of voters that would otherwise take days to access in person. Most notably, Walter

Mondale became a Center City client on March 16, 1984 when he delivered a press conference across the country to members of the press who were able to phone in their questions back to the studio. Later that same day, presidential hopeful Gary Hart also made a campaign stop at Center City to be interviewed via satellite for the evening broadcast of the MacNeil-Lehrer Report on PBS. On a worldwide level, the U.S. Government has enlisted Center City's video conferencing tools for such functions as an hour-long conference led by Jeanne Kirkpatrick that spanned seven different countries in Europe and South America.

Center City is also highly regarded for its amenities geared toward client comfort. At no extra charge, they provide private offices and plush lounge areas that look out onto the Chicago skyline. Viewing rooms and video-equipped meeting rooms facilitate ancillary client needs, and for on-camera talent, there are several make-up and dressing rooms. Add to these niceties the fact that a racquetball court, sauna, steam room, and whirlpool were left on the premises after the facility was converted from a health club, and the place really does show that it has the moxie to challenge the west coast industry on its own terms...



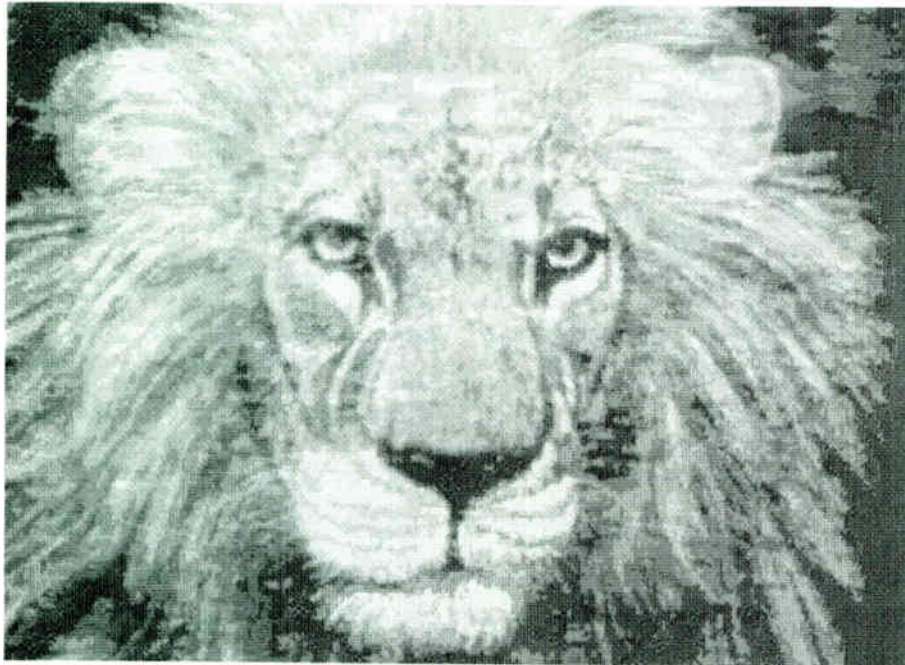
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The New Computer Graphics

by Lou CasaBianca

Computer graphics, computer art and video effects have become part of our film and video visual diet. The networks, commercial directors and feature filmmakers, through the skillful use of the technology, have developed in us a sweet tooth for eye candy. Although it may be at a subconscious level, in the minds of most audiences, graphics add excitement. The esoteric systems and expert knowledge once necessary to approach this field has given way to a more accessible and friendly numbers of computer graphics packages and work stations. Speed and miniaturization are still the bywords of computer graphics development. Information and texture are the elements used by these systems to recreate reality.

One of the first experimental mainframes, Harvard's Mark I computer, took about five seconds to multiply two ten-digit numbers. The new CRAY-2, smaller and much more powerful than the Cray-1, can multiply up to 2.8 billion pairs of 16-digit numbers per second. In computer graphics terms, this translates into greater resolution and detail at higher speeds. The infamous "trickle down factor" has taken on a much more positive meaning in computer and video graphics. Smaller can

be cheaper, faster and easier to use.

How do computer graphics relate to the recording studio or a music video producer? Well, first of all there's the business presentation part of communications: anytime you can show someone a picture or a diagram to help express ideas and concepts, generally you're way ahead of the game. Pages of words and numbers can be replaced and/or enhanced by the creative use of good graphics. This is true whether they are used in a venture business plan designed to raise funds or in storyboards to "sell" a project. Secondly, computer animation opens up whole new visual worlds of fantasy and heightened reality.

The use of computer animation and video effects has become a genre in itself. The Computer Image Scanimate System, the MCI Quantel Paint Box, the Mirage, and Ampex Digital Optics (ADO) are some of the devices that have become assimilated into the fabric of advanced television production. At recent conventions held in San Francisco and Chicago, a number of PC-based integrated computer graphics work stations and expert level programmers' toolkits were released to an enthusiastic audience of CG professionals. The availability of these kinds of systems to the Fortune 1000 Indus-

trial Group, independent artists/producers, high schools and colleges will be instrumental in creating a fresh new approach to computer graphic art and animation. VLSI is the electronic gateway to digital music and video special effects at very low costs. Smooth surface shading, multi-light source, three dimensional animation that could once only be created through expensive film opticals is now available in real-time at a fraction of the previous cost.

The July *Mix* MVP reviewed a number of production budgeting, scripting and project management software packages. The availability of computer-aided production software for scripting, pre-visualization storyboarding and keeping track of the production logistics, is the closest thing to "artificial intelligence" available to writers and producers today. And what about systems that are so new that the outer limits and higher creative levels have just barely been scratched in development and await further definition by new users? What are some of the lower cost alternatives available to the producer or director to simulate on video the look of the more expensive machines, either as a substitute when the budget isn't there, or when preparing storyboards for animation and graphic design for work to be done on the more sophisticated systems? How can you use your Apple, IBM PC, or Macintosh to create better detailed storyboards? What follows is a brief look at some of the options.

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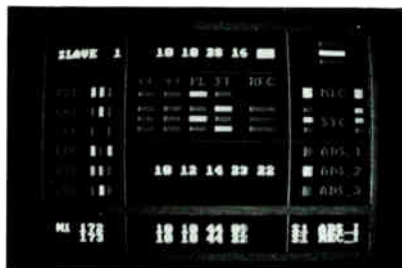
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APPLE

Apple Corporation, the innovative company that brought the world the first practical personal computer, is going through massive adjustments in management and distribution. The rise and fall of Apple Computer has become somewhat of an industry analyst's Monday morning quarterback speculation. In the end, the doom and gloomers will probably be proven wrong. The 8-bit based Apple II and the Macintosh are the most installed microcomputers in schools, recording studios and television production companies around the world. With icons and a mouse borrowed from the "Alto" computer designed by Xerox PARC researchers in Palo Alto, the 32-bit Macintosh has set a new standard in easy-to-use integrated applications computer design. The development of the 68000-based Macintosh as the next level in the state-of-the-art of friendly computers will etch its place in the history of technology.

The "open architecture" design of the Apple II+, IIe and IIc, and the graphic and user appeal of the Macintosh, combined with the enormous after-market for peripherals and enhancements will keep Apple alive and well for quite a few years. If you own or have access to an Apple II, and have wondered about its graphic capabilities, here are a few recommendations.

THE COMPUTER COLORWORKS

The Jandel Corporation, through its Computer ColorWorks division, has created "The Digital Paint System" which allows the user to create, present, print out, and telecommunicate. You can draw freehand, create perfect lines, rectangles, circles and curves, and trace from drawings and photographs. The system can capture images and make them bigger or smaller or change their shape, and includes a library of stock images you can borrow or "grab" by computer for your own drawings. It supports 15 built-in typesetting fonts and can load in dozens of other fonts from the Fontrix family of type styles. The Digital Paintbrush handles just like a pen or pencil. You don't have to be an artist to draw with these kinds of systems. Using grids for great accuracy and micro mode for detail, you can trace pictures or add fancy type styles to pre-drawn images supplied with the package. Customized manual or automatic presentations can be made using an on-screen pointer, dissolves, and on-screen images that can be timed at from three- to 99-second intervals. The software lets you print out your on-screen graphics to any one of 37 popular dot matrix printers. Unlike most value-added graphics software, The ColorWorks does not require a special

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graphics card. The Apple II+ and the IIe with the right software and peripheral hardware, are now capable of pumping out the kind of computing power needed to design and produce a wide range of computer graphics.

IBM PC GRAPHICS

The introduction of the PC by Big Blue was the seal of approval needed by the Fortune 500 to make the transition from mainframes controlled by groups of computer high priests, to microterminals that have opened-up the technology to real people.

In the beginning, IBM's focus was on moving words and numbers around. Recently, after a number of value-added resource manufacturers pointed the way, the company has released the IBM Professional Graphics Controller. There are a number of levels of graphics capability available for the IBM. The IBM Color/Graphics Adapter (CGA) can display up to four colors at a time from a set of 16 colors in medium resolution (320 x 200), or black and a choice of one color in high resolution (640 x 200) at a cost of \$250. Tecmar's Graphics Master can provide all colors in high resolution with vertical line resolution up to 400 lines for about \$650. IBM's Enhanced Graphics Adapter (EGA)

still displays 16 colors in high resolution (650 x 350), but they can be chosen from a set of 64 different colors. . . and not just in RGB and intensity, there are two bits for each color output, allowing four intensities for each primary color. Fully loaded with 256k of graphics memory, the EGA runs about \$1,000.

The Professional Graphics Controller (PGC) can display 256 different colors on the screen at the same time, choosing from a set of 4,096 possible colors (640 x 480 resolution) at a cost of \$2,995. A new package from Vectrix, the VX/PC Board, does 512 colors at once, in 672 x 480 resolution, from the same set of 4,096 colors, and is priced at \$2,495. For another \$500 the color can be expanded to 16.8 million choices (8 bits and thus 256 intensities for each primary color). This is serious color capability. The IBM PGC has built-in commands for 3-D perspective which can be executed from assignable viewing angles along the X, Y or Z axis. The Vectrix VX/PC package was released about a year before the IBM package, and consequently has a greater variety of application software available. Both are high-quality products with a wide variety of applications for graphics arts, image processing, engineering work stations, and many other fields.

DR. HALO

Dr. Halo is an IBM compatible "icon"-based graphics software package produced by Media Cybernetics. Using Macintosh styled pop-up menus, Dr. Halo provides graphic tools like Pencil, Paint, Type Styles, Airbrush, and Line Styles. Dr. Halo can be used for sketching, painting, cutting and pasting, drawing curves and charts, and can be rendered in high resolution monochrome or color graphics, and dot matrix, color and inkjet printers. The package includes a symbol library which allows you to store any symbol you've created for future use. You can set line width, type path, colors and pattern fills in any of the systems eight type faces. Dr. Halo can support all the colors that your color card can handle. "Grab and show" programs allow you to capture graphics from other applications including Lotus 1-2-3, Supercalc and others. Any image can be flipped, rotated or mirrored. At \$99.95, Dr. Halo is an excellent entry-level, IBM-compatible package for business and creative applications.

ISLAND GRAPHICS

Island Graphics Corporation has released Paint/Image manipulation software for AT&T's new continuous-tone,



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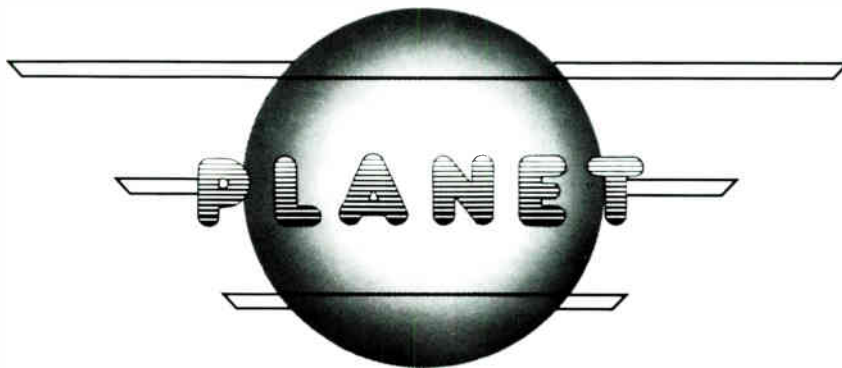
image capture board (ICB). The ICB provides owners of AT&T and IBM computers an affordable way to integrate video images and high-resolution graphics. The program allows you to manipulate images that have been captured by an ordinary home video camera. The software contains a full-featured paint program using the ICB's 32,000 on-screen colors. Island also has a companion business presentation graphics package. Island's products are written in "C," and operate under UNIX as well as MS-DOS.

THE MINDSET COMPUTER

The Mindset Computer is one of the best low-cost integrated computer graphics work stations available. The Mindset Professional Videographics System is an IBM-PC compatible color videographics computer. It can run thousands of the existing IBM and IBM compatible software packages, and execute real-time frame-by-frame animation. Mindset runs its own unique software on a system that utilizes two built-in VLSIs and multi-tasking co-processor architecture. The graphics chip contains the equivalent of two boards, 45,000 transistors. Video capture and NTSC gen lock modules are available for digitizing and keying composite video and graphics for reproduction to videotape, in color and in stereo. The Mindset video production system uses the 16-bit Intel 80186 as its central processor.

Mindset has built-in interfaces for RGB color monitor, composite video monitor, and black & white or color TV RF modulators; and three I/O expansion ports for RS-232C, hard disk interface, and graphics tablet. An expansion unit adds dual 360k floppy disk drives, 224k RAM (256k total with system unit), MS-DOS, three additional I/O expansion ports, and dual cart ports, each with 128k bytes ROM space. It can be controlled or accessed through a custom 84 key low profile keyboard, a mouse, light pen or a joy stick. The Mindset can gen lock its color graphics to any standard NTSC video source, including both broadcast and consumer half-inch. A new text package provides broadcast quality character generator specs with multiple and custom fonts and fade control. The unit features synthesized audio stereo output.

Mindset's technology is just getting into the hands of video production and computer graphics artists and students. The power and the application capabilities provided by the system can be customized in pre-planned steps by adding modules that add new features and functions at relatively low incremental costs. Mindset, comparably equipped, starts at under \$5,000.



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MINDSET SOFTWARE

Lumena, developed by Time Arts Inc., opens up into a fully-equipped computer graphics studio with 157 commands, logically organized into 23 menus. Up to 512 colors are available in the composite mode, with 16 available on-screen at any one time. Lumena tools and techniques include variable pen and brush sizes, custom brushes and multi-color brushes; four-way symmetry; selective erasing, changing and gradation of colors and the ability to shift perspective and duplicate, move, rotate and scale images. Lumena fonts allow you to create custom fonts in any size, and hundreds of colors, at any

angle, fully or partially drop-shadowed. Lumena animation can be used to develop real-time video cell animation.

Designer, the paint program, offers a powerful array of built-in tools, including ten brushes, 28 color strokes, and 30 patterns. 4-Point Graphics Plus is the Mindset presentation graphics package.

MACINTOSH

The Mac has inspired a loyalty from users that borders on becoming a cult; a not-so-secret group of computer enthusiasts who have invested and become proficient in what is unquestionably the friendliest computer on the market. Macintosh, the first commer-

cially available 32-bit computer, has filled the gap in the accessibility of low-cost computer graphics design systems for the general user. It is easy to use and has been supported with a wide range of software packages designed to bring its computing power down to where the rubber meets the road or where the mouse meets the desk, as the case may be. A mouse-controlled Fat Mac with 512k internal memory, the Apple LaserWriter printer and the appropriate software, can create print shop quality publications and presentations. In addition to rendering words and numbers, the Mac's bit-mapped built-in monitor with 512 x 342 resolution can be used to create high quality black and white line drawings, maps, illustrations and original or digitized artwork.

Macintosh is configured from the factory with one-internal 3½-inch disk drive, modem add-on, Image Writer printer serial port, Mouse port, and a second disk drive port. Mac's most significant shortcomings, slow speed, no color, and small internal memory, have all been overcome by a number of innovative third party value added manufacturers. Beck-Tech has created a color video converter which allows MacPaint artists to switch from black and white to color. Reportedly there will soon be a Macintosh black box that will be able to be connected through the existing RS-422 ports and provide the expansion slots not provided in the closed architecture of the Macintosh.

Apple's, MacPaint, MacWrite, and MacDraw are the basic software library used for the operation of the Mac. The availability of "switcher," a virtual public domain software utility allows you to easily transport files of drawings, graphs and words from one program to another. Switcher integrates Mac software the way Lotus 1, 2, and 3 integrates words, numbers and graphics for the PC.

MAC CHARLIE

MacCharlie, made by Dyna Communications Inc. of Salt Lake City, is a software and hardware addition to the Macintosh that adds IBM compatibility for about \$1,800. One part is a box shaped like a Macintosh, half as wide as the Mac itself. It snaps onto the bottom and side of the Macintosh and contains an Intel 8088 microprocessor, two disk drives and 640k of internal memory. In addition, there is a keyboard extension that snaps onto the existing Mac keyboard, and adds function keys and numeric/cursor keypad to the Macintosh keyboard. For Macintosh users who have decided that they want IBM PC/MS DOS compatibility, MacCharlie is a very practical upgrade add-on. Now you can run most IBM compatible software and Macintosh software on the same computer. For those

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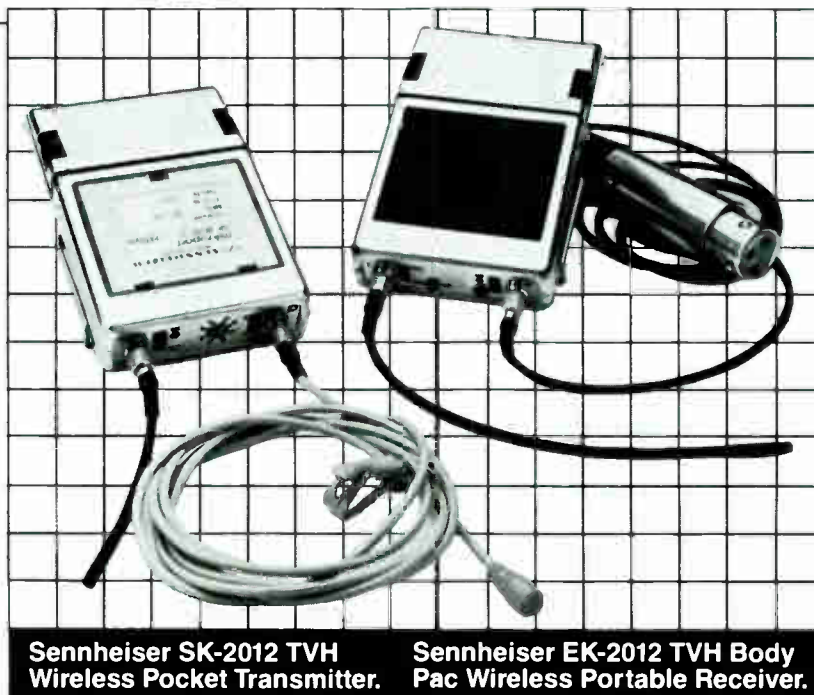
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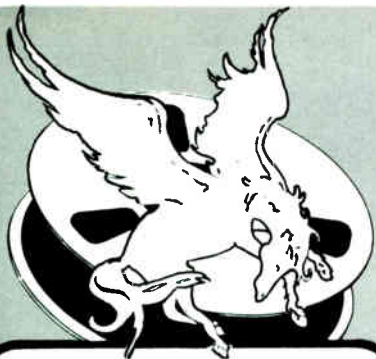
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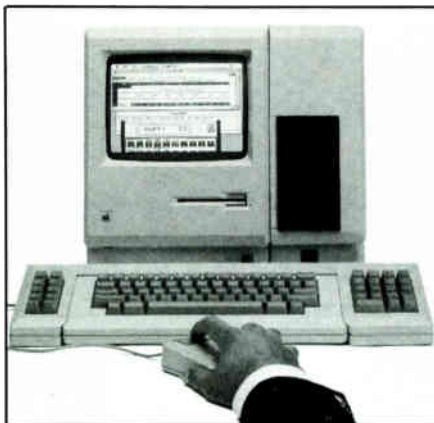
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Macintosh with MacCharlie

who are debating the pros and cons of IBM compatibility vs. Macintosh graphics, the MacCharlie combines the merits of both systems in one easy-to-use package.

VIDEOWORKS

"VideoWorks," Hayden Software's animation program designed for the Mac, allows the user to put pictures and/or images in motion. This includes images created on MacPaint or pulled from the library included with VideoWorks. Real-time frame-by-frame animation options are available with this program designed for storyboard artists, producers, cartoonists and hobbyists.

AMIGA

What if you could have interactive animation, color, music, dialogue, and sound effects streaming from your keyboard? At an affordable price? Commodore-Amiga are the producers of the Amiga computer. The Amiga CPU design is based on the same chip used in the Macintosh computer: The Motorola 68000, a 32-/16-bit microprocessor (32-bit internal path and registers, 16-bit external data bus) running at 7.15909 MHz. Amiga's custom VLSI chips handle graphics, color, animation, music and speech synthesis. The Amiga system design uses co-processor technology, making it run faster than the Macintosh, and allowing it to run in color with the most evolved sound capabilities resident in any other 68000 based PC-polyphonic four voice programmable built-in audio synthesizer.

The meaning and the power of the personal computer takes on new dimensions with the introduction of the Amiga. At its price point (\$1,295 base unit), and with its user comfort design and productivity capabilities, the Amiga opens up new vistas for computer graphics, video effects and MIDI computer technology. Amiga brings new possibilities to specialized professions such as advertising, architecture, CAD (Com-

puter-Aided Design), marketing, publishing, film, video, and music. Its open architecture is designed to be upgraded. The Amiga built-in voice synthesis is the most open-ended user interface available.

Amiga's graphic capabilities are equally predominant; the graphics chip can render the actual display of a lens being rotated through intersecting, multi-colored laser beams, while the 68000 is free to calculate the angles of refraction in an optical modeling simulation. Can we talk colors? 4,096 different colors; 16 colors at 640 x 400 or 640 x 200 resolution; 32 colors at 320 x 200 resolution. A dedicated graphics chip makes high-speed animation possible, with NTSC video output, frame grabber and gen lock capabilities built-in. The frame grabber can take a single frame of video, digitize it and feed it into the computer. Gen lock capability lets you key or mix graphics on video and feed them back to videotape.

Amiga's graphics power is articulated through the use of "sprites," programmable blocks or frames of graphic information. In effect, the graphics operating systems allows you to layer graphics the way sound is layered in multi-track recording. Sprites can pass in front of or behind other sprites and can be viewed as transparencies where you can see through sections of sprites and view objects that pass behind them. Amiga uses something called "blitter" to move blocks of information around the screen bit by bit.

Amiga comes with bundled or built-in software: "Amigado's," the operating system; "tutorial" a text and graphics program introducing the Amiga; "A-Basic," a programming language; "Amigascope," an Amiga graphic demo; and "speechcraft," the speech program with user-definable parameters (male-female voices, etc.) allowing unlimited text-to-speech conversion. (The Atari ST 32-bit computer, nicknamed the "Jackintosh," will be reviewed in a forthcoming *Mix*.)

AMIGA SOFTWARE

The Amiga has been released with a comprehensive selection of application software support. Island Graphics has produced a series of graphic packages specifically designed to take advantage of the Amiga's power. "Graphicraft" is an entry level, but powerful, paint program. "Paintcraft" is a professional level graphics and art production program. "Chartcraft" is a business graphics package for 3-D and special effects charts and graphs for presentations. "Videocraft" is an advanced animation effects and image manipulation program using icons and pull-down menus for easy and rapid implementation.

VALUE ADDED RESELLERS/ SYSTEM INTEGRATORS

There are four key elements to be considered in the evaluation of a system: (1) the user's needs and starting level of knowledge, (2) the custom application software capabilities, (3) the hardware design requirements, and (4) the availability of expert consultation and training to get you up to speed on the fastest learning curve with the minimum up-front investment of time and money.

The Value Added Reseller (VAR) or the Systems Integrator provide consulting services created by the development and demands of the new information and entertainment technologies. VAR consultants can be instrumental in analyzing what approach you will take as a budding computer artist; as a writer, producer or director who wants to visualize a script with an electronic storyboard; as a musician who wants to illustrate music and sound; or as a recording studio owner/engineer who wants to put the entire facility on the ultimate self-diagnostic computer aided design and engineering database.

In next month's MVP, Part II of the Graphic Advantage IBM-PC/AT and micro-mini animation systems. ■

Computer Hardware & Software Manufacturers Contact List

Apple Corporation
20525 Mariani
Cupertino, CA 95014

Beck-Tech
Claremont Hotel
Berkeley, CA 94705

Commodore-Amiga
1200 Wilson Dr.
West Chester, PA 19380

The Computer Colorworks
3030 Bridgeway
Sausalito, CA 94965

Dayna Communications, Inc.
50 South Main St.
Salt Lake City, Utah 84144

Hayden Software/Videoworks
600 Suffolk Street
Lowell, MA 01854

Island Graphics
One Harbor Drive
Sausalito, CA 94965

Media Cybernetics/Dr. Halo
1651 3rd Avenue
New York, NY 10128

Mindset Corporation
617 North Mary
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Tecmar, Inc.
6225 Cochran Road
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HARDWARE | SOFTWARE

Ampex Zeus 1 Video Processor

Unveiled at the 1985 SMPTE Exhibition (October 28 through 31, in Los Angeles), the Ampex Zeus 1 is a fully digital video processor which combines fourth generation time base correction technologies with unique video processing and variable motion capabilities. Compatible with the entire family of Ampex type-C VTRs, the Zeus 1 system is designed to meet the needs of the mid- to high-end broadcaster or post-production facility. According to a company spokesman the unit is "the first fully digital processing system to virtually eliminate picture hopping or blurring, associated with other picture correction devices during slow motion and program compression."

The system combines the following features into a single, compact unit: slow motion and program compression; bad color frame edit processing; full frame store capability; enhanced (adaptive spacial-averaging) dropout replacement; improved signal-to-noise (utilizing 4 x fsc 9-bit digital sampling); long time-constant velocity error elimination; digital operational controls; self-diagnostics; and multi-format availability (NTSC, PAL-M, and switchable PAL/SECAM). Zeus 1 is currently in production and first deliveries are expected in the fourth quarter of 1985.

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New Audio Analyzers from HP

Hewlett-Packard, of Palo Alto, CA, have introduced two products designed for fast, accurate analysis in the consumer and professional audio test market. Like their predecessor, the HP 8903A, but at a lower price, the new 8903B audio analyzer and 8903E distortion analyzer are programmable units which combine many functions into a single instrument. Included are: high performance AC voltmeters, fully automatic distortion analyzers, DC voltmeters, SINAD meters, and audio frequency counters. Some of the new features on the two units (not included on the 8903A) include a balanced audio input; two plug-in filter positions (available optionally: 400 Hz high-pass, CCITT weighting, C-message weighting, CCIR weighting, CCIR/ARM weighting, and "A" weighting); a lower noise floor, and RMS/average responding detectors.

The HP 8903B, which also includes an audio source (capable of swept measurements down to -90dB) is priced

at \$5,800. The more economical 8903E, designed for users who already have an audio source, is \$3,900.

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CD Sound Effects Library

Sound Ideas, of Toronto, Canada, has released what may be the world's first sound effects library available on Compact Disc. The 28 disc set, pressed at Polygram, contains over 3,000 stereo effects—all fully catalogued, and the CD medium allows for rapid access and precise cueing, as well as simplified storage and handling. The complete library is priced at \$1,450 (U.S.) and is now available.

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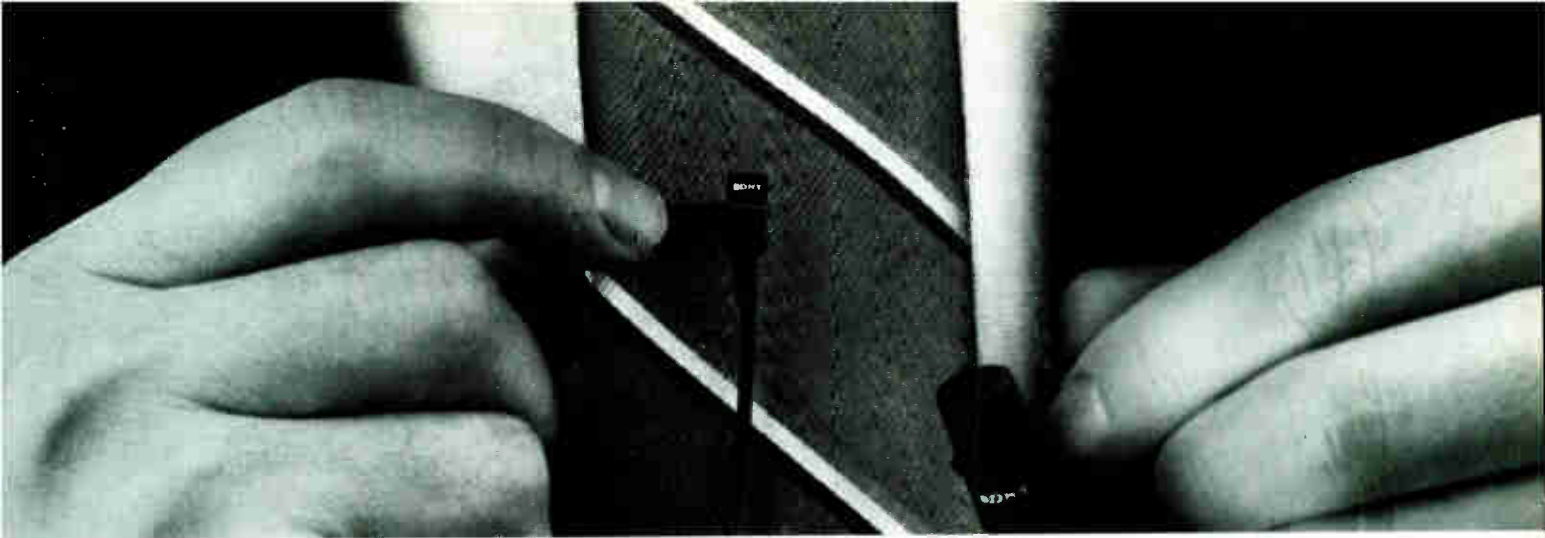


Auratone Three Channel Monitors

Auratone's Model 5MC, a unique three channel monitor speaker system for the video/broadcast and recording industries, is the equivalent of three Auratone 5C Super-Sound-Cube™ monitors in a three compartment enclosure (HWD: 5 1/4" x 16 1/2" x 8 1/2"). The 5MC may be mounted in standard 19-inch racks with optional metal rack ears, or it may be placed on consoles, desks or wall mounted horizontally or vertically. The 5MC was designed specifically for broadcasters to provide separate audio channels for a variety of feeds such as cue, program, emergency channel, talk back, news and sports. Excellent close field A-B comparisons of stereo-mono mixes may be made using the two outside channels for stereo with the center channel for mono.

Frequency response closely matches the Auratone 5C monitors (anechoic on axis response is ± 3.5 dB from 150 to 12.5k Hz). Shielded magnet structures greatly minimize image deflection on nearby CRTs. Impedance is 8 ohms and program power handling is 30 watts per channel. The 5MC is finished in all black textured vinyl and the black stretch fabric grilles are removable. Suggested pro-net price for the Auratone Model 5MC multi-channel monitor is \$159 each. The optional rack mounting kit is \$10.

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For one, we've taken our mics in a new direction with the addition of the Sony ECM-66 uni-directional. Its wide-angle cardioid pattern provides better off-axis frequency response than the classic pattern—while also providing an unprecedented level of isolation from ambient noise.

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We've made more of some good things, too. The new ECM-55, for one: the latest refinement of our successful ECM-50 series.

And we've expanded our line of accessories—with new color windscreens; pencil-type, safety-

pin and necklace-type clips; and a power supply holder that clips to your belt.

Sony lavalier microphones operate on either a single AA battery or phantom-power. You also have a choice between black or satin-nickel finishes; and XLR, pigtail or Sony wireless-compatible output configurations.

So to see (barely) and hear (very clearly) the results of Sony's refusal to rest upon its laurels, call your Sony representative: Eastern Region, (201) 368-5185; Southern Region, (615) 883-8140; Central Region, (312) 773-6000; Western Region, (213) 639-5370. Or write to Sony Professional Audio Products, Sony Drive, Park Ridge, NJ 07656.

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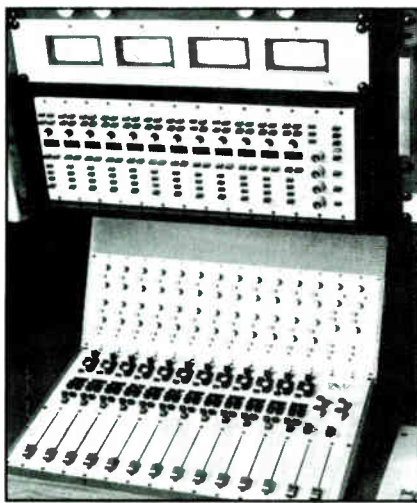
World Radio History



SONY
Professional Audio

YNH Audio Console

The YNH console Model ESC-02, designed for the video production and post-production environment, comes standard with two 32 x 12 routers, one for the fader section and one for the monitor section. This extremely compact, rack-mountable mixer accepts 16 stereo sources, with routers addressable from internal commands or RS-232 serial port. By dispensing with the



customary patchbays, the YNH console allows instantaneous crosspoint selection with four-character alphanumeric LED readout designations.

The serial controlled console is easily interfaced with edit computers, master control computers or any compatible serial bus for audio-follow-video switching, level control and audio dissolves. The console features precision Penny & Giles faders and three-band EQ with sweepable mid-range providing 16dB of cut/boost in each range. Four output buses permit simultaneous stereo and two mono mixes. Audio Intervisual Design, the board's exclusive Southern California distributor, will exhibit the YNH console at the SMPTE show in Los Angeles.

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Simon Systems 4 Channel Direct Box

The RDB-400 from Simon Systems (Sylmar, CA) is an AC powered, rack-mounted unit which provides four independent direct boxes for studio or stage work. Features include: totally active design (no transformers in the audio path); front and rear panel balanced XLR outputs; toroidal power supply for reduced hum and noise; speaker-level input pads; input overload LEDs; ground lift switches; and multi-position output selectors with three modes—"normal" for zero insertion loss; "line level" with infinitely variable trim; and an "attenuation" mode with stepped variable trim. The unit's output mode flexibility allows the conversion of +4dBm signals to -10dBm or vice-versa, and the RDB-400 can be used as a preamp, distribution amplifier, buffer or attenuator, as well as typical direct input applications. The RDB-400 is priced at \$895, and optional configurations are available.

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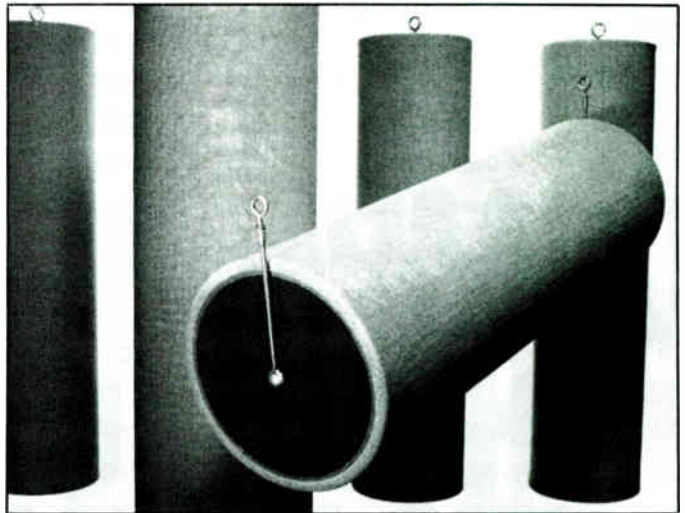
Aphex Studio Dominator™

New from Aphex Systems Ltd., (North Hollywood, CA), and unveiled at last month's AES Convention in New York City, the Studio Dominator is an intelligent three-band limi-

ter with a proprietary circuit which varies the limiting threshold. According to the manufacturer, the unit's unique "Transient Enhancement Circuit" increases the perception of transients while maintaining absolute peak limiting. Tunable crossover frequencies, plus high and low frequency drive controls allow the user to create different effects; and limiting can be pre-shaped to match the saturation characteristics of a particular medium for maximum signal to noise performance.

The Studio Dominator is designed for use in any situation where clipping is a problem, such as digital audio, disk mastering, video post-production, and optical film recording. The unit is available in both stereo (\$1,195) and mono (\$795) versions.

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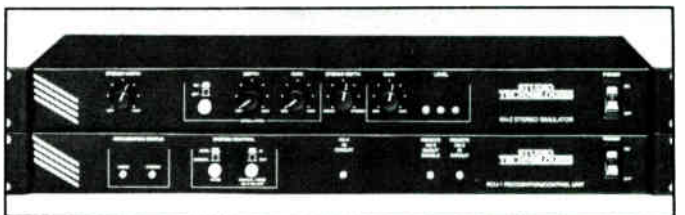


ASC Tube Corner Silencer

The Corner Silencer from Acoustic Sciences Corporation of Eugene, OR, is a new, patented, low-frequency sound absorber effective down through 45 Hz. The sturdy, three-foot-long cylinder weighs just eight pounds. Model 90 (9-inch diameter) provides 10 Sabines absorption for frequencies 90-400 Hz and Model 45 (11-inch diameter) supplies 15 Sabines absorption from 45-400 Hz. A 400 Hz crossover provides selective diffusion or absorption of mid and high frequencies.

Designed for studio, control room, or mobile unit applications, the Corner Silencer provides tighter bass, diminished room boom, improved low- and midrange definition, and easier EQing. Each unit has threaded end fittings for easy, versatile mounting, and ASC provides column bases, gobo carts, and wall and ceiling mounts for permanent or temporary installation. Suggested retail price of the Model 90 is \$149, and the Model 145 is \$199.

Circle #054 on Reader Service Card



Stereo TV Recognition Unit

Studio Technologies, Inc., of Lincolnwood, IL, have introduced their RCU-1 Recognition Control Unit, designed for use in conjunction with MTS television broadcast opera-

tions. The unit precisely determines and displays the mono/stereo status of broadcast audio programming and automatically switches a stereo simulator into the on-air broadcast chain upon recognition of mono. The RCU-1 employs VCA-based cross-fading circuitry for a smooth transition from true to simulated stereo. Extensive circuitry is used to allow ± 45 degrees of phase error (at 1kHz), and channel level difference of 10dB to still be recognized correctly.

The RCU-1 can also be used as a dedicated mono/stereo recognition device. Prior to broadcast, videotapes can be monitored to determine the actual status of the audio. The RCU-1 is designed as a companion device for the Studio Technologies, Inc. AN-2 stereo simulator. The RCU-1 is, however, compatible with simulators built by other manufacturers. List price for the RCU-1 is \$1,200.

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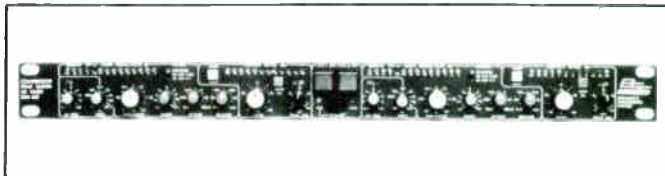
Yamaha REV7 Reverb

With a sophisticated combination of hardware and software, Yamaha's REV7 digital reverberator is capable of creating a wide range of sound effects, to meet the needs of sound engineers, musicians, recording studios, broadcasters, and film/video production houses. Effects are managed by six early reflection modes, with up to 99.9 milliseconds

of initial delay time and first reflection delay time. Precise tonal coloring is controlled by a three band parametric equalizer.

The REV7, priced at \$1,195, incorporates 30 instantly available preset ROM effects, and an additional 60 effects programs can be easily created, stored and instantly recalled. The Yamaha REV7 also incorporates a MIDI facility for selection of effects from keyboards and other MIDI devices.

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Soft Limiting for BSS DPR402

Brooke Siren Systems have announced the availability of a "soft limiting" feature on the DPR402 compressor/limiter/de-esser. The DPR402 normally provides a hard knee compressor and de-esser transfer function: reconfiguring the unit for soft-knee simply requires the addition of a resistor on the rear barrier strip. This change can be made to one or both channels of the DPR402 independently, and does not affect the other functions of the unit. Full technical details are available by contacting Jim Jacobelli at Brooke Siren Systems, 262a Eastern Parkway, Farmingdale, New York 11735, (516) 249-3660. On a related note, the suggested U.S. retail price for the DPR402 is now \$1,095.

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NOW FOR SOMETHING

Recording consoles sold today were designed over four years ago. They are patterned after designs that are a decade older. Think about how recording has changed since then. There were no synthesizer virtual tracks, no music videos, no MIDI, no VITC, and no requirement to better the noise and distortion of digital recorders and CDs. Today split monitoring consoles have gone the way of the brontosaurus, with in-line consoles soon to follow. What contemporary studios need is something completely different.

NEOTEK's new **ELITE** consoles meet the challenges of today's recording with a dual-channel design that sets the new standard for system flexibility, with Direct Digital Interface for universal logic control, and with sonic performance that's a step ahead of even other NEOTEK consoles.

FLEXIBILITY means more than having 32 effects sends and 60 line inputs to faders, more than freedom from the limitations of status switching and other antique ideas, more than having a four-way solo system and multiple mute groups. It is the ability to quickly and easily control these powerful functions that makes the unique dual-channel **Elite** today's most flexible console system.

DIRECT DIGITAL INTERFACE allows logic signals from audio/video editors, MIDI controllers, personal computers, and a growing number of studio devices with digital outputs to directly control channel and master mute groups of an **Elite**. Turning one channel off and another on can change levels, EQ, echo sends, and routing. DDI means that the **Elite** will follow the most complex editing, mixing, or composing session, locked to SMPTE code, without any further operator attention . . . without automation.

PERFORMANCE in the **Elite** comes from minimum path design and new hybrid and discrete circuits at all critical points, a new state variable equalizer, and new components selected for audio quality. There are no polar caps, no unity gain buffers, and no CMOS switches. Not even the limitations of IC op amps. A powerful CAD system as optimized routing and isolation. The result is that the linear response of the **Elite** has been extended several octaves wider than other consoles, with the payoff of unmatched sonic performance.

Join the Elite. Whether you chose one of the many stock models or a custom unit with A.K. disk-based automation or moving faders from Massenberglabs.

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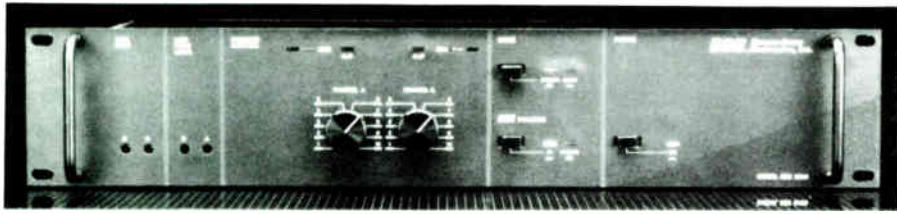
COMPLETELY DIFFERENT



NEOTEK

ELITE

World Media History



Barcus-Berry BBE 202R

by Jim Thomas

Have you ever walked into one of those high-class, high-priced professional audio stores and, after inspecting the mysterious black box known as the "Time/Space Modulator XQ6," asked yourself, "What will they think of next?" Well, here it is, folks, a new idea from a new company. It's called the BBE 202R Differential Load Reactance Compensator and it's being manufactured by Barcus Berry Electronics, a sister company of the well-known transducer manufacturer Barcus Berry. The 202R's name seems long and complex at first glance, but it was actually derived in a straightforward, common sense fashion. Fortunately, the theory behind the 202R and its operation is just as common sense and straightforward, as we shall see.

The front panel of the Load Reactance Compensator contains a power switch with red indicator light; a process/bypass switch with green/yellow indicator lights (one for each mode respectively); and a stereo/mono switch, also with green/yellow indicator lights for each respective mode. Also located on the front panel are four recessed potentiometers and two large rotary knob potentiometers. The recessed pots allow for user adjustment of the low frequency gain and line gain levels of each channel (one of each type per channel). The factory preset for the line gain level is unity with an input signal level of 0 dBm and the low frequency level is set to +3 dB at 50 Hz. The two large rotary controls on the front panel allow user control over the amount of signal processing (again, one for each channel) and each has a three color LED drive level indicator as well as a peak level indicator (which lights 3 dB below clipping). In order to fully understand just what these large rotary controls do, we must look into the theory behind the 202R.

Whenever a system incorporates an amplifier interfaced with a dynamic

speaker, several transduction problems present themselves. Ultimately we want a speaker to reproduce exactly what is put into it—a linear transduction of the electrical signal into acoustic energy. This would be no problem if the speaker presented a fixed, purely resistive load to the amplifier. Unfortunately, it doesn't. Retarded diaphragm acceleration due to the mass of the speaker diaphragm, voice coil reactance, back EMF generated in the voice coil, and nonlinear power transfer due to frequency dependent impedance changes are examples of speaker related signal distortion. Audibly, these problems manifest themselves as degraded transient response, low end muddiness, and reduced high frequency response. In multi-amped systems where the speakers are primarily operated in their optimum ranges, these problems are not as severe. However, the crossover networks utilized in these systems are subject to these same problems. As I said before, these distortions occur at the speaker/amplifier interface and this is precisely where the 202R can help.

The designers of the Load Reactance researched a wide variety of speakers and analyzed the nature and degree of phase and amplitude distortion presented by the speakers. This information was then taken and used to build a generic electrical model of a speaker. The effects of this model on an audio signal were analyzed, and from this research, methods of compensation were designed. The 202R uses these compensation circuits to offset the phase and amplitude distortion introduced by a dynamic speaker.

The actual operations performed by the circuitry are as follows: the signal is first divided into three frequency bands crossing over at 100 Hz and 1 kHz. The low frequency band is phase corrected and can be arbitrarily boosted at 50 Hz from 0 to +5 dB by adjusting the LF gain pot. The MF band is phase corrected only and the HF band is both phase

and amplitude corrected. The nature of the phase correction is built into the circuitry; the degree of amplitude correction is user variable via the large rotary front panel control. The amplitude correction is a form of dynamic compression/expansion based on the program material that happens to be present at any given moment. The circuitry looks at the ratio of HF to MF information and is activated when frequency band masking is detected. The degree of compression or expansion is user controllable, ranging from -5 to +12 dB. The processing level should be set while listening to the program material. This gain compensation is a dynamic process that takes place only when frequency masking material is present. The actual nature of the circuits performing these operations was not divulged due to the proprietary nature of the new technology.

The 202R is installed just prior to the power amp or transmitter in the signal chain. It is a 19-inch wide, 7-inch deep, 3-inch tall rack-mount box that consumes two EIA rack spaces when installed. Located on the rear panel are the input/output terminations and phone jacks for patching to an accessory Multi-Channel Interlock Control which allows for drive level control of eight channels with the twist of one knob. The 202R utilizes XLR connectors for balanced or unbalanced low impedance (22K ohm) input and regular 1/4-inch phone connectors for unbalanced high impedance (50K ohm) input. The output XLR connectors are designed to automatically switch from balanced to unbalanced line termination and 1/4-inch phone connectors are also available for use with unbalanced output lines.

The manufacturer suggests many applications for the Load Reactance Compensator, ranging from live sound to studio recordings. These include use in movie theatre sound systems, intercom systems, TV and radio broadcast chains, cassette and tape duplication systems, and more.

The live sound situation in which I tested the 202R incorporated a three-way, multi-amped speaker system. The total mix was processed through one channel while in the stereo mode and the results were impressive. Vocal intelligibility and presence improved dramatically, low frequency information sounded tighter, the drums became crisper, and the horns took on a brighter quality. There was a much larger

We, the undersigned, ask only
one thing of a piano.

Leonard Bernstein

Leonard Bernstein

André Previn

André Previn

Billy Joel

Billy Joel

Luciano Pavarotti

Luciano Pavarotti

Georg Solti

Georg Solti

Aaron Copland

Aaron Copland

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range of processing available than this particular situation called for and, as a result, a very fine line between just the right amount of processing and too much. Over processed sounds became very bright and fatiguing to the ear. The point at which this happened, however, was easily discernible and as long as this point was not surpassed, everything sounded great.

For the next test, the processor was installed into the recording chain of several live concerts ranging from classical to jazz. Stereo tapes were made so the total mix was processed through both channels of the 202R while in the stereo mode. Two MCI JH-110 machines were used to record the concerts: One received the processed mix and the other received the same mix without the processing. A-B listening tests were performed with impressive results. Strings, brass, woodwinds, and percussion all sounded more present and more distinctive on the processed tapes. The processed tapes also sounded much more natural than unprocessed tapes with added equalization.

The final test involved listening on several home stereo systems, to check out the processor with different amplifier/speaker combinations ranging from the expensive to the inexpensive. In all cases, the system sounded much more pleasing, with the most noticeable difference being heard in the lower quality systems. Interestingly enough, I found myself turning off the loudness buttons and flattening out the tone controls and equalizers in systems that had never sounded good before without some type of tone adjustment. For my own personal system, the 202R was the answer to problems that I had been trying to solve with a graphic equalizer. The system has never sounded so good! (Unfortunately, the processor is only on loan.)

Throughout the tests, the BBE 202R Load Reactance Compensator sounded clean and quiet. Overload situations were never encountered and plenty of processing was available at all times. In all cases, the processor improved the sound without adding the coloration problems experienced with equalizers. As far as I can tell, the 202R does everything that the manufacturer says it does, but you don't have to take my word for it. Several people in the industry have used the processor and the results can be heard on the following jazz releases: *Conversation* by Subramanian on Milestone records; *Classics* by Freddie Hubbard on Fantasy records; *So Long Blues* by Red Garland on Galaxy records; and *Further Delights* by Hank Jones and Tommy Flanagan on Galaxy records. The processor was also used in the live sound system for the Grammys and may be

heard on the current Beach Boys' album and Buddy Rich's new digital release.

This particular model, designed for commercial use, lists for \$1,495. A consumer version of the Load Reactance Compensator is available in the form of the BBE 2002. Also soon to be marketed is the BBE 302, a version which operates in an active feedback loop between speaker and amplifier where it can initiate instantaneous compensation of the signal. According to the manufacturer, the 302 is even more remarkable than the 202R. I can't wait to hear it! ■

Tascam

MS-16 Recorder and M-520 Console

by Joe Van Witsen

The line that delineates professional audio production equipment from "semi-pro" and "home" gear is rapidly disappearing. This trend is being motivated from both ends of the spectrum. Professionals are looking for more compact, lower maintenance products to place in tight production environments that simply did not exist ten years ago. And through advancements such as large scale integration, the price/performance ratio difference between high quality professional systems and low-cost equipment grows smaller every day. This has already occurred in the computer and photographic fields. Technology has become so sophisticated and economical, that much of the attention once required to operate professional equipment is now integrated into the product itself, usually through advanced micro-electronics and user friendly, almost transparent software.

MS-16 Recorder/Reproducer

The Tascam line of multi-track recording tools exemplifies this more-for-less philosophy; and the MS-16, their latest entry in the professional recording market, exceeds Tascam's prior model, the 85-16B, yet at a fraction of its price. The MS-16 is a 16-track recorder using the Tascam-established one-inch tape for-

mat. It has been designed especially for time code based synchronization.

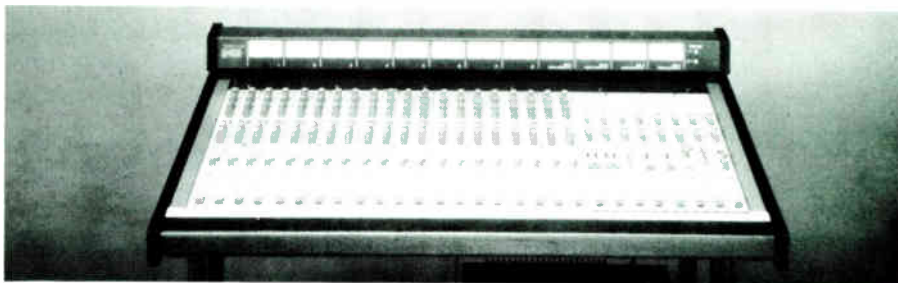
The tape path is an "omega" wrap, derived from its popular 50 Series of 2-, 4-, and 8-track machines. The omega wrap is extremely smooth and stable while virtually eliminating tape slippage during cueing and shuttling. The transport ballistics have also been tailored for synchronization to provide rapid and positive lock-up. Tape tension is controlled by a microprocessor controlled reel servo system. The capstan is servo controlled by a large, phase-lock loop, direct-drive, brushless motor. The ceramic capstan shaft reduces speed variation problems.

"Modular" is the key word in the MS-16's design. The transport and electronics are two separate units that can be placed in a roll-around cart, rack mounted, or placed on a counter top. Several invaluable features are incorporated into the rugged transport. Two pitch controls provide coarse adjustment $\pm 15\%$ and a fine adjustment of $\pm 0.7\%$. A spooling mode winds the tape at 80 ips for smooth packing. Return-to-zero and search-to-cue functions provide automatic shuttling to those points. A precision aluminum splicing block is positioned just beneath the head assembly.

The VU meter panel is mounted on the front of the electronics unit. It swings down to allow access to all the electronics which are mounted on removable PC cards. The meter panel is also removable to allow remote placement. The electronics provide wide frequency response with excellent transient and phase characteristics. The amplifiers are direct coupled, with the first stage of the reproduced electronics consisting of a pair of ultra-low noise FETs, eliminating the need for a coupling capacitor between the heads. The bias section uses a master bias oscillator in connection with a bias amplifier for each track. This provides silent punch-ins and punch-outs.

The improved head design provides very smooth response. The assembly uses three heads: erase, record/sync, and reproduce. A useful feature of the record/sync head is that in sync mode it provides reproduction of equal high quality to the reproduce head. This means that, during overdubbing, the

Tascam M-520





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

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

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

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



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audio in the cue headphones is of the same quality as a straight playback off the reproduce head. This is a tremendous time saver because the engineer does not have to continually check a take because of differences in the sync head's response, allowing more concentration on the performance.

The MS-16 was designed specifically for time code applications like audio-for-video/film sweetening and layback. In addition to the stable omega wrap tape path, the unit provides a lifter defeat mute feature and synclock insert function which assure uninterrupted time code playback. The lifter defeat mute feature mutes tracks one through 15 during search to cue modes and when the unit is controlled by an external time code synchronizer/controller, leaving track 16 open for playback of time code data. Synclock allows the time code track (track 16) to be played in the sync output mode regardless of output select switching. This prevents the operator from accidentally putting the time code out of sync.

A SMPTE controller plug connects the MS-16 to a variety of synchronizer devices manufactured by Adams-Smith, Audio Kinetics, BTX, Convergence, Fernseh, ISC, GTC, MCI/Sony, United Media, Videomedia, and similar systems. The SMPTE connector reports the machine's tape speed, direction, and play mode to the controlling device. The controller provides commands for play, record, wind, stop, etc. along with a capstan reference signal

to maintain synchronization. This SMPTE plug is a 38 pin connector which can also interface the MS-16 with the optional AQ-65 Autolocator/session controller.

The AQ-65 Autolocator is a compact autolocator and tape transport controller. It provides a number of standard controls and functions along with some innovative features previously unavailable on such devices. It can locate any point on the tape by hour, minute and second, loaded in by a numeric keypad and destination LED display. It features a ten point memory which is either loaded by the keypad while the tape is stopped or rolling, or by using a direct store key while the tape is rolling.

A return-to-zero key brings the tape back to the zero point that has been loaded in. A preroll key allows the tape to be cued to a location before the desired punch-in point. The length of the preroll is programmable from the keypad. Preroll is a standard function in video editing. This is the first time it has appeared in an ATR autolocator. A repeat key allows automatic looping between two points on the tape with the option of punching out automatically at the desired out point. A shift function allows a loop to be created between a memory location and an earlier point on the tape. A "shift" feature transfers locate time to tape time in order to create an offset. The AQ-65 can also be used with Tascam Series 40 and 50 tape machines. A factor selector on the

AQ-65 matches the autolocator to the ballistics of the particular tape machine in use.

Two optional DX-8DS 8-channel dbx units provide 16 channels of simultaneous encode/decode. The dbx units are powered by the MS-16 which they have been specifically designed to operate with. When connected to the MS-16, their operation is completely automatic, working as an integrated system. The dbx provides more than 30 dB of noise reduction per channel and a dynamic range of 100 dB.

M-520 Mixing Console

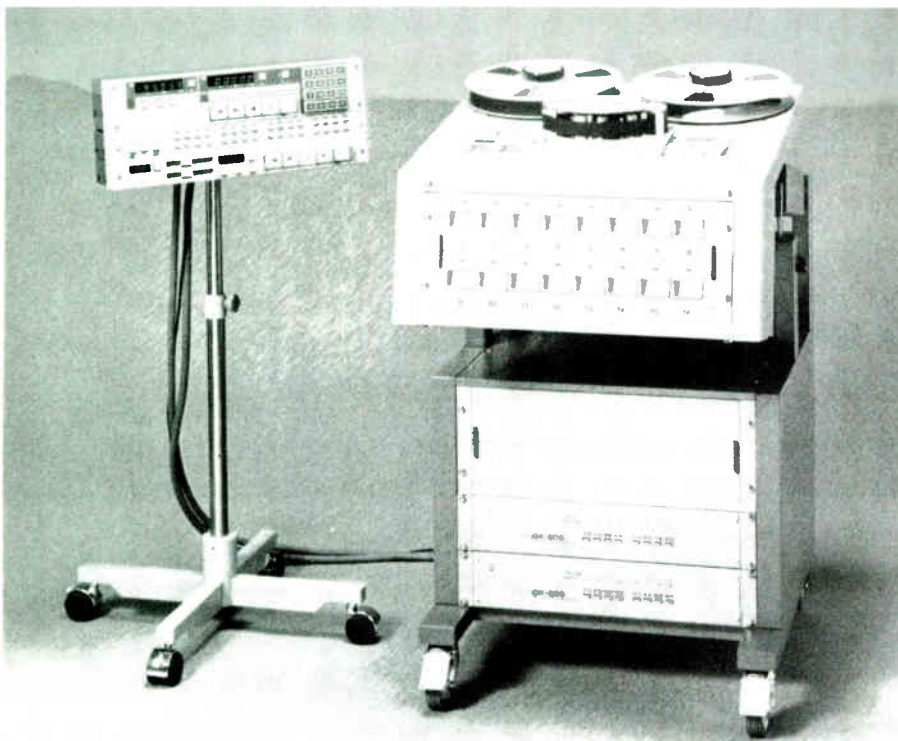
The Tascam M-520 mixing console provides 20 input modules, eight output buses, a 16-track monitor section and four built-in auxiliary systems allowing a number of different functions such as four mono mixes, two stereo mixes or one stereo and two mono mixes. The console is designed to provide a variety of sends and feeds with many patch points throughout the signal path. The Tascam design team kept user flexibility in mind.

The input modules have an input selector switch allowing mike, tape or instruments, with separate trim pots for mike and line levels, so the operator can preset proper trim levels at the beginning of a session, and merely switch inputs as needed without having to continually reset the trim. A phase reversal switch on each input is also included. Each module's mike input is a balanced, three-conductor transformerless circuit, along with an individually switchable, on-board 48-volt phantom supply for condenser microphones and accessory powering.

Although it would be useful if the board had 1/4-inch phone jacks on every input channel instead of RCA-type pin jacks, the M-520 does provide 1/4-inch inputs on channels one and two, which function as a direct box and can be assigned to the appropriate track. The increasing use of drum boxes and MIDI-interfaced synthesizers would make 1/4-inch inputs on the other channels a more flexible and convenient addition. Input modules three and four have phono inputs instead of instrument inputs. These permit the use of a stereo turntable without the need for a separate phono preamplifier. These phono inputs provide an RIAA equalization curve with an impedance of 50k ohms. Input modules five through 16 have line inputs for line level inputs such as synthesizers.

Each input module contains a three section semi-parametric sweep equalizer. The sweep ranges are: 50-500 Hz, 100-5k Hz, and 2.5k-15k Hz. These three ranges also contain their own gain controls providing boost or cut of

Tascam M-16



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20 dB. A pre-fader listen (PFL) switch allows the pre-fader signal to go directly to the solo circuits, replacing what is on the monitor select. Eight output bus assign switches are placed above a pan pot which pans from the odd output buses to the even output buses. A "channel on" switch disrupts the signal flow to the pan pot and the post position of the aux one through four signal select switch. The solo button causes the input signal to go directly to the solo master volume control, then to the stereo master A left/right outputs. The input faders are smooth, long throw types.

Four mono non-dedicated buses provide effects send, echo send, secondary monitor or headphone cue. Two selector switches provide for pre-fader, post-fader, and tape in for independent cue mixes. Each aux bus has a dedicated mute switch and gain control.

Eight straight line faders are provided in the master section, one for each bus. Each bus master controls all signals assigned to that bus from the input channels, program access send/receive or the program sub in. Each of these buses has two output jacks to allow it to be used with a 16-track recorder.

Sixteen "monitor bus/off/tape" switches are provided. In the bus position, a signal at the program bus output is routed to the monitor level and pan pots. In the tape position, it routes signals from the multi-purpose tape into the monitor level and pan pots. A & B stereo slide faders adjust the overall level of the monitor select.

The built-in talkback mike can be assigned to different outputs. Three test tones are produced by a tone oscillator: 40 Hz, 1kHz, and 10kHz. Four slate/test tone switches select output to bus, aux 1/2 and aux 3/4, as well as talkback send to stereo master B left/right outputs.

Twelve large VU meters respond to average levels. Each has a peak LED which flashes at 10dB above 0 VU. Meters one through eight may be switched in groups of four to display external signals or the internally routed signals. Meters nine through 12 may be switched in groups of two to display aux 1/2 and aux 3/4 or stereo master A/stereo master B.

Final Evaluation

Both the MS-16 recorder/reproducer and the M-520 mixing console performed beyond our expectations. The sonic performance of both units together is of truly professional calibre. They interface to create a compact, lightweight, integrated system. The MS-16 is a quiet, reliable and sturdy machine. The AQ-65 Autolocator saves considerable time in the studio with looping and preroll features. And the M-520

mixer is very easy to learn and certainly flexible enough for the most demanding 16-track applications.

The system is simple to use and straightforward in design. The documentation that Tascam provides with the M-16 and M-520 is clear, concise, and refreshingly graphic. The manuals are profusely illustrated with diagrams, charts, and graphs, in addition to system engineering diagrams keyed to specific user applications and comprehensive engineering data.

The two units would be well suited as the basis for an economical, yet flexible artist home studio arrangement. Their performance characteristics and pricing have not been surpassed by other manufacturers. They are a unique entry in the marketplace. ■

TEAC/Tascam Corporate Profile

TEAC, the Tokyo Electro-Acoustic Company, was formed over 28 years ago by Katsumi Tani, who today at the age of 70 is still actively involved in the company's operation. TEAC's track record for cost-control and reliability has helped it to become a major supplier of sub-systems to other manufacturers. In fact TEAC, along with Sony Corporation, was co-developer in the production of the 3/4-inch U-matic videotape recorder in 1966. TEAC also designed the first Japanese made disk-cutter. The company's experience continues today through its association with NASA and the space shuttle program.

The TEAC product line's design philosophy is geared to providing equipment for the recording, storage and retrieval of information. This includes audio and videocassette, open reel, floppy, and Winchester disk drives for the consumer, professional and industrial markets.

Tascam, TEAC's professional audio subsidiary produces products for broadcast and production applications, such as audio mixing consoles and tape recorders, for music recording, sound reinforcement and on-air installations. To insure that the specific needs of the professional applications are paramount in the design procedure, the company has dedicated engineering groups dealing with the unique design intricacies of this market.

—Lou CasaBianca

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February

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Computers in Production

March

Southeast Studios
European AES Edition

April

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May

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Digital Recording Supplement

June

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July

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August

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September

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—FROM PAGE 43, COLNOT-FRYER

an ad, and they would be asked to execute that concept musically (their recent work for Levi's is an example). Second, a client may already have lyrics to a spot, but no music. In this case, Colnot-Fryer would supply the tune in whatever style the client desires (funk, R&B, etc.). Finally, they might be asked to score film.

To take on the tasks that come hurtling through the door everyday, Fryer has amassed a formidable collection of weaponry. Designed around the principle that all they really need besides the synthesizers is a multi-track tape recorder, devices for inputting it, and a small mixer for editing purposes, Fryer and Colnot were able to keep things economically in line by not having to dish out for a huge audio console (final mixing is done out-of-house) and an acoustical room with iso booths and all of the other goodies common to standard studios. Everything necessary to Colnot-Fryer's work fits into one room, is completely modular, and is MIDI interfaced. One person can disassemble the entire works and rearrange it in two hours. Largely supplied by Gary Gand of Northfield's Gand Music & Sound, the electronic wonderland that surrounds Fryer each day, includes an advanced assortment of gear such as a Sequential Circuits T-8, Roland MKS 80, PPG Wave system, Yamaha DX7, Fairlight CMI, Oberheim Xpander, Minimoog, myriad onboard effects, equalizers, Linn 9000, Simmons drum synth rack, and an assortment of things that are known only to Fryer. SMPTE time code is supplied by a Roland SBX 80 generator, while everything is put down for the permanent record on a 2-inch MCI 24-track tape recorder with autolocator. Since things have been kept as simple as possible, Fryer can easily act as producer, player, and arranger all in one, and insure that the synthesizer sound remains clean.

Once set loose in his electronic playpen, Fryer starts pushing buttons, grabbing wires, and throwing around floppy disks with the zeal of a 13-year-old left alone with a stack of his dad's back issues of *Playboy*. Like people who own state-of-the-art home stereo systems, half of the fun of Fryer's gadgetry is updating it and buying more. For that reason, NAMM shows for Fryer are like Christmas and his birthday, rolled into one.

"Part of the reason for our success is the fact that standard studios don't have the time or money to keep everything up-to-date when it comes to a healthy collection of synthesizers," Fryer says as he demonstrates some of the sampled sounds stored in his Fairlight CMI's brain. "We fulfill a

specific niche in the market that I don't believe many people have really gotten into yet."

Fryer is constantly experimenting with sampling. It's not unusual at all to see him outside kicking over garbage cans for the benefit of his tape recorder, or buying up handfuls of exotic bird whistles while roaming the side streets of Paris that will later be heard on tape. "I like to sample a sound, and then do strange things with it," he says. "Sometimes, I'll loop what I've got in funny places, or maybe I'll splice the sound of a bow being drawn across a string to something totally different. Percussive sounds obtained by walking around the house and grabbing stuff out of drawers and beating on things is also fun. It sounds stupid, but put it on a track, and there's a complexity to it. In a sense, you can sample anything, but eventually you'll discover that only certain things work."

Fryer has created sounds with his synthesizers that range from scissors snipping cloth to full-blown orchestral-type treatments. To the casual observer, it may seem that there are no limits to what a synthesizer can do in the studio, and to a large extent that's true. For the uninitiated, however, Fryer issues the following warnings: "One of the limitations I've found with doing everything with synthesizers is that there is no such thing as a demo. If I give a client a bass sound, that's the actual bass sound, not me playing bass on the piano—there's no difference between the rough draft and the final thing. Another problem is that when a client hears something he doesn't like and wants you to change a rhythm section or something else major, I can't just have the engineer, bassist, and guitarist do it all again at once and fix it in 30 seconds. I myself have got to physically go back and change each part individually, which is certainly time-consuming and not very economical."

It almost feels threatening when you stop and consider that Colnot and Fryer can solve creative, arranging, writing, and production problems with nothing more than a small room full of electronic hardware. Causing further alarm are the Clio and Sammy awards which litter the place, and the others that are sure to follow. Relax, though, solace can be found the next time you see one of those futuristic Levi's ads on television with the sounds bordering upon the surreal. . . it may have originated with something Fryer sampled while rummaging around the nether regions of his kitchen drawer. An attitude like that helps bring things down a little closer to Earth. ■



ALLIGATOR RECORDS'

BRUCE IGLAUER IS LIVING ON BLUES POWER



(Top photo) The Alligator Records gang. Front (L-R): Mindy Giles, Bruce Iglauer, Lisa Shively. Rear (L-R): Andy Gerking, Bill Wokersin, Pam Hall, Hilton Weinberg.

Alligator's "Blues Queen," Koko Taylor.



PHOTO: CHARLES CHERNEY

by Blair Jackson

"I'm a really bad guitarist. I've been playing for years and years and haven't improved one iota. I've also produced about 40 albums, but I can't read music, I have little technical knowledge, and I don't know theory."

You might say that Bruce Iglauer is a little on the modest side. OK, OK, all his claims of personal ineptitude are grounded in something approaching the truth. But the fact is, Iglauer is at the center of one of America's most encouraging music business success stories. As the founder and head of Chicago-based Alligator Records, Iglauer has been a key figure in keeping the legacy of the Chicago blues alive around the world, and he's given exposure to dozens of worthy blues and roots music artists who might have languished in obscurity otherwise. Aside from helping put the likes of Koko Taylor, Albert Collins, Son Seals, Hound Dog Taylor and Lonnie Brooks on the map, Alligator has also put out outstanding disks

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—FROM PAGE 97, ALLIGATOR

that have helped revive the careers of acknowledged greats like Johnny Winter, Roy Buchanan, and Lonnie Mack.

The great Muddy Waters told me during an interview in the late '70s that he'd never been rich, but he was happy because "I've always been able to play my music, always been able to make a

Recent Alligator signee Lonnie Mack.



PHOTO: LONE STAR SILVER

record here or there, and always had enough to buy myself a T-bone steak and keep my family livin' pretty nice." By those standards, Alligator is truly flourishing. Certainly, many of the musicians who have recorded for the label still exist at or below the poverty level, but the fact is, several artists in the Alligator stable are currently thriving and the company itself is what you might term a "hot label"—not quite in the same league as Windham Hill, mind you, but definitely on the upswing.

For Bruce Iglauer, it's been a long, sometimes difficult road from a comfortable, white section of Cincinnati to the sweaty clubs of Chicago's Southside, to learning the intricacies of the record business. "I never really set out to 'be a record company,'" he says, obviously still a bit mystified by the events of life. "It all sort of just... happened."

Iglauer wasn't really exposed to black music of any kind when he was growing up. "The first record I heard after 'The Little Engine That Could' was probably *Oklahoma*," he says. But in

the early '60s, like many young people around the country, he also became enamored with folk music. By 1966, he was a self-described "folk purist" who sometimes traveled hundreds of miles to attend folk festivals. It was at these gatherings that he got his first taste of raw folk and country blues—at the University of Chicago Folk Festival in 1966, young Iglauer was captivated by the likes of Mississippi Fred McDowell and Sippie Wallace. Later that year, at

the Mariposa Folk Festival up in Canada, he heard Sonny Terry & Brownie McGee and Walter Horton. (Ironically, both Horton and Terry & McGee would record for Alligator years later.)

As his exposure to the blues increased, Iglauer found himself more and more drawn to the passion inherent in the genre. He befriended a man named Bob Koester, founder of the Delmark blues label, and used to hitch to Chicago to be with him. Eventually, he even worked as a shipping clerk in Koester's store, the Jazz Record Market. "He was really something of a father figure to me," Iglauer says. "He taught me a lot about the blues, of course, and I got my first real exposure to the record business through him, too."

With Delmark (and Arhoolie, the California-based blues/ethnic music label) as obvious inspirations, Iglauer made his first tentative venture into the world of making records when he decided to cut an album with one of his favorite musicians on the Chicago blues scene, Hound Dog Taylor. Using

—PAGE 200

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OVERCOMING THE "NO-COAST" BLUES

NORTH CENTRAL RECORDING

by Linda Johnson

"There are a lot of things going on out here in the Midwest, but it's not necessarily stuff that the everyday rock and roller is going to want to read about." So says Jerry Mills of Flanner's Pro Audio in Wisconsin. Indeed, our recent check-up on the Midwest recording scene revealed a healthy group of studios on the industrial/commercial front—several have expanded and upgraded this year—while the music community has seen a decline in record activity. When the music recession hit a few years back, North Central studios weren't affected as crucially or as quickly as those on the coasts; similarly,

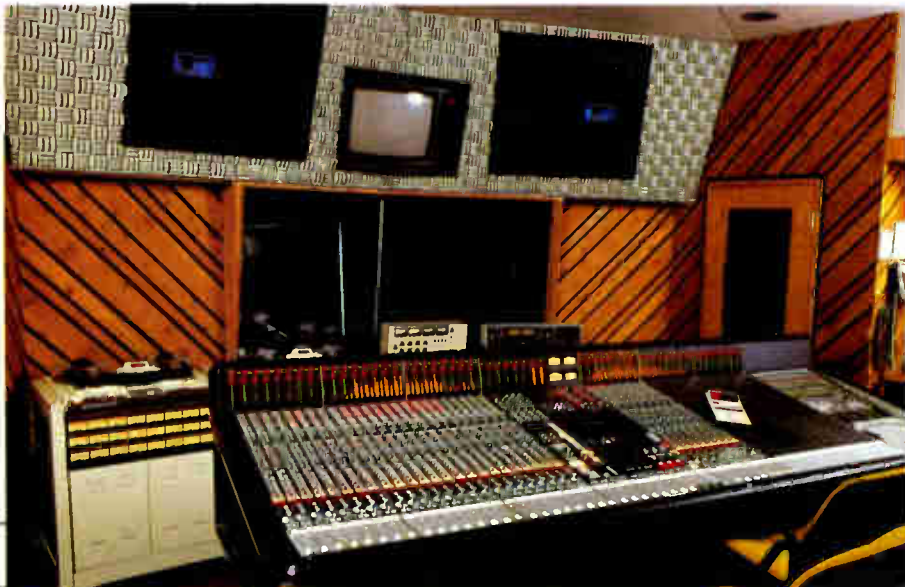
Streeterville — The Finishing Suite

the resurgence of business today seems to be taking some time to reach the Midwest. Nevertheless, with the help of local studios, and organizations such as the Chicago Music Coalition, the Midwest Music Expo, and the Chicago Chapter of NARAS (see accompanying piece), the music scene is slowly but surely getting back on its feet again. Meanwhile, the industrial and commercial markets continue to flourish throughout the Midwest.

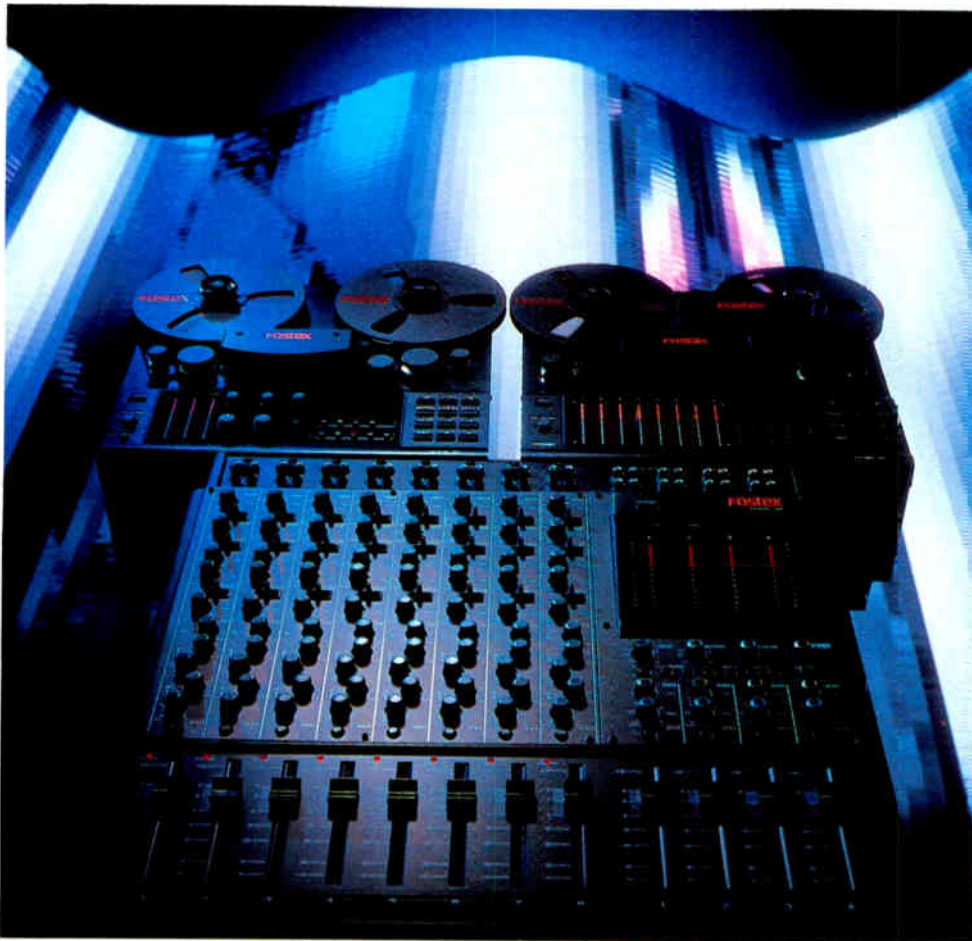
In an effort to strike a balance between these markets, Streeterville Studios in Chicago, one of the area's largest audio facilities, recently added three new 24-track rooms (bringing their

—PAGE 103

A film scoring session in one of Universal Recording's 19 studios.



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PHOTO: PHIL MOLOTTIS

MARTY FELDMAN MAN WITH A MISSION

"I promise to make Chicago the recording center it once was," says Marty Feldman. "And Chicago will become the next music heartland of America!" As a key man in a music culture that generally gets what it demands, he has continually provided the right chemistry for success. In the past 18 years, 250 commercially released albums have been recorded under Feldman's aegis. Thirty-one LPs went gold or platinum for an array of artists that includes: Jan Hammer, REO Speedwagon, The Eagles, Willie Dixon, Ike and Tina Turner, Frank Zappa, Styx, The Ohio Players, Tom Scott, Corky Siegel, Vic Damone, Weather Report, Heart, Rod Stewart, and about 50 other top names.

Today, Marty Feldman is not only owner of Paragon Recording Studios, he is also the newly-elected president of the Chicago chapter of NARAS. In the course of completing his mission, he has been encouraging communication between grassroots and formal groups. "The Chicago music industry needs to implement cooperation, not competition," says Feldman, and local forces agree. George Solti, director of the world-renowned Chicago Symphony Orchestra, has agreed to help in some upcoming surprises. Dan Lavorini of the Chicago Music Coalition has been meeting with vocal NARAS mem-

bers, like Jerry Soto, to bring about a spirit of unity. Ever. Mayor Harold Washington is getting into the act by paying a city tribute to NARAS' new polka Grammy.

Can Feldman pull off his mission? A look at his past reveals a flexible, multi-talented organizer. He's raced cars and mastered scuba diving. In the early '60s, he played drums professionally with jazz artist Joe Daley, and later toured Europe with Stan Getz. Eventually his technical curiosity won out and he delved into the world of recording engineers under the tutelage of Malcolm Chisolm at the now defunct Chicago Sound Studios. (Not to be confused with Sound Studios which is still active.) Soon he found himself editing film for television's *Wild Kingdom*. But when he opened Paragon Studios in 1967, he was a sound effects specialist with a mono recorder.

Eventually he built up a loyal clientele and Paragon evolved into a 24-track Studer- and 3M-equipped studio with three production and duplication support rooms. The mixing consoles are custom-made and Feldman has plans for a new portable console that producers would be able to carry with them and plug into mainframes of different studios. After 18 years, Paragon has assembled a collection of over 200 microphones, but Feldman still has to "fly a special mike in" if a client has a particularly obscure favorite. He has a reputa-

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—FROM PAGE 100, N. CENTRAL

studio count to seven) in hopes of better serving the needs of local musicians. "We wanted to even out our audio/video with our music services," says Frank Agnello, "and to move the level of musical production in this town to a new plateau." Streeterville works extensively with locally-based Alligator Records, cutting such artists as Johnny Winter, Roy Buchanan, Lonnie Mack, and Stevie Ray Vaughan. But, Agnello acknowledges that commercial work is their mainstay. "We're doing more finishing for TV than ever before," he says. "We made a commitment to this type of work, as is evidenced in our recent purchase of two SSL consoles." Audio sweetening and A/V work for such clients as Coors Light, Bud Light, Sears, and McDonald's, continues to keep Streeterville in good health.

Murray Allen, president of Universal Recording Company in Chicago, is to the point about the focus of his studio: "Everything here is aimed toward post-production for video, or advertising work, because they're both much more predictable than the record biz." As one of the largest facilities in the country with 19 studios, Universal spent over \$700,000 on equipment alone this year. "We bought lots of toys," understates Allen, "like a computerized film chain, digital 2-tracks, AMS, Lexicon, and tons more." Several of Universal's studios are already equipped with BTX Shadow and Softouch synchronizers, various digital machines (including a 32-track recorder), for work on such projects as 50 percent of all the Olympics commercials seen on TV last year. Allen concludes that Universal will continue to work on such projects, excelling in the world of video post-production and advertising.

Formerly an 8-track media production room and cassette duplication business, Jor-Dan Studios of Wheaton, IL, took a major gamble last year when they upgraded by building an all-new, two-room facility designed by acoustical wizards Jack Edwards and George Augspurger. Studio co-owner Dan Zimbelman says he took a "no compromises approach" to the audio chain in the 24-track room by selecting Studer recorders and installing an all-discrete Neve 8058 console in a 28x16x28 configuration. Zimbelman adds that the board originally came out of a studio in Spain, and was shipped to England last year to be completely refurbished by Mr. Rupert Neve. Apparently, all this attention to detail has paid off, as Jor-Dan has since attracted an impressive roster of clients, ranging from Survivor (who cuts basics for the *Rocky IV* title cut) to Grateful Dead leader Jerry Garcia producing the Franken & Davis band's (Badmouth) score for the Colum-

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Over at Chicago Trax Recording, engineer Steve Scapperi says that they have plans to move into a larger facility this month, closer to downtown, in hopes of attracting more jingle business. The two new rooms were designed by Doug Jones, and will be equipped with state-of-the-art machinery, including Harrison consoles, digital reverbs, Akai samplers, and more. The studios will be used for both jingle and record work, according to Scapperi, who adds that during the day, they're currently very busy with commercial work for McDonald's, Coca-Cola, and Ford, and at night, artists such as Ministry and Amy Hart have been in to cut tracks for their new albums.

Marty Feldman of Paragon Studios in Chicago reports that "business has been booming like crazy!" An even balance of jingle and record work is keeping his facility on its toes these days, with such projects as cutting tracks for Jim Kahr, and the Conway Brothers, and jingles for McDonald's and Prestone anti-freeze. With the recent purchase of a SMPTE interlock system with 3/4-inch video, Feldman adds that he likes the idea of video sweetening taking place in recording studios rather

will be video-equipped. Zenith/dB Studios recently completed work on two feature-length films, *Pink Nights* and *Under the Biltmore Clock*, as well as doing the automated dialogue replacement on *The Naked Face* and *Grandview USA*.

Just outside of Chicago, Studio Media in Evanston recently installed plenty of new equipment, including Threshold power amps, two Trident consoles, digital reverbs, and a rented Mitsubishi X-80. Benji Kantors notes that business is indeed going well. "Commercial work is on a real upswing. Everyone is expanding," he says. "The music industry is beginning to pick up as well." As a result, Studio Media's work is divided between demo/record and commercial/industrial projects. Kantors adds that they're doing quite a bit of work with local labels: Flying Fish, Pausa, Sugar Hill, Fever, Enigma, and Quaver. Though his studio does some audio sweetening now, Kantors says that a video lock-up system is next on his list. "We'd like to get into more post-production," he concludes.

Ken Kosakowski of Milam Audio in Pekin, IL, notes an increase of synchronizer sales to studios and production companies throughout the state, since



Audio Com — Toledo, Ohio

than at video houses. "We each should handle our specialties," he says.

Business beliefs differ slightly at nearby Zenith/dB Studios, where nearly every type of work takes place in their nine-room facility, from demos to film mixing to industrial work to radio/TV commercials. "We're a full-service studio," says engineer Chris Field, who adds that they will soon expand their video capacities, and are planning the construction of another room which

Sony recently delivered the Syncmaster system to his store. Audio Kinetics, Tannoy, Soundcraft, and Sound Workshop consoles are also selling well, says Kosakowski, noting that sales on lower priced/high feature consoles are definitely taking up a lot of his time at work.

Due east in Toledo, OH, Audio Com reports an increase in business for their two 8-track studios. Committed exclusively to industrial/commercial work,

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Circle #078 on Reader Service Card

—FROM PAGE 107, FELDMAN

stimulate recording activity in the area," he says. "And we must raise the standards of the product that represents Chicago." In this spirit, CMC has a committee of music industry professionals evaluate cassette tapes of aspiring talent. For a \$10 donation, they'll even give professional feedback on cassette tapes from anywhere in the country. (Interested parties can send tapes to: The Chicago Music Coalition, P.O. Box 41069, Chicago, IL 60614.)

The money stays in Chicago, but the feedback might just help someone get a deal in New York.

Probably the best way to anticipate Feldman's leadership of Chicago's new music team is to look at the way he runs his studio. "I don't heavy-hand the artists," he says. "The purpose of the studio is to support great performances with service and preparation." He does anything to achieve the desired result. For example, when Rod Stewart wanted a "church sound,"

Feldman talked a nearby Episcopalian minister into letting him run 1,000 feet of cable out a studio window and into a church aisle to record some vocals.

Feldman says he uses a "boutique approach." He constantly upgrades and improves his main studio rather than building a chain of adequate offshoots. A stint at Trident Studio in London gave him a chance to develop a European "make the best of what you have" outlook. But he does seem to have a lot already, and his close contact with the national officers of NARAS puts him in an ideal position to promote Chicago. "The Grammy Awards ceremony on CBS was number two in the ratings last year," he points out. "Only the Superbowl beat us out."

Although Feldman's Paragon Studios has had records in the Top Ten for six years straight, he intent-

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"Most people don't even know Gauss speakers exist," says Jim Martindale, Engineering Manager of Apex Systems Ltd. "I live with sound at work and at home. At Apex, we specialize in products that make sound better. So, I'm really critical of sound quality and demand dependability. That's why I like and use Gauss speakers."

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These comments were unsolicited and made by Mr. Martindale who purchased the Gauss speakers he uses in an elaborate sound system which supports Cinemascope movies, VHS Hi-Fi video, compact discs, stereo TV and "normal" stereo.

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Circle #072 on Reader Service Card

(Right to Left) Marty Feldman, president, Paragon Recording; Robert Irving III, producer



ly wants to build up the entire Chicago music scene through NARAS. A number of seminars are being planned, with guests like Phil Ramone on the agenda. There is even talk of an informal "NARAS niteclub." As president of the Chicago chapter, Feldman doesn't feel that he runs an exclusive club. He sees it more as a means to acknowledge and promote creative achievement. "We need to give ourselves credit for being a well-source of American music," he says. Then he holds up a thick volume entitled *The History of Chicago Blues*. It was published in London.

—Bob Wallick

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far as your imagination will go. Maybe even further.

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—FROM PAGE 106, N. CENTRAL

been taking the place over. Jeff Gastineau says that as word gets around about the new room, business is getting stronger all the time. "We're also video-equipped now," he adds, as 3001 is gearing up to do soundtrack work and audio sweetening. "We want to fill in the notches that other facilities aren't serving in the area, for people who can't afford to go to the big video houses." In their efforts to cultivate the local music scene, 3001 is quite busy with demo/album projects for such bands as The Point, Phil Dukes, and The Razor Penguins.

Similarly, further south in Cincinnati, Jim Baskin of QCA Recording Studios stresses that he plans to keep music a primary focus of his facility, which, incidentally, has just added a new Lexicon 224 and a Scamp Rack to its outboard arsenal. "But," continues Baskin, "we're also seeing a significant increase in jingle work." With Proctor & Gamble in the area, jingle and industrial work is inevitable for local studios, yet instead of listing current projects in that field,



QCA Recording Studios just added a new Lexicon 224 and a Scamp Rack to its outboard arsenal.

Baskin is eager to name some musical groups recently in at QCA: Midnight Star, Klymaxx, Ohio Players, The Whispers, and Bootsy Collins.

Midnight Star, Bootsy Collins, as well as Sheila E. and Prince, have also been in recently at nearby Fifth Floor Recording, where chief engineer Robin Jenney reports that they're busy with projects ranging from TV IDs to film sweetening to album work. The installation of an Audio Kinetics Q.Lock sync system and an MCI one-inch layback machine

seems to give some indication of the direction Fifth Floor hopes to take. "Audio sweetening is definitely a new thing for us," says Jenney enthusiastically. "We just did an 18-minute film for AT & T, as well as the sweetening for a feature-length film called *The Last Witness* (released overseas)." Jenney admits that Fifth Floor is eagerly pursuing video/film sweetening projects, "but," he says, "we will still remain loyal to our album and jingle people."

Up north, in Beachwood (outside Cleveland), music work has picked up according to Keith Voight of Beachwood Recording. In addition, Voight says they've brought on a person to handle agencies for commercial and multi-image work because "we saw a

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market that we weren't tapping." Welcoming business on nearly every front now, Beachwood Recording found it necessary to invest \$100,000 in new gear this year to accommodate the influx of new projects. "Our two studios are separate entities," explains Voight. "For A, we bought lots of high-end, album-oriented production equipment, such as an AMS harmonizer, a Lexicon 224X, Klark-Teknik graphic EQs, and we also offer digital mastering in that room. In B, we've installed high-end audio gear directed toward advertising, such as telephone interface, digital



Engineer Robin Jenney (left) of Fifth Floor Recording in Cincinnati, working with Reggie Calloway (center) and Bo Watson (right).

stop clocks, an Eventide Harmonizer, and a 3/4-inch video system."

Working exclusively on record projects, Pearl Sound in Canton, MI (outside Detroit) has had several local bands in recently, including The Romantics, The Stingrays, and Dominoe. "The place is going seven days a week!" beams Ben Grosse. Steady work has allowed Pearl Sound to purchase a new Studer 800 24-track and an 820 2-track, and Grosse adds that the studio is wired for video. "We've left that option open," he says, "but we're so busy with records that we can do without it for now." Grosse foresees that Pearl Sound will "keep on music. We'll keep upgrading the studio as well, and eventually put up a second room. We'd like to make one of the two rooms 48-track. And," he concludes, "I'll deal with digital as my clients' demands go."

Sound Suite in Dearborn Heights is also busy with record work. Owner John Lewis Jr. notes that several English groups record there, primarily because producer Don Was (of Was Not Was) works there often. Floyd Joy, the Four Tops, and Aretha Franklin were also in recently, and Lewis adds that Sound Suite has been doing a few jingles for Cadillac and Pontiac. "It's a different twist for us," he says, "but we're definitely open to that biz, too. We really see the need to be more diversified, because in the '82 recession we found we'd have done a lot better if we'd had a more diverse clientele." Currently equipped with playback and 3/4-inch

capacities for sweetening, Sound Suite hopes to get more involved in one-inch work, and by January, a second studio with an SSL console will go on line. "We want to gain national and international clientele," says Lewis, "and the SSL is so happening now that I believe it will draw the elite as well as the local music scene."

Another Dearborn Heights facility, Studio A Recording, moved to a larger building this year, and reports that they've had steady work in record production and some commercial projects. The new studio offers a "nicer, expanded environment" to clients, according to studio manager Marilyn Morgeson, and is well-equipped with new Klark Teknik, AMS, Aphex, and MCI machines.

Also a recently relocated studio in Michigan is The Alliance Recording

Co. in Whitmore Lake, where owner Al Hurschman says that "in moving, we were able to handle clients who were coming in to record portions of projects, as opposed to camping out." Hurschman adds that he can now also offer his clients increased flexibility, as the new studio is equipped with a 56-channel NEOTEK Series 3C. "We can have two clients in at one time, and neither one runs into a channel utilized by the other," he says. Alliance has seen an increase in in-house commercial production and film soundtrack projects this year, work that Hurschman says is relatively new to him. "We just finished up a rockabilly song for a car commercial," he laughs. But record production continues to be the mainstay of his business, due in part, says Hurschman, to Alliance's good reputation—Todd Rundgren and Frank Zappa have both produced there in the past.

After a recent direct mail campaign, Brandon Wade of Crosstown Recording in Kalamazoo, MI (mid-state), says that he's "shocked" by the dramatic increase in business. "But," he adds, "we're still at about the same level we were last year, which is a bit disappointing for the Midwest. Things haven't turned around to where everyone thought they would." As a result, Wade says he caters to several different markets, though record work is Crosstown's primary source of business. "There simply isn't a market for video here," he explains. "We have much more call for digital 2-track than video-sync. Maybe if we were in a larger town things would be different." But Wade concludes that he's happy with the work he has, and anticipates expanding and upgrading his facility in the near future.

Just across Lake Michigan in Wauke-

—PAGE 160



Beachwood Recording, just outside Cleveland, spent nearly \$100,000 this year upgrading their two 24-track studios. Pictured right: Studio B.

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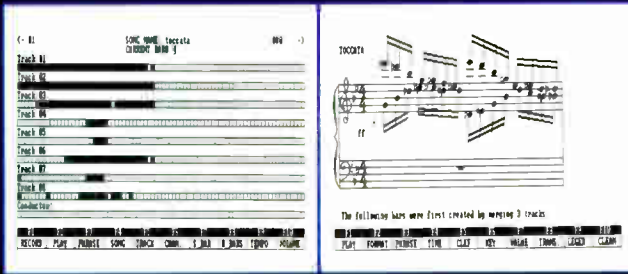
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Mix listings procedure: Every month, **Mix** mails questionnaires to recording studios and/or other vital facilities and services for the recording, sound and video production industries. Basic listings (name, address, contact) are provided free of charge. Extended listings (equipment, credits, specialization), and photographs or company logos may be included at a nominal charge. If you would like to be listed in a **Mix** Directory, write or call Lauri Newman, **Mix** Directories, 2608 Ninth Street, Berkeley, CA 94710, (415) 843-7901.

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MPS

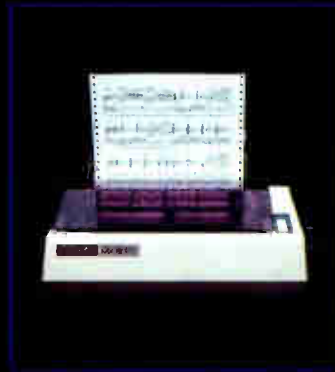
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Song Mode, Arrange Page Score Mode, Analysis Page

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Roland Music Software Series

MPS
Music Processing System
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Studio Manager: Jane Hannel
Engineers: Craig Harding, independents
Dimensions of Studios: Studio A: 9 x 19, Isolation Booth: 9 x 11.
Dimensions of Control Rooms: 9 x 19.
Tape Recorders: Ampex 440C 8 track; (2) Otari 5050B 2 track; Nakamichi 580 cassette deck; Nakamichi 300 cassette deck.
Mixing Consoles: Sound Workshop Logex 8, 12 x 8 x 2
Monitor Amplifiers: Yamaha P220L (Control Room), Sescor (headphones).
Monitor Speakers: JBL 4311s, Yamaha NS-10M, Auratones.
Echo, Reverb & Delay Systems: AKG BX10 reverb, Delta-Lab DL2, DeltaLab 1024, tape delay.
Other Outboard Equipment: Eventide Instant Flanger, (2)

UREI LA4 comp/limiters, MXR dual 15 band EQ, (2) MXR 31 band EQ, Valley People Stereo Dyna-Mite, EXR-1 Exciter, (2) dbx 155, Goldline GL-30 RTA, Rock mini amp, Sescor parametric EQ, Countryman & Associates direct boxes, (2) Acoustic 150 guitar amps, Dwarf amp, the usual assortment of foot actuated effects.
Microphones: Sennheiser 421s, 441; Neumann U47, U87; AKG 414-EB, 220s, D-1000s; Shure SM7, SM57s, SM58s; Electro-Voice RE20; Audio-Technica condensers.
Instruments Available: Fender Telecaster, Kramer Stage-master Bass, Rickenbacker 12-string, Guild Starfire, tambourines, claves, cowbell, maracas.
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Studio Manager: Helen Davidson

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(312) 636-6790
Owner: David Molinari, Greg Fuerst
Engineers: David Molinari, Greg Fuerst
Dimensions of Studios: 20 x 20 x 10
Dimensions of Control Rooms: 12 x 8 x 9
Tape Recorders: TEAC/Tascam 38, 8 track; TEAC 3440, 4 track; TEAC X-10, 1/4 track; Pioneer CT-5; Pioneer CTF 6262; TEAC 2300, 1/4 track; Akai 747, 1/4 track; TEAC 234, 1/4 sync.
Mixing Consoles: Electro-Voice 7416, 16 in; Biamp 883, 8 in.
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Owner: Phillip W. Stephens

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Studio Manager: Renee Steagall

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also **REMOTE RECORDING**
12202 Union Ave., Cleveland, OH 44105
(216) 752-3440
Owner: Thomas R. Boddie
Studio Manager: Thomas Boddie

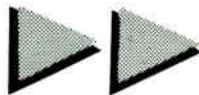
●● **BODY ELECTRIC STUDIOS INC.**
25 W. Harrison St., Wheaton, IL 60187
(312) 260-0220
Owner: Brian Basilico
Studio Manager: Brian Basilico
Dimensions of Studios: 18 x 12 x 7
Dimensions of Control Rooms: 10'3" x 8'2" x 7'
Tape Recorders: TEAC 80-8 8 track; TEAC 32-2B 2
Mixing Consoles: TEAC 35-35Ex, 20 x 4 x 2; TEAC Model
1, 8 x 2.
Monitor Amplifiers: Pioneer SA 9001
Monitor Speakers: Klipsch Heresy, Auratones, Omega
50s.
Echo, Reverb & Delay Systems: Master-Room XL 305
reverb, DeltaLab DL-4.
Other Outboard Equipment: Symetrix 501 comp/limiter,
Ashly SC-50 limiter, EXR Exciter, Symetrix 201 dual noise
gates, MXR pitch transposer, (5) 10 band EQs, Biamp quad
limiter, Multivox rotator.
Microphones: Sony 38-B, 989, 23F, Shure SM57; E-V PL-
95, PL-6; AKG-D 200.
Instruments Available: Yamaha DX7, LinnDrum, Roland
IX-3P, ARP String Ensemble, MSQ 700, Fender Stratocaster,
Gibson Les Paul, Epiphone 12-string, classical, P-bass, vari-
ous percussion.
Video Equipment & Services: Sony HF-300 Beta Hi-Fi,
Zenith monitor.
Rates: Rates available upon request.

●● **BOWLING GREEN STATE UNIV. STUDIOS**
also **REMOTE RECORDING**
College of Musical Arts, Bowling Green State Univ.
Bowling Green, OH 43403
(419) 372-0405
Studio Manager: Dr. Burton Beerman

●● **BRAUNCO INC.**
also **REMOTE RECORDING**
P.O. Box 236, Warren, IN 46792
(219) 375-3148
Owner: Elaine B. Braun
Studio Manager: Sue O'Brien
Engineers: J. Alan Jones, Steve Nichelson, Dana Howard,
Ted Hughes, Michael Braun
Dimensions of Studios: Main Studio: 30 x 60 w/15 ceiling.
Drum Booth: 10 x 10. Vocal Booth: 6 x 7.
Dimensions of Control Rooms: Video Control 15 x 10.
Audio Control 10 x 12.
Tape Recorders: Tascam 58, 8 track; Tascam 52, 2 track;
Tascam 122, 2 track.
Mixing Consoles: Tascam 50, 12 x 8
Monitor Amplifiers: Crown D-75.
Monitor Speakers: JBL 4401.
Echo, Reverb & Delay Systems: Upon request.
Other Outboard Equipment: Sigma CSG 360A, sync
generator, Fortel CCD-HP time base corrector, Panasonic
A-500 editing controller.
Microphones: Electro-Voice RE20s, RE11s, 526s; Shure
SM57s, SM11s.
Instruments Available: Wurlitzer piano, Fender Jazz Bass,
Fender Stratocaster, Acoustic amp, Kawai synthesizer, Rog-
ers drums.
Video Equipment & Services: Sony M-3 cameras, Cross-
point Latch switcher, Chyron VP-2 character generator, Pana-
sonic AV-700 editors, Sony VO-4800 portable VTR, portable
broads, spots, ellipsoids, and fresnels w/12 channel
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 2204 Duke St., Indianapolis, IN 46205
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 Studio Manager: Betsy Brown

●● **CENTERSTAGE RECORDING STUDIO**
 324 Evergreen Lane, Pewaukee, WI 53072
 (414) 691-3605
 Owner: Brad Olson, John Lechner
 Studio Manager: John Lechner

●● **CENTRAL SOUND**
also REMOTE RECORDING
 21860 Normandale, Birmingham, MI 48010
 (313) 540-1318
 Owner: Derrick Hakim
 Studio Manager: Derrick Hakim

●● **C.H.B. PRODUCTIONS**
only REMOTE RECORDING
 31204 Birchlawn, Garden City, MI 48135
 (313) 425-1510
 Owner: Christopher H. Bay
 Studio Manager: Christopher H. Bay

●● **CHICAGO AUDIO WORKS, INC.**
only REMOTE RECORDING
 1005 West Webster Ave., Chicago, IL 60614-3502
 (312) 327-5533
 Owner: Scott D. Smith
 Studio Manager: Scott D. Smith
 Engineers: David Obermeyer, Howard Kamens, Scott Smith
 Dimensions of Control Rooms: Transfer Suite, 10 x 12
 Tape Recorders: Studer B-67 PNVUK-1 Neopilot, mono;
 Otari MTR-12 Pilot, 2 track; Nagra 4.2L, mono; Nagra 4-S, 2
 track; Nagra 4-S-TC, 2 track; Nagra SNN, mono; Ampex
 AG-440C, 4 track; Sony PCM-F1, 2 track.
 Mixing Consoles: Studer 169, 12 x 3; SQN, 4 x 1.
 Monitor Amplifiers: Crown D-150, Yamaha P-2200.
 Monitor Speakers: Klipsch Heresy, E.V. Sentry 100A, UREI
 813.
 Other Outboard Equipment: Dr. Click, UREI 565T Filter
 Set, UREI 550A Filter Set, UREI 964 click track generator,
 Magna-Tech noise gate, Kepex, UREI 1176 limiter, etc.
 Extensive specialized sync and camera slate systems, com-
 munications equipment, mike booms.
 Microphones: Schoeps CMC-441, Schoeps MK-4, MK-8,
 MK-6 capsules; Sennheiser MKH-816, MKH-416, MD441,
 MD421; Sony ECM-30, ECM-50, ECM-989; Shure SM58,
 SM53, SM5B, SM33, SM61, SM62, SM7B; Electro-Voice
 RE50, RE55, RE20, CO85, 635A, RE11, RE16; Neumann
 SM69, U87, KMR81, KMR82; Beyers MKE-5, M-88 M-69.
 Video Equipment & Services: Limited to sound recording
 for video.
 Rates: Inquire
 Extras: Custom 14-foot Ford utility truck for location sound
 recording. Digital audio recording, in sync with picture.
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 ten years, specializing in production audio for motion picture
 and video-tape productions. We have one of the Mid-
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 duction audio, along with a custom Ford utility truck for
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 pean standards. We are fully equipped for any type of pro-
 duction from features to documentaries.

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 Studio Manager: Ray Maxwell

●● **CLAYTON STUDIOS, INC.**
also REMOTE RECORDING
 1126 S. Big Bend, St. Louis, MO 63117
 (314) 781-6200
 Owner: Richard Ulett
 Studio Manager: Robyn Goffstein

●● **CMU PUBLIC RADIO**
also REMOTE RECORDING
 PBC/CMU, Mt. Pleasant, MI 48859
 (517) 772-4220
 Owner: Central Michigan University
 Studio Manager: Dan Bracken

●● **COLONEL'S STUDIO**
 12017 Tindall Dr., St. Louis, MO 63131
 Owner: Gary M. Rich
 Studio Manager: Gary M. Rich



●● **COMMUNICATIONS WORKSHOP**
also REMOTE RECORDING
 222 S. 9th St., Minneapolis, MN 55402
 (612) 347-1700
 Owner: Campbell-Mithun Advertising
 Studio Manager: Fred Street

●● **COMPONENT STEREO, INC.**
 4527 Oakton, Skokie, IL 60076
 (312) 673-0430
 Owner: Russell Lowe
 Studio Manager: Russell Lowe

●● **CONCEPT PRODUCTION, INC.**
 2984 Triverton Pike, Madison, WI 53719
 (608) 271-2606
 Owner: corporate
 Studio Manager: C. Dan Geocaris

●● **D.L. CORBET AUDIO SYSTEMS**
 4220 Cleveland Ave., Dayton, OH 45410
 (513) 258-2994
 Owner: Donald L. Corbet
 Studio Manager: Julie K. Corbet

●● **THE CORBETT STUDIO**
also REMOTE RECORDING
 1223 Central Pkwy., Cincinnati, OH 45214
 (513) 241-8282
 Owner: WGUC Radio
 Studio Manager: Bruce Ellis

●● **CREATIVE PITS**
 1219 W. Winneamac Ave., Chicago, IL 60644
 (312) 769-0273
 Owner: Smui Chompo
 Studio Manager: Smui Chompo

●● **CREATIVE PRODUCTIONS, INC.**
also REMOTE RECORDING
 220 W. Sixth, Topeka, KS 66603
 (913) 234-4082
 Owner: Barry L. Busch
 Studio Manager: Barry L. Busch

●● **DEER CREEK AUDIO ILLUSIONS**
also REMOTE RECORDING
 865 Clark Ave., Webster Groves, MO 63119
 (314) 962-7635
 Owner: Sue Harwood
 Studio Manager: Chris Harwood

●● **JOHN DOREMUS INC.**
 875 N. Michigan Ave. Suite 1801, Chicago, IL 60611
 (312) 664-8944
 Owner: John Doremus
 Studio Manager: Tony Angier

●● **DRAGON'S LAIR STUDIO**
 5212 N. 48th Ave., Omaha, NE 68104
 (402) 455-8104
 Owner: Mark E. White
 Studio Manager: Mark E. White

●● **EDEN PRODUCTIONS**
 9610 Vaughan, Detroit, MI 48228
 (313) 836-0756
 Owner: David & Elaine Sanders
 Studio Manager: David Sanders

●● **EDGE ENTERPRISES**
 2731 Hills-Miller Rd., Delaware, OH 43015
 (614) 369-1476
 Owner: Craig Markley
 Studio Manager: Craig Markley

●● **ELECTRAX RECORDING**
also REMOTE RECORDING
 821 Skokie Hwy., Lake Bluff, IL 60044
 (312) 689-9125
 Owner: Mark Dooley
 Studio Manager: Tom Morgan

●● **EMC PRODUCTIONS**
 300 York Ave., St. Paul, MN 55101
 (612) 771-1555
 Owner: David Feinberg, Pres.
 Studio Manager: Bruce Kennedy, Chief Eng.

●● **EUREKA RECORDING STUDIO**
 10255 W. 235th St., Lakeville, MN 55044
 (612) 469-4395
 Owner: Chris Hinding
 Studio Manager: Chris Hinding

●● **EXODUS SOUNDS**
 3743 Radcliffe Dr., Northbrook, IL 60062
 (312) 564-5377
 Owner: Rick Simmons
 Studio Manager: Rick Simmons

●● **FAITH RECORDING STUDIO**
also REMOTE RECORDING
 4252 Bingham, Dearborn, MI 48126
 (313) 281-3436
 Owner: A.J. Amore
 Studio Manager: Monta Amore

●● **FIDDLESTRING PRODUCTIONS**
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 (216) 733-3140
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 (217) 584-1800
 Owner: Dan Little
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●● **GNOME PARK STUDIO**
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 6460 Breamore Rd., Indianapolis, IN 46220
 (317) 259-8075
 Owner: Mike Moser
 Studio Manager: Mike Moser

●● **GROUP II AUDIO**
also REMOTE RECORDING
 1480 Dublin Rd., Columbus, OH 43215
 (614) 488-0621
 Owner: The Media Group
 Studio Manager: Mark E. Snider

●● **GWYNNEWOOD RECORDING**
also REMOTE RECORDING
 8130 Daly Rd., Cincinnati, OH 45224
 (513) 521-4755
 Owner: Bill Gwynne
 Studio Manager: Bill Gwynne
 Engineers: Bill Gwynne, Steve Wood
 Dimensions of Studios: Main Studio 12 x 18; Drum Room:
 12 x 14.
 Dimensions of Control Rooms: 14 x 14; lounge/rehearsal
 area: 10 x 10.
 Tape Recorders: (2) Otari MX5050 MkIII-8 8 track; TEAC
 A-6100, 2 track; Sony digital PCM-F1, 2 track; TEAC A-2340,



GWYNNEWOOD RECORDING
Cincinnati, OH

4 track; TEAC A106, cassette.
Mixing Consoles: Soundcraft 1600 Producer, 24 x 12; Kelsey ProTour 813, 16 x 8.
Monitor Amplifiers: (2) Crown DC-300A, (2) SAE P-50, Biamp TC-60.
Monitor Speakers: JBL 4311, Auratones.
Echo, Reverb & Delay Systems: Lexicon PCM6C digital reverb, Ursa Major SST-282 Space Station digital reverb, effects processor, DeltaLab ADM 1024 Effector II, DeltaLab ADM 4096 Echotron, Ibanez AD-22G.
Other Outboard Equipment: Roland CPE-800 & VCA800 computer mixdown system (SMPTE based), Fastex SMPTE tape recorder, automation chase lock system, dbx noise reduction on all tracks, (2) Ashly SC-50 comp./limiters, dbx 161 & 163 comp./limiters, Ashly SC-66 stereo parametric EQ, MXR pitch transposer, Oberheim ring modulator, stereo synthesizer, phaser, chorus, etc. Also full sound reinforcement system.
Microphones: Neumann U89; (3) EV CS15, RE15, RE16, AKG C-451E, D160E1, (2) AKG D1000E; (2) Shure SM57, (2) SM62, SM58, SM53, SM54; Sony ECM33, ECM65; Audio-Technica ATM-11.
Instruments Available: LinnDrum, Yamaha DX7, 1955 Fender Precision Bass w/switchboards, 1965 Fender Precision Bass (stock), upright piano, 88-key Rhodes suitcase. Also we can get any acoustic/orchestral instruments.
Video Equipment & Services: 1/2" video locked to 8 track audio. Computer mix of audio for video. Saketa SC100 video monitor.
Rates: \$25/hr audio only. \$35/hr video & audio. Location work by contract.

● **HEDQUIST PRODUCTIONS**
also REMOTE RECORDING
 1007 East Madison, Fairfield, IA 52556
 (515) 472-7416
 Owner: Jeffrey Hedquist
 Studio Manager: Jeffrey Hedquist

● **HG STUDIO**
 21324 7 Mile Rd., Franksville, WI 53126
 (414) 425-5211
 Owner: Don Hunjadi
 Studio Manager: Don Hunjadi
 Engineers: Don Hunjadi
Dimensions of Studios: 25 x 11 with 8 1/2 x 11 drum booth, 5 x 3 1/2 vocal booth.
Dimensions of Control Rooms: 13 x 17
Tape Recorders: Tascam 38, 8 track w/dbx; Tascam 32, 2 track w/dbx; Tascam 22-2, 2 track w/dbx; Pioneer SP10C, cassette.
Mixing Consoles: Ramsa WR-T820 w/full metering, 20 x 8 x 2.
Monitor Amplifiers: Crown DC-75, Pioneer SX680, Tascam headphone amp.
Monitor Speakers: JBL 4311B (control room), Auratone 5C, JVC SK202 (studio).
Echo, Reverb & Delay Systems: Lexicon PCM6C digital reverb, DeltaLab Effector digital delay, Roland echo, Eventide HM80 Harmonizer.
Other Outboard Equipment: dbx 160X comp./limiter, Paisa stereo limiter, custom built compressor, Apex Type B Aural Exciter, Rane RE14 graphic EQ, Paisa parametric EQ, custom built noise gates, dbx 150 Type I noise reduction, dbx 155 Type I noise reduction.
Microphones: AKG-414EB, (2) Sennheiser MD421, (2) Shure SM57, (2) Shure SM58, (2) Audio-Technica ATM31, Audio-Technica ATM21, (4) Realistic condensers, DOD and Whirlwind direct boxes.
Instruments Available: Toki acoustic piano, Yamaha CP-70 electric grand, Prophet-600, Moog Source, Oberheim DX drum machine, others on request, extra charge for some instruments.

Video Equipment & Services: Satellite earth station, Quasar VHS recorder (mostly for entertainment).
Rates: \$15/hr. Block rates available.

● **HIDDEN CITY RECORDERS**
 26769 West Hills Dr., Inkster, MI 48141
 (313) 563-9350
 Owner: Flash Pashkot
 Studio Manager: Ree Pashkot

● **HIGH SOCIETY SOUNDS**
also REMOTE RECORDING
 214 Black Oak Dr., Morton, IL 61550
 (309) 266-7063
 Owner: Eric Tindall
 Studio Manager: David Thurman

● **HUBBARD STREET STUDIOS**
 11 E. Hubbard St., Chicago, IL 60611
 (312) 670-0110
 Owner: Fred Reynolds & Jim Poulosom

● **HUNTINGTON SOUND DESIGN**
also REMOTE RECORDING
 131 Oak St., Royal Oak, MI 48067
 (313) 543-7995
 Owner: Burr S. Huntington
 Studio Manager: Burr S. Huntington

● **IDH RECORDING**
also REMOTE RECORDING
 11424 Valley Court, Burnsville, MN 55337
 (612) 894-6424
 Owner: Israel Hill
 Studio Manager: Israel Hill

● **IDUMIAN MUSIC**
 1746 Gorge Park Blvd., Stow, OH 44224
 (216) 688-9144
 Owner: Jim Schley-May
 Studio Manager: Jim Schley-May

● **IMPACT PRODUCTIONS**
 220 S. William St., South Bend, IN 46601
 (219) 233-8369
 Owner: James A. Greulich
 Studio Manager: James A. Greulich

● **INLAND TELEPRODUCTIONS**
 3301 Clinton Parkway Ct., Suite 5, Lawrence, KS 66046
 (913) 843-9148
 Studio Manager: Bob Branch

● **IVO SOUND RECORDERS**
also REMOTE RECORDING
 539 S. Baltimore, Hastings, NE 68901
 (402) 463-5059
 Owner: Don Robertson
 Studio Manager: Noah Zark







● **JGM RECORDING**
also REMOTE RECORDING
 5401 W. Kamerling, Chicago, IL 60651
 (312) 261-2277
 Owner: Lito Manlucu
 Studio Manager: Lito Manlucu

● **JOYFUL NOISE RECORDING**
 3925 Kirkshire SE, Grand Rapids, MI 49508
 (616) 452-1616
 Owner: R. Holwerda
 Studio Manager: R. Holwerda

● **JT SOUNDS**
 107 W. First St., Gaylord, MI 49735
 (517) 732-3700
 Owner: James Tobin
 Studio Manager: James Tobin

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Owner: Alberto Kniepkamp
Studio Manager: Alberto Kniepkamp

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8817 Menard, Morton Grove, IL 60053
(312) 966-1297
Owner: Leroy Koetz
Studio Manager: John Koetz

● **KP RECORDING**
3221 Lake Shore Dr., St. Joseph, MI 49085
(616) 983-3733
Owner: Ken & Karen Parr
Studio Manager: Ken Parr

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also REMOTE RECORDING
8936 Kleinman Rd., Highland, IN 46322
(219) 923-0074
Owner: Larry A. Brechner
Studio Manager: Carol Lynn Brechner

●● **LAKESIDE MEDIA**
1437 W. Howard, Chicago, IL 60659
(312) 274-8999
Owner: Bill Landow
Studio Manager: Victor Sanders

●● **LAKESITY RECORDING STUDIOS**
2554 Boone Ave. So., Minneapolis, MN 55426
(612) 546-8331
Owner: Les A. Walstein
Studio Manager: Robert Nelson, Les Walstein

●● **LAND RECORDING STUDIO**
also REMOTE RECORDING
1912 Heriford Rd., Columbia, MO 65202
(314) 474-8141
Owner: Bob Pruitt
Studio Manager: Bob Pruitt

●● **LANSING SOUND STUDIOS INC.**
2719 Mt. Hope Rd., Okemos, MI 48864
(517) 351-6444
Owner: "Boogie" Bob Baldoni
Studio Manager: Derek Chandler

●● **LEWIS SOUND PRODUCTIONS**
78 N. Country Club Rd., Decatur, IL 62521
(217) 422-8614
Owner: Richard K. Lewis
Studio Manager: Richard K. Lewis

●● **L.H. SOUND**
P.O. Box 2785, Livonia, MI 48151
(313) 522-8463
Owner: Lord's House Church of Livonia
Studio Manager: Michael Aldeman

●● **LIGHTHOUSE PRODUCTIONS, INC.**
also REMOTE RECORDING
2020 E. Camp McDonald Rd., Mt. Prospect, IL 60056
(312) 823-8855
Owner: Chip Moore
Studio Manager: Dan Reilsnyder

●● **LIGHTSONG**
4209 Bagley Pkwy., Madison, WI 53705
(608) 238-5371
Owner: John Villemonte
Studio Manager: John Villemonte

●● **LOST NATION SOUND**
6 Storer St., Guysville, OH 45735
(614) 662-5701
Owner: Dave Aiken
Studio Manager: Nancy Aiken



●● **MAGNETIC STUDIOS, INC.**
also REMOTE RECORDING
4784 N. High St., Columbus, OH 43214
(614) 262-8607
Owner: John Fippin & Robin Gulcher
Studio Manager: Bonnie Plapper

●● **MASTER TRACKS**
518 N. Main, Mt. Prospect, IL 60056
(312) 253-5680
Owner: Alan & Paul Shively
Studio Manager: Alan & Paul Shively

●● **MAXWELL RECORDS**
7012 W. 26th St., St. Louis Park, MN 55345
(612) 920-5347
Owner: Gregg Giswold, John Keen
Studio Manager: John Keen

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232½ Main St., Ames, IA 50010
(515) 232-4331
Owner: Youth & Shelter Services
Studio Manager: David Kowaleski, Kent Newman

●● **MESHENDA PRODUCTIONS**
also REMOTE RECORDING
7615 Maryland, Chicago, IL 60619
(312) 651-3872
Owner: Lisa Williams
Studio Manager: Lisa Williams

● **MID-AMERICA SOUND**
only REMOTE RECORDING
120 Monroe St., Fort Atkinson, WI 53538
(414) 563-3449
Owner: Jim Eckhart
Studio Manager: Jim Eckhart

●● **MIDNITE MUSIC**
also REMOTE RECORDING
9368 Winston, Redford Twp., MI 48239
(313) 537-5808
Owner: Ron Gutzeit
Studio Manager: Ron Gutzeit

●● **MILWAUKEE SOUND STUDIOS**
also REMOTE RECORDING
610 N. Water St. Suite 240, Milwaukee, WI 53202
(414) 272-7085
Owner: Mark D. Heleniak
Studio Manager: Betty Samuelson

●● **MIRACLE WORKS RECORDING**
also REMOTE RECORDING
1205 Williamsburg Dr., Champaign, IL 61821
(217) 359-2948
Owner: Lee Powell
Studio Manager: Lee Powell

●● **MIXED MODES PRODUCTIONS**
254 Durand St., East Lansing, MI 48823
(517) 351-3340
Owner: Dennis Jablonski
Studio Manager: Dennis Jablonski

● **MSU SCHOOL OF MUSIC RECORDING SERVICES**
also REMOTE RECORDING
214 Music Bldg., Michigan State University
East Lansing, MI 48824

(517) 355-7674
Owner: School of Music, Michigan State University
Studio Manager: John T. McDaniel

●● **MUSIC MASTERS, INC.**
17 Ponca Trail, St. Louis, MO 63122
(314) 821-2741
Owner: Corporate
Studio Manager: Greg Trampe

●● **MUSIC WORKS**
also REMOTE RECORDING
165 E. Hoedown, Columbia, MO 65203
(314) 442-6220
Owner: Mike Leipard & Dan Kleindienst
Studio Manager: Robert Cole

●● **MUSICIANS WORKSHOP**
only REMOTE RECORDING
717 S. Stough, Hinsdale, IL 60521
(312) 986-8120
Owner: Ralph M. Ostrom
Studio Manager: Ralph M. Ostrom

●● **MUSTANG STUDIOS INC.**
5405 Market St., Boardman, OH 44512
(216) 788-4085
Owner: Joe Bertin, Brenda Bertin
Studio Manager: Joe Bertin

●● **M.Y. RECORDING STUDIO**
also REMOTE RECORDING
4519 South Hills, Cleveland, OH 44107
(216) 741-6453
Owner: Dennis Yurich, Tom Meller
Studio Manager: Dennis Yurich

● **MYSTERY SOUND**
also REMOTE RECORDING
P.O. Box 63011, Rochester, MI 48063
(313) 585-2173
Owner: Tom Ness
Studio Manager: Sue Trescott

●● **NEW OUTLOOK PRODUCTIONS**
also REMOTE RECORDING
5731 S. State St., Chicago, IL 60621
(312) 667-9488
Owner: Light of the World, C.O.G.I.C.
Studio Manager: Don Greer, Kathy Sartin

●● **NIGHT DUTY RECORDING**
1574 Sloan St., St. Paul, MN 55101
(612) 778-9259
Owner: Rich Jorgensen
Studio Manager: Rich Jorgensen

● **NIGHTINGALE-CONANT CORPORATION**
also REMOTE RECORDING
7300 N. Lehigh Ave., Chicago, IL 60048
(312) 647-0300
Owner: Nightingale-Conant Corporation, James E. Reising,
Audio Operations Manager
Studio Manager: Douglas D. Durham

●● **NIGHTRAIN STUDIO**
1112 Hickory St. #6, Grafton, WI 53024
(414) 377-6042
Owner: Rob Woolfenden
Studio Manager: Joanne Tsubota

●● **NITE SHIFT RECORDING**
5150 Main St., Claypool, IN 46501
(219) 892-5258
Owner: Randy Jones, Scott Hemingar, Brian Mikel
Studio Manager: Randy Jones

●● **NORTHSIDE STUDIO**
1351 Shepley Dr., Bellefontaine Neighbors, MO 63137
(314) 869-4367
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Studio Manager: Rick Stoffel

●● NORTHWESTERN RECORDING
#6 Public Square, Lima, OH 45801
(419) 227-4268
Owner: T. Stuckey
Studio Manager: Dennis Frey

●● NORWEST COMMUNICATIONS
also REMOTE RECORDING
123 S. Hough St., Barrington, IL 60010
(312) 381-3271
Owner: Mark Karney

● NOVA PETRA STUDIO
also REMOTE RECORDING
Box 1974, Janesville, WI 53547
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Owner: Douglas & J. A. Barrette
Studio Manager: Douglas R.S. Barrette



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Studio Manager: David R. Wood

●● OLD PLANK STUDIOS
26 W. 135 Plank Rd., Naperville, IL 60540
(312) 420-0743
Owner: Steve Jacula
Studio Manager: Phil Bonnet

●● ONE 5 PRODUCTIONS
P.O. Box 783, Waukesha, WI 53187
(414) 542-9691
Owner: Steve Conway
Studio Manager: Steve Conway

●● PARALLEL IMAGES
also REMOTE RECORDING
1818 N. Mohawk, Chicago, IL 60614
(312) 642-6672
Owner: John L. Hurd
Studio Manager: John L. Hurd

● PARKER SOUND
1673 Holland, Birmingham, MI 48008
(313) 540-8231
Owner: Jim Parker
Studio Manager: Jim Parker

● PCF RADIO NETWORK
8465 Keystone Crossing, Suite 295
Indianapolis, IN 46240
(317) 259-0163
Owner: Pearson, Crahan & Fletcher Group, Inc. Advertising
Studio Manager: Jerry Curtis

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1026 Carole Lane, St. Louis, MO 63021
(314) 391-8770
Owner: Richard Byron
Studio Manager: Richard Byron

● **PHOTO COMMUNICATION SERVICES, INC.**
also REMOTE RECORDING
6410 Knapp NE, Ada, MI 49301
(616) 676-1499
Owner: Michael Jackson
Studio Manager: Michael Jackson

● **PIECES OF EIGHT RECORDING STUDIO**
2144 E. Prairie Ave., Decatur, IL 62521
(217) 429-0295
Owner: Barry & Susan Billman
Studio Manager: Barry Billman
Engineers: Barry Billman; asst. engineers: John Evans, Susan Billman.
Dimensions of Studios: 12 x 14, 12 x 14
Dimensions of Control Rooms: 12 x 16
Tape Recorders: Tascam 80-8, 8 track; Tascam 32, 2 track; Tascam A-2340, 4 track; Tascam 244, 4 track; Sansui 1110, 2 track; Technics RS-B18, 2 track.
Mixing Consoles: Tascam 5B, 8 x 4
Monitor Amplifiers: Philips, Sansui, Hitachi.
Monitor Speakers: Philips 545 MFB, Auratone 5C.
Echo, Reverb & Delay Systems: DeltaLab, Electro, Ibanez.
Other Outboard Equipment: Symetrix 501 compressors, Para limiters, Ibanez comp. effects by Ibanez, MXR, Roland, Electro-Harmonix, Cry Baby, ADC 553, Mk II EQ, Audiosource EQ 1 analyzer/equalizer, direct boxes.
Microphones: AKG C24 stereo tube; Sennheiser 421; Shure SM81 phantom, SM57s; AKG; Shure.
Instruments Available: Keyboards: Yamaha CX5M music computer & programs, RX-15 drum computer, Farfisa, Hohner, Fibes and Rogers drums; amps: Fender, Boogie, Silverstone, Kalamazoo; guitars: Fenders, Gibsons, Martin, Yamaha, Danelectro, Kay, Rickenbacker, Fender bass, Gretsch, lots of percussion.
Rates: \$20/hr plus tape.

● **PORTULACA LIMITED**
2447 N. Ashland Ave., Chicago, IL 60614
(312) 769-2127
Owner: Lynda Elmon
Studio Manager: Daniel Holm

● **POSSE PRODUCTIONS**
4333 Carlson, Traverse City, MI 49684
(616) 947-7332
Owner: Paul Hulstader
Studio Manager: Paul Hulstader
Engineers: Paul Hulstader
Tape Recorders: Tascam 58, 8 track; TEAC 3340-S, 4 track; Concept ELC, cassette.
Mixing Consoles: AHB System 8, 16 x 8 x 2.
Monitor Amplifiers: QSC
Monitor Speakers: EV Sentry 100A
Echo, Reverb & Delay Systems: Orben III-B.
Other Outboard Equipment: Valley People, Tascam, TEAC, Morley.
Microphones: AKG, Audio-Technica, Electro-Voice, Peavey, Sennheiser, Shure.
Instruments Available: Steinway upright piano, Prophet 600 synthesizer, Sequential Circuits Drumtraks, Ibanez bass & electric guitars, Yamaha & Guild acoustic guitars, Fender & Roland amps.
Rates: Call for rates.

● **POST SCRIPT PRODUCTIONS**
also REMOTE RECORDING
704 S. Milwaukee Ave., Wheeling, IL 60090
(312) 541-1155
Owner: Art Stevens
Studio Manager: Thomas Wachal

● **PRAISE STUDIO**
Box 303, Knox, IN 46534
(219) PRAISES
Owner: The Singing Rudd Family
Studio Manager: Rich Wallen

● **PRECISION AUDIO INC.**
also REMOTE RECORDING
18582 US 20, Bristol, IN 46507
(219) 295-7493
Owner: Sanford Swartzendruber
Studio Manager: Larry Becker

● **PRO RECORDING SERVICE**
also REMOTE RECORDING
13709 Mapleleaf Dr., Garfield Heights, OH 44125
(216) 662-1435 eves.
Owner: Bruce Leslie
Studio Manager: Bruce Leslie

● **PRODIGY PRODUCTIONS**
also REMOTE RECORDING
P.O. Box 4656, Youngstown, OH 44515
(216) 799-8951
Owner: Paul J. Pompura, James J. Gumina
Studio Manager: Paul J. Pompura

● **PRODIGY RECORDING STUDIOS**
2725 Thatcher Ave., River Grove, IL 60171
(312) 456-6847
Owner: Vince Capotosto
Studio Manager: Vince Capotosto

● **RARE AIR RECORDERS**
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(517) 323-4182
Owner: Mark & Karen Raschke
Studio Manager: Mark Raschke

● **REAL GONE RECORDING**
1813 Euclid Ave., Lincoln, NE 68502
(402) 475-6945
Owner: Terrell I. Clements
Studio Manager: Terrell I. Clements

● **REAL RECORDING STUDIO**
also REMOTE RECORDING
7055 Garden Prairie Rd., Garden Prairie, IL 61038
(815) 597-1781
Owner: Mark Sears
Studio Manager: Mark Sears

● **REEL PRODUCTIONS**
2705 Flicker Lane, Rolling Meadows, IL 60008
(312) 259-1312
Owner: Steve & Carol Moroniak
Studio Manager: Steve Moroniak

● **REMOTE RECORDINGS**
4033A Lafayette Ave., St. Louis, MO 63110
(314) 664-6555, 385-4354
Owner: C.A. Jackson, Jr.

● **R/J RECORDING**
also REMOTE RECORDING
P.O. Box 302, Geneva, IL 60134
(312) 584-4657
Owner: Richard J. Peck
Studio Manager: Richard J. Peck

● **ROCKINGHAM RECORDING**
also REMOTE RECORDING
7240 Big Walnut Rd., Galena, OH 43021
(614) 965-2310
Owner: Michael R. Smith
Studio Manager: Michael R. Smith

● **R Y RECORDING**
Route #1 Box 44, Willard, WI 54493
(715) 267-6749
Owner: Richie Yurkovich
Studio Manager: Richie Yurkovich

● **SOLO STUDIO**
Box 20, Bagley Ave., Bagley, WI 53801
(608) 996-2260
Owner: Tom Bennett
Studio Manager: Tom Bennett

●● SONLIGHT PRODUCTIONS
also REMOTE RECORDING
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Studio Manager: Rev. Becen Padron

●● SOUND ADVICE RECORDING
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Studio Manager: George Thomas Zissos

●● SOUND CONCEPTS
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Owner: Duane McKee
Studio Manager: Duane McKee, Ziggy Zarco

●● SOUND 80
4027 IDS Center, Minneapolis, MN 55402
(612) 339-9313
Owner: Jan Enckson
Studio Manager: Bill Lubansky

●● SOUND FIELD
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Studio Manager: William Hendriksen, Jr.

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Studio Manager: Tom Marks

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Studio Manager: Rick Siepak

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●● SOUND SERVICES
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●● SOUND SHOP RECORDING STUDIO
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(414) 352-7766
Owner: Roger A. Roth
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●● SOUND SYSTEMS PRODUCTIONS
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Studio Manager: Mark Reno

●● SOUNDMASTER RECORDING
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●● SOUNDVISIONS
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●● SPARROW TREE RECORDING
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(219) 926-7070
Owner: Sam F. Miller
Studio Manager: Cynthia

● SPECIAL RECORDINGS, INC.
3026 E. Grand Blvd., Detroit, MI 48202
(313) 873-4655
Owner: Fred Flowerday
Studio Manager: Anthony (Tony) Caminita

●● STACK RECORDING
10260 S. Nicholson Rd., Oak Creek, WI 53154
(414) 764-9680
Owner: Wayne R. Zwicke
Studio Manager: Wayne R. Zwicke

● STEVE'S MOBILE RECORDING
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(513) 742-0371

●● STILL VOICE RECORDS
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AMEK 3000, EX 36/32/36 Automated	55k
Audionics 501, G 18/16/18, 5534 ICs Frame 10 ret	12k
Harrison 3232C, EX, 32/32/32, Automated	35k
Harrison MR-2, EX, 48/32/48, Auto	75k
MCI JH 528B, VG, 28/24/28, LM/JH-50	35k
MCI JH 536C, EX, 36/32/36, LM/JH-50	65k
MCI JH 636 VU, EX, 28/24/28, Auto, 28 param	30k
Neve 8108, EX, 48/48/48, Necam I	150k

Neve 8016, EX, 24/8/16, 4 Ret, 1081 Eq's	30k
Neve 8038, VG, 36/16/24, Ex Crescent Studio U.K.	75k
Neve 8038, VG, 36/16/24, 1074 EQ, Ex CTS London	65k
Neve 8068, EX, 32/16/32, 4 Returns, 2 Limiters	70k
Neve 8078, VG, 36/16/24, Necam 2, 1081 EQ, 8 Ret	145k
Quad-Eight, VG, 36/24/36, Coronado Auto Discrete	30k
Soundcraft 3B, EX, 32/24/24, 8 Returns	23k
Soundworkshop, EX, 28/24/24, 8 Para	15k
Trident 808, MINT, 32/24/24, 7 Months Old	35k
Trident TSM, EX, 40/24/40, Refurb Ex Vineyard, U.K.	55k

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MCI JH 110 B 4T	7k
MCI JH 16/24T, Loc III	17k
MCI JH 114/24T, Loc III	17k
Otari MTR-90 Mark 2, 16T Wired for 24 w/Locator	27k
Otari MTR-90 Mark 1, 24T w/Remote Loc	23k
Studer A80RC, 1-Track	8k
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EMT 250	18k
Lexicon 224	4.5k
Lexicon 224 XL	8.5k
Lang PEQ-1	500
Lang PEQ-4	500
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Neve EQ 4 Band, 1091	1.2k
Neve EQ 3 Band, 1064, 1073 EC	750
Q-Lock, Studer, 3M-79 ATR, MMI 200 Sony	9.5k
Urie 1176 LN	450

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Neumann U-67, VG	1.2k
Neumann SM-69, VG, Stereo Tube	1.6k
Neumann U-87, G	650
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 Studio Manager: Shirley Faeiella

● **SUN SOUND STUDIO**
also REMOTE RECORDING
 540 32 Ave. N., St. Cloud, MN 56301
 (612) 253-8652
 Owner: Mitch Groethe, Craig Groethe
 Studio Manager: Mitch Groethe

CORRECTION:

In our September article on Southern California recording, we inadvertently reversed the captions on two photographs (pages 160 and 164). The studios are correctly identified below.



The Village Recorder



Sound Affair Recording



● **SUNDANCE STUDIO**
 2925 E. Rome West Rd., Chillicothe, IL 61523
 (309) 579-2142
 Owner: Steve Meister, Phil Borland, Ron Rolling
 Studio Manager: Steve Meister

● **SURREALIST FOUNDATION PRODUCTIONS**
only REMOTE RECORDING
 1636 Lakehurst Dr., Fort Wayne, IN 46815
 (219) 749-0996
 Owner: Ron Wartzok
 Studio Manager: Ron Wartzok

● **SYNC SOUND PRODUCTIONS**
 816 10th St. S., Minneapolis, MN 55404
 (612) 333-6479
 Owner: Gary Lynn
 Studio Manager: Stephen Leighty

● **TAB RECORDS**
also REMOTE RECORDING
 2018 W. County Line Rd., Mequon, WI 53092
 (414) 241-5641
 Owner: Todd A. Boettcher
 Studio Manager: Todd A. Boettcher

● **TAPE II STUDIOS**
also REMOTE RECORDING
 1999 S. Valley View Dr., St. Joseph, MI 49085
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 Owner: Joel L. Motel
 Studio Manager: Joel L. Motel

● **TEAMWORK LTD.**
also REMOTE RECORDING
 P.O. Box 35203, Detroit, MI 48235
 (313) 836-3115
 Owner: Teamworks/Prowest, Co.
 Studio Manager: Edward J. Prowell

● **TKO RECORDING**
 18902 Puritas Ave., Cleveland, OH 44135
 (216) 671-8476
 Owner: Edward Salzgeber
 Studio Manager: Edward Salzgeber

● **TOMSICK BROTHERS PRODUCTIONS**
also REMOTE RECORDING
 21271 Chardon Rd., Euclid, OH 44117
 (216) 481-8380
 Owner: Ken Tomsick
 Studio Manager: John Tomsick

● **TRACK ONE RECORDING**
only REMOTE RECORDING
 28 Louis Grandview Est., Bloomington, IL 61701
 (309) 827-8467
 Owner: Tom Watkins
 Studio Manager: Tom Watkins, Rich Mounce

● **TRACK ONE RECORDING STUDIO**
also REMOTE RECORDING
 127 Huron St., Elyria, OH 44035
 (216) 322-3984
 Owner: Edward R. Minnich
 Studio Manager: Vivian Terry-Minnich

● **STEVE TWITCHELL/PRODUCTION**
also REMOTE RECORDING
 15 West Blvd. No., Columbia, MO 65201
 (314) 875-6715
 Owner: Steve Twitchell

● **UNDERGROUND RECORDING**
 287 Bensley, Calumet City, IL 60409
 (312) 891-5531
 Owner: Ken Fuehrmeyer
 Studio Manager: Ken Fuehrmeyer

● **VALLEY ACOUSTICS MULTI TRAK SYSTEM**
only REMOTE RECORDING
 903 N. Baird, Fergus Falls, MN 56537
 (218) 736-2750
 Owner: Maurice A. Skogen
 Studio Manager: Mark Wallis, Charlie Spaulding

● **VILLA DEL GUIDO STUDIOS**
 12007 W. Main, Huntley, IL 60142
 (312) 669-5767
 Owner: Maggie Hamill, Steve Pappas
 Studio Manager: Steve Pappas, Maggie Hamill

● **V'S RECORDING STUDIO**
 513 Damon St., Athens, WI 54411
 (715) 257-9198
 Owner: Mitch Viegut
 Studio Manager: Mitch Viegut

● **THE WATCHWORKS**
also REMOTE RECORDING
 203 N. Maplewood, Berrien Springs, MI 49103
 (616) 471-3058
 Owner: Stormwatch Productions
 Studio Manager: G. Allan Clarke

● **WESTEND STUDIOS**
 Box 194, Hays, KS 67601
 (913) 628-2157
 Owner: Mike Miller
 Studio Manager: Jan Miller

● **WHCO**
also REMOTE RECORDING
 Highway 154 West, Sparta, IL 62286
 (618) 443-2121
 Owner: Hirsch Communications
 Studio Manager: J.L. Scheper, gen. mgr.

● **WIELAND STUDIOS**
 211 Fraser St., Box 573, Kawkawlin, MI 48631
 (517) 684-5370
 Owner: Brad Wieland
 Studio Manager: Dennis Balgavy

● **WISE GUYS RECORDING STUDIO, INC.**
also REMOTE RECORDING
 5000 Wyoming Ave. Suite 121, Dearborn, MI 48126
 (313) 582-5988
 Owner: Dennis George, Greg Stevens
 Studio Manager: Dennis George

● **WOODEN NICKEL SOUND STUDIO**
 6844 Dickison Cemetery Rd., Dunlap, IL 61525
 (309) 243-7658
 Owner: Donald J. Rosser
 Studio Manager: Donald J. Rosser

● **ZEPHYR AUDIO PRODUCTIONS**
also REMOTE RECORDING
 1109 W. 73rd, Merrillville, IN 46410
 (219) 736-0064
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 Studio Manager: Edward R. Salka

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 on page 206.**

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102) SOUND RECORDING, 2ND ED., John Eargle An updated edition of this highly respected book covering acoustics and psychoacoustics, devices, systems, and methods currently used in recording technology. New chapters have been added covering digital recording and building low-cost studios. Includes extensive coverage of signal processors. 355 pp.(H) \$26.95

120) CRITICAL LISTENING COURSE, F. Alton Everest This invaluable course specifically addresses the important nuances of the audio world. The 106 page training manual with ten pre-recorded lessons on cassette tapes lead you from basic to advanced listening techniques in increasing progression. Topics include estimating frequency, frequency band limitations, sound level changes, components of sound quality, frequency response irregularities, various types of distortion, reverberation effects on speech and music, signal vs. noise, and voice colorations. \$129.95

133) ACOUSTIC TECHNIQUES FOR HOME AND STUDIO, 2ND ED., F. Alton Everest This excellent sourcebook approaches environmental acoustic design from a practical rather than mathematical viewpoint with emphasis on the fidelity of sound reproduction and design of small recording studios. Includes vital info on principles of acoustics, human hearing, room resonance, diffusion of sound, and absorption properties of acoustical materials. 352 pp.(P) \$14.95

148A) PRINCIPLES OF DIGITAL AUDIO, Ken Pohlmann This brand new release is a clear and concise overview starting with the fundamentals of d.a. and comprehensively covering recording, reproduction, media, error protection, the Compact Disc, and more. The majority of the data, formulas, and illustrations has never before been published, which makes this an excellent addition to the literature in the field. Appropriate for skilled audio engineers or novices. 284 pp.(P) \$19.95

169) REFERENCE DATA FOR ENGINEERS: RADIO, ELECTRONICS, COMPUTER, AND COMMUNICATIONS, 7TH ED., Howard W. Sams Co. This is the newly revised and expanded edition of the most widely used electronic engineers' reference book ever published. Over 1,500 pages and 48 chapters with 50 percent new material make this the most up-to-date, one-volume reference library anywhere. Also, includes lists of references and bibliographies as a guide to primary sources and definitive texts. A must for all engineers. 1,500 pp. \$69.95

203) VIDEO USER'S HANDBOOK, 2ND ED., Peter Utz A complete hands-on manual for all levels of video production for more effective use of equipment, simple problem solving and complex troubleshooting. Includes descriptions and instructions for studio video gear as well as information on audio, lighting, editing, and graphics. 500 pp.(P) \$19.95

301) THIS BUSINESS OF MUSIC (REVISED AND ENLARGED), Shemel & Krasilovsky This highly comprehensive 1985 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. 646 pp.(H) \$19.95

319) SCORING FOR FILMS, Earle Hagen Although published in 1971 this book still provides an excellent orientation to the problems and possibilities of composing for films. It specifically addresses the mechanics and vocabulary of film composition, the psychology of creating music for this medium, and the split responsibilities of the composer and the editor. 254 pp.(P) \$24.00

346) SUCCESSFUL ARTIST MANAGEMENT, Frascogna & Hetherington The only book to deal with all phases of artist management from both the artist's and manager's point of view. In five parts: Establishing the Artist-Manager Relationship, Planning the Artist's Career, Making the Plan Work, Career Maintenance and Control, and Mastering Success. 256 pp.(H) \$17.50

358) FOUNDATIONS OF COMPUTER MUSIC, Edited by Curtis Roads & John Strawn This superb reference book from MIT is the most complete overview of the field for serious students and practitioners. In four sections it covers Digital Sound-Synthesis Techniques, Synthesizer Hardware and Engineering, Software Systems for Music, and Perception and Digital Signal Processing. It contains many classic articles in revised and updated versions and should be in every contemporary composer's library. 736 pp.(H) \$50.00

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NORTH CENTRAL STUDIOS

16 TRACK

●●● **ACME RECORDING STUDIOS**
also REMOTE RECORDING

3821 N. Southport, Chicago, IL 60613
(312) 477-7333
Owner: Michael Rasfeld
Studio Manager: Les McReynolds

Direction: Acme specializes in studio & remote music recording of all kinds. Clients include Jump 'n the Saddle, Louie Bellson, The Scientific Americans, Suso, Claudia Schmidt, Mama Yancey, Jack Bruce, Nessa, Flying Fish, MoPro, Blind Pig, Atlantic, and Columbia Records. We offer fast turnaround time with expert attention to detail. Our real-time cassette division (25 at once) means you have no good reason to be a high-speed dupe! We do everything in-house—duplicating, printing, artwork, shrink-wrap, and recording for any size record or cassette project. "We Only Sound Expensive."

●●● **ACTION CITY RECORDS**
P.O. Box 302, Napoleon, OH 43545
(419) 533-4782

Owner: John & Sharon Kuser
Studio Manager: John E. Church
Engineers: John Kuser, John Church, Matt Kunesch
Dimensions of Studios: 32 x 32 w/10 x 8 iso booth
Dimensions of Control Rooms: 20 x 14
Tape Recorders: MCI JH-10, 16 track; Otari 5050 Mk II, 2 track; TEAC C3RX, 2 track.
Mixing Consoles: Ramsa 8816, 16 x 16
Monitor Amplifiers: Crown 300A
Monitor Speakers: JBL 441L, Auratones
Echo, Reverb & Delay Systems: EMT stereo plate reverb, ADA 2ix, Ibanez DM 2000, Ibanez HDM 2000, PCM 60 digital reverb.
Other Outboard Equipment: Vocal Exciter, Loft 400R noise gates, DOD compressors, parametric EQ, dbx noise reduction.
Microphones: AKG 414, 451s, D-12, 200Es; Electro-Voice PL-20s, PL-6s; Neumann KM84s; Shure 57s, 58s; misc.
Instruments Available: Chickering baby grand, DW 6000 Korg, Yamaha DX7, Farfisa organ, Vintage Fender guitars & amps, various other guitars; Marshall & Dean Markley amps, Tama electronic drum kit, Korg digital drum machine
Rates: \$35/hr. Block rates available.

●●● **A.L.B.O. FOUNDATION ENT.**
5246 Plainfield NE, Grand Rapids, MI 49505
(616) 364-9273
Owner: Keith David Gill, Kathleen Gill
Studio Manager: Keith David Gill, Kathleen Gill

●●● **ANGEL RECORDING STUDIO**
4435 Mayfield Rd., Suite #6, South Euclid, OH 44121
(216) 382-6036
Owner: Mark Luthardt
Studio Manager: Mark Luthardt

●●● **ASH ST. MUSIC PRODUCTION**
19921 Woodworth, Redford (Detroit), MI 48240
(313) 531-2158
Owner: Joseph E. Newcomb
Studio Manager: Joseph E. Newcomb

●●● **AUDIO ART**
403 S.W. 8th St., Des Moines, IA 50309
(515) 282-3223
Owner: Audio Art, Inc.
Studio Manager: Roger Hughes

●●● **AUDIO ARTISTRY**
6000 NW 27th, Lincoln, NE 68524
(402) 470-3663
Owner: Unicorn Productions
Studio Manager: Mark Lewno

●●● **AUDIOLOFT RECORDING STUDIOS**
also REMOTE RECORDING
Old Hiway 54 West, P.O. Box 7-11
Macks Creek, MO 65786
(314) 363-5432
Owner: B.J. Carnahan
Studio Manager: Brad Edwards

●●● **BOARDROOM RECORDING INC.**
608 S. Elmhurst Rd., Mt. Prospect, IL 60056
(312) 255-1151
Owner: Brian T. Adler
Studio Manager: Brian T. Adler

●●● **CANDLELIGHT STUDIO**
also REMOTE RECORDING
740 N. Campbell, Chicago, IL 60612
(312) 276-LITE
Owner: Bob & Mary Krutiak
Studio Manager: Bob Krutiak

●●● **CEDAR RAPIDS MUSIC PRODUCTIONS CO.**
also REMOTE RECORDING
3417 Center Point Road N.E., Cedar Rapids, IA 52402
(319) 395-0438
Owner: John O'Brien
Studio Manager: John O'Brien

●●● **CENTRAL STUDIOS**
also REMOTE RECORDING
275 N. Lexington, Central High, St. Paul, MN 55104
(612) 645-9217
Owner: St. Paul Schools, #625
Studio Manager: Ben James

●●● **CORNERSTONE RECORDING**
703 S. 2nd St., Milwaukee, WI 53204
(414) 643-0879
Owner: David & Barbara Siebauer
Studio Manager: David Siebauer

●●● **THE COUNTY RECORDING OFFICE**
Suite 440 Merchants Bank Bldg., Muncie, IN 47305
(317) 286-1999
Owner: Sound Influence
Studio Manager: Jon Barnard

●●● **CREATIVE SOUND RECORDING STUDIO**
also REMOTE RECORDING
1 1/2 W. National Ave., Brazil, IN 47834
(812) 448-3013, 446-2864
Owner: Joseph Anderson
Studio Manager: Steve Brown

●●● **CROSSLINK PRODUCTIONS**
also REMOTE RECORDING
2455 North Star Rd. #303, Columbus, OH 43221
(614) 488-5993
Owner: James N. Cannell
Studio Manager: Craig Schneider

●●● **CUSTOM RECORDING STUDIOS**
also REMOTE RECORDING
3829 Scott Ave. No., Minneapolis, MN 55422
(612) 535-2587
Owner: James & Bunny Reynolds
Studio Manager: James Reynolds

●●● **DANGER RECORDING**
366 N. Prior Ave., St. Paul, MN 55104
(612) 645-8650
Owner: C. David Erbele
Studio Manager: C. David Erbele

●●● **DAYBREAK MUSIC PRODUCTIONS**
also REMOTE RECORDING
1500 Midway Ct., Elk Grove Village, IL 60007
(312) 228-7090
Owner: John Groppi
Studio Manager: Jane Tallman

●●● **DOMAIN COMMUNICATIONS**
also REMOTE RECORDING
289 Main Place, Carol Stream, IL 60188
(312) 668-5300
Owner: Edward Elliott
Studio Manager: Pete Tumas
Engineers: Dan Anderson, Kerry Cordray, Jon Gauger, Tim Hollinger, Roger House, Dave Lors, Larry Shackley, Barb Tennyson, Pete Tumas

Dimensions of Studios: (A) 27 x 16 x 12½; (B) 12 x 9 x 8½
Dimensions of Control Rooms: (A) 23 x 16 x 9½; (B) 16½ x 11½ x 8; (C) 14 x 12 x 8½
Tape Recorders: Tascam 85-16B, 16 track; Tascam 80-8 8 track; Otari MX-5050, 4 track; Sony TC-854-4 4 track; MCI JH-110B, 2 track; Scully 280B, 2 track; Tascam 32 and 32-2B, 2 track; TEAC X-1000R, ¼ track; Sanyo VCR-7200, Beta HiFi digital 2 track.
Mixing Consoles: NEOTEK Series 1E, 16 x 8 x 2; Quantum QM12B, 12 x 4; Nadi Custom, 8 x 2.
Monitor Amplifiers: Crown 150
Monitor Speakers: E-V Sentry V, Sentry 100, Sentry 1A; Auratone 5C.
Echo, Reverb & Delay Systems: Lexicon 200, AKG BX-10, Eventide 969 Harmonizer, Ursa Major MSP126.
Other Outboard Equipment: Aphex Aural Exciter, Orban de-essers, dbx limiters, Dolby-B, Dolby-B, dbx Type I noise reduction, GateX noise gates, ElectroSound 8000 cassette duplicators (5 slaves), Formaster floppy diskette duplicator.
Microphones: AKG, Beyer, Neumann, Shure, Sony.
Instruments Available: Yamaha DX7, Oberheim OB-8 w/MIDI, Oberheim DMX & DSX.
Rates: \$60/hr, 16 track; \$50/hr, 8 track; \$45/hr, 4 track; \$40/hr, 2 track; \$75/hr, remote recording.

●●● **EDIFY PRODUCTIONS INC.**
 6900 Knox Ave. South, Minneapolis, MN 55423
 (612) 861-2050

●●● **EUROPA STUDIOS**
 also **REMOTE RECORDING**
 100 1st St., Noble, IL 62868
 (618) 723-2518
 Owner: Jeff D. Gordon
 Studio Manager: Jeff D. Gordon

●●● **FRONTIER RECORDING**
 also **REMOTE RECORDING**
 RR # 5, Patterson Dr., E. Peoria, IL 61611
 (309) 266-5504
 Owner: John M. Holm
 Studio Manager: John M. Holm

●●● **GATTUSO BROS. RECORDING & PRODUCTION**
 1300 Market Ave. N., Canton, OH 44714
 (216) 456-2806
 Owner: Rick, Chuck, Denny Gattuso
 Studio Manager: Dave Marchione
 Engineers: Rick Gattuso, Dave Marchione, John Fowler, Tony Polluck
Dimensions of Studios: 32 x 28
Dimensions of Control Rooms: 32 x 22
Tape Recorders: TEAC 85-16B, 16 track; Otari 5050B, 2 track; Yamaha TX-816 & QX-1, 256 banks.
Mixing Consoles: Yamaha RM-2408, 24 x 24 modified; TEAC M-16, 24 x 24 modified.
Monitor Amplifiers: Yamaha 2250, Yamaha 2150.
Monitor Speakers: JBL 4312, Yamaha SX-20, Auratones.
Echo, Reverb & Delay Systems: Yamaha D-1500, Yamaha R1000, Yamaha Rev-7, Ecoplate reverb.
Other Outboard Equipment: dbx compressors, Yamaha 2020, Yamaha CC-1031, Y-CAM System.
Microphones: Neumann U87s, AKG 414EB, Sennheiser 441, Shure SM57/58, AKG D12E, E-V RE20.
Instruments Available: Total Y-CAM System w/KX88, CP-80M, CP-60M; guitars; amps; synthesizers; electronic percussion; and Yamaha DX5, DX7, DX21.
Video Equipment & Services: ¾" U-matic Sony system: on location video or studio videos for anything.
Rates: \$45/hr; package deals of all kinds—we trade!!

●●● **GEMINI PRODUCTIONS**
 also **REMOTE RECORDING**
 2816 W. 98th St., Evergreen Park, IL 60642
 (312) 636-0889
 Owner: Anthony W. Spear
 Studio Manager: Paul Zappavigna

●●● **HARTWOOD RECORDING**
 4607 Jeffers Rd., Eau Claire, WI 54703
 (715) 834-5122
 Owner: John E. Hartzell
 Studio Manager: Ruth E. Hartzell

●●● **HARVEST PRODUCTIONS**
 2026 N. Cedar St., Holt, MI 48842
 (517) 694-1974
 Owner: Mark Miller, Steven Curran
 Studio Manager: Steven Curran
 Engineers: Mark Miller, Steve Curran, freelance engineers are welcome.
Dimensions of Studios: 30 x 20 w/2 iso. booths
Dimensions of Control Rooms: 18 x 9
Tape Recorders: Tascam 85-16B, 16 track; Otari MTR-10-

11 ¼" or ½", 2 track; Tascam 32 & 22-2, 2 track; JVC KD-A6 cassette.
Mixing Consoles: Trident Series 70, 28 x 16 x 24.
Monitor Amplifiers: BGW 250E and (2) Symetrix headphone amps.
Monitor Speakers: JBL 4311s, Auratones, UREI 809.
Echo, Reverb & Delay Systems: Programming Technologies, Ecoplate, Ursa Major Space Station, MXR 01a digital reverb, Lexicon 200 digital reverb, Yamaha Rev-7.
Other Outboard Equipment: Valley People Kepex II, Valley People Gain Brain II, dbx 161 compressor, Aphex Type B Aural Exciter, Symetrix CL-100 compressor, EXR Exciter, MXR flanger-doubler, Symetrix stereo parametric equalizer, Ashly SC-63 parametric equalizer, Eventide H-910 Harmonizer, Symetrix headphone amps, dbx 166 gated compressor/limiter, Aphex Compellor, Yamaha D1500.
Microphones: AKG 414, 451, D-12, "The Tube"; Shure SM81, SM57; Sony C-38, ECM-23F; Sennheiser 441, 421; E-V; Audio-Technica, etc.
Instruments Available: Yamaha DX7 digital synthesizer, Sequential Circuits digital drum machine, (2) Hammond organs (C-3 & M-3), Leslie, Fender Strat & Telecaster, (2) pianos.
Rates: Please call for rates.

●●● **HIT CITY RECORDING**
 also **REMOTE RECORDING**
 707 E. 54th St., Indianapolis, IN 46220
 (317) 257-0764
 Owner: Tim Brickley, David Langlitt
 Studio Manager: Paul C. Mahern, Ion Guinn

●●● **HOWLER STUDIO**
 19160 Summers Dr., South Bend, IN 46637
 (219) 272-0761
 Owner: Howler Publishing Co.
 Studio Manager: Stephen Foster

●●● **IGL AUDIO**
 Box 100, Spirit Lake, IA 51360
 (712) 336-2859
 Owner: John Senn
 Studio Manager: John Senn

●●● **INLAND SEA RECORDING**
 also **REMOTE RECORDING**
 2117 East 5th St., Superior, WI 54880
 (715) 398-3627
 Owner: Dave Hill
 Studio Manager: Dave Hill

●●● **J.E.M. RECORDING**
 1428 Noyes St., Evanston, IL 60201
 (312) 328-8801
 Owner: J. Scott Exam
 Studio Manager: J. Scott Exam
 Engineers: J. Scott Exam, independents welcome
Dimensions of Studios: 17 x 19, 8 x 14, 7 x 9
Dimensions of Control Rooms: 10 x 14
Tape Recorders: MCI JH-114, 16 track; Otari MK III, 8 track; Studer A-810, 2 track; Otari 5050B, 2 track.
Mixing Consoles: NEOTEK Series I, 16 x 8 x 2.
Monitor Amplifiers: Hafler, Harman Kardon Cit 16, Yamaha.
Monitor Speakers: Yamaha NS-10, JBL L-100, Auratones, Braun.
Echo, Reverb & Delay Systems: Ecoplate III, Lexicon PCM60, Master-Room XL-305, Lexicon PCM42, (2) Delta-Lab 256.
Other Outboard Equipment: (2) NEOTEK 1E parametric EQs, (2) dbx 160X, Valley People 610, GateX 4-ch gate/expander, 10 channels dbx 180 noise reduction.
Microphones: (3) AKG 414, (3) AKG 460B, Shure SM81, assorted Sennheiser, Shure, Electro-Voice, PZM, etc.
Instruments Available: Baby grand piano, Hammond B-3, DX7 synth, Juno 106 synth, Minimoog, computer with complete MIDI multi-track sequencer, LinnDrum computer, Rockman XL-100, acoustic guitar, assorted amps.
Video Equipment & Services: Upon request.
Rates: Upon request.

●●● **TOM JONES RECORDING STUDIOS**
 also **REMOTE RECORDING**
 220 South Broadway, Rochester, MN 55904
 (507) 288-7711
 Owner: United Audio Corporation
 Studio Manager: Dan Thomas

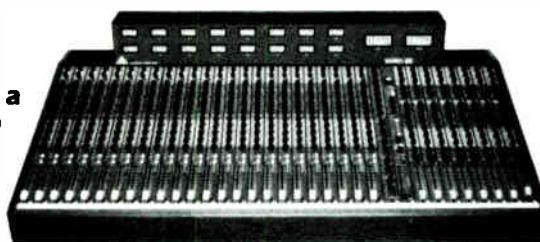
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●●● **KENNETT SOUND STUDIOS, INC.**
also **REMOTE RECORDING**
P.O. Box 602, Kennett, MO 63857
(314) 888-2995
Owner: Kennett Sound Studios, Inc.
Studio Manager: Joe Keene

●●● **KLAVIER AUDIO ARTS**
P.O. Box 67, Monroe, OH 45050
(513) 539-9409
Owner: Ron Crosby
Studio Manager: Bill Eisele

●●● **LH PRODUCTIONS**
10140 Conway Rd., Ladue, MO 63124
(314) 997-6356
Owner: Eric Lindstrom, Ronald Hitschler
Studio Manager: Ronald Hitschler

●●● **LIVONIA SOUND RECORDING**
15018 Beatrice, Livonia, MI 48154
(313) 522-7274
Owner: Henry J. Vartanian
Studio Manager: Ed Moon, engineer

●●● **L-M AUDIO/VIDEO RECORDING SHOP**
also **REMOTE RECORDING**
206 Locust, Americas, KS 66835
(316) 443-5181
Owner: Lee C. Muller
Studio Manager: Lee C. Muller, Gene Morrow

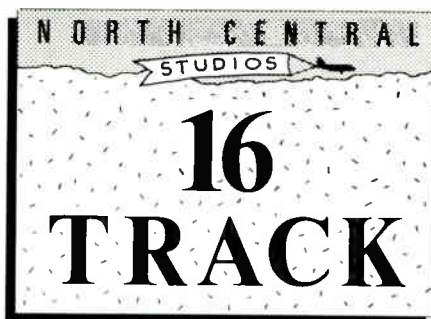
●●● **MAGNETIC EAST**
315 Country Club Dr., Topeka, KS 66611
(913) 234-8243
Owner: Frank Seitz
Studio Manager: Frank Seitz

●●● **MASTER WERKS STUDIOS**
16445 Harper Ave., Detroit, MI 48224
(313) 343-9390
Owner: Al Ruedemann, Brian Ascenzo
Studio Manager: Brian Ascenzo

●●● **MAUER BROTHERS RECORDING STUDIO INC.**
also **REMOTE RECORDING**
7933 N. 73rd St., Milwaukee, WI 53223
(414) 354-5140
Owner: Mark Mauer, Charlie Mauer, Mari Mauer, Linda Mauer
Studio Manager: Scott Schuelke
Engineers: Mark Mauer, Charlie Mauer, Scott Schuelke, independents
Dimensions of Studios: 16 x 38; 10 x 18 drum booth; 7 x 8 voiceover booth.
Dimensions of Control Rooms: 19 x 21
Tape Recorders: Tascam MS-16 w/autolocator, 16 track; Tascam 80-8, 8 track; Tascam 25-2, 2 track; Otari MTR-10 w/autolocator, 2 track; Scully 280-B, 2 track.
Mixing Consoles: NEOTEK Series 1-E, 16 x 8 x 16.
Monitor Amplifiers: SAE 2600 (mains), SAE 2200 (ref.), Marantz 140s.
Monitor Speakers: UREI 813-A, JBL 4301, JBL (custom built).
Echo, Reverb & Delay Systems: Urso Major Space Station, Roland SDE-3000, Roland RE-201.
Other Outboard Equipment: Eventide 910 Harmonizer, Aphex Type II, GT-4 noise gate, dbx 161 stereo comp/limiter, Roland stereo phase shifter, Neptune 342 parametric EQ, MXR 15 band graphic EQ, (3) Nakamichi 480 cassette decks, (2) Technics turntables (SL1500 MkII, SL-B1).
Microphones: AKG, Sennheiser, Shure, E-V, Neumann.
Instruments Available: 11 piece Rogers drum kit, Hammond B-3 w/122 Leslie, Yamaha DX7, any instruments you need.
Video Equipment & Services: Full video services available on request.
Rates: Please call for rates.

●●● **METRO SOUND**
5143 Brouse Ave., Indianapolis, IN 46205
(317) 251-1638
Owner: Chris Rich

●●● **METZ SOUND**
4865 N. Washten Ave., Chicago, IL 60625
(312) 989-5935
Owner: Ivica Metzger



●●● **MOBILE RECORDING CO.**
also **REMOTE RECORDING**
4929 N. Ridgeway, Chicago, IL 60625
(312) 267-8666
Owner: John McCortney
Studio Manager: Lynette Pralle

●●● **MOJATONA STUDIOS**
3159 N. Thomas Rd., Freeland, MI 48623
(517) 781-4067
Owner: Don Zeidler, Gary French
Studio Manager: Don Zeidler, Gary French
Engineers: Don Zeidler
Dimensions of Studios: 21 1/2 x 18
Dimensions of Control Rooms: 10 1/2 x 15
Tape Recorders: Tascam MS-16, 16 track; ascam 38, 8 track; Fostex A-B, 8 track; Fostex A-2, 2 track; Fostex X-15 (cassette), 4 track; Akai 4000 DS, 2 track; Akai HX 1-C, cassette.
Mixing Consoles: Fostex 350, 8 x 4 x 2; Ramse WR-T820, 20 x 8 x 2.
Monitor Amplifiers: Biamp TC120, Topco CP120, Technics SU-CO3.
Monitor Speakers: Bose Interstudio SA300, Auratone 5-Cs.
Echo, Reverb & Delay Systems: Fostex 3180 reverb, Ibanez HD 1500 harmonizer, ADA S1000 delay, DOD R-908 delay.
Other Outboard Equipment: Fostex 3030 EQ, Fostex 3070 compressor, dbx 224 noise reduction, Fostex MN-50 compressor.
Microphones: E-V PL20, Shure SM57, Shure PE65H, E-V DS35.
Instruments Available: Hammond organ, Poly 800 and Yamaha CS01 keyboards, Fender Telecaster, Ibanez Roadstar, Yamaha SGB200, Yamaha bass, Guild 12-string electric guitar, Alvarez acoustic cutaway guitars, Washburn mandolin, Shobud pedal steel guitar, Roland 909 drum machine, also 606 and 303 bass line, Fender, Peavey, and Supro amps, various effects pedals.
Rates: 4 track demo, \$20/hr; 8 track, \$30/hr; 16 track, \$40/hr.

●●● **MORNING STAR RECORDING**
also **REMOTE RECORDING**
151 Kale, Mahtomedi, MN 55115
(612) 429-2018
Owner: Tim Moeller, Dave Calahan
Studio Manager: Tim Moeller

●●● **NEW LIFE SOUND**
also **REMOTE RECORDING**
P.O. Box 775, Goshen, IN 46526
(219) 533-8793
Owner: Marvin R. Beachy
Studio Manager: Marvin & Jon Beachy

●●● **NIT WIT PRODUCTIONS**
1107 W. 16th St., Davenport, IA 52804
(319) 323-7347
Owner: Dan Schafnit
Studio Manager: Dan Schafnit

●●● **NUMARK, INC.**
51308 Peach Tree Ln., Utica, MI 48087
(313) 739-6940
Owner: John Antos
Studio Manager: Mark Antos

●●● **PHASE I MEDIA CENTRE**
2415 E. Lombard St., Davenport, IA 52803
(319) 359-3856
Owner: Terry Loder, Phil Hartley
Studio Manager: Scott D. Papich

●●● **PIONEER RECORDING STUDIO, INC.**
also **REMOTE RECORDING**
4238 Ramsgate, Bloomfield Hills, MI 48013
(313) 855-1466
Owner: Gary A. Rubin
Studio Manager: Chris Ruggero

●●● **POGO RECORDS RECORDING STUDIO**
also **REMOTE RECORDING**
35-37 Taylor St., Champaign, IL 61820
(217) 351-8155
Owner: Invisible, Inc. (Mark Rubel, Roger Prillaman Esq.)
Studio Manager: Mark B. Rubel
Engineers: Chief: Mark Rubel
Dimensions of Studios: 19 x 24 x 14, 20 x 50 x 11.
Dimensions of Control Rooms: 15 x 19 x 14
Tape Recorders: 3M Model 56, 30/15ips, 16 track; Scully 280, 2 track; Technics cassette.
Mixing Consoles: United Audio (UREI)/Accurate Sound 610-A Tube, 12 x 4 x 2; Studiomaster modified, 24 x 8 x 2.
Monitor Amplifiers: Crown DC-300A, D-60; Dynaco 70 modified; Soundcraftsmen MA5002; Altec A340A tube (phones).
Monitor Speakers: Altec 604E; Electro-Voice Sentry III; Mission 70; Auratone 5C.
Echo, Reverb & Delay Systems: Orban 111B; DeltaLab Super Time Line, DL1; tape and acoustic.
Other Outboard Equipment: dbx 160s, Yamaha, MXR and Altec EQs, Biamp limiters, direct line to WEFT community radio station.
Microphones: (2) Neumann U67 tube, KM85; Sennheiser 441, 421; E-V RE20, RE10; Shure SM80, 81, 57, 58, SM7, 85, 53, 54, 555 etc.; AKG D224E; Altec/Western Electric 639A, PML EC-71.
Instruments Available: Conover studio grand; Camco, Sonor, Ludwig and Yamaha drums; Vox, Fender, Gibson, Rickenbacker and Gretsch guitars and basses; Zildjian and Paiste cymbals; Fender Princeton, Ampeg, Supro and Vox amps; cheesy organs by Vox and Farfisa; Roland JX-3P, Yamaha DX7, RX11, Hohner Clavinet, Wurliitzer electric piano, various other instruments available.
Video Equipment & Services: By arrangement
Rates: Limited introductory rate: \$35/hr (includes engineer and instruments).

●●● **PRESCO PRODUCTIONS**
also **REMOTE RECORDING**
4366 W. 66th St., Cleveland, OH 44144
(216) 749-7244
Owner: John F. Presby, Jr.
Studio Manager: John F. Presby, Jr.

●●● **PRIME TIME PRODUCTIONS**
also **REMOTE RECORDING**
557 Marview Ave., Akron, OH 44310
(216) 376-2934
Owner: Thomas M. Hanna
Studio Manager: Joe Dibenedetto

●●● **PRODUCTIONS OF PRAISE**
also **REMOTE RECORDING**
St. Rt. 35, West Alexandria, OH 45381
(513) 839-5595
Owner: Jerry Winkler
Studio Manager: Jim Hazelwood

●●● **Q & R RECORDING STUDIOS**
1307 Ridge Ave., Evanston, IL 60201
(312) 864-6655
Owner: Q. Brown
Studio Manager: Steve Rashid

●●● **RAINBOW BRIDGE RECORDING**
117 W. Rockland Rd., Libertyville, IL 60048
(312) 362-4060
Owner: Rockland Music Inc.
Studio Manager: Perry Johnson

●●● **RAVE RECORDING**
also **REMOTE RECORDING**
800 N. Clark St., Chicago, IL 60610
(312) 337-1302
Owner: R.R.C.
Studio Manager: Bob Chionelli

●●● **REELSOUND AUDIO**
also **REMOTE RECORDING**
25859 Mulroy Dr., Southfield, MI 48034
(313) 356-2640
Owner: James Ascenzo, Dan Ascenzo
Studio Manager: James Ascenzo

●●● **THE REEL THING INC.**
3133 Chester Ave., Cleveland, OH 44114
(216) 696-3133
Owner: Jim Silver
Studio Manager: Fred Owen

●●● **RINGGER RANCH RECORDING**
also REMOTE RECORDING
Box O, Gridley, IL 61744
(309) 744-2229
Owner: Dennis Virkler, Gary Ringger
Studio Manager: Dennis Virkler

●●● **ROCK SERVICE**
also REMOTE RECORDING
2500 N. 77th Ct., Elmwood Park, IL 60635
(312) 452-5594
Owner: Chris Kirby
Studio Manager: Sherrie Fraszczak

●●● **ROME RECORDING STUDIOS**
also REMOTE RECORDING
1414 E. Broad St., Columbus, OH 43205
(614) 253-4418
Owner: Jack Casey
Studio Manager: Jack Casey

●●● **ROSEWOOD SOUND STUDIOS, INC.**
also REMOTE RECORDING
716 Oakland Rd. N.E., Cedar Rapids, IA 52402
(319) 364-5658
Owner: Martin R. Stramel
Studio Manager: Martin R. Stramel

●●● **RYANSOUND RECORDING STUDIO**
also REMOTE RECORDING
5080 Larchmont, Detroit, MI 48204
(313) 897-6402
Owner: Ryan & Randy Wimbley
Studio Manager: Raymond Wimbley
Engineers: Rick Guinyard, Robert Jamison, Dave Sanders,
Raymond Wimbley
Dimensions of Studios: 25 x 12

Dimensions of Control Rooms: 12 x 12
Tape Recorders: Tascam 8516B, 16 track; Otari ½ track MX5050-B MKII, 2 track; TEAC ¼ track A2000, 2 track; (3) Sharp RT100 cassette decks.
Mixing Consoles: Tascam Model 15B, 20 x 8; TEAC Model 1, 8 x 2.
Monitor Amplifiers: Spectro Acoustics, Sony, Technics.
Monitor Speakers: Klipsch Heresy, Yamaha NS10M, Auratone Sound Cubes 5C.
Echo, Reverb & Delay Systems: Lexicon PCM60, Furman RV1, MXR digital delay, DOD digital delay, ADA digital delay.
Other Outboard Equipment: dbx 160X comp/limiter, Valley People 530 dual Dyna-Mite, Aphex Exciter, UREI graphic EQ, MXR flanger-doubler, Omni Craft noise gates, dbx noise reduction.
Microphones: AKG 414, AKG D190, E-V PL20, E-V 635A, E-V lavalier mikes, Shure SM57s, Shure lavalier mike, Sennheiser 421, TEAC PE100.
Instruments Available: Fender Rhodes 73, Korg Poly-6, Sequential Circuits Prophet 5, Oberheim OBB, LinnDrum computer, Fender Precision Bass.
Rates: \$40/hr, block rates available.

●●● **SCHARREN STUDIOS**
6591 Pilliod Rd., Holland, OH 43528
(419) 866-1065
Owner: Steve Scharren
Studio Manager: Steve Scharren
Engineers: Steve Scharren, Tim Story
Dimensions of Studios: 24 x 15; drum booth 10 x 7; "live" room 15 x 12.
Dimensions of Control Rooms: 15 x 10
Tape Recorders: Tascam 85-16B 16 track (w/dbx); Otari 5050 BII 2 track; Tascam 42 2 track; Sony cassette deck K777 2 track; Nakamichi cassette deck 500 2 track; Sony TCD-5M 2 track; Fostex 250, 4 track cassette recorder; Sony ¼-inch, ½ track mastering deck, Revox B77, 2 track.
Mixing Consoles: Ramsa 8816, 16 x 4 x 2
Monitor Amplifiers: Hafler DH 500, Crown D-150
Monitor Speakers: (2) Boston Acoustics A-400, (2) Realistic Minimus-11, (2) JBL 4411, Auratone 5Cs.
Echo, Reverb & Delay Systems: DeltaLab DL-4; MXR 01 digital reverb, Lexicon PCM 60 digital reverb, Ecoplate II.
Other Outboard Equipment: Aphex Aural Exciter, Aphex Compeller, Symetrix 522 stereo comp/limiter, expander, gate & ducker, Symetrix SG-200 gate, Symetrix 501 Com-



SCHARREN STUDIOS
Holland, OH

pressor; Sundholm stereo EQ w/parametric notch filters. TR 707 & 909 drum computers; dbx .50, 224 & 1X40, (2) dbx 160X comp/limiters, 3BX; Ibanez DM2000 programmable digital delay, Ibanez MSP 1000 comp/EQ/notch filter; DeltaLab DL5 harmonizer; Studio Technologies stereo simulator; Rockman, Drumulator; MXR stereo chorus; Boss pedals (all types)
Microphones: AKG BT 330, 224E, D12E, 414s; E-V PL77, 76, BK-1, RE20; Beyer Dynamic M101; Sony ECM 22; Crown PZMs; and many more.
Instruments Available: Full 10-piece set of studio drums, Baldwin piano, (3) Ovation acoustic/electric guitars, G&L 2000 electric bass, Baldwin "Ode" Banjo, G&L and Kramer electric guitars, Les: Paul custom, Fender amps, Chet Atkins electric classical guitar, Roland IX3P synth, with programmer, Gibson ES 335, Emulator II with over 100 disks & the latest sequencer/SMPTE updates; Memorymoog; DW6000, DX7; plus just about any other instrument available upon request, including some of the finest studio musicians in the Midwest.
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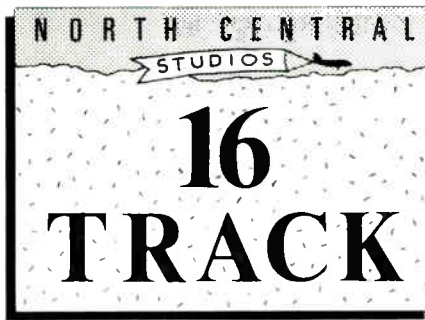
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●●● SITAR'S SOUND STUDIO
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280 E. Haven Ave., New Lenox, IL 60451
(815) 485-2507
Owner: John L. Sitar
Studio Manager: Karen Sitar

●●● SOTO SOUND STUDIO
also REMOTE RECORDING
931 Sherman Ave., Evanston, IL 60202
(312) 475-9556
Owner: Jerry & Claudine Soto
Studio Manager: Claudine Soto
Engineers: Jerry Soto
Dimensions of Studios: 30 x 30 w/vocal booth
Dimensions of Control Rooms: 15 x 25
Tape Recorders: Tascam Series 70, 8 track; Tascam 90-16, 16 track; (2) TEAC 2340, 4 track; Otari MX5050 1/2 track; Ampex PR10 1/2 track; Fisher PH405 portable stereo cassette recorder; (2) TEAC; (2) Hitachi cassette decks.
Mixing Consoles: Sunn Magna 5000, 24 x 4, Tascam Model 5, 8 x 4, Tascam Model 5 EX, 8 x 4.
Monitor Amplifiers: Yamaha P2200, QSC 5.1, Technics SU730.

Monitor Speakers: Altec Valencias, Bic Venturi Formula 4's, Auratones, Realistic, Philips, Koss, Transistor radio.
Echo, Reverb & Delay Systems: MXR digital delay; MXR flanger, Tapco reverb; MXR pitch transposer; Brick Audio plate reverb; DOD digital delay; Eventide Harmonizer HM80

Other Outboard Equipment: dbx 160, 161, comp/limiter, 164 stereo comp/limiter; Symetrix CL-100 compressor/limiter; dbx noise reduction; Soundcraftsman RP 2201-R graphic equalizer, MXR noise gate; Philips 312 electronic turntable.

Microphones: Sennheiser, AKG, Shure, Electro-Voice, Audio-Technica.

Instruments Available: Dr. Rhythm, Simmons drums available upon request, Moog Rogue, Yamaha CP-10, guitar, keyboard & bass amps, Ludwig drums, Hammond B-3 organ (w/percussion), Leslie speaker, Fender Rhodes, Moog Prodigy synthesizer, Wurliizer baby grand, asst. percussion, Gibson Les Paul "Gold Top," Epiphone bass, acoustic guitar, Roland organ/strings, Yamaha digital drum machine, Casio C-Z 5000 digital polyphonic keyboard w/8 track sequencer.
Rates: 1-4 track, \$30/hr; 8 track, \$33/hr, \$150/5 hrs; 16 track, \$40/hr, \$180/5 hrs. Lyrics set to music: 1 song, \$175; 2 songs, \$300.

Extras: Studio musicians available, guitar, keyboard, arranging or production services available by Jerry Soto. Free video recording of any session! (Just bring in a VHS cassette).

Direction: We can arrange your lyrics to music, record your voice on your song and more. We record virtually every type of music, and also handle projects for Warner Bros. & ABC TV. We have secured contracts with blues labels in London, England, and Vienna, Austria, as well as with recording blues greats Buddy Guy, Phil Guy, Brewer Phillips, Lefty Dizz, Eddie Clearwater and others. We also record many other styles: rock, funk, reggae, R&B, Latin, Greek, soundtracks for plays and dance groups, and even people from India! You name it, we record it! In closing, we're proud to say, through hard work and dedication, we've become one of Chicago's most popular studios. We also thank our clients who have made this dream...a reality.

●●● SOUND IDEAS PRODUCTIONS
701 Douglas St, Sioux City, IA 51101
(712) 255-9911

Owner: Kraig Wall, Greg Wall, Lon Rochester, Jim Rossiter
Studio Manager: Kraig Wall, pres.
Engineers: Kraig Wall, Tom Renfro. Video: Greg Wall, Tim Poppin

Dimensions of Studios: 20 x 30, plus piano & vocal iso.
Dimensions of Control Rooms: 17 x 15
Tape Recorders: Tascam 85-16B w/dbx noise reduction, 16 track; Otari MX-5050B, 2 track; Otari MX-5050B w/dbx noise reduction, 2 track; Harman Kardon CD-401, cassette deck.

Mixing Consoles: Tangent 3216, 24 x 16.
Monitor Amplifiers: Yamaha P2050 & P2100

Monitor Speakers: JBL 4411, Auratone 5C
Echo, Reverb & Delay Systems: Klark-Teknik DN-780 digital reverb, (2) MICMIX XL305, DeltaLab ADM 1024 digital delay.

Other Outboard Equipment: dbx 160X comp/limiter, dbx 155 noise reduction, dbx 162 comp/limiter, Aphex Aural Exciter B, EXR Exciter, Symetrix stereo parametric EQ.
Microphones: Crown PZM, AKG 414, Shure SM-81, Sennheiser 421, 441, Countryman EM-101.

Instruments Available: Yamaha conservatory grand piano, Fender Rhodes electric piano, Rogers drums w/Zildjian cymbals, Sequential Circuits Prophet 10, Emulator I, Emulator II, Yamaha DX7, Roland JX-8P, LinnDrum.

Video Equipment & Services: JVC 3/4" editing system w/Panasonic monitors, Sharp XC 80011 camera w/tripod & fluid head, JVC 4900 3/4" field recorder w/JVC field monitor, Lowell light kit, Telex wireless microphone.

Rates: Audio: \$65/hr, block rates available. Video: Call for rates.

●●● SOUND LAB
29256 York, Inkster, MI 48141
(313) 721-4032

Owner: Michael A. Moore, Don Moore
Studio Manager: Michael A. Moore

●●● SOUNDSTAGE I RECORDING
13270 6 1/2 Mile Rd., Battle Creek, MI 49017
(616) 979-1532

Owner: James R. Cummings
Studio Manager: Sandra Towers



SPARROW SOUND DESIGN
Chicago, IL

●●● SPARROW SOUND DESIGN
also REMOTE RECORDING
3501 N. Southport, Chicago, IL 60657
(312) 281-8510

Owner: Bradley Parker-Sparrow, Joanie Pallatto
Studio Manager: Bradley Parker-Sparrow
Engineers: Bradley Parker-Sparrow Joanie Pallatto
Dimensions of Studios: Studio: 50 x 35. Isolation: 10 x 11.
Dimensions of Control Rooms: 15 x 30

Tape Recorders: Tascam 85-16, 16 track; Ampex ATR-102 15/30 ips (rebuild/vary speed, remote/zero return), 1/4" & 1/2" 2 track; Technics 1520 (modified), 2 track; Tascam 3440, 4 track; Technics 1506 (modified), 2/4 track; TEAC V-7, cassette; Tascam 122 cassette, 3 track/slide cue.

Mixing Consoles: Tascam Model 15 rebuild (modified), 24 x 16 x 16; Biamp 1282, 12 x 3 for keys.

Monitor Amplifiers: Main: Yamaha P2200. Studio: (2) Mac 30, tube. Cue: Yamaha P2050 and Mac 50 FET. Symetrix HA-10B cue amp.

Monitor Speakers: UREI 813B and Auratones. AR 3A in studio.

Echo, Reverb & Delay Systems: Furman RV-1 Spring, EMT 140S plate, Lexicon PCM60 digital reverb, Lexicon Prime Time, Lexicon PCM41, (2) Technics 1506 tape delay.

Other Outboard Equipment: (4) UREI 1176, UREI LA-2A (tube), (2) Ashly limiters, Pultec ME-Q-5 midrange EQ (tube), Ashly noise gate, (2) Ashly parametric, 200 point TTY custom built patch bay, Onkyo turntable, original AR turntable w/Shure Type 5 cartridge, Audio-Technica cartridge, Bogen tube tuner.

Microphones: Tube: Neumann U47, M49, (2) KM54, (2) KM53, SM2 (stereo), SM69 (stereo); AKG C-24 (stereo), C-12A, C-12, C-61. FET: Neumann U89, U84; Sony C-22; (4) Audio-Technica 813, 801. Ribbon: (2) Beyer M160. Other: EV RE10, RE11, RE15, (2) RE16, RE55, 676, 666; Sennheiser MD 421, (2) MD 441, MD-21; Beyer 300; (2) Shure 545, (7) SM58.

Instruments Available: Vintage rebuild Fender Rhodes, DX7, Roland Jupiter 8, Julius Bauer cross ribbed rebuild grand piano. Les Paul original guitar, Ampeg tube bass amp.

Video Equipment & Services: Panasonic color monitor, 16 track Synch-Lock.

Rates: Upon request.

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33018 Breckenridge Dr., Sterling Heights, MI 48077
(313) 977-7829
Owner: Richard F. Carver
Studio Manager: Richard F. Carver

●●● **STUDIO ONE, INC.**
also **REMOTE RECORDING**
645 N. Michigan, Chicago, IL 60611
(312) 337-5111
Owner: Kirk Johnson
Studio Manager: Mark Stefancik

●●● **STUDIO PRODUCTION FUTURES**
also **REMOTE RECORDING**
3360 Lakeshore, Monroe, MI 48161
(313) 289-1397
Owner: George Milkovich
Studio Manager: Dennis "Machine Gun, MC5" Thompson

●●● **SUNSET RECORDING**
5830 Sunset Ave., La Grange, IL 60525
(312) 579-0455
Owner: Mark MacLean
Studio Manager: Steve Arens

●●● **SUNSET STUDIO**
also **REMOTE RECORDING**
117 W. 8th, Hays, KS 67601
(913) 625-9634
Owner: Mark Meckel
Studio Manager: Mark Meckel

●●● **SUTTMAN PRODUCTIONS**
also **REMOTE RECORDING**
P.O. Box 72, Dayton, OH 45409
(513) 299-4578
Owner: Eric J. Suttman
Studio Manager: Eric J. Suttman



●●● **TAPE MASTERS**
3532 Washington Blvd., Indianapolis, IN 46205
(317) 926-2025
Owner: Tom Reynolds

●●● **GREG THOMPSON MUSICAL PRODUCTIONS**
1850 Guenther Rd., Dayton, OH 45427
(513) 854-2476
Owner: Greg Thompson
Studio Manager: Greg Thompson
Engineers: Diamond (James Williams), Skip McDonald, Rand Jennings, Greg Thompson
Dimensions of Studios: 20 x 20
Dimensions of Control Rooms: 10 x 18
Tape Recorders: Fostex B-16, 16 track; Fostex A-8, 8 track; Fostex A-2, 2 track; Technics cassette deck.
Mixing Consoles: Soundcraft 1600, 16 x 8; Fostex X350, 8 x 4; Fostex 350, 8 x 4.
Monitor Amplifiers: Crown DC300
Monitor Speakers: JBL 431L, Electro-Voice (computer design w/15" E-V and large E-V horn), Auratone.
Echo, Reverb & Delay Systems: (2) DeltaLab Echotron 4096 digital delays, (2) DeltaLab Elfection 1024 digital delay /chorus/flanger/reverb, DeltaLab Elfection 64 delay /chorus/flanger/reverb, Furman reverb limiter EQ.
Other Outboard Equipment: Furman comp/de-esser/



GREG THOMPSON MUSICAL PRODUCTIONS
Dayton, OH

limiter, Electro-Voice graphic EQ, (3) Fostex patch bays, (4) pair Koss headphones, (1) pair Fostex T20 headphones, dbx noise reduction.
Microphones: (4) Electro-Voice PL20, (2) Electro-Voice Black Knight, Sony and AKG D2000E.
Instruments Available: Oberheim Matrix 12 synthesizer, Prophet-5 (w/ MIDI) synthesizer, Kawai electric grand piano, Oberheim digital drum machine w/Simmons chips, Hammond B-3 organ w/Leslie 900 tone cabinet, Roland Voice Vocoder.
Video Equipment & Services: Will soon offer video and computerized recording services.
Rates: Painless
Extras: Original songs available for producers and/or artists.
Direction: Specializing in songwriting, demo tapes, and commercial jingles. Have recorded and worked with: The Jacksons, Earth, Wind and Fire's horns, 7th Wonder, Billy Osborne, Coke Escovito, Eddie Pugh, Jerry Weaver, The Players (Ohio Players), Skip McDonald, Steve Arrington, and many others.

●●● **TOBY'S TUNES, INC.**
2325 Girard Ave. So., Minneapolis, MN 55405
(612) 377-0690
Owner: Harley Toberman
Studio Manager: Ms. Piggy

●●● **TRACK RECORD STUDIOS**
also **REMOTE RECORDING**
1561 Sherburne Ave., St. Paul, MN 55104
(612) 645-9281
Owner: Norton Lawellin, "Red" Freeberg
Studio Manager: Lawellin & Freeberg

●●● **TRADE SECRET RECORDING**
9407 Olde Eight Rd., Northfield, OH 44067
(216) 468-0646
Owner: Alan M. Horenchak
Studio Manager: Paulette

●●● **W G RECORDING STUDIO**
also **REMOTE RECORDING**
312 S. Mill St., Kansas City, KS 66101
(913) 621-1676
Owner: Luther Wilson, Jr.
Studio Manager: Luther Wilson, Jr.

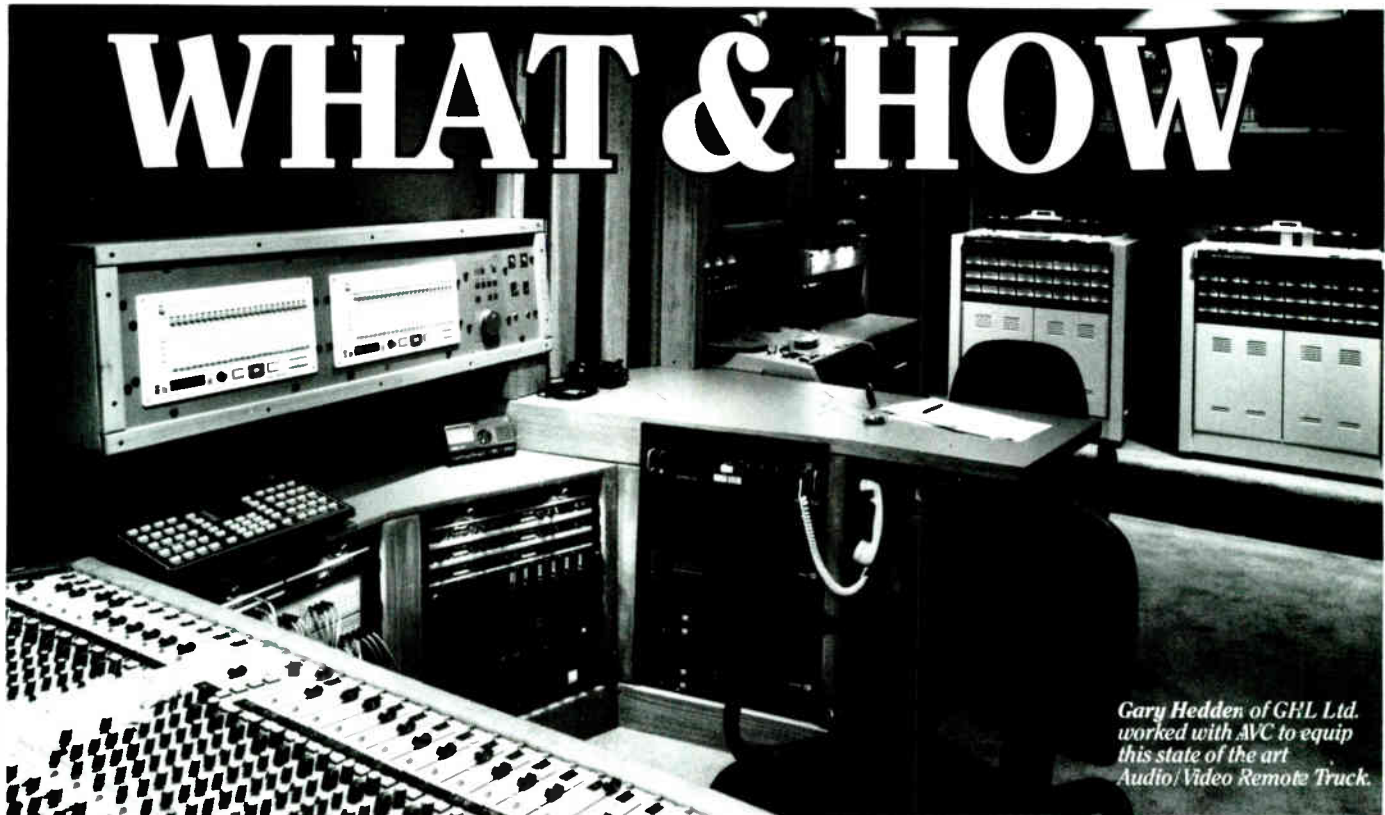
●●● **WHITE HORSE RECORDING**
also **REMOTE RECORDING**
620 15th St., Moline, IL 61265
(309) 797-9898
Owner: Jeanne McKirchy-Spencer, Ron Spencer
Studio Manager: Ron Spencer

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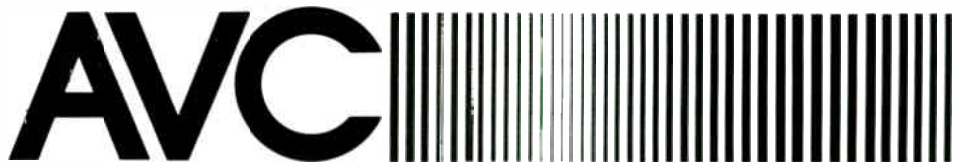
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◆◆◆ THE ALLIANCE RECORDING COMPANY

also REMOTE RECORDING
8449 Parshallville Rd., Fenton, MI 48430
(313) 632-5653

Owner: Al Hurschman, Mark Farmer
Studio Manager: Al Hurschman
Engineers: Al Hurschman, Dee Hurschman, Don Pushies, Jacques Mersereau, independents.

Dimensions of Studios: 36 x 40
Dimensions of Control Rooms: A: 20 x 24; B: 18 x 20
Tape Recorders: MCI JH-114, 24 track; MCI 110-A, 2 track; MCI 110-B, 2 track; Otari Mark III, 8 track; Scully 280B, 2 track.

Mixing Consoles: NEOTEK IIIC, 56x24; Hill J Series, 24x8.
Monitor Amplifiers: SAE, Crown, McIntosh
Monitor Speakers: UREI 813B, JBL 4311, JBL 4312, JBL 4301, Yamaha NS10, Auratone.

Echo, Reverb & Delay Systems: Lexicon 224XL, EMT 140TS, ART 01A, Sound Workshop 262, Harmonizer 910, Marshall Time Modulator, DeltaLab DL-2, DeltaLab Time Line, Eventide 1745, Yamaha analog delay, Time Tech, Dynacord tape delay.

Other Outboard Equipment: (2) UREI 1176; (2) dbx 165, (2) dbx 166; Scamp rack w/limiters, gates, EQ; Orban 418A, 424A; Omni Craft noise gates; Teletronix LA-2A; Eventide Instant Phaser; MXR flanger/doubler; Invinics limiter.

Microphones: Neumann: U89s, U87s, KM84s, KM56s, U47s (tube); AKG: 414s, 451s, C28s, 109s, 190; EV: RE20s, CS15s, RE55s, RE15s, 635s, 666, DS35s; Sennheiser: 421s, 441s; Beyers: 500s, 260s, 101s; Shure: SM81s, SM57s, SM58s, SM54s; Altec M30s; Crown P2M.

Instruments Available: Ensonic Mirage; Yamaha DX7; Korg Poly 6; Korg 3 x 3; LinnDrum; Ludwig drums; Fender Rhodes; Fender, Peavey, Roland, AIMS & Marshall instrument amps.

Video Equipment & Services: Synchronizer, 3/4" deck, and monitor available for post-scoring.
Rates: Available on request.

◆◆◆ AMBIENCE RECORDINGS, INC.

27920 Orchard Lake Rd., Farmington Hills, MI 48018
(313) 851-9766

Owner: Charles F. Schenck
Studio Manager: Dennis P. Forbes

◆◆◆ ARS RECORDING STUDIO

11628 S. Pulaski, Alsip, IL 60658
(312) 371-8424

Owner: ARS Enterprises Inc.
Studio Manager: Gary Cobb
Engineers: Gary Cobb, Harry Brotzman, Bob Sheffield, Jeffery Cobb.

Dimensions of Studios: 20 x 30 x 10 and 9 x 10 x 10
Dimensions of Control Rooms: 16 x 20 x 10
Tape Recorders: Otari MTR-9011, 24 track; Otari MX 7800, 1" 8 track; Studer 810, 1/4" 2 track; Otari 5050-B, 1/4" 2 track; Studer A710, cassette; (5) Technics RSM-85, cassettes.
Mixing Consoles: Trident Series 70, 28 x 24.
Monitor Amplifiers: (2) Crown PSA-2s, (2) Crown 150s, BGW 750.



ARS RECORDING STUDIO
Alsip, IL

Monitor Speakers: UREI 811Bs, JBL 4430s, Auratone 50s.
Echo, Reverb & Delay Systems: Lexicon Super Prime Time, PCM42, PCM60; Ursa Major 8 x 32; Master-Room chamber and 210 Spring.

Other Outboard Equipment: dbx 165 and 163 compressors; Omni Craft noise gates, MXR flangers and phasers.
Microphones: Neumann, Crown, Sennheiser, B&K, E-V, Audio-Technica, Shure, AKG.

Instruments Available: Ludwig and Gretsch drums; Bluthner 7' grand piano.
Rates: Call for rates.

◆◆◆ AUDIO PHONICS CORPORATION

also REMOTE RECORDING
P.O. Box 396, Kenosha, WI 53141
(414) 656-0717

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◆◆◆ AUDIO RECORDING STUDIOS, INC.

also REMOTE RECORDING
601 Rockwell Ave., Cleveland, OH 44114
(216) 771-5112

Studio Manager: Bruce Gigax

◆◆◆ AUDIO TRAK INC.

1965 Harlem Rd., Rockford, IL 61111
(815) 654-7771

Owner: Joe Guarino
Studio Manager: Joe Guarino

◆◆◆ AUDIOCRAFT

also REMOTE RECORDING
915 W. 8th St., Cincinnati, OH 45203
(513) 241-4304

Owner: E.T. Herzog, Jr.
Studio Manager: E.T. Herzog, Jr.

◆◆◆ AUDIOGRAPH PRODUCTIONS INC.

also REMOTE RECORDING
2810 Bennett Rd., Okemos, MI 48864
(517) 332-3272

Studio Manager: Doug Monson
Engineers: Chief eng: Glenn Brown, Jerome Fox
Dimensions of Studios: A: 22 x 30 x 18; B: 14 x 10 x 9.
Dimensions of Control Rooms: A: 18x17x10; B: 14x10x9.
Tape Recorders: Studer A-80 MkIII, 24 track; Studer A-810, 2 track; (2) Otari MX5050B, 2 track; Otari MX5050, 4 track.
Mixing Consoles: NEOTEK Series 2, 32 x 24.
Monitor Amplifiers: Multiple Crown & McIntosh.
Monitor Speakers: UREI 813A, JBL 4311, JBL 4301, Auratone 5C.

Echo, Reverb & Delay Systems: Lexicon 224XL digital reverb, live chambers, Lexicon Prime Time II, Prime Time 93, Lexicon PCM 42, Eventide H910 Harmonizer.

Other Outboard Equipment: Eventide FL201 Instant Flanger, (6) Kepex II, (3) Gain Brain II, (2) Dyna-Mites, Orban de-esser, Aphex Exciter B, (4) Gately compressors, UREI 1176 and 1178 limiters, Teletronix LA-2A, dbx 160X, (2) UREI 546 dual parametric EQ, Roland SBC 350 Vocoder, Gately EQ-7.

Microphones: Shure, Sennheiser, Electro-Voice, Crown P2M, Neumann, AKG, Sony, Beyers.

Instruments Available: 1929 Kimball grand piano, Hammond B-3 1962, countless Fender, Gibson, Marshall, Peavey, guitar amps, Emu Emulator II, Oberheim OB-Xa 8 voice, Oberheim DSX sequencer, Oberheim DMX digital drum computer, Siel DK 600 synth, Yamaha DX7, Ludwig drum set, percussion box, digitally sampled Whank Stabs and small instruments too numerous to mention.

Video Equipment & Services: 3/4" sync equipment available on request.
Rates: Call for rates.

◆◆◆ AZI PRODUCTIONS

also REMOTE RECORDING
1650 Cass St., Fort Wayne, IN 46808
(219) 484-3018

Owner: AZI Productions

◆◆◆ BEACHWOOD STUDIOS

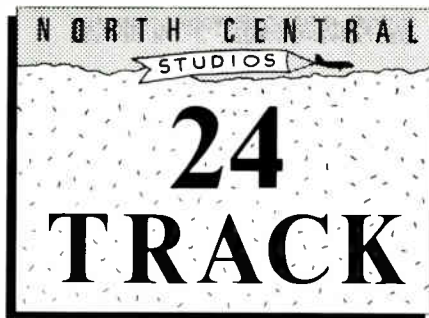
also REMOTE RECORDING
23330 Commerce Park Rd., Beachwood, OH 44122
(216) 292-7300

Owner: EDR Corporation
Studio Manager: George A. Sipl; General Manager: Keith A. Voigt
Engineers: George A. Sipl, Dale Peters, Bruce Hensal, Joel Solloway, Paul Schwartz, Jim Carroccio
Dimensions of Studios: (A) live room: 29 x 26 acoustically

Engineers: Al Ursini, chief eng; Harry Brotman, Dana Cor-nock, Bob Kearny, Tom Matthews, Larry Sturm, Joe Tortorici
Dimensions of Studios: (A) 34 x 24 x 16 w/8 x 10 iso room; (B) 11 x 16 x 12
Dimensions of Control Rooms: (A) 24 x 18 LEDE; (B) 14 x 13
Tape Recorders: Otari MTR-90 Series II, 24 track; MCI JH-24, 24 track; Otari MTR-12, 2 track; Studer B67, 2 track; Tascam 80-8, 8 track.
Mixing Consoles: Harrison Raven w/Audio Kinetics MasterMix automation, 32 x 24; Soundcraft 2400, 24 x 24.
Monitor Amplifiers: UREI, Haller, Crown, BGW
Monitor Speakers: UREI 813, UREI 811, MDM-4, Yamaha NS-10M, Auratones, JBL 4313.
Echo, Reverb & Delay Systems: Ecoplate reverb, Lexicon 200 digital reverb, Lexicon PCM60 digital reverb, Quantec room simulator, Lexicon Prime Times I & II, Effectron 1024.
Other Outboard Equipment: Eventide Harmonizers, dbx 165 comp/limiters, UREI LA-4s, EXR Exciter, UREI parametric & graphic EQ, Pultec EQ, Valley People Dyna-Mites, Drawmer gates, Kepex & Gain Brains, Roland & Eventide flangers, stereo synthesizers, Akai S612 sampler, UREI digital metronome.
Microphones: Neumann U87, U47, KM84; AKG 414 D12; Sennheiser 441, 421; E-V RE20; Beyers M260; Sony ECM 22, 51; Shure 81, 57; Crown PZM.
Instruments Available: Yamaha C5 grand piano, Hammond B-3 w/Leslie, Sonor drum kit w/7 assorted snares, Fender Rhodes, Moog Model 900 synthesizer, Yamaha DX7, LinnDrum, Drumulator II, Roland 707, Memorymoog, Casio CT201, Fairlight CMI, Fender & Musicman amps.
Rates: Upon request.

●●●● **COLUMN ONE RECORDING**
 3555 South Mentor, Springfield, MO 65804
 (417) 881-5015
Owner: Jim & Elizabeth Martin
Studio Manager: Lou Whitney

●●●● **CONTROL SOUND**
 3819 42nd Ave. So., Minneapolis, MN 55406
 (612) 724-6579
Owner: Scott Bauer, Jeff Bjork
Studio Manager: Jeff Bjork



●●●● **CREATIVE COMMUNICATIONS**
 also **REMODE RECORDING**
 3700 So. Hawthorne, Sioux Falls, SD 57105
 (605) 334-6832
Owner: Bill Prines
Studio Manager: Vesta Prines

●●●● **CROSTOWN RECORDING**
 601 E. Crostown Pkwy., Kalamazoo, MI 49001
 (616) 343-7972
Owner: Brandon Wade
Studio Manager: Jon Aaron
Engineers: Brandon Wade
Dimensions of Studios: 33 x 35
Dimensions of Control Rooms: 28 x 16
Tape Recorders: Otari MTR 90 Series II 24/8 track; Otari MTR-12 Series II; Otari 5050B II, 2 track.
Mixing Consoles: Soundcraft 1624/2400 24.
Monitor Amplifiers: BGW
Monitor Speakers: UREI 813, JBL 4313B, Auratones.
Echo, Reverb & Delay Systems: Ecoplate I, MICMIX Master-Room reverberation, Lexicon 200 digital reverb, Lexicon PCM 41 & 42 delay, Eventide Harmonizer, Eventide flanger.
Other Outboard Equipment: UREI 1176 limiters, Teletronix LA-2A, Gain Brains, Kepex, White 4000 Series 1/3

graphics, Peterson strobe tuner, Orban 422 Studio Optimod.
Microphones: Neumann 87, Neumann 84, Neumann 47, Sennheiser 441, Sennheiser 421, AKG 414EB, AKG 451, Shure 81, Shure 56, Telefunken 251, Electro-Voice RE20, Electro-Voice RE16, PMLDC-73, Sony ECM-50, Crown PZM, Countryman 101, direct boxes by Countryman, Ax-max, Sescam and Westlake.
Instruments Available: Baldwin SD-10 9' concert grand, Hammond B3 w/Leslie, Yamaha DX7 synthesizer, Mini-moog, Mesa Boogie amps, Fender Super Reverb, Ampeg B-15 bass amp, Lab Series L6 bass amp, Oberheim DX drum machine, Simmons Clap Trap, Sonor and Ludwig studio drum sets, Fender Precision Bass, Telecaster, Les Paul Special, Gibson Southern Jumbo acoustic.
Rates: \$50-\$85/hr. Inquire for block rates.



THE DISK LTD.
 Detroit, MI

●●●● **THE DISK LTD.**
 14611 E. Nine Mile Rd., E. Detroit, MI 48021
 (313) 779-1380
Owner: Robert Dennis, Greg Reilly, Tom Gelardi
Studio Manager: Greg Reilly
Engineers: Greg Reilly, Robert Dennis, Dave Baker, John Jaszez
Tape Recorders: Ampex MM1000, 24 track; 3M M59, 16 track; Ampex ATR-102, 2 track; MCI JH-110B, 2 track; Scully.
Mixing Consoles: API fitted with Allison Research Computer Mix System, custom, 32 x 24.
Monitor Amplifiers: McIntosh, Crown, PAS.
Monitor Speakers: DLC design ACUs w/UREI horn, Acoustic Research modified with JBL mid and Electro-Voice horn, and Auratones.
Echo, Reverb & Delay Systems: (2) EMT 140s, Lexicon PCM41, Effectron, DeltaLab DDL-1, Lexicon 200 digital reverb.
Other Outboard Equipment: Harmonizer, Kepex, Teletronix compressors, Pultec EQs, Orban parametric EQ, Loft delay and flanger, time code regenerator, DLC limiters.
Microphones: Neumann U47, U67, U87, U86s and U85; Electro-Voice RE20s, RE15, RE10, RE55, 635A; Sennheiser MD 421s.
Instruments Available: LinnDrum, Mirage digital sampling synthesizer
Video Equipment & Services: ¾" Sony BVU 800, BTX synchronizers and tape controller, BTX time code generator, Panasonic color monitor.
Rates: Give us a call.
Extras: Separate edit room with two MCI 2 tracks and monitor system. Used for tape duplication, editing, and listening.
Direction: Credits include: "Atomic Dog" George Clinton, "Heard it Through the Grapevine" Roger Troutman, "Lady" One Way, "The Saga Continues" Roger Troutman, and many early Detroit rock & roll groups such as Bob Seger, SRC, Frost, and Frigid Pink. We are also licensed by the State of Michigan to teach Recording Engineering classes.

●●●● **EDITEL-CHICAGO**
 301 E. Erie, Chicago, IL 60611
 (312) 440-2360
Owner: Scanline Communications
Studio Manager: Lenard Pearlman

●●●● **FIFTH FLOOR PRODUCTIONS**
 517 W. 3rd St., Cincinnati, OH 45202
 (513) 651-1871
Owner: Richard & Ellen Goldman
Studio Manager: Richard Goldman
Engineers: Robin Jenney, Gary Platt, John Murray, Carol Burkart

—LISTING CONTINUED ON PAGE 138

How hot
are we?

AUDIO·GRAPH·PRODUCTIONS INC

2810 Bennett Road Okemos, Michigan 48864 (517) 332-3272

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even more
than
meets the eye...
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Total Audio is Streeterville Studio's credo.

President/Studio Manager Jimmy Dolan amplifies the concept: "We all know what an audio studio is, or should be, but all are not the same by definition or design. Our 'conscious positioning' delivers **Total Audio** to a diverse clientele and illustrates the ways in which Streeterville distinguishes itself. Our experienced team is equipped to meet any audio challenge ranging from the cleanest narration recording to 'cutting edge' audio tracking and finishing for records, film or commercials. All this at rate structures that can be customized to meet your project's needs. Add to this Streeterville's people, providing everything necessary to guarantee your project's success rather than simply doing another "job," and you have the promise of **Total Audio.**"



Streeterville Recording Studios • 161 E. Grand Avenue • Chicago, IL 60611 • (312) 644-1666

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 Chris Blackwell * Mark Bolin * Peter Boyle
 Brecker Brothers * Oscar Brown Jr. * Anita Bryant
 Jerry Butler * Pat Butrum * Robin Geoffrey Cable
 Chi-Lites * Stanley Clarke * Otis Clay * Vassar
 Clements * The * Coal Kitchen * Natalie Cole
 The Conway Brothers * Gwin' Shames * Vic
 Damone * Carl Davis * Mable Davis * Lorraine
 Day * The Dells * Delaney * Willie Dixon * Len
 Dressler * Murray Dymally * The Eagles * Emotions
 Dale Evans * Richard Evans * Phil * Maze-O
 Buzz * The * The Flock * Foghat * Foggy Tops
 Peter Gabriel * Jerry Goodman * Steve Goodman
 Bunky Green * Paul * Gypsy Fari * Bill
 Halverson * Ian * Eddie Harris * Paul
 Harvey * Hawking * Kitty Haywood * Heart
 Ken * Loretta Holloway * Ides of March
 Impressions * Robert Irving III * Michael Jackson
 McKinley Jackson * The Jackson Five * Walter
 Jackson * The Jordanaires * B.B. King
 Tommy Lipuma * Carol Lawrence * Frank Marino
 Mason Proffitt * Robin McBride * Henry
 McCulluch * Buddy Miles * Liza Minnelli * Bob
 Monaco * Moody Blues * Bob Moog * Barry Mraz
 Muhammed Ali * Ted Neely * Rick Nelson * New
 Colony Six * Ohio Players * Oregon * The Other
 Side * Ouray * Joe Pass * Jim Peterick * Oscar
 Peterson * John Prine * Bill Quateman * Caleb
 Quaye * Phil Ramone * Elliot Randell * Ronald
 Reagan * Max * Eugene
 Record * REO Speedwagon * Minnie
 Riperton * Max * Judy Roberts * Doug
 Rauch * Kenny Rogers * The First Edition * Roxy Music
 Rufus * * Dave Sanborn * Jesse
 Saunders * Ken Scott * Tom Scott * Earl Scruggs
 Second City * Shadows of Night * Denny Siewell
 Corky Siegel * Siegel * Don Shelton
 John Siomos * Ben Sidiq * Swingsmiths * Smoke
 City * Soul Train * David Steinberg * Bob Stewart
 Harry Stone * Mike Stone * * Styx
 Bruce Swedien * * Tribal Brothers
 Teagarten * Van * Third World * TW4
 Mario Thomas * Tom Tom * * Bill
 Trout * Trillion * Ike & Tina Turner * Phil Upchurch
 Utah Heep * Weather Report * Tony Williams * Jonathan
 Winters * WLUP * Frank Zappa * And many more

Circle #100 on Reader Service Card

NORTH CENTRAL STUDIOS 24 TRACK

—FROM PAGE 136

Dimensions of Studios: (A) 20 x 25, (B) 18 x 12
Dimensions of Control Rooms: (A) 20 x 15, (B) 18 x 17
Tape Recorders: (A) MCI JH-24, 24 track; Studer B-67, 2 track; Otari MX-5050B, 2 track; Technics 10A02, 2 track. (B): Studer B-67, 2 track; Otari MX-5050B MkIII, 8 track; Otari MX-5050B, 2 track; Tascam 34, 4 track.
Mixing Consoles: Sphere automated console Eclipse A, 28 x 24; Speck Electronics 16 x 8.
Monitor Amplifiers: BGW 500, BGW 250, McIntosh 500
Monitor Speakers: UREI 813 Time Aligned, JBL 4311, Auratones, JBL 4411.
Echo, Reverb & Delay Systems: Lexicon 224 digital reverb, Ecoplate reverb, Lexicon Prime Time digital delay, Marshall Time Modulator, Cooper Time Cube, MXR 01 digital reverb.
Other Outboard Equipment: Orban 622B parametric equalizer, UREI 1176LN limiters, dbx 160 limiters, dbx 902 de-esser, dbx noise reduction (26 channel), Audionics equalizer, Aphex CX-1 expander/compressors, Aphex EQF-2 equalizers, LA-2A limiters, Orban 424A compressor/limiter.
Microphones: Neumann U87, Neumann KM 84, Neumann KM 86, Shure SM57, Shure SM58, Electro-Voice RE20, Electro-Voice RE16, Sennheiser 421, AKG 414.
Instruments Available: Steinway 7' grand piano, Fender Rhodes, Rogers drums, synthesizers available by appointment.
Video Equipment & Services: Audio Kinetics Q Lock 3.10, Sony 3/4" VCR, Sony monitor, NEC monitor, Sony JH-110 video layback machine.
Rates: Available upon request.

●●●● 54 SOUND
 1525 E. 9 Mile Rd., Ferndale, MI 48220
 (313) 54-SOUND, 547-6863
 Owner: Joel Martin, Frankie LaMarr

●●●● FUTURE SOUND STUDIOS
 also REMOTE RECORDING
 141 S. Main St., Marion, OH 43302
 (614) 383-2566

Owner: David E. Sifrit
 Studio Manager: Terry Hero
 Engineers: David Sifrit, Mark Wilson & local freelance
Dimensions of Studios: 48 x 29 x 12
Dimensions of Control Rooms: 21 x 16 x 10
Tape Recorders: Lyrec, 24 track; Ampex 351 tube, 2 track; JVC digital VR-100B, 2 track.
Mixing Consoles: Harrison (automated) 2322 w/ Allison 64K programmer, 24 track.
Monitor Amplifiers: Spectra-Sonics, Crown, Yamaha, QSC
Monitor Speakers: JBL 4435, JBL 4312, Auratones
Echo, Reverb & Delay Systems: EMT 250 steel plate, (4) Yamaha R-1000 digital reverberators, (3) Yamaha D-1500 digital delays.
Other Outboard Equipment: White 1/3 octave real-time analyzer, (3) Galax quad gates, (2) dbx 165A compressors, (2) Yamaha stereo compressors, (2) White 4001 EQs, Eventide H-910 Harmonizer, MXR harmonizer, EXR Exciter, (12) Spectra-Sonics outboard parametric equalizers.
Microphones: Normal assortment of AKG, Beyer, RCA, E-V, Neumann, Sennheiser and Shure.
Instruments Available: Yamaha DX7 synth w/expander module and sequencer, Yamaha studio drum machine, 5-piece Simmons drum set, Ludwig drum set, Les Paul guitar, 7' grand piano, Minimoog, Hammond B-3.
Rates: \$75/hr. Project rates negotiable.
Extras: Our spacious drum alcove (16x16x10 trapezoidal) was specially designed to maximize drum track separation for unbelievably tight percussion mixes. In addition, the studio room design provides a spacious, diffuse sound, making it ideal for small symphonic and classical instrumental and vocal recordings, while, with adjustable partitions, allowing it to produce excellent multi-track pop recordings as well.

Direction: Futuresound provides most of the equipment and goodies that are available in a well-equipped metropolitan studio without the metropolitan studio price tag attached. Our experienced staff enjoys working with a diverse portfolio of clients, and artists from classical to pop are both welcomed and appreciated.



GHL AUDIO ENGINEERING
 Hilliard, OH

●●●● GHL AUDIO ENGINEERING
 also REMOTE RECORDING
 P.O. Box 273, Hilliard, OH 43026
 (614) 876-1057
 Owner: GHL
 Studio Manager: Lynne Hedden
 Engineers: Gary Hedden, Jim Kaiser, Dennis Conner, independent engineers welcome.
Dimensions of Studios: 25 x 50 x 16
Dimensions of Control Rooms: 8 x 22
Tape Recorders: (2) Otari MTR-90/II, 24 track; Otari MTR-12/1, 4 track 1/2" / 2 track 1/4"; (2) Otari MX-5050, 1/4" 2 track; (2) Aiwa AD-F990, cassette recorders.
Mixing Consoles: Harrison MR-4, 36 x 24 w/ARMS automation.
Monitor Amplifiers: Hafler Pro-Series amps.
Monitor Speakers: Fostex LS-3, Fostex RM-765, Fostex G-7000, MDM-4, Minimus 7, Auratones.
Echo, Reverb & Delay Systems: (2) Lexicon 200 digital reverbs, (2) Lexicon PCM42 digital delays, Marshall Time Modulator 5402, Quantec Room Simulator, Eventide 910 Harmonizer, dbx 906 flanger/delay.
Other Outboard Equipment: (4) dbx 903 compressors, (2) dbx 902 de-essers, (6) Valley People dynamics processors, (4) Aphex EQF-2 equalizers, (6) Aphex CX-1 compressor/expander, (8) Dolby 361 type A noise reduction, dbx 180 type 1 stereo noise reduction, dbx 700 digital audio processor.
Microphones: AKG C-414, C-460B; Neumann U89, KM84, SM2; Beyer M-500; Sennheiser MD-421; Shure SM58, SM57; Altec M-49; Sony C-38; Electro-Voice RE20.
Instruments Available: on request.
Video Equipment & Services: 3/4" JVC-6650, Panasonic S1900 monitor, RCA remote control CCTV.
Rates: Available on request
Extras: Three machine lock up via BTX Softouch controller; unique video track interface; 54 pair Neumann input snake w/Jensen split for house sound; foldback and cue: Bag End TA-12, Fostex T-20 headphones; 2 channel 6 station Clear-Com; Sony C-5 Compact Disc player.
 Direction: The GHL remote truck is regarded as one of the finest facilities available. We, however, are certainly not limited to concert-type dates. Recent projects have included significant major-label recordings produced by GHL at a variety of locations. We encourage our clients to explore the freedoms of recording and mixing in a leading-edge control room at any appropriate site. The GHL staff is always available for consultation, engineering, and production in any studio. Clients include Motown records, Savoy Records, Milk & Honey Records, H.B.O., D.I.R. Broadcasts, Universal Recording, Chicago Recording Co., U.S. Air Force, and many regional artists.

●●●● GRS RECORDING
 also REMOTE RECORDING
 13300 Broad St., Pataskala, OH 43062
 (614) 927-9566
 Owner: GRS, Inc.
 Studio Manager: Steve Andrews

●●●● HIGH FIDELITY RECORDING, INC.
 also REMOTE RECORDING
 1059 Porter, Wichita, KS 67203
 (316) 262-6456

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

Owner: Corporation
Studio Manager: James Stratton
Extras: We offer full services in video as well as audio. Equipment includes 16(30) tracks on two inch tapes, EMT Plate reverb, Lexicon 200 digital reverb, PCM 41/42 delay, AKG C460, C451, and Neumann U-87 mikes. ATR-100 2 track (half inch or quarter inch) dbx 700 digital 2 track system, one inch "C" format VTRs, SMPTE code, digital video effects with rotation and perspective; and duplication in VHS, Beta and 3/4", Dolby and dbx noise reduction, and Orban compressor, limiter-de-esser, remote 16 track recording, video production.

●●●● **HOFFMANN MEDIA CENTER**
also REMOTE RECORDING
 2185 Hampton Ave., St. Louis, MO 63139
 (314) 647-4900, ext. 53
Owner: International Lutheran Laymen's League
Studio Manager: Ken Roberts, Mark Eischer

●●●● **IRONSIDE RECORDING STUDIO**
 Fall Creek Rd., Branson, MO 65616
 (417) 334-7040
Owner: Bob & Sherri Millsap
Engineers: Bob Millsap, John Salem, Jake Niceley, Ric Williams
Dimensions of Studios: 26 x 30
Dimensions of Control Rooms: 21 x 26
Tape Recorders: (2) Sony/MCI JH-24, 24 track; MCI JH-110, 2 track; Studer B-67, 2 track; Studer A-67, 2 track; Sony DASH II, 2 track; (2) Sony ES 666, cassettes.
Mixing Consoles: Sound Workshop Series 34, 32 x 24; NEOTEK Series III, 28 x 24.
Monitor Amplifiers: (2) Hafler, Crown D150, (3) BGW, McIntosh, Sony FET
Monitor Speakers: Tannoy, Super Red Time Aligned, Auratone, JBL 4311, Klipsch
Echo, Reverb & Delay Systems: Lexicon 200 (w/software updates), Lexicon Prime Time II, ADA 128i, Eventide Harmonizer, H910, (2) EMT 150 plates, Blevens plate, Lawson plate, Klark-Teknik.
Other Outboard Equipment: (2) Pultec tube program EQ, EQP1-A; (4) White 1/3 octave EQ; Brooke-Siren, dbx, Allison, UREI, limiters; 4 channel Omni Craft noise gate; EXR Exciter; (4) Kexex, dbx noise reduction; Studio Technologies stereo simulator.



IRONSIDE RECORDING STUDIO
 Branson, MO

Microphones: (3) U87, (4) 414, (6) KM84, KM85, Sanken MU41, U47, (7) 421, (2) RE20, RE16, (10) Sony, SM57
Instruments Available: Rhodes 88 stereo, (2) Kamball grand pianos, digital keyboards, clavinet, (2) guitar amps (2) bass amps, LinnDrum.
Rates: Call for current rates. All rates are based on payment schedule discounts.
Extras: Located in the heart of the Ozark Mountains of southern Missouri in a resort town near four fishing/recreation lakes. Excellent studio musicians available. Owner has excellent track record as a producer/publisher.

●●●● **JEWEL RECORDING CO.**
also REMOTE RECORDING
 1594 Kianer Ave., Cincinnati, OH 45231
 (513) 522-9900
Owner: Rusty York
Studio Manager: Rollin Bennett, Jr.

●●●● **JOR-DAN, INC.**
 1100 Wheaton Oaks, Dr., Wheaton, IL 60187
 (312) 653-1919
Owner: Dan Zimbelman
Studio Manager: Introducing JOR-DAN: A new first-class "no compromise" studio facility. Design: John Edwards & George Augspurger. Equipment: Neve, Studer, Neumann, EMT, Lexicon, etc. Country suburban setting with adjacent indoor tennis, racquetball, pool, nautilus. Full service professional staff, plus, personal attention to clients' accommodations (travel, hotels, dining, etc.) Also featuring: 8 track media studio, video transfer service, critical quality cassette manufacturing and packaging. Call (312) 653-1919 for information and rates.

●●●● **K & R'S RECORDING STUDIOS INC.**
also REMOTE RECORDING
 28533 Greenfield, Southfield, MI 48076
 (313) 557-8276
Owner: Kenneth Glaza
Studio Manager: Pat

●●●● **MEDIA INTERNATIONAL**
also REMOTE RECORDING
 247 E. Ontario, Chicago, IL 60611
 (312) 467-5430
Owner: Media International Inc.
Studio Manager: Bill DeLonghe, Jackie Babicz

●●●● **METRO MOBILE LOCATION RECORDING**
only REMOTE RECORDING
 2009 John's Dr., Glenview, IL 60025
 (312) 998-6420
Owner: Timothy R. Powell
Studio Manager: Timothy R. Powell
Dimensions of Studios: The Midwest and beyond
Dimensions of Control Rooms: 12 x 8
Tape Recorders: MCI JH-24, 24 track; Tascam 38, 8 track; Tascam 40-4, 4 track; Technics 1500US, 2 track; Aiwa 3500, cassette; Otari MTR-10, 2 track.
Mixing Consoles: NEOTEK Series II, 32 x 24; Valley People Dynamic, 4 x 2.
Monitor Amplifiers: Crown D150A, Sony Tan 5550.

—LISTING CONTINUED ON PAGE 140

Why do Jensen Transformers have Clearer Midrange and Top End?

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

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

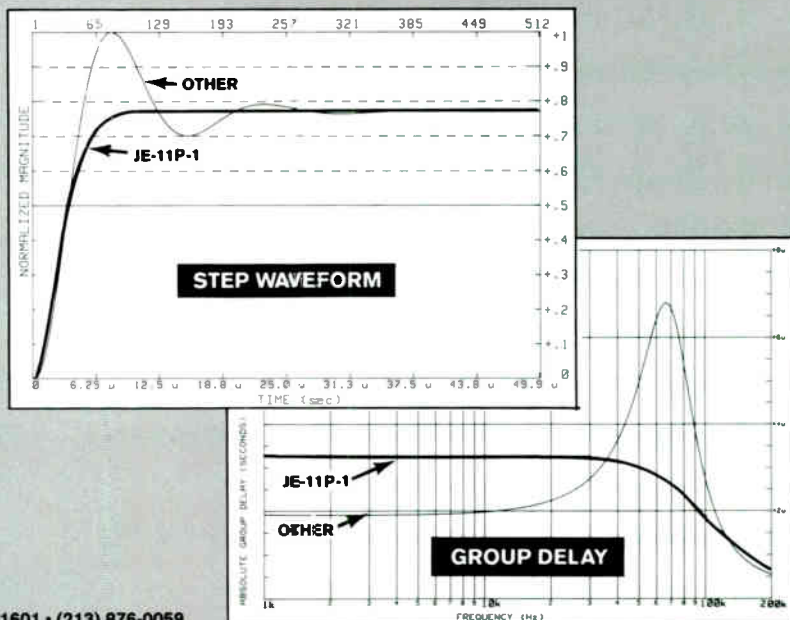
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 INCORPORATED

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metro mobile
LOCATION RECORDING

METRO MOBILE LOCATION RECORDING
Glenview, IL

Monitor Speakers: JBL 4313, Yamaha NS10, Auratone 5C, Fostex 785
Echo, Reverb & Delay Systems: Lexicon PCM60, Sound Workshop 280, Effectron ADM-256, ADM-1024, Lexicon Prime Time.
Other Outboard Equipment: dbx 160X, dbx 166, Eventide Omnipressor, MXR dual limiter, Valley People Dyna-Mite, Burwen 2000N, Technics tuner, 40 channel snake & splitter, stands, cables, 100 amp AC distribution system, Talkman wireless intercom, dbx noise reduction.
Microphones: Shure SM57, SM58, SM33, SM7, SM81; Sony ECM-150, C500, ECM-377; Sennheiser 441, 421; AKG 414, 451, D202; Neumann U87, U47, KM 84; Audio-Technica ATM31, ATM11; E-V PL1777; Nakamichi CM300; C-ducer tapes, Sescom & Stewart direct boxes; Beyer 160.
Video Equipment & Services: Sony/Panasonic CCTV with color monitor; SMPTE reader-generator available; full audio for video location support.
Rates: \$1,500/day plus \$1.00/mile outside of Chicago.

NORTH CENTRAL
STUDIOS
24
TRACK

•••• **MIDWEST RECORDERS, LTD.**
also **REMOTE RECORDING**
807 W. Oklahoma, Milwaukee, WI 53215
(414) 483-5055

Owner: Rick Singer
Studio Manager: Rick Singer
Engineers: Dave Neitzke
Dimensions of Studios: (A) 25 x 22; (B) 9 x 16
Dimensions of Control Rooms: (A) 20 x 18; (B) 14 x 11
Tape Recorders: Otari MTR-90 II, 24 track; Otari 5050B III, 8 track; Otari MTR-10, 2 track; Ampex 440C, 2 track; Studer/Revox A-700, 2 track; Sony PCM-F1, 2 track digital; Tanberg 3004, cassette deck.
Mixing Consoles: Harrison Raven, 32 x 24 w/automation; Hill Audio, 16 x 8.
Monitor Amplifiers: Crown DC-300A II, Banner 300, Crown D75, AB 900, AB 600.
Monitor Speakers: JBL 4435s, JBL 4333, JBL 4612 Cabaret, Yamaha NS-10M, Auratones.
Echo, Reverb & Delay Systems: Lexicon 224XL, Lexicon 95 Prime Time, Roland SRV-2000, Roland SDE-3000, Eventide H910.
Other Outboard Equipment: UREI 1176LN limiters, UREI LA-4 limiters, Valley People 430 Dyna-Mites multi-function processors, Audioarts 1200 limiters, Omni Craft GT-4s, Eventide 2830 Omnipressor, dbx-3BX expander, Orban 622B parametric EQ, Delta Graph EQ-10 graphic.

Microphones: Neumann U87s, U47, U67, KM84; AKG 414s, 452s, D12E; Sennheiser 441s, 421s; Electro-Voice RE20s; Shure SM58s; Studer SMK5-U; Crown PZM 30 APGs; RCA 77DX.
Instruments Available: Kurzweil 250, Yamaha GS-2, Linn-Drum, Pearl drums.
Video Equipment & Services: Sony Pro Feel 25"; JVC CR-6300 U-3/4"; JVC 2650; 1/2" Sony.
Rates: Please call for rates.

•••• **MULTI-TRAC RECORDING STUDIOS, INC.**
also **REMOTE RECORDING**
25533 Five Mile Rd., Redford, MI 48239
(313) 531-5353
Owner: Nicholas G. Canzano

•••• **MUSIC FOR MOVIES CO.**
4848 N. Keeler Ave., Chicago, IL 60630
(312) 283-1477
Owner: Jeffrey Ritter
Studio Manager: Mike Meyer

•••• **MUSICOL, INC.**
also **REMOTE RECORDING**
780 Oakland Park Ave., Columbus, OH 43224
(614) 267-3133
Owner: Boyd Niederlander, John Hull
Studio Manager: Doug Edwards
Engineers: Doug Edwards, Lisa Dale, Steve Carter, John Hetrick, John Hull, Cornell Scott.
Dimensions of Studios: (1) 30 x 36 x 20; (2) 16 x 18 x 8; (3) 12 x 15 x 8
Dimensions of Control Rooms: (1) 20 x 25 x variable 12 to 8 feet; (2) 15 x 18 x 8; (3) 12 x 16 x 8.
Tape Recorders: MCI JH-24, 24 track w/auto locator; (10) Ampex 440B, 1, 2, 4 tracks; Musicol M-R/8, 8 track; Ampex 300, 1 track; (3) Ampex 351, 1 track; Ampex 351, 2 track; 3M 56, 16 track; (2) Sony 701ES Digitals; (10) Magnecord 72B/748, 2 track; (10) Telectro AN-1, 1 track.
Mixing Consoles: Quantum 10-10, 29 x 16; Quantum 168, 16 x 16; Soundcraft 200S, 16 x 4; Soundcraft 200S, 8 x 4; 1B, (2) Quantum QM8, 8 x 4.
Monitor Amplifiers: McIntosh, Marantz, Bose.
Monitor Speakers: Big Red, Altec, JBL, E-V, Auratone
Echo, Reverb & Delay Systems: Lexicon Prime Time, PCM 41, Eventide Harmonizer, Lexicon 200, Orban Ilc-ustom built plates, tape delay.
Other Outboard Equipment: Kepex, UREI 1176s, Gain Brain, L-H Clarifier, Pultec 1A3, MXR dual limiter, UREI 527A, UREI 529, Westrex hi band limiter.
Microphones: (30) Neumanns, (10) RCAs, (25) E-Vs, Sennheiser, Shure, Altec, Crown PZM.
Instruments Available: Steinway grand, full range of synthesizers, drums available.
Video Equipment & Services: 1/2" VHS and Beta; low light color cameras.
Rates: Best in the Midwest — call us.
Extras: We manufacture phonograph records and jackets—real time and high speed duplication of cassettes; 8 tracks and reel to reel, both stereo and mono. We produce and supply nationally syndicated radio such as: Mother Earth News, Prevention Health Report, Energy Watch, to radio stations throughout U.S. and Canada.
Direction: Records produced by Musicol have won Downbeat awards—Best Jazz Record of the Year. Records have been nominated for Dove Awards. Been in business at present location since 1968.

•••• **NORTHERN AFTER DARK**
also **REMOTE RECORDING**
5500 So. Marginal Rd., Cleveland, OH 44103
(216) 361-2650
Owner: Northern Entertainment
Studio Manager: Greg Webster

•••• **ON SOUND PRODUCTIONS INC.**
1522 Euclid Ave., Cleveland, OH 44115
(216) 574-6277
Owner: Van Pavloudis
Studio Manager: Van Pavloudis

•••• **OPUS RECORDING & EQUIPMENT CO.**
also **REMOTE RECORDING**
4262 Grand Ave., Gurnee, IL 60031
(312) 336-6787
Studio Manager: Fred Bergstrom
Engineers: Tony Pettinato, Perry Miller, Joe Apostol, Al Pangelino
Dimensions of Studios: 50 x 30 (iso: 17 x 16 and 17 x 12)
Dimensions of Control Rooms: 2 rooms: 21 x 23 and 17 x 16.
Tape Recorders: MCI JH-24, 24 track; Ampex ATR-102, 2 track; Otari MkIII, 2 track; Otari 5050, 2 track; TEAC 6600, 2 track; (3) Nakamichi MR-1, 2 track; Otari MkII, 8 track.
Mixing Consoles: Amek Matchless, 26 x 24; Amek Scorpion, 16 x 16.

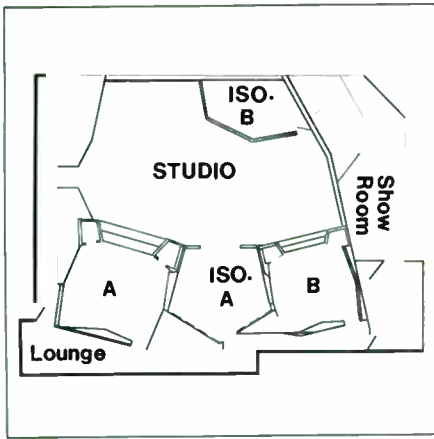
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OPUS RECORDING & EQUIPMENT CO.
Gurnee, IL

Monitor Amplifiers: Crown, Soundcraftsman, McIntosh.
Monitor Speakers: Gauss, Auratones, Altec 604, Fostex.
Echo, Reverb & Delay Systems: (3) Lexicon PCM60s, (4) Lexicon PCM41s, Lexicon PCM42, Alesis reverb, Tapco reverb, (2) stereo plates.
Other Outboard Equipment: (4) dbx 160X, (2) Neve compressors, (4) Rocktron compressors, Harmonizer, (4) noise gates, (2) Rocktron & dbx noise reductions, (4) 2070 Onkyo cassettes, custom parametric 8 band, EXR Exciter.
Microphones: (6) AKG 414s, (14) AKG 451s, (15) Beyer dynamics; (10) Shures, RCA DX77, (2) Neumann, (8) Sennheiser 441s.
Instruments Available: Yamaha 74" grand piano, Fender Rhodes, Juno 60, LinnDrum, MXR drums, Ludwig drums, grand piano, Marshall amps, Fender amps & guitar, bass, B3 organ.
Video Equipment & Services: 1" video location shoots & editing.
Rates: \$25 - \$50 per hour.
Extras: Production assistance at no charge; record & demo packages; albums, 45's pressed; cassette duplication; artwork & cover services; keyboard and outboard gear rentals available.
Direction: To continue providing hi-tech & quality recordings for the Christian & secular market. To continue working with labels and independents to give them the best sound available.

●●●● **PAC-3 RECORDING CO. INC.**
also **REMOTE RECORDING**
7106 Greenfield, Dearborn, MI 48126
(313) 581-0520
Owner: Richard G. Becker
Studio Manager: Kevin Wright

●●●● **PARAGON RECORDING STUDIOS**
also **REMOTE RECORDING**
9 E. Huron St., Chicago, IL 60611
(312) 266-0075
Owner: Marty Feldman
Studio Manager: Nancy Gardner

●●●● **PEARL SOUND STUDIOS LTD.**
47360 Ford Rd., Canton (Detroit area), MI 48187
(313) 455-7606
Owner: Ben Grosse
Studio Manager: Mark Hugger
Engineers: Ben Grosse, Mark Hugger, Tom Whitaker, Jon Michelson, Rex Baillie, various independents
Dimensions of Studios: 35 x 50 x 20
Dimensions of Control Rooms: 20 x 16 (Sierra/Hidley design)
Tape Recorders: Studer A800, 24 track; Studer A820, 2 (1/2") track; Otari MTR-10, 2 track; (2) Otari MX-5050B, 2 track.
Mixing Consoles: NEOTEK custom, 40 x 24.
Monitor Amplifiers: UREI, Crown, Hafler
Monitor Speakers: Sierra/Hidley TM-8, Yamaha NS10M, Auratone, JBL 4311B, JBL 4401, anything on request.
Echo, Reverb & Delay Systems: AMS DMX-1580S digital delay/sampler, Lexicon 224XL, Lexicon Super Prime Time, Lexicon Prime Time, Klark-Teknik DN780 digital reverb, Audicon plate reverb, Effectron II, Loft delay/flanger, Ursa Major Space Station, Cooper Time Cube, live chamber.
Other Outboard Equipment: Eventide Harmonizer, Eventide flanger, Eventide phaser, Teletronix LA-2As, Pultec EQs, API EQs, Valley People Gain Brain IIs and Kepex IIs, EXR, Aphex, etc.
Microphones: All sorts of grey, silver & brown ones. Some have tubes.
Instruments Available: Anything on request. On premises: Emulator II, Yamaha DX7, Prophet 5, Prophet 600, Ober-



PEARL SOUND STUDIOS LTD.
Canton, MI

heim DMX drum machine, Yamaha RX11 drum machine, Simmons SDS7 digital/analog drums, Marc MX-1 triggering device, Roland SBX80 sync box, Roland MSQ 700, Tema drums, Yamaha & Knabe pianos, Marshall, Fender, Roland, Mesa Boogie amps, vintage guitars & basses, Asteroids, Defender.
Video Equipment & Services: Please call.
Rates: Please call.

●●●● **PEPPERMINT PRODUCTIONS CORP.**
also **REMOTE RECORDING**
803 E. Indianola Ave., Youngstown, OH 44502
(216) 783-2222
Owner: Gary Rhamy
Studio Manager: Brenda J. Circle
Engineers: Gary Rhamy (chief eng.), Richard Willmitch (assistant eng.)
Dimensions of Studios: (A) 40 x 30 x 15 ceiling; (B) 20 x 15
Dimensions of Control Rooms: (A) 10 x 35; (B) 10 x 15
Tape Recorders: Scully 24 track on professional 2" tape format; Ampex 1/2" & 1/4" machines; Technica 1500, 2 track; Pioneer 1/4 track; Pioneer and Marantz cassette machines; 30ips mastering for no noise recording.
Mixing Consoles: Custom console, utilizing the best individual components by UREI, API, Altec and Modular Audio
—LISTING CONTINUED ON PAGE 142

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Producer/Musician, *Gnome Studio*

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Producer/Musician, *Sound Suite*



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Gary Spaniola

Producer/Musician, *Seller Sound Studio*

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(313) 471-0027 994-0934 - Ann Arbor

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**RED LABEL RECORDING STUDIO
Winnetka, IL**

●●●● **RED LABEL RECORDING STUDIO**
552 Lincoln, Winnetka, IL 60093
(312) 446-1893
Studio Manager: Fred Breitberg
Tape Recorders: Studer A80 Mk III, 24 track; (2) B67 Studer, 2 track; Studer A80 1/2", 2 track.
Mixing Consoles: Harrison transformerless 2824, 28 x 24; Audioarts, 12 x 18.
Monitor Amplifiers: Biamp.
Monitor Speakers: UREI, MDM 4, Auratone.
Echo, Reverb & Delay Systems: 224 Lexicon, Ecoplate, PCM 41, Harmonizer, Quantec QRS.
Other Outboard Equipment: Over 10 channels various outboard equalizers (API, Aphex B&B), (6) Aphex (B&B) limiters, (2) dbx 165.
Microphones: AKG, Neumann, RCA, Sennheiser, Beyer, E-V.
Instruments Available: Grand piano, Fender Rhodes, Sonor drums, Mesa Boogie and Ampex amps.

●●●● **THE REEL THING, INC.**
also **REMOTE RECORDING**
3133 Chester Ave., Cleveland, OH 44114
(216) 696-3133
Owner: James L. Silver
Studio Manager: Fred Owen

●●●● **REFERENCE STANDARD**
P.O. Box 8588, Northfield, IL 60093
Owner: Gary Fry
Studio Manager: Carol Fry

●●●● **REFRAZE RECORDING STUDIO**
2727 Gaylord Ave., Dayton, OH 45419
(513) 298-2727
Owner: Mark & Jane Frazee
Studio Manager: Mark Frazee
Engineers: Mark Frazee, Gary King, Jane Frazee (asst. eng.)
Dimensions of Studios: 38 x 34 x 20, 11 x 11 iso room; 9 x 10 drum booth, 20' high ceiling
Dimensions of Control Rooms: 18 x 21 control room LEDE acoustics
Tape Recorders: Otari MTR-90, 24 track; Otari MTR-12II C 1/4", 2 track; Otari MTR-12H 1/2", 2 track; Tascam 25-2 1/4", 2 track; (2) Sony cassettes; Tascam 122 cassette.
Mixing Consoles: Trident Series 70, 28 x 16 x 24.
Monitor Amplifiers: UREI 6500, Crown DC-300A, Crown D150A, Crown D60
Monitor Speakers: JREI 813B, JBL 4313, Auratone 5C, Hitachi HS-01
Echo, Reverb & Delay Systems: Quantec Room Simulator,

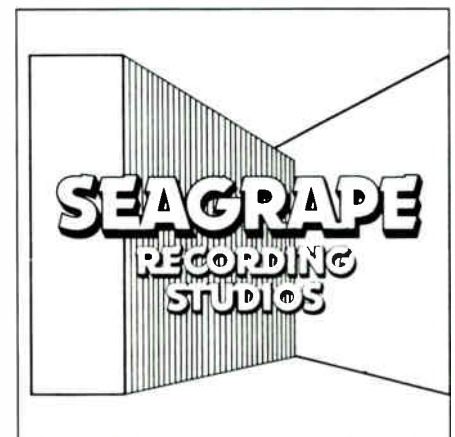


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Dayton, OH**

Lexicon 200 digital reverb (6 programs), Lexicon PCM60 digital reverb, Orban Parasound 111B reverb, Lexicon Prime Time (w/extended memory), Lexicon PCM41s, Eventide Harmonizer 949 (w/extended memory), DeltaLab Harmonicomputer, MXR digital delay.
Other Outboard Equipment: (2) UREI 1176 peak limiters, (2) dbx 160 comp/limiters, Valley Audio Gain Brain & Kepex, Klark-Teknik DN 30/30 graphic EQ, UREI 546 dual parametric EQ, dbx 160X comp/limiter, (2) dbx 166 dynamics processors, Orban 424A comp/limiter/gate/de-esser (stereo), Aphex Aural Exciter Type B.
Microphones: Neumann U87s, U48s; Sennheiser 421s, 441; AKG D12Ea, 451s (w/ck 1 modules), 414, 224e; PZM; Beyers 101s & 201s; Shure SM57s, 58s.
Instruments Available: Customized Fender Rhodes, Baldwin 9' grand piano, Ludwig drums, Zildjian cymbals, Sound City 120 amp, Ampeg & Yamaha bass amp, Ludwig timpani, Musicman bass, Rickenbacker 4001 bass, Rickenbacker 12-string, Martin acoustics, Hagstrom Swede guitar, Gibson guitars, most keyboards available on request. Linn & DX drum machines available, Simmons drums.
Video Equipment & Services: 1/2" Beta & VHS recorders, Multiple cameras available.
Rates: 24 track, \$80/hr. Daily & weekly rates available.

●●●● **REMINGTON ROAD STUDIOS**
1244 Remington Rd., Schaumburg, IL 60195
(312) 885-1330
Studio Manager: Michael Freeman

●●●● **RIVER CITY STUDIOS, LTD.**
also **REMOTE RECORDING**
147 Goodrich, Grand Rapids, MI 49503
(616) 456-1404
Studio Manager: Stephen Thrall, Joe McCargar



**SEAGRAPE RECORDING STUDIOS
Chicago, IL**

●●●● **SEAGRAPE RECORDING STUDIOS**
5740 N. Western Ave., Chicago, IL 60659
(312) 784-0773
Owner: Tom Haban, Mike Konopka
Studio Manager: Mike Konopka
Engineers: Tom Haban, Mike Konopka, Herb Fields, London Fassat
Dimensions of Studios: 50 x 25 x 12 nominal
Dimensions of Control Rooms: 20 x 20 x 12

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Tape Recorders: MCI JH-24, 24 track; MCI JH-116, 16 track; Otari MX 5050, 2 track; Sony PCM-F1, digital converter.
Mixing Consoles: NEOTEK Series III, 26 x 24.
Monitor Amplifiers: (2) McIntosh MC2205.
Monitor Speakers: JBL 4430, JBL 4311.
Echo, Reverb & Delay Systems: Lexicon 200, Lexicon 60, Lexicon Super Prime Time, Eventide 949, MICMIX 515, Ecoplate II, MICMIX 305, MICMIX 121, MXR digital delay.
Other Outboard Equipment: UREI 1176, Spectra Sonics limiters, Tapco Graphics, Symetrix gates & limiters.
Microphones: Neumann U87s, AKG 451s, RCA 44, various Beyer, Sennheiser, E-V and Shure.
Instruments Available: Yamaha CP-70 piano, Hammond B3, Mirage digital sampling keyboard.
Rates: 24 track, \$75/hr, 16 track, \$60/hr, 2 track, \$35/hr.
Direction: Nestled along the western shore of Lake Michigan, architect Robert Jones has created this stunning masterpiece. Located just 10 minutes from Chicago's famed Magnificent Mile and walking distance from an ample supply of moderately priced hotel rooms, Seagrape is the perfect studio for your project in today's era of shrinking budgets.

◆◆◆ SELLER SOUND STUDIO
 5014 Peekskill Dr., Sterling Hgts., MI 48078
 (313) 264-7500
 Owner: Gary Spaniola
 Studio Manager: Gary Spaniola

◆◆◆ SEPTEMBER RECORDING
 also REMOTE RECORDING
 5210 E. 65th St., Indianapolis, IN 46220
 (317) 842-4955
 Owner: Robert Airis, Richard Airis, John Strong
 Studio Manager: Robert Airis

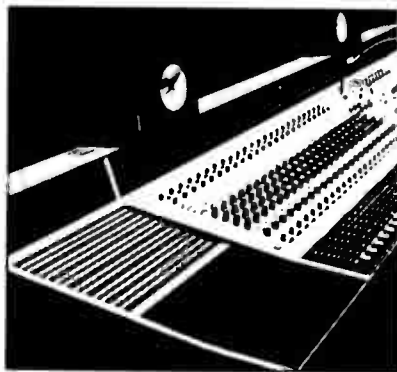
◆◆◆ 74TH ST. RECORDING STUDIO
 5250 W. 74th St., Minneapolis, MN 55435
 (612) 835-9952
 Owner: Paul Martinson, Scott Rivard, John Volinkaty, Tom Lecher, Don Bajus, Mike Jones
 Studio Manager: Paul Martinson, Scott Rivard
 Engineers: Paul Martinson, Scott Rivard, Eric Pilhofer
 Dimensions of Studios: 28 x 25; booth: 11 x 12.
 Dimensions of Control Rooms: 18 x 22
Tape Recorders: MCI JH-24, 24 track; MCI JH-110A, 8 track; MCI JH-110B, 2 track; MCI JH-110C, 2 track; Nagra 4.2 1 track (Neopilot).
Mixing Consoles: Trident 65, 40 x 8 / 16 x 2.
Monitor Amplifiers: PSE, SR
Monitor Speakers: JBL 4425, JBL 4312.
Echo, Reverb & Delay Systems: Lexicon 224X, Ecoplate II, AKG BX10, (2) Eventide Harmonizers.
Other Outboard Equipment: Neve, PSE, Pandora limiters; Kepex II gates; UREI filters; Orban de-esser; 6 channel monitor matrix.
Microphones: Neumann, AKG, Shure, Sennheiser.
Instruments Available: Yamaha 74" grand piano; Fender Rhodes piano; Gretsch drums.
Video Equipment & Services: Adams-Smith SMPTE lockup; JVC 3/4" video, 24 track, 8 track, Magna-Tech hi-speed projector, recorder, and dubbers, 16 and 35mm.
Rates: \$65-\$150/hr.

◆◆◆ SOLID SOUND
 P.O. Box 7611, Ann Arbor, MI 48107
 (313) 662-0667
 Owner: Robert G. Martens
 Studio Manager: James Spencer
Extras: Post-scoring, audio for video, and original music are our specialty. Solid Sound, Inc. is the home of the renowned music production house, Sasi Sound Productions. We use a uniquely modified Sony video machine, time-code locked to our ATRs to achieve the ultimate situation for sound-oriented people. Analog, digital and sampling synthesizers are available along with LinnDrum and SBX-80 Sync-box to ensure perfect SMPTE, MIDI lockup. Come see us for any creative music or mix-to-picture needs.

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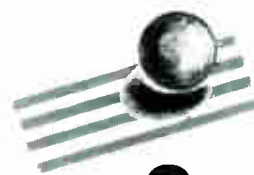
◆◆◆ SONIC ART
 23783 W. Petite Lake Rd., Lake Villa, IL 60046
 (312) 356-8992
 Owner: RBRB Inc.
 Studio Manager: Rick Brown

◆◆◆ SOUND FACTORY
 424 W. Minnesota Ave., Box 505, Willmar MN 56201
 (612) 235-6268, 235-9104
 Owner: Lowell Lundstrom, Chet Pnewe, Bill Simmons
 Studio Manager: Chet Pnewe



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●●●● **SOUND IMPRESSIONS, INC.**
 also **REMOTE RECORDING**
 110 River Rd., Des Plaines, IL 60016
 (312) 297-4360

Studio Manager: Bill Holtane, C.M.S.
 Engineers: Timothy R. Powell (chief eng.), Bob Hartman (staff eng.), John Nevin (staff eng.)
 Dimensions of Studios: (A) 525 sq. ft.; (B) 225 sq. ft. (isolation room); (C) 40 sq. ft. (narration only).
 Dimensions of Control Rooms: (A) 300 sq. ft.; (C) 400 sq. ft.
 Tape Recorders: Otari MTR-90 II, 24/16 track; MCI JH-110B, 2 track; Scully 280-MS, 4/2/full track; Otari MX-5050, 2/full track; TEAC A3440, 4 track; Nagra III, full track; Ampex AG 500, 2 track; Aiwa 3200, cassette.
 Mixing Consoles: Soundcraft 1600, 24 x 8 x 24 x 2; Ramco WR-8816, 12 x 4 x 2; Tascam Model 10, 8 x 4.
 Monitor Amplifiers: McIntosh, Crown, Kenwood, Edcor.
 Monitor Speakers: UREI 811A, JBL 4310, Altec A-7, Auratone.

Echo, Reverb & Delay Systems: AKG BX20, Eventide Harmonizer, Eventide flanger, MICMIX XL-121.

Other Outboard Equipment: UREI LN 1176 limiters, Allison Kepex noise gates, Orban parametric EQ, dbx noise reduction, dbx 163 limiter, Delta graphic EQ, UREI 565, Audico AVE impulers, Technics turntables.

Microphones: Neumann U87, U47; AKG 414EB, C451; Shure SM57, SM53, SM7, SM33; Electro-Voice 654, 655; Sennheiser 421, 441.

Instruments Available: Yamaha grand piano. Others available upon request.

●●●● **SOUND RECORDERS**
 also **REMOTE RECORDING**
 206 S. 44th, Omaha, NE 68131
 (402) 553-1164

Owner: Don Sears
 Studio Manager: John Boyd

●●●● **SOUND RECORDERS KANSAS CITY**
 also **REMOTE RECORDING**
 3947 State Line, Kansas City, MO 64111
 (816) 931-8642

Owner: Don Sears
 Studio Manager: Jim Wheeler



●●●● **SOUND SUITE RECORDING STUDIOS**
 14750 Puritan Ave., Detroit, MI 48227
 (313) 273-3000

Owner: John Lewis, Michael Grace
 Studio Manager: Garzelle McDonald

●●●● **SOUND SUMMIT**
 Americana Lake Geneva Resort, Hwy 50
 Lake Geneva, WI 53147
 (414) 248-7666

Owner: Sound Summit, Inc.
 Studio Manager: Phil Bonanno, Mari Valenti
 Engineers: Phil Bonanno, Jay Shilliday, Jim Bartz, Bruce Breckenfeld (maintenance eng.), independents welcome.
 Dimensions of Studios: 35 x 24
 Dimensions of Control Rooms: 20 x 19
 Tape Recorders: Studer A800, 24 track; Studer A80, 24 track; Studer A80 1/2", 2 track; Studer A80 1/4", 2 track; Mitsubishi X80A, 2 track.
 Mixing Consoles: Neve 8068 w/Necam Auto, 36 x 32.
 Monitor Amplifiers: Yamaha 2002, Crown DC300, DC-50, D60
 Monitor Speakers: Lakeside 2-way custom, JBL 4411, Yamaha NS10, Auratones
 Echo, Reverb & Delay Systems: EMT 140s (tube type), Ecoplate 1, Lexicon 224x w/LARC, Lexicon 200 digital



SOUND SUMMIT
 Lake Geneva, WI

reverb, Lexicon Super Prime Time DDL, Lexicon PCM 42 DDL, Lexicon PCM 41 DDL, Roland chorus/echo.

Other Outboard Equipment: (2) dbx 160 limiters, (4) dbx 160x limiters, (2) UREI 1176, (2) UREI LA-4A limiters, Teletronix LA-2A (tube) limiter, (2) Neve 32264 limiters, Drawmer noise gates, Omni Craft noise gates, (2) Orban parametric 622 EQ, Orban graphic EQ, Pultec EQ, Orban de-essers, Orban stereo syn, Eventide Harmonizer, MXR flanger, Ursa Major Space Station, Scamp Rack, UREI metronome.

Microphones: Neumann M49 (tube), U87, KM84, U47 FET, Telefunken 251 (tube), AKG C24 (tube stereo), 414, 451, 452, H17, D12, D707, C60 (tube) The Tube, Shure SM57, 565, SMS, SM7, SM81, Sony C37A (tube), ECM 50, RCA 77DX, Beyer 101, Schoeps/Studer SKM 5, Sennheiser 421, 441, E-V RE20.

Instruments Available: Yamaha C7 grand piano, Yamaha DX7, synthesizer, Hammond C3 organ w/Leslie, Fender Rhodes, Sonor drum kit, Minimoog.

Video Equipment & Services: Complete audio-for-video sweetening utilizing Sony S850 1/4" video cassette recorders and Adams-Smith synchronizers.

Rates: Upon request.

Extras: Located at Americana Lake Geneva Resort Complex, accommodations are available along with the following recreational facilities: horseback riding, outdoor tennis courts, 2 golf courses, boating, bicycling, indoor and outdoor pools, indoor tennis and racquetball courts, Neutilus room, saunas, steam bath, whirlpools, tanning beds, skiing, an airport, and much more.

Direction: Recent clients include Cheap Trick, Jerry Goodman, Golland, John Hunter, Pretty Boy, Ruby Star, and Survivor.

●●●● **STAR TRAX RECORDING INC.**
 15602 S. 70th Ct., Orland Park, IL 60462
 (312) 429-2760

Owner: Frank Lufi
 Studio Manager: George Lufi



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 Chicago, IL

●●●● **STREETERVILLE STUDIOS**
 161 E. Grand Ave., Chicago, IL 60611
 (312) 644-1666

Owner: James C. Dolan
 Studio Manager: Jimmy Dolan, Steve Kusiciel (chief eng.)

Engineers: 15 plus 3 person tech staff
Dimensions of Studios: (1) 47 x 22 x 14; (2) 37 x 27 x 12; (The Suite) 14 x 15 x 12; (5) 14 x 13 x 8'9"; (6) 14 x 10 x 8'9"; (7) 10 x 10'6" x 8'9".
Dimensions of Control Rooms: (1) 25 x 16'6" x 11'6"; (2) 24 x 18 x 10; (The Suite) 21 x 22 x 10; (5) 20 x 16 x 8'9"; (6) 17 x 14 x 8'9"; (7) 18 x 13'6" x 8'3".
Tape Recorders: (3) Otari MTR-90, 24 track; (4) MCI JH-24, 24 track; (2) Studer A-80, 4 track; (2) Otari MTR-10, 4 track; Otari MTR-12, 4 track; Otari MTR-10, 4 track; (17) Studer B-67, 2 track; (2) Studer B-77, 2 track; (4) Studer B-710, cassettes; (2) Nakamichi 700, cassettes.
Mixing Consoles: Solid State Logic 6000E w/Total Recall, 32 x 32 x 48 mainframe; Solid State Logic 4000E w/Total Recall 32 x 32 x 40 mainframe; Neve 8128 w/Necam II, 48 x 48 x 48 mainframe; (2) Harrison 4032s w/Autoset I, 32 x 32 x 40; Neve 2118 w/custom discrete circuitry, 6 x 4 x 2.
Monitor Amplifiers: UREI, Hafler, BGW, Crown
Monitor Speakers: All rooms UREI Time Align 813s, 811s, and 809s; Yamaha NS10s; Auratone, Rogers, JBL, others also available.
Echo, Reverb & Delay Systems: Lexicon 224x w/LARC; (5) Lexicon PCM60s; (2) Lexicon "Prime Time" digital delay; Lexicon 92; (3) EMT 140 plate reverb; (2) EMT 240 Gold Foil reverb; (2) MXR digital delay, Eventide digital delay 1745; (2) Korg SDD-2000 MIDI sampling digital delay units.
Other Outboard Equipment: UREI digital metronome 962; (4) UREI LA-4 comp/limiter, UREI LA-2A tube type limiter; (6) UREI 1176 LN leveling amps; Allison Gain Brains; Kepexes; Orban/Parasound dynamic sibilance controller 516C; Orban parametric equalizer 622B; Pultec EQP-15 equalizer; Lang PEQ-1 Program equalizers; White 1/3 octave EQs; EXR and Aphex Aural Exciters; MXR Pitch Transposer, Eventide Harmonizer.
Microphones: All studios draw upon a microphone collection, surpassing 100 in total, that encompasses brand new as well as vintage models: including Neumann, AKG, B&K, Crown, Beyer, Electro-Voice, Sony, Sennheiser, Pearl & Shure among many others.
Instruments Available: Steinway 6'4" grand piano, Yamaha 7'4" grand piano, Weber tack piano, Hammond organ model B3 w/Leslie, Hohner clavinet, Moog 2034 poly synthesizer, Musser piano, Musser xylophone, Musser "One-Niter" vibes, Ludwig 25", 27", 28" 29" tympanis, Fender Rhodes 88 Mark I, Fender Rhodes 73 Mark II, Ampeg B15N bass amplifier, Ampeg SB12 bass amplifier, (2) Roland cube 60 guitar amplifiers, (2) Sonor Signature drum sets, Emulator 2, (3) Yamaha DX7, (2) Roland Juno 106, Roland Jupiter 6, Korg Poly 61M, Chroma, Ensoniq Mirage Sampling Keyboard, Roland MSQ-100 & 700, Roland TR707 and 909, Yamaha RX-11.

Video Equipment & Services: Complete audio-for-video services available. Adams-Smith 2600 5 machine; 2600 3 machine synchronizer; Audio Kinetics "Q.Lock" 3.10 synchronizing system; BTX 4600 synchronizer; BTX 4500 controller; Sony/MCI 1" Type C layback machine; Sony BVU 800 3/4" VCR; (4) Sony 5800 VCRs; (2) Sony 5000 VCRs; (2) SVT 26" RGB video monitors, Sony PVM 1900 TV monitor; custom Sony Trinitron 19" receiver/monitor; (2) Panasonic CT-1910M TV monitor; Conrac 19" monitor.
Rates: Negotiable
Extras: Album credits include both current Johnny Winter LPs plus LPs for Roy Buchanan, Lennie Mack/Stevie Ray Vaughn, Koko Taylor, James Cotton and Big Twist & the Mellow Fellows. National commercials include McDonalds, U.A.L. Sears, Bud Light, Coors, 7-Up Intl., Popeye's, Perkins, Taster's Choice, many others.
Direction: Since 1969, Streetersville has been the source of state-of-the-art sound for audio recording in Chicago and the Midwest. Today's "cutting edge" stance provides the ultimate tools necessary to deliver total audio services from the simplest to the most complex tracks for records, radio, TV, film. Examples of facilities and service featuring this unmatched power are the first SSL Programmable Equalizer installed in the U.S. which increases the potential of the 6000E Stereo Video System in a dedicated audio-for-video suite and exclusive nationwide satellite recording services enabling studio-quality sessions from coast-to-coast. However, the best thing about Streetersville is the people—a team of energetic, experienced engineers backed by a support staff that fulfills each job with professional caring.

◆◆◆ STUDIO A RECORDING
5619 N. Beech Daly, Dearborn Hts., MI 48127
(313) 561-7489
Owner: Studio A Recording, Inc.
Studio Manager: Marilyn Morgeson
Engineers: Eric Morgeson
Dimensions of Studios: 40 x 30
Dimensions of Control Rooms: 22 x 25
Tape Recorders: MCI JH-114, 24 track; Studer B-67, 2 track; MCI JH-110, 2 track 1/2"; TEAC 3300-SX, 2 track; Sony cassette decks, Sony PCM F-1.
Mixing Consoles: MCI JH-528 fully automated 28 x 28.
Monitor Amplifiers: #200, Nikko 120, 220, Crown PSA-2, (2) Hafler P225.
Monitor Speakers: JBL 4311, Auratone 5-C, UREI 813s.
Echo, Reverb & Delay Systems: Klink-Teknik DN780, AMS RMX-16, DeltaLab Compuelectron, Urse Major 8x32 digital reverb, Lexicon Prime Time #93, 2 track delay, Lex-

con 200, PCM 42.
Other Outboard Equipment: Eventide Harmonizer, stereo chorus, phasers, flangers, graphic EQ, noise gates, compressors, limiters, JH-50 automated mixing, dbx noise reduction, Valley People Dyna-Mite, Aphex Compellor, Valley People Kepex gates, Valley People Maxi-Q EQs.
Microphones: Neumann U87, AKG 414-E, 451-E; Sennheiser 421; Sony ECM-9-P, Sony ECM 22-P; Shure SM57, SM58; E-V DO-54, E-V DS-35, 635; Crown PZMs.
Instruments Available: LinnDrum II computer, 1936 7' Steinway B grand piano, Roland JX8P x/programmer synthesizer, Synclavier II digital synthesizer w/sampling & terminal support. Rhodes 73, clavinet, ARP Odyssey, Fender Deluxe amp, Acoustic 150, Peavey standard, 5-piece Ludwig drums, assorted percussion.
Rates: \$75/hr.

◆◆◆ STUDIO DELUX
West Bloomfield, MI 48033
(313) 855-2942
Owner: Rick Stawinski
Studio Manager: Bill McKinney (mgr./head eng.)

◆◆◆ STUDIO M MINNESOTA PUBLIC RADIO
45 E. 8th St., St. Paul, MN 55101
(612) 221-1500
Owner: Minnesota Public Radio
Studio Manager: Tom Mudge
Engineers: Tom Voegeli, Tom Mudge, Lynne Cruise, John Scherf, Scott Rivard
Special Services: 32 track 3M digital mastering system. (2) 4/2 tracks w/editor
Tape Recorders: Otari MTR 9011, 24 track; (4) Otari MTR 10, 2 track; MCI JH-110B, 4/2 track; Otari MTR 12 w/SMPTE center stripe, 2 track; all analog machines equipped w/Dolby A NR; MCI JH-110B 1/2", 2 track.
Mixing Consoles: MCI JH-636 VU automated console 36 x 24 x 36.
Monitor Amplifiers: Sound 80, SR 200 programmable
Monitor Speakers: JBL 4430s, several alternates on request
Echo, Reverb & Delay Systems: (2) Lexicon 224x w/LARC digital reverb, EMT 140, Ecoplate I and II.
Other Outboard Equipment: Orban Dynamic Sibilance controller, Audio and Design (recording) Complex limiter, Audio and Design (recording) "Scamp" rack; (2) UREI LA-4A limiters, Eventide 949 Harmonizer, UREI "Little Dipper" filter, (2) Trident parametric EQs, Omni Craft noise gates, MCMIX Dynaflanger, Marshall Time Modulator.
Microphones: (6) Neumann U87, (6) KM84, (4) KM88, SM69; (2) Schoeps CMT-56; (7) AKG C 452EB/CK1; (4) Sennheiser 421; (4) Shure SM57, (2) SM58, (2) SM81, (4) C414, (7) C567; (4) B&K 4006.
Instruments Available: Rhodes 88 electric piano, Steinway 9' grand w/Alpha acoustic "piano bag," Pearl drums w/"rims", Paiste cymbals, ARP 2600 synth.

Video Equipment & Services: Cypher digital (BTX) "Soft-touch" Shadow Interlock System w/IVC 3/4" (CR 8250) video recorder. Services: audio "sweetening" sync to video recording, mixing, and editing of audio.
Rates: Analog recording, \$125; digital recording, \$140; audio/video interlock rates upon request.

◆◆◆ STUDIOMEDIA RECORDING COMPANY
1030 Davis St., Evanston, IL 60201
(312) 864-4460
Owner: Consortium, Ltd.
Studio Manager: Benj. Kanter, Scott Steinman
Engineers: Benj. Kanter, Scott Steinman, David Appel (chief eng.), Sam Fishkin, Don Gates, Jeff Meyer
Dimensions of Studios: (A) 600 sq. ft.; (B) 325 sq. ft.; (Live Room) 375 sq. ft.
Dimensions of Control Rooms: (A) 450 sq. ft.; (B) 275 sq. ft.
Tape Recorders: (A) MCI JH-16, 24 track; MCI JH-110B, 2 track; MCI JH-110B, mono. (B) Tascam MS16, 16 track; Otari M5050, 2 track; MCI JH-110B, mono. Others: Tascam Series 70, 8 track; Otari M5050, 4 track.
Mixing Consoles: (A) Trident Series 80B, 32 x 24 x 24; (B) Trident Series 65, 24 x 8 x 16.
Monitor Amplifiers: (A) Threshold S1000s, BGW, and Crown; (B) Crown and BGW.
Monitor Speakers: (A) UREI 813; (B) UREI 811B; Others: Yamaha NS10, E-V Sentry 100, JBL 4311, JBL 4313, and Auratones.

Echo, Reverb & Delay Systems: Ecoplates I, II, and III, Lexicon Model 200, Lexicon PCM 60, Lexicon Prime Time, Korg SDD 3000, Marshall Time Modulator, Eventide 710 Harmonizer, AKG BX10, MXR digital delay, MXR Pitch Transposer, Studio Technologies reverb processor, Studio Technologies AN-1s, AN-2 stereo simulator.
Other Outboard Equipment: UREI LA-4, 1176, 1178; dbx 160; Gain Brain comp/limiters; Kepex and Omni Craft noise gates; Orban de-esser; Furman parametric; White graphic EQs; EXR Exciter; UREI digital metronome.
Microphones: Neumann, AKG, Sennheiser, Beyer, Shure, E-V, Coles, Wright, Crown.
Instruments Available: Baldwin SF10 7' grand piano; Rhodes 88, Fender, Marshall, and Hi Watt amps; Ashly/Crown/Eastern Acoustics bass system. Gretsch 5-piece drum kit w/Zildjian cymbals. Hand percussion.
Video Equipment & Services: RCA VHS recorder, Sony Trinitron monitor. No video services.
Rates: Available upon request.

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•••• **STUDIO WEST**
25005 W. 129 St., Olathe (Kansas City area), KS 66061
(913) 782-3379
Owner: G. West
Studio Manager: Gary West
Engineers: Warren Rhoades, Crayge Lindesay, Paul Dalen
Dimensions of Studios: 29 x 16
Dimensions of Control Rooms: 16 x 15
Tape Recorders: MCI/Sony JH-24 w/Auto Loc. III, 24 track; Otari 5050, 2 track; Revox B-77, 2 track; Sony 1/4 track
Mixing Consoles: Soundcraft Producer Series 1600 (w/modifications), 24 x 40.
Monitor Amplifiers: Crown, Hafler, White EQ.
Monitor Speakers: JBL 4435, JBL 4411, Yamaha NS-10M, Auratones, Minimus-7.
Echo, Reverb & Delay Systems: Lexicon 224X, Master Room XL305 reverb, (2) Roland SDE-2000 DDLs.
Other Outboard Equipment: Eventide 949 Harmonizer, UREI 1176 LN and dbx 165 compressors, Valley Audio Dyna-Mite gates, Audioarts parametrics, UREI 1/3 octaves, Orban de-esser, Roland flanger, etc.
Microphones: Neumann 87, tube 47, 84s; AKG tube C12a, 414, 425eb, D12; Sennheiser 421; E-V RE20; Shure SM57, SM58, SM81; and more.
Instruments Available: Yamaha C-3 grand piano, Leslie 147, Guild 6- and 12-string guitars, Hamer bass, Oberheim DX drum machine, Music Man and Marshall amps, drums and wide range of synthesizers on request.
Rates: Upon request; by the hour, day or week.

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2350 Getz Rd., Ft. Wayne, IN 46804
(219) 432-8176
Owner: Chuck Surack
Studio Manager: Chet Chambers
Engineers: Chuck Surack, Chet Chambers, Dick Swary, Barry LaBov, Tony Hettlinger
Dimensions of Studios: 25 x 18, 10 x 10, 4 x 8 (voice-over)
Dimensions of Control Rooms: 12 x 12, 12 x 14
Tape Recorders: Soundcraft 760 III, 24 track; Fostex B-16, 16 track; Otari 5050, 2 track; Revox PR99 II, 2 track; (2) TEAC/Tascam 122, cassettes; Otari 4050, cassette duplicator.
Mixing Consoles: Amek-TAC Matchless, 26 x 24; Ramsa 8118, 18 x 16.
Monitor Amplifiers: Sound Code Systems (MOSFET), Marantz 510.
Monitor Speakers: E-V Sentry 500, (3 sets) Yamaha NS-10M, Auratones.
Echo, Reverb & Delay Systems: Ursa Major Star Gate 323, Alesis XT digital reverb, Yamaha R-1000 digital reverb, Yamaha Rev 7 digital reverb, DeltaLab 2048 digital delay, Korg SDE 2000 w/digital sampling.
Other Outboard Equipment: Valley People Dyna-Mite, Symetrix compressor, EXR Exciter, Drawmer compressor, EH Vocoder, LT Sound TVE vocal eliminator, Tascam Model 1 effects mixer, all tape recorders have dbx noise reduction, Apple Macintosh w/many music and studio software programs.
Microphones: Neumann U87; AKG 414/P48, D-12; E-V RE20; Sennheiser 441; Crown PZM; A-T 813S, 831, 836; Beyer M-500; Shure SM81, SM57, SM58.
Instruments Available: Kurzweil 250 w/all options, Yamaha DX5, Yamaha DX7, Roland JX-8P, Moog Memory-moog, 360 Systems "MIDI-bass", LinnDrum computer, Yamaha RX-11 drum computer, Fender Jazz Bass, X-100 Rockman, Bass Rockman, Selmer Super 80 Tenor Sax, Armstrong flute.
Video Equipment & Services: We do all industrial and band videos. We have had our work on HBO, Radio 1990, Nightflight, America Rocks, as well as several cable programs and other industrial uses.
Rates: \$30-\$40/hr for everything; no other charges.

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4900 Euclid Ave., Cleveland, OH 44103
(216) 431-1444
Owner: Jeff Kassouf
Studio Manager: Mark Price

•••• **TALDEK SOUND INC.**
530 Arlington Rd., Newton Falls, OH 44444
(216) 872-5719

•••• **TANGLEWOOD RECORDING STUDIO**
also REMOTE RECORDING
9520 W. 47th St., Brookfield, IL 60513
(312) 485-0020
Owner: Tony Hugar
Studio Manager: Tony Hugar
Engineers: Larry Millas, Milan Bertosa, Frank Pappalardo, independents welcomed.
Dimensions of Studios: 30 x 17, 8 x 10
Dimensions of Control Rooms: 22 x 17
Tape Recorders: Studer A80/VU Mk IV, 24 track; MCI 110B, 2 track; Technics RS-1500, 2/4 track.
Mixing Consoles: Harrison Raven/MR-4, 28 x 24.
Monitor Amplifiers: Hafler, QSC.
Monitor Speakers: UREI 813B, Yamaha NS-10, Auratones, JBL.
Echo, Reverb & Delay Systems: Lexicon 200, Lexicon PCM60, Ecoplate, Lexicon PCM42, Loft, DeltaLab, Eventide.
Other Outboard Equipment: Pullec Tube EQs, Drawmer gates, Dyna-Mites, UREI LA-4s, dbx.
Microphones: Neumann, AKG, Shure, Sennheiser, Fostex.
Instruments Available: Yamaha 6' conservatory grand piano, Sonor drums, Emulator II, Simmons, DMX, DX7, Jupiter 6.
Video Equipment & Services: 3/4" editing facilities.
Rates: Available on request.

•••• **TECHNISONIC STUDIOS**
1201 S. Brentwood, St. Louis, MO 63117
(314) 727-1055
Owner: Aragon Companies
Studio Manager: Linda Schumacher

•••• **3001 STUDIOS**
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•••• **TONE ZONE RECORDING**
1316 N. Clybourn, Chicago, IL 60610
(312) 664-5353
Owner: JP USA
Studio Manager: Roger Heiss
Engineers: Roger Heiss, Roy Montroy
Dimensions of Studios: 40 x 20 (20' ceiling, 3 iso. booths)
Dimensions of Control Rooms: 18 x 16 (12' ceiling, LEDE room)
Tape Recorders: Otari MTR-90-II, 24 track; Otari MTR-12, 1/4" & 1/2" 2 track; Scully 280B, 2 track; (3) Tascam 122-B, cassettes.
Mixing Consoles: Harrison MR-4, 36 x 24.
Monitor Amplifiers: UREI 6500, Hafler 500, Hafler 220.
Monitor Speakers: UREI 813-B, Yamaha NS-10, Auratones, (control room); UREI 813, (playback/studio).
Echo, Reverb & Delay Systems: Quantec Room Simulator, Lexicon 200 reverb, Studio Technologies Ecoplate, Lexicon 92 DDL, Lexicon Prime Time, Eventide 949 Harmonizer, DeltaLab DL-4.
Other Outboard Equipment: (2) dbx 160X, (2) dbx 165, (2) UREI 1176 compressors; Drawmer DS-201, Symetrix 522, Omni Craft GT-4 gates; Orban 622B, Ashly SC-66A EQs; UREI 964 metronome; UREI 1122 preamp; Studio Technologies AN-2 stereo simulator.
Microphones: Neumann KM84, U47, U87, SM2, M49; AKG 451, 460, 414, C12-A, C535; Sennheiser MD-421; Shure SM57; Crown PZM.
Instruments Available: Yamaha C-7 piano, Sonor drums, misc. guitars and synths available upon request.
Rates: Available upon request.

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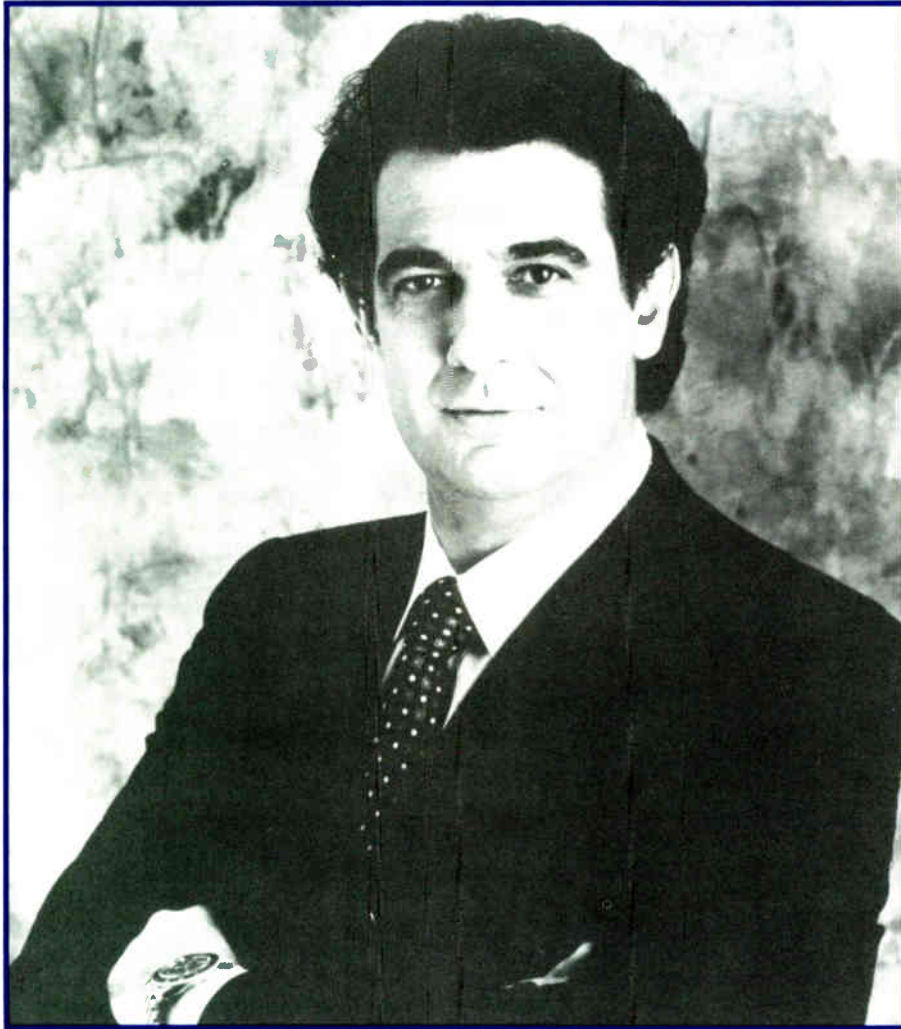


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SOUND ON STAGE

by George Petersen



The phrase "Sound reinforcement for opera" seems to be somewhat of a contradiction in terms—after all, one of the main attractions of opera is hearing great voices (sans amplification) in a good listening environment. And ideally this is what opera should be, which is why books on operatic P.A. applications are as difficult to find as a \$1,000 digital multi-track recorder. However, when world-renowned tenor Placido Domingo took the Spanish folk opera collection *Antología de la Zarzuela* on a major market tour into imperfect acoustical spaces ranging from Madison Square Garden to the Oakland Coliseum, a bit of electronic assistance would be required.

The show's promoter selected Rock City Sound (Annandale-on-Hudson, NY) to coordinate the tour's sound. Rock City, which mainly does legitimate theater and audio/visual work, has a small Turbosound TMS-4 system which is well suited for those applications, but was insufficient for the arena venues on the itinerary. "I talked to Danny Abelson at Turbosound," explains Rock City president, Shelton Lindsay, who wanted to use Turbosound components for the entire run, "and he suggested I contact Eighth Day Sound in Cleveland, since they have a large complement of TMS-3 cabinets. I contracted with Eighth Day to do the tour, and they used Linear Sound (a Turbosound-equipped company in Oakland,

Placido Domingo's **ZARZUELA TOUR**

*Bringing Opera
To the Arena*

CA) to cover the west coast date, where it wasn't profitable for Eighth Day to make the trip out."

The mains system consisted of 30 TMS-3s in a flown stereo configuration: an 18 box center cluster (6 left/6 mono fill/6 right); and two side clusters, each having six boxes in a 3 left/3 right array. Running the show in stereo not only brought a heightened sense of realism to the audience members, but also allowed the inclusion of various effects, Lindsay notes. "We found that putting a 30ms delay on Placido's voice



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*TurboMid™ and TurboBass™ devices are covered worldwide by Principle Patents and not simple design patents. The concepts embodied in these designs are, therefore, entirely unique. See Turbosound literature for full information.

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Circle #116 on Reader Service C

and panning it to one side with an Aphex (Aural Exciter) has a tendency to give a slight chorusing effect and makes everything a bit rounder, milder and less harsh."

One particularly interesting aspect of the production was the use of microphones. Besides a nine-piece complement of wireless units (HME System 85 transmitter/receivers with Sennheiser MKE 40 lavaliers), eight AKG shotgun mikes were employed: six CK8s across the front of the stage, and two CK9 long-throws covering the upstage wing areas. The nine wireless mikes had to be used for a total of 17 performers throughout the three-hour production, so quite a bit of backstage coordination between the technical and wardrobe crews was necessary. The outputs of the receivers were split via Jensen isolation coils, enabling the house mixing console to have a separate input channel for each performer, with all equalizing and trim adjustments preset during the soundcheck. "For instance, Anna Martin and Isabel Rodriguez are sharing the same transmitter," Lindsay clarifies, "but each one gets a dedicated channel on the console so we can equalize it, set the gain characteristics for that voice, and if we decide to use any effects, we have more control over that mike." A quick PFL would be run from the wings, just before each performer made an entrance, to insure that everything was operational.

Yet despite precautions, some problems can arise, particularly when using multiple wireless units, especially "whenever we were near channel 8 transmitters—areas with heavy traffic, airports or shipping lanes," Lindsay recalls. "In Miami, the harbor was full of it, and everything worked fine until two or three minutes before Placido was to walk onstage. So we pulled a mike off one of the other people in the cast, and that worked for the duration."

The 24-piece orchestra was individually miked, and sent to a backstage monitor console, which submixed the live music into five groups (violins, celli, bass, percussion, and brass). These were sent to the house console, where Mario Goldstein (Placido's engineer) combined the live orchestral and vocal elements with prerecorded tape tracks used to "sweeten" the orchestral and choral sound. The tapes were originally cut in Barcelona, and were played back on Otari 5050 1/4-inch 4-track machines, which allowed both stereo reproduction and a click track to keep the conductor in sync. The purpose of using the sweetening tracks was not to deceive the audience, but for valid logistical reasons: travelling with a 48-piece orchestra and over 100 chorus members can be a definite hardship to a touring company. However, the need



PHOTO: GEORGE PETERSEN

Mario Goldstein, Placido's engineer, and John Perovsek of Eighth Day set EQ during a soundcheck.

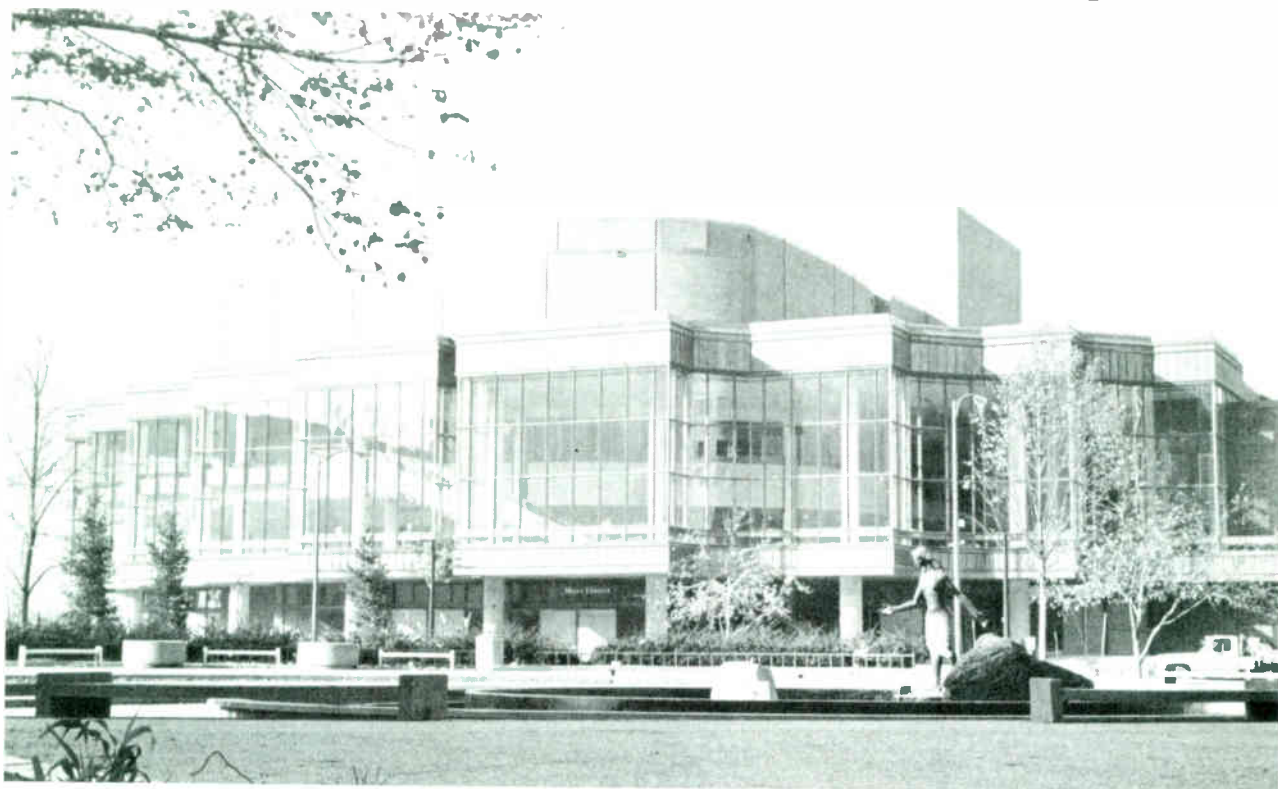
for sweetening the orchestra's sound with either taped accompaniment or miking the sound of the instruments proved to be minimal, Lindsay notes. "At the level we're running the sound at, we still use a lot of the orchestra's (acoustical) ambience, even in an arena."

While observing the show's soundcheck, the question of the cast's monitor requirements came up. Are opera singers as picky about monitors as rock performers? "Oh, no," states Lindsay. "Actually they ask for no vocal reinforcement in the monitor mix, although we were sure that in the arenas they'd want it. They are used to working in legit theaters and simply want to hear the orchestra." A few slant floor monitors (kept at a low SPL) were also placed in the orchestra, so the players could hear the vocals and a bit of the taped sweetening tracks.

Although the critical reviews of the show were somewhat mixed—comments ranged from disappointed reactions to the fact that Placido sings only six songs, to the opera-styled Zarzuela's unsuitability to the arena environment—technically, the production came off extremely well. This is especially remarkable due to the logistics of the show: with a scheduled 8 a.m. load-in, the crew has only 11 hours (assuming the house opens at 7 p.m.) to put together a complex production, including sound, sets, lighting, and cast/orchestra requirements and setup. And when this hectic timetable is combined with some language barriers between the mostly Spanish cast and a mostly English-speaking crew ("Necesito un line-level feed."), some difficulties were bound to arise. Fortunately, patience and a spirit of cooperation prevailed, with superb results. Bravo! ■

THE ORDWAY MUSIC THEATRE:

ST. PAUL'S REAL LIVE ICE PALACE



The new Ordway Music Theatre, home of the St. Paul Chamber Orchestra, Minnesota Opera, and the Shubert Club, has been receiving a great deal of publicity lately, virtually all of it unambiguously favorable. One remarkable aspect of the theater, however, remains relatively unsung: namely, the acoustical quality of the theater, which is perhaps its most essential element. Because as R. Lawrence Kirkegaard, acoustical designer of the theater's sound system has pointed out, no matter how beautiful a concert hall might be, if the acoustics are bad, the hall itself will inevitably be considered bad, and the acoustician will undoubtedly take the blame. There's little chance of that at the Ordway. Its sound system is a model of fine design and careful planning. It fittingly matches the architectural design and good looks of the very struc-

ture of the Ordway.

And one can certainly and justifiably lavish praise on the Ordway Music Theatre's good looks: its interior and exterior elegance, its gleaming multifaceted glass facade, and its glittering park-surrounded setting. How easy it is to imagine the Ordway as F. Scott Fitzgerald's Ice Palace incarnate—for it sparkles with gem-like beauty; its rich appointments and decor perfectly evoke a bygone era of charm and opulence.

Naturally, when \$45 million is spent on a project, no matter what the project is, one assumes that all materials are of the highest quality. In this case, the Ordway Theatre definitely proves that assumption.

Acoustically, everything possible has been done to insure a splendid evening of sound. In fact, great pains have been taken to insure good acoustics. In the Ordway, this feat was a little more challenging

than one would normally expect. The 1,815 seat theater is a true multi-purpose facility with several equally important prime uses. (It is most emphatically *not* a theater with one major use and several subsidiary ones.) For example, the Ordway's main house will accommodate orchestra, ballet, and opera performances. It must also provide fitting acoustics for optimum enjoyment of unamplified sound (voice, instrument, and ensemble). In addition to the main house, there is a smaller sized studio theater that must also acoustically accommodate a wide range of performances: recitals, dramas, lectures and films, children's theater, puppetry, mime, and dance.

The prime attribute of the Ordway's acoustical system is, of necessity, flexibility. Several essential components supply this much needed versatility. (1) A moveable acoustical shell (in small or expanded

configuration) reflects sound from the stage into the theater. (2) Large reflective panels, called acoustical clamshells, reflect sound from the stage front toward the balcony. (3) Large, fabric-covered panels, hidden behind the walls' mahogany grilles, are made to absorb sound. (4) Heavy curtains above the stage itself serve the same purpose.

These last two devices are meant for use during dramatic presentations, piano recitals, and whenever sound clarity is essential. They'll remain dormant when a more reverberant atmosphere is desired—during orchestra concerts, for example. For events requiring heavy amplification, Kirkegaard designed a system configuration that provides sound "imaging," i.e., the amplified sound seems to be emanating directly from the performer. To achieve this end, a continuous line of microphones extends across the front of the stage; three loudspeaker clusters—left, center, and right—are poised above it.

With all the painstaking care that has gone into the planning and building of the Ordway—especially in the area of acoustics—it

would have been unforgivable to settle for less-than-perfect cabling equipment.

Yet, this happens all too often. In trying to adhere to budget limitations, audio cabling equipment, because it is often the final step in a sound system installation, is given short shrift. Such treatment is nonsensical; although the cables might not be glamorous, they're an utterly essential link in the audio chain and a determining factor in sound quality.

Happily, the sound system designers of the Ordway were clearly cognizant of the all-important role played by audio cabling equipment. Specified by Kirkegaard of Kirkegaard & Associates, Chicago, IL, and manufactured by Wireworks Corporation, Hillside, NJ, the cable assemblies used in the Ordway offer superb durability and performance.

Another little-known fact is that a listener seated in the main house is surrounded by more than 250 speakers hidden in the architecture of the theater. Including the studio theater's system, the monitor/page system and the portable sound

equipment, there are more than 500 JBL loudspeakers in the Ordway system, powered by JBL professional amplifiers. Altogether the 56 amps can deliver 30,000 watts of clean, undistorted power.

Inputs to the main house system are controlled from a custom 24-channel mixing console. There are also eight portable mahogany racks housing a wide selection of outboard equipment—the kinds of toys that would delight the heart of any recording studio engineer. Nearly half a million dollars were spent on the elaborate sound system, installed by AVC Systems of Minneapolis.

Now, as the excitement of the Ordway's grand opening is subsiding, it is becoming a clearly established fact that the Ordway will be regarded as one of our country's handsomest landmarks, a source of pride for all those involved in its design and construction, a treasure to its community and nation, and perhaps most important of all, it promises to fulfill its purpose as a great concert hall.

—Angela DiCicco and Bob Kehl

The Incomparable Direct Box



MICHAEL BODDICKER—One of the world's leading synthesists and a consistent winner of NARAS's "Most Valuable Player" award for such projects as "Flashdance," "Thriller," and "The Magic Egg"...on the DI-400 Quad Direct Box:

"My job is to give the engineers a finished signal, instead of giving them the raw ugly synthesizer sound and letting them 'treat' it in the mix. The DI-400 allows me to 'go direct' to tape instead of having to go through the mic preamps, which really makes a remarkable change in the tone color."

"When I use a direct box...I trust and prefer the DI-400 over all others. The clear, clean, crisp sound of the DI-400 is great!, especially on the top end of the digital synthesizers...I get more air out of the sound."

The DI-400 Quad Direct Box is an AC powered, rack-mounted version of the highly acclaimed AXE DI-100 Direct Box. The DI-400 contains four separate Line Level Direct Boxes with variable gain and AC power supply...all within a single rack space.

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PROTECTING YOUR COMPUTER DATA

by Bruce Nazarian

Where Would You Be if This Happened to You?

Crisis!! You just crashed the memory in your MIDI sequencer, your recording session starts in 20 minutes, and the only cassette dump you have of the sequences won't load, or worse, you can't find the tape!

Panic Strikes!

It could be so much easier: Instead of panicking, you calmly take a sip of your coffee, rewind the data cassette you made not ten minutes ago, reload the latest version of your keyboard sequence, and emerge a hero!

As anyone who has worked with computers knows, Murphy's Law can always get you. Simply stated, this means "Whatever *can* go wrong, *will* go wrong." In the case of drum machines, sequencers and other digital goodies, Murphy's Law usually manages to appear in the form of a memory crash. This can be a frustrating experience when it wipes out hours of your creative efforts, forcing you back to square one. Fortunately, there are a few data storage tips that can save you lots of aggravation, and they're very easy to learn.

Save Data Often

While you are working on your program or sequence, take time out every once in awhile to save your work on a data cassette. (If you have the luxury of a disk drive, use it all the time!) The more often you save your work, the less of it you can lose. Plus, the momentary break will help keep your concentration fresh for programming.

Be Safe, Not Sorry

Don't just save the data once, and let it go at that. That may be fine for now,

Fortunately, there are a few data storage tips that can save you lots of aggravation, and they're very easy to learn.

but what if the tape glitches later, and you lose your one-and-only copy of that data? A better way is to record every cassette file *twice*. Verify both recordings so that you are sure you will have a safety or backup copy of your important data. Remember, once it's lost, it's usually lost forever. On disk, make a backup version of the file, with a similar but different name, like "Sequence.Data," and "Sequence.Data.Bakup."

Use Good Media

It pays to use the best tapes or disks you can afford to store your important digital data. So-called "personal computer" or "data" cassettes seem to offer some benefits over bargain-basement

"no-name" audio cassettes. They usually have fewer dropouts, better frequency response for computer data, well-constructed shells to prevent jamming, and are usually available in smaller lengths (C-10 or so). The small length often comes in handy, since it's easier to keep one song or sequence on each side of a cassette. Besides, why pay for 80 unused minutes on a C-90 cassette?

Keep Track of What's Stored Where

If you do any amount of programming, your library of cassettes or disks will mount up in no time. It will do you no good to have the data if you can't find it when you need it. There are several ways to organize your data, and you will probably find (or invent) the way that suits you best. In any event, mark down the date, the song title(s), the artist, etc. Also keep track of which instrument you are storing the data for (digital data all starts to sound alike after awhile). I've had very good luck using data cassettes of the C-10 length, one tape for each song I work on. They're easy to catalog, and easy to store. The same goes for disks—keep track of file names, and their contents. Even though disk drives are inherently faster than cassette storage systems, it can still take lots of time to sift through 50 disks, searching for the right file. Using meaningful file names will also help. Try to name your data files so that the title defines the contents.

Keep Your Cassettes and Disks Safe

That means keep them away from magnets, TV sets, monitor speakers (with magnets inside them), telephones (which create a magnetic field when they ring), and other insidious threats to your data. A small metal box is a good place to keep them, or a filing cabinet drawer. Any place except where stray magnetic fields can get in and do their damage.

• • •

Following these few simple guidelines for protecting your data will inevitably pay off. Without them, you may be lucky enough to escape the wrath of the Digital Gods for awhile, but in the long run the odds are against you. Using some common sense for data storage will not only keep your programs organized and safe, but the next time something should crash, you'll be an instant hero! ■

WHEN YOU NEED FACTS ABOUT PROFESSIONAL AUDIO EQUIPMENT

There is hardly another business on earth where there is so much disagreement about the tools of the trade.

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WHEN YOU NEED FACTS, CALL EVERYTHING AUDIO

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World Radio History

—FROM PAGE 111, N. CENTRAL
sha, WI, Jerry Mills of Flanner's Pro
Audio reports that Sony's new APR

studio is equipped with a Ramsa T-820
mixing board, Lexicon PCM60 digital
reverb, Crown power amps, and other

year: post-production of a Grammy-winning album *Raiders of the Lost Ark: The Story on Record* (CBS/Lucasfilm); post-production of a 13-part radio adaptation of *Star Wars*, and a ten-part series of *The Empire Strikes Back*; on location recording and post-production for a CBS/Cable showing of *A Christmas Carol*; live 32-track digital recording and 32-track post-production to picture of a PBS special, *What Child is This?*; as well as several commercial music productions for Coca-Cola, Anheuser Busch, Pillsbury, and McDonald's. Need it be said that things are going well for Studio M? "We'd like to become even more first class," adds Mudge. "We want to put in a Neve console in the near future."

One giant step south in Branson, MO (40 miles south of Springfield, and just 12 miles north of the Arkansas border) Bob Millsap, owner of Ironside Recording reports the facility has reaped a bountiful harvest of bookings since the studio went on-line 11 months ago. Their first session actually occurred two days before the construction was completed, when Pat Boone came by to do some tracks for a television project. Since then, Ironside has played host to an impressive line up of other top name acts, including the Sons of The Pioneers, Rodney Dillard, and Roy Clark, who recut and mixed a special 23 song collection of his hits with producer/owner Millsap.

In Columbia, MO, Bob Pruitt of Land Recording reports that his 8-track studio is doing just fine, an upswing in recording projects keeping him busy. Some groups in cutting tracks recently include Babe Martin, The Bel Airs, Jim Steffan, and Rocket Kirchner. "The local music scene is picking up for the first time in about four years," says Pruitt. "Bands are beginning to mature." ■

Recently relocated, The Alliance Recording Co. in Michigan is now equipped with a 56-channel NEOTEK Series 3C.

5000 Series 2-track is a "real hot seller." Mills adds that NEOTEK consoles, Lexicon 200s, PCM 60s, and digital processing gear are also selling well. "Our increase in business has been to people who want to know not only what's available, but how to use it as well," says Mills, adding that because the majority of Fortune 500 companies are located in the Midwest, most business for Flanner's is with video sweetening facilities and A/V facilities for corporations.

Far from the mega-corporate world, 22-year-old Don Hunjadi of HG Studio in Franksville, WI (Milwaukee area), reports that his 8-track studio recently moved to a new site, and is busy with record/demo work as well as some jingle projects. The small but healthy

outboard gear. "We like to think that HG is one of those studios that doesn't let the number of tracks limit the amount of quality we put into our recording," says Hunjadi.

The list goes on and on for Studio M in St. Paul, MN, as studio manager Tom Mudge describes business over the past

"It's the kind of room that you don't have to wrestle with to get a clean, natural sound." —Tom Mudge, studio manager of Studio M, St. Paul, MN.



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"Our new Carver amp racks pack twice the number of channels in about the same truck volume as the conventional racks they replace. In addition the average power per channel has increased while the average weight per channel has decreased. In the low end, for example, we now have 1,200 watts per cabinet where 650 watts were previously available. They take less room on the truck, they weigh less and our systems have more headroom than before. The Carver amplifier has allowed us to take a significant step in improving our sound systems." **CLAIR BROTHERS**

And not only a sound industry giant like Clair Brothers tours with Carver.

"We have toured Carvers with the following artists: Softcell, Paul Young, Johnny Mathis, Donna Summers, Howard Jones, Pointer Sisters, Psychedelic Furs, Lee Greenwood, General Public, George Thorogood. This is exclusive of our numerous one-nighters. The consensus of the performers is that the equipment sounds great. They have been amazed by the sound of the amps as well as their size and weight. As for reliability, out of 50 amps we had only one fail in the past year of touring. This is by far the best record we've had with any manufacturer of amplifiers. Sonically, the extra headroom is readily apparent. We, at Manticore unanimously agree that the PM-1.5 is incredible and is the only amp we intend to buy."

Tom Whisner (owner) MANTICORE

In the Laboratory The Carver PM-1.5 was rigorously tested by Len Feldman for MODERN RECORDING (February 1985). His laboratory test results also prove that the PM-1.5 really delivers. The following quotes from the Lab Report are reprinted with permission of MODERN RECORDING & MUSIC:—

"The first thing we noticed when we began to work with the Carver PM-1.5 was the ease with which the amplifier delivered almost limitless power to speaker loads which we had previously considered to be difficult to drive to loud levels. This is the sort of amplifier that just refuses to quit."

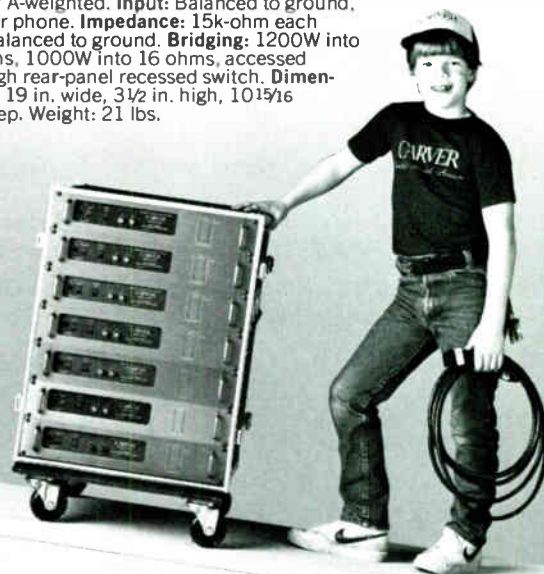
"The amplifier delivered a clean 480 watts per channel into 8-ohm loads with both channels driven for its rated harmonic distortion level of 0.5%. Even at the frequency extreme of 20 Hz, power output for rated THD was 470 watts as against 450 claimed by Carver. Furthermore, at rated power output, distortion decreased to an insignificant 0.015% at mid-frequencies and 0.007% at 20 Hz. When connected to 4-ohm loads, the PM-1.5 delivered 750 watts per channel for rated THD of 0.05%—far more than the 600 watts claimed by Carver. Clearly, when it comes to specs for a professional amplifier, Carver has taken a very conservative approach... All (manufacturer's claims) equaled or exceeded published specifications—usually by a wide margin."

"Carver has managed to deliver a tremendous amount of power in a small lightweight package at a very reasonable cost..."

"For the professional audio engineer or technician who has to move a lot of gear around much of the time and who expects total reliability and circuit protection, come what may, the Carver PM-1.5 represents, in our view, a real winning product. We will probably see it used increasingly by professionals in every area of sound reinforcement."

Now—don't you think you owe it to yourself to hurry over to your local Carver Pro Sound Dealer and *test your own PM-1.5?* Whether you run a megawatt sound company, a struggling bar band, or a recording studio gearing up for digital, the Carver PM-1.5 will pay you. In increased portability and reduced freight costs. In freedom from expensive blown drivers. In sheer sonic excellence.

*Power: 8 ohms, 450 watts/chan. 20 Hz-20 kHz both channels driven with less than 0.5% THD. 4 ohms, 600 watts/chan. rms 20 Hz-20 kHz both channels driven with less than 0.5% THD. 16 ohms, 300 watts/chan. 20 Hz-20 kHz both channels driven with less than 0.5% THD. 2 ohms, 525 watts/chan. at clipping, 1 kHz, with less than 0.5% 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 80 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 15/16 in. deep. Weight: 21 lbs.



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Electronic Musician is the first magazine devoted exclusively to the rapidly expanding field of electronic and computer aided musical instruments. Every month, *Electronic Musician* addresses topics of vital importance to contemporary musicians, composers, recording enthusiasts and computer/music hobbyists.

Electronic Musician is edited by Craig Anderton, an often-cited expert in the field of electronic instruments and computerized music systems. Craig has published several books, including *Home Recording for Musicians*, and the soon-to-be-released *MIDI for Musicians*. He has also written many articles for leading music and computer publications.

Use the attached postage-paid card to order *Electronic Musician* at the special charter subscription rate of \$11.95. First issue published in January 1986; charter rates are available only until December 31, 1985.

THE CALM BEFORE THE STORM

by Craig Anderton

As this is being written, the next big event on the music industry calendar is AES, so most manufacturers have held off on any new product introductions so they can get the attention and notoriety associated with a major convention. In this month's MI Update, we'll cover some odds and ends before the fall onslaught of new products begins.

Keyboard Stands

By now, everyone is familiar with the Ultimate Support and Solid Support stands, but there are some new kids on the block. I became personally interested in the subject when Transmitter, my band, needed to get some kind of keyboard setup that was simple and reliable. The Knight Industries keyboard stands claim a unique clamping system that makes it easy to add or remove a tier without disassembling the stand, and they also offer an adjustable single keyboard stand—just the thing for, say, vocalists or guitarists who double on synthesizer from time to time. Akai's keyboard stand includes, in addition to the stand, an integral cabinet for holding rack mount effects (DDLs, parametrics, etc.). Integrating the effects in with the keyboards seems like a real good idea, especially since it gets patch cords off the ground. For my own setup, I opted for the stands from Invisible Products Corporation. These look like they can't possibly work—they're kind of spindly, and instead of supporting the keyboards via a "jungle gym" type assembly, provide a base on which the keyboards sit. But after sticking an OB-8 and Emulator II (some pretty bulky and hefty keyboards) on their 24-inch width stand, I was convinced. Apparently, the secret is a tensioning system, not unlike a suspension bridge, that greatly increases the steel

support's structural strength. I'm impressed, and all the more so because these stands look like they would hardly be able to hold up a Poly-800. But they not only work, they're easy to disassemble (it takes about 30 seconds) and lightweight... if you're thinking about keyboard stands, check these out.

MIDI Echo

MIDI software is getting slicker all the time. In a previous column, I briefly mentioned Akai's ME10D MIDI Echo Unit. This is not a DDL controlled via MIDI, but rather, a signal processor that actually works on the MIDI signal. Now there are several programs available for home computers that provide the same type of function. The latest one, Echo Plus from Dr. T Music Software, not only allows for 0 to 32 repetitions of the original signal, but also provides for pitch and velocity change for each repeat. You can also assign keyboard splitting for synthesizers that do not include this feature, and for some really wild effects, each repeat is assignable to a different MIDI channel. Eight user-defined presets can be saved to disk for instant recall of your favorite effects. The program, which lists for \$90, is compatible with Sequential, Passport, Korg, Yamaha, and Music-Data interfaces.

Just Intonation

There seems to be more and more interest in alternate tuning scales, not just among experimenters but among major artists such as Wendy Carlos. The Just Intonation Network publishes 1/1, a quarterly journal devoted to acoustic and electronic instrument building, tutorials, and in-depth analyses of specific scales and musical styles. Membership is \$15/year (including a subscription to 1/1) from Other Music, 535 Stevenson St., San

Francisco, CA 94103. For Rev. 3 Prophet-5 owners, Soundscape Productions (P.O. Box 8891, Stanford, CA 94305) is offering 40 programs of just intoned scales including all major and minor keys (allowing for easy transposition while maintaining accurate intervals) and seven ancient Greek scales. Available on both disk and cassette for \$25, the cassette version also includes computer-generated audio reference tones for tuning instruments other than the Prophet-5.

Sampling

Speaking of Prophets, Sequential is now shipping their long-anticipated Prophet 2000. This is the first mid-priced sampling device (about \$2,500), yet includes many of the features found on more expensive machines. And while we're on the subject of samplers, don't forget about some of the delay lines that offer excellent sampling (i.e. DeltaLab CompuEffectron, Korg's "best buy" SDD-2000). Want to do some sampling with your Macintosh computer? Then contact Fractal Software, 1747 Bagpipe Way, San Jose, CA 95121. And Decillionix (P.O. Box 70985, Sunnyvale, CA 94086), the people who first brought sampling to home computers (specifically the Apple II), have a new accessory program called "P-Drum" (\$99 list). When used with their DX-1 sampling system, P-Drum lets you create long sound sequences; 48 patterns, each of which can be up to 64 beats long, may be combined for a total sequence length of 3,072 beats. Volume envelope modification and sound mixing capabilities are included, as well as a real-time sound processing menu which includes pitch transposition and digital delay functions. Ten presets of delay/transposition variables can be recalled. ■



The Fleshtones are (L-R) Bill Milhizer, Keith Streng, Jan-Marek Pakulski, Gordon Spaeth, and Peter Zarembo.

The Fleshtones' French Connection

by Moira McCormick

How's this for the ultimate in remote recording? New York band tapes the first three nights of a two-week residence in a Parisian club, rushes to mix, master and press, and voila! Before the first week ends, the record is in local shops and newfound fans pack the venue for the remainder of the band's stay.

It would take somebody like the Fleshtones, American garage-rockers supreme, to pull off a live LP so live that your basic French rock and roll fan could pop to the nearest *disquerie*, plop down a few francs for the hot wax, then hop to the club that evening to see the Tones doing the same show in person.

That's the way it was with *Speed Connection*, a purportedly superior domestic version that recently hit the American streets. "We always said if we were going to do a live album it would be sort of a special event," says drummer Bill Milhizer.

IRS Records' French rep, Henry Padovani (the original guitarist for the Police), came up with the instant album idea and suggested it be done in Paris. So in March, the Fleshtones (Milhizer, vocalist Peter Zarembo, guitarist Keith Streng, bassist Jan-Marek Pakulski, and saxist Gordon Spaeth) set out for Club Gibus in gay Parea.

"We played two weeks—ten shows all told," Milhizer recounts. "So for the whole last half of the time we were there, the album was out and kids were coming into the club with it. It was a real gas. Gibus holds around four, five hundred people and it was pretty much sold out every night."

Paris is apparently quite a stronghold of Fleshtones fanatics, an irony that is not lost on these cult favorites who've labored too long in Stateside obscurity. "There is such a strong scene in France for bands from America," Milhizer observes, "particularly the ones they perceive as playing pretty real, traditional rock and roll. And we love 'em for it."

The City of Lights wasn't quite such a pique-nique for the technical crew, according to engineer James A. Ball. "Paris," he says flatly, "was a nightmare."

The troubles started with the remote truck, *Le Voyageur*, which—unbeknownst to the band—had changed hands prior to the Fleshtones' booking. "When we got there," says Ball, "all there was was two speakers, a mixing console and a tape machine. They didn't have microphones; we were lucky they had tape. But we made do with what we had."

Ball and producer Richard Gottehrer had previously worked with the Fleshtones on a pair of songs that graced the soundtrack of the film *Bachelor Party*, so they knew what aural effects they were looking for. Gottehrer, says Ball, "felt that the overall sound of the record should be like a live radio broadcast. So we did use some techniques to give it a real live sound, but everything was done so fast, we really relied on the sound of the band and the sound of the room."

After two nights of recording, a master tape was hastily mixed. "We walked out of the truck bleary-eyed at four in the morning, then went back in to mix it four hours later," Ball recalls. Compounding the time problem was the apparent fact that Duran Duran had usurped the Fleshtones' mix time at the tony Palais de Congres. "So we mixed at probably the second-best studio in Paris," says Ball, "Le Grand Arnet, which is owned by the same people."

The LP was mixed in a breakneck six hours, after which Padovani immediately packed the finished tapes off to Amsterdam for mastering and pressing. Two days later, *Speed Connection* was out in Paris, and several days after that, it hit the rest of the Continent.

The American release, called *Speed Connection II—The Final Chapter*, was taped on the third night of the Fleshtones' gig at Club Gibus. For the European version there was no time to fuss over the choice of takes, but the Stateside release (mixed in relative leisure last July at New York's Record Plant) captures on vinyl "a much better show,"

according to Ball. "The crowd was really behind the band."

The LP cover sports original pencil and ink art by singer Zarembo—"funny little pictures of us on the scene in Paris," says Milhizer.

What's inside is vintage Fleshtones: raucous, rip-ye-lungs-out party music, marinated in '60s garage-trash and delivered with a whole lotta love—well, genuine affection, anyway. Fave Tones tunes include "Roman Gods" and "Hex-breaker!" (the title tracks of their two previous albums), "Stop Foolin' Around," "Watch This," "BYOB," "Screamin' Skull," and a new song, "One More Time." Also included are T-Bone Burnett's "When the Night Falls," previously covered by the Eyes; "Wind Out," an R.E.M. goodie with Pete Buck of that band sitting in on guitar; and the carefully titled "Kingsmen-Like Medley."

"We do one song by the Kingsmen," Milhizer explains, "an instrumental called 'Haunted Castle' which is the flip side of 'Louie Louie.' Also in the medley is a song called 'Twelve Months Later,' which was 'Louie Louie' chords and feel but is actually by a group called The Sheep—which really is the Strangeloves." An intriguing twist is that former Strangeloves drummer Richard Gottehrer played tom fills on

that cut, using a garbage can drum constructed for him by Milhizer.

Working with Gottehrer, says Milhizer, was "a lot more fun than I've had working with other producers. His whole approach is spontaneous. During pre-production, Gottehrer would just start playing along with the band, and maybe in the course of the song holler things out—rather than other ways I've seen it done, where the producer sits in front of the band with a notepad."

Speed Connection II—The Final Chapter is the final chapter in the Fleshtones' relationship with IRS Records. Their contract was not renewed by the label, although Peter Zarembo will continue as host of *IRS' The Cutting Edge* on MTV.

"I think the world deserves to hear more Fleshtones," says Milhizer in all modesty, "and I want more people to be aware of us. The reason we started this whole thing was that we all think this is what we would like radio to sound like when we turn it on. Not just Fleshtones music—there are a lot of bands that make awfully good music and don't get played."

"I never take our audience—what there is—for granted," Milhizer continues. "I like the terms 'cult following'

and 'cult band,' but at the same time I want the cult to get bigger and bigger. A cult," he smiles, "of millions. . ."

"The Fleshtones have been around for a long, long time, but our career is just out of its infancy." ■

—PAGE 166

THE FAR SIDE

By GARY LARSON



"A cat killer? Is that the face of a cat killer? Cat chaser maybe. But hey—who isn't?"

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PHOTO: TREVOR HUGHES

Jane Siberry at Manta Sound, 1985.

Jane Siberry

—She'd Probably be Famous...

by David Schwartz

One of this year's nicest musical surprises comes out of Toronto in the form of singer/writer/producer Jane Siberry. Her Duke Street album, *No Borders Here* (released in the States on Windham Hill's Open Air label), establishes Siberry's songsmithery in the thick of such ingenious, no-nonsense writers as Joni Mitchell and Laurie Anderson.

Siberry's complex songs and mini-suites reflect her firm determination to produce herself in the studio, in order to keep her vision "undiluted by the taste of another producer." This musical possessiveness, she admits, runs contrary to the game plan of hit records. "I really have always disliked the conventional feelings that record companies have had that you can't produce your own work. Producing, in my mind, just means watching it through to the end. If someone had come in and been involved with all our recording projects, it would have been a diluted effort, and I feel that much further ahead that I made my own mistakes."

The producer role is not exactly a tight fit for Siberry, though, and she depends on co-producer and band member John Switzer (also Jon Goldsmith and Kerry Crawford on *No Bor-*

ders Here) for additional perspective and craftsmanship. "I feel more like a director than a producer," says Siberry, "just directing all the things to make the record. I'm not really aiming at AM airplay, I'm just aiming at getting something that truly interests me. Basically I try to be as creative as I can. That's what works best."

Though *No Borders Here* is a polished and innovative recording concept, neither Siberry or Switzer come from a hands-on engineering background, so they depend on top flight engineering talent in the studio. The album was recorded at both Inception Sound and Manta Sound in Toronto, mixed at Manta, and mastered by Bernie Grundman in Los Angeles. "We always go for the best sound possible," says Siberry. "We use a lot of high-tech things in our production and we're really dependent on an engineer who can take an idea and do his end of it, or we're lost."

A pianist since the age of four, Siberry sees her songs as a direct combination of the musical influences around her as she was growing up. "When I was young, the records in the house were from Matt Monroe, to the Womenfolk, to classical music. We had a really strange collection. Neither of my parents are real record buyers, so we had mostly gifts in our record collection.

"I've always loved groups with lots of harmony, so the '60s, with groups like the Beach Boys and the Mamas and the Papas, were really special for me. And then later I went out with a keyboard player who was always listening to Steely Dan and Yes and Emerson Lake and Palmer... heavy, complex groups. All of those things were influences, even my favorite TV commercials. I was a basic sponge."

An admitted late bloomer at 29, Siberry has been writing her songs of introspection and personal observation for about ten years. She has a flair for coining cliché one-liners, like, "I'd probably be famous if I weren't such a good waitress," and "His card says 'executive' but it mumbles 'just a salesman.'"

"Dancing Class," from *No Borders Here*, is Siberry's claim of taking a dancing class each year so that she can stay in touch with herself and meet different kinds of women than she encounters at work:

*"there is a girl I like to pair up with
she comes from Germany
she's beautiful
and I like the way she dresses
and I like the way she moves
we never speak
we only acquiesce" **

Her songs all appear to be very personal reflections, though in reality she

claims to manufacture the situation out of a collage of herself and other people in her life. "Of course I'm writing to express something, but I've never liked sentimentality, so I usually try to keep the songs fairly distanced from myself by having that part-unbelievable aspect to them. The circumstances are not quite real. The situation in 'Dancing Class' wasn't true. I know a German girl who is really beautiful, and I admire her. I've taken a few dancing classes here and there, so I know what it's like to sit there with strange girls once a week, and I have thoughts about borders and age, and so that all went into the song. All of it's true in the sense that my mind is right there with every part of it as if it did happen."

Siberry has recently finished her second Duke Street album at Toronto's Manta Sound, co-produced with Switzer and engineered by John Naslen, and has embarked on her first promotional tour in the U.S. If the concert fans respond as positively as have the critics, this could be a banner year for Siberry. If not, it probably won't bother her much. "I'm not trying to be a household name or anything... though a cult following would be nice. There are a lot of other things I'd like to do, though. I'd really still like to be a sideman in a band. I love to play keyboards and guitar, and percussion, but in my band I'm playing less and less, because it's becoming more important for me to concentrate on singing. But I'd probably jump at the chance if some band on Queen Street in Toronto asked me to play keyboards for them." ■

*from "Dancing Class" © 1984 Wing-it Music/Red Sky Music (CAPAC)

New Music America:

Another Country Heard From

by Josef Woodard

The basic premise of the New Music America Festival, it could be stated, is to infuse a different city each year with sounds the general populace doesn't necessarily want to hear—or, to put it more delicately, doesn't yet *know* whether it wants, because for the most part these sounds have never been heard before.

New Music America is a broad-based, multimedia Mardi Gras of musical thought from outside the mainstream. Refugees from all disciplines mingle under the "New Music" rubric, which rather than defining stylistic parameters is intended to encompass

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anything and everything that fits nowhere else. It's called "new" music because much of it is emerging from infant technologies, adapting and updating existing paradigms to suit new and different media, and otherwise defying complacency.

Those who deal with the New Muse tend to stretch not only the preconceptions of what music is, but also where and how it is presented. Unexpected, sometimes unlikely, instruments are used, and some practitioners use performance, visual, and other media in conjunction with sound. Not content to quarter themselves in the closed world of concert halls and designated performance areas, Festival participants have been known to take their work to the streets, airports, shopping malls—anywhere citizens gather or pass.

Despite its quotient of bizarre sites and sounds, New Music America is still concerned primarily with music. Compositions from all corners of the stylistic playing field—many of them commissioned and/or composed especially for the Festival—are highlighted, but the emphasis is on the unusual, not exclusively the new: The 1981 Festival in San Francisco saw the reappearance of player-piano visionary Conlon Nan-carrow (see *Mix*, October 1984) after 40 years of self-exile in Mexico.

New Music America '85 takes place in Los Angeles, a city ever eager to shed its stereotype as a cultural wasteland, from October 31 to November 10. Among the key performers are John Adams, Carla Bley, Morton Subotnick,

Harold Budd and the E.A.R. Unit Quartet. In addition to jazz, rock, folk and ethnic events are specially-commissioned micro-operas and Bonnie Barnett's "Auto Hum"—which enlists the humming talents of the audience and is simulcast by radio to involve the commuter crowd.

Unlike past festivals, each of which was sponsored by a single, regional cultural organization, LA's program is the result of a concerted effort among 12 separate groups, from the Los Angeles Philharmonic to the Otis Parsons Art Institute to the Arnold Schoenberg Institute. According to Carl Stone, co-artistic director of the Festival and member of the parent New Music Alliance: "Each organization had its own slightly different point of view, and all were interested in participating in the Festival—which has its own point of view, frankly."

Though still a relatively esoteric—and by nature elusive—umbrella identity, New Music seems to be gaining considerable force. And the Festival is gradually becoming an important fixture on the culture calendar. When the invitation for proposals for this year went out, 600 responses came back, along with some 300 names recommended by the advisory committees. "We're getting proposals for 1989 now," reports Stone. "Whether it will continue to be useful up to that point, I'm not sure. But the Festival is definitely an institution, and I guess the trick will be to keep it from becoming a stodgy institution, like so many are prone to be."

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Carl Stone: New Music Crusader

by Josef Woodard

Carl Stone is one of New Music's more committed—and highly qualified—crusaders. The Los Angeles-based composer earns kudos for his smart, witty electronic/acoustic music, and he toils for the cause on many fronts as well. Stone heads the "Meet the Composer" organization, matching deserving with grants and commissions. As an influential programmer at KPFF, LA's bastion of alternative radio, Stone has championed many an obscure artist. As co-artistic director (with Joan La Barbara) of the seventh New Music America Festival, taking place in Los Angeles between October 31 and November 10, Stone has had an opportunity

to wear all his hats at once.

As a composer, Stone is thoroughly reconciled to the role of digital technology in contemporary music—but his musical *modus operandi* remains as unpredictable as his schedule.

Consider the stylistic flux of his three major performances in the LA-area over the past year. Last December, in the ballroom of the Park Plaza Hotel, he performed a lush, hour-long work with a Synclavier, signal processing gear, two bagpipe players, and a pipe organ. At a Cal Arts Festival last spring, Stone deployed a Buchla 400 synthesizer and a digital delay to weave some loopy, mock-fugal music, at one point generating a hyperspace counterpoint on the theme of "Twinkle, Twinkle Little Star." Bach would have been impressed. Early this summer, Stone performed before yet another kind of audience: The young radical—

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S.I.R. RETURNS TO VIDEO

by Robyn Flans

Walking into Studio Instrument Rentals, you don't see gold records on the walls, but rather, box office promo shots of some of the oldest and greatest films made. That only seems strange if you are not aware that the Sunset location of S.I.R. once belonged to Columbia Film Studios. Now it seems very fitting, actually. With the refurbishing of Stage Three, it is almost as if it's come full circle. As one of today's prime video facilities, it seems that Studio Three will ironically see more production now than when Columbia utilized it nearly 60 years ago.

S.I.R. continues to expand. Having outgrown their original building at 6235 Monica Boulevard, S.I.R. bought the Columbia property at 6048 Sunset Boulevard in 1974. (There is a third rehearsal/locker accommodations in Santa Monica.) Between 1978 and 1979, Robert Altman shot part of *Keeping Them Off The Streets* in Stage Three, and at that time there was some discussion about upgrading the facility to handle a shoot. In 1980, when the video surge began, the rehearsal hall took active steps toward its new goal.

"Using it as a rehearsal studio was sort of an overkill," studio manager Tom Estby explains. "Ten thousand square feet of space for a rehearsal is a bit odd. The buildings here had been inactive for quite some time, so the acoustics had rotted. You're talking 50 or 60 years of these old fiberglass stuffings. Literally, the stuffings of the building were coming out. We had to re-do it all."

Estby says there are several factors which make Stage Three appealing. The most crucial of these elements is the hard wall cyc (cyclorama) which gives the appearance of infinity, since there are no corners or bottom. It is ideal for any production, and can be painted to represent any setting.

"Without the cyc, it just becomes a large room," Estby explains. "If you've ever spent any time in television, video or commercial shooting, there's always a use of some type of a cyc, whether it be a hard wall or soft wall cyc. It's what's necessary for the entire lighting and shooting process. But not every room has the requirements or means to be able to put a cyc in it. That mostly comes down to size. Stage Three being a full shooting stage, had both the ceiling height requirements and the width requirements to put in a large enough cyc to accommodate the videos."

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—PAGE 175

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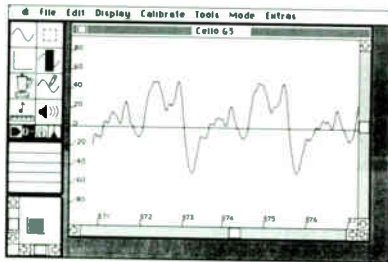
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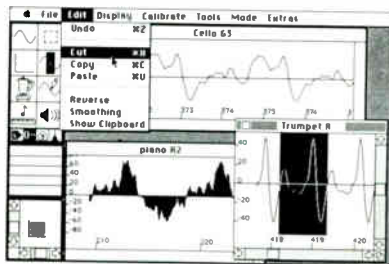
Now, Digidesign announces Sound Designer—a powerful music software package that links the Emulator II and the Apple Macintosh, creating a music system offering unprecedented performance at a breakthrough price.

What can Sound Designer do? Sample any sound with the Emulator II. Transfer the sound to the Macintosh and display the waveform on the Mac's high resolution screen. You won't be kept waiting—the Macintosh and Emulator II communicate at the lightning speed of 500,000 bits per second—nearly 17 times MIDI rate!



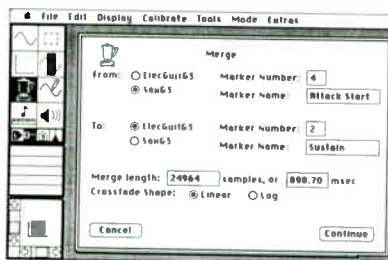
The sound waveform displayed can be scaled *independently* on both the amplitude and time axes to show any degree of detail, from a few samples to the entire waveform. Use the "Zoom Box" to magnify a small area of the waveform for closer inspection. Scale marks and a screen cursor display the exact time location and level at any point in the sound.

Use cut and paste editing to rearrange the sound, or to splice pieces of one sound onto another sound—up to three sounds can be displayed on-screen at once. Sounds can be edited with an accuracy of nearly 1/30,000th of a second! Throw away your razor blades.



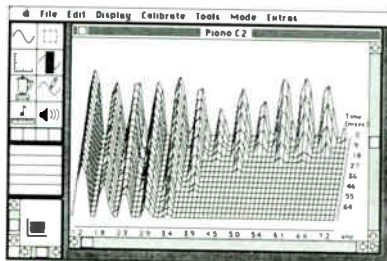
Redraw any part of the waveform using Sound Designer's pencil. Remove clicks or other extraneous noises from sounds by simply drawing them out of the waveform.

Use Sound Designer's digital mixer to perform a variety of digital signal processing functions. Mix sounds in any proportion, fine tune the level of a sound or create hybrid sounds using the *merge* function. A saxophone that gradually becomes a screaming electric guitar? No problem. Of course, the sound you create can be quickly transferred to the Emulator at any time for high quality playback.

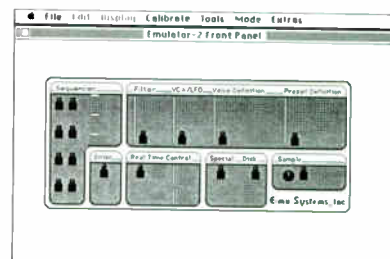


The essential process of looping sampled sounds is greatly simplified by Sound Designer. No more random (and time consuming) searches for loop points—you can see the waveform and quickly assign the loop in the proper location.

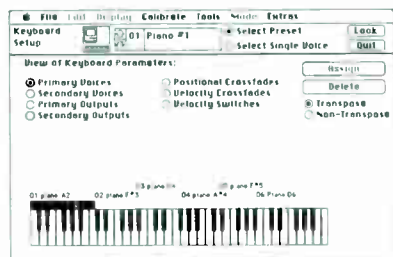
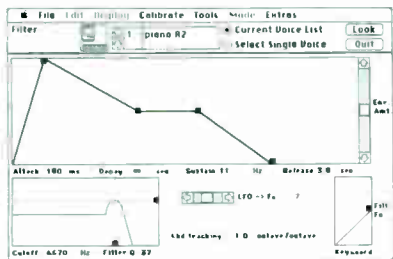
Break the sound file down into hundreds of separate frequency bands using Sound Designer's FFT (Fast Fourier Transform) based frequency analysis. The three-dimensional FFT waveform reveals the envelope of each frequency as the sound evolves. Very educational for those intrigued by the nature of sound.



Synthesis? Yes. Sound Designer includes direct digital synthesis. Because it is software (algorithm) based, virtually any type of synthesis can be implemented, including FM, Waveshaping, Additive and other powerful synthesis techniques.



And once you have created your sounds, you can use Sound Designer's Emulator II front panel mode to adjust all of the Emulator II's parameters. Graphic programming screens are provided for each Emulator II module: arrange samples on the keyboard, draw filter response and ADSR curves, set up controller and MIDI configurations, adjust keyboard velocity, MIDI, controller and arpeggiator parameters and more.



Don't worry about obsolescence—Digidesign is continually adding new capabilities to the program, and updates are available to registered owners at nominal cost. Resynthesis, digital EQ, compression, expanded synthesis capabilities and more will be offered in future updates.

At about one-third to one-tenth the price of comparable systems, the Sound Designer/Emulator II combination represents the best value in computer music systems. However, the system offers another advantage more important than money.

Most computer music systems are hardly user-friendly. User-indifferent is a better description: strange commands to memorize, confusing terminology and painfully slow operation have thwarted many musician's attempts to use this advanced technology.

You don't need unlimited patience and a Ph.D. to learn Sound Designer. Sound Designer takes full advantage of the Macintosh's simplicity—program functions are *visually* represented by icons (pictures). No cryptic commands to memorize!



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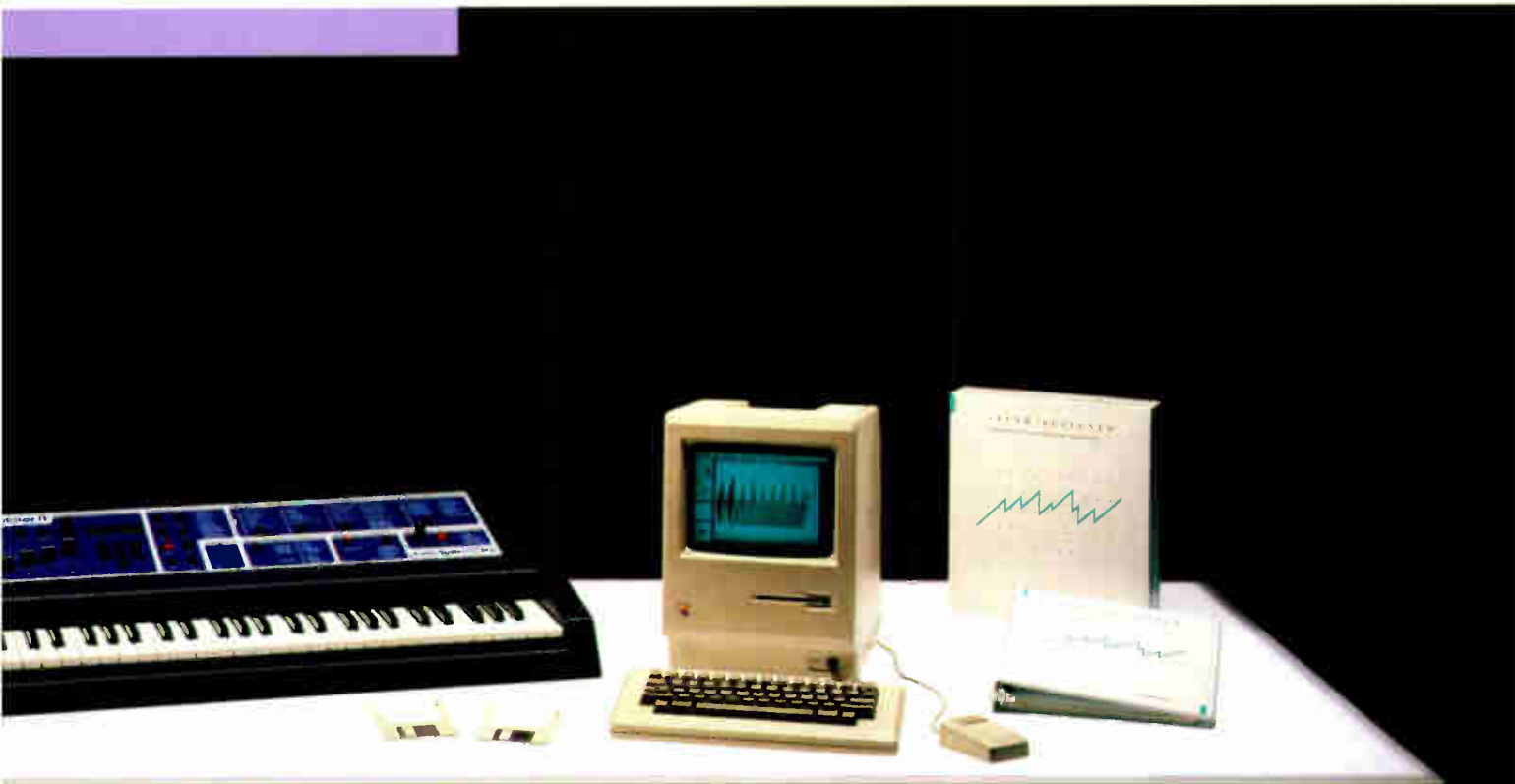
The Emulator II/Sound Designer system is a valuable tool, whether you're scoring a film, adding sound effects to a video production or creating the sounds for your next hit. You'll find the system quite stimulating—to both your creativity and your ears!

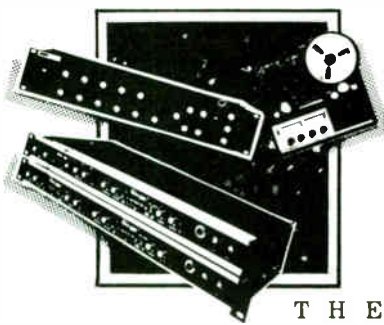
Want to see the system in action? Send \$29 to Digidesign (address below) for a 30 minute demonstration video (specify Beta or VHS). Like to know more about the Emulator II? Send \$2.00 to E-mu Systems for a color brochure and a *very* impressive demo record.

Sound Designer requires a 512K Macintosh, 2 disk drives or an internal hard disk (recommended), and an active imagination. The Emulator II requires fingers.

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 - Two Interfaces fit next to each other if you need two MIDI INs or two MIDI OUTs
 - Rugged aluminum exterior

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- All MIDIMAC software is compatible with MIDIMAC Interface and MIDI interfaces from any manufacturer.
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- Powerful real-time MIDI sequencer for Macintosh 512K
 - Holds up to 48,000 MIDI events (24,000 notes) in up to 26 sequences of 10 tracks each
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 - Synchronize in both directions to any MIDI drum machine or sync box: sync to SMPTE with Roland SBX-80, etc.
 - Edit tracks just like on a tape recorder; specify bar & beat to punch in and punch out
- MIDIMAC Patch Librarian** \$50 each
- Save synthesizer sound "patches" on disk instead of expensive RAM cartridges or inconvenient tapes
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- "Front Panel" for DX7: all voice parameters on the screen
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 - Allows editing TX sounds without having a DX7

For more information, visit your Opcode dealer, or contact:

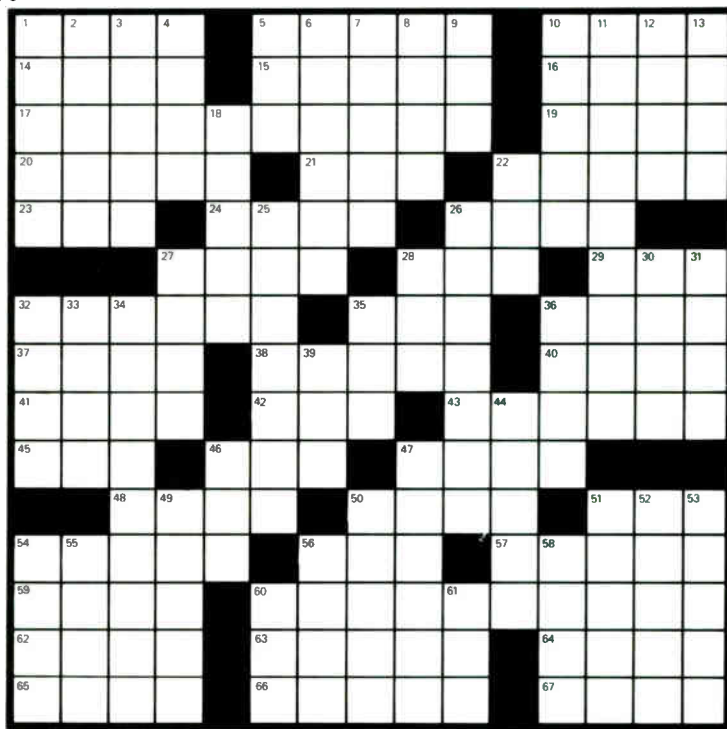
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—FROM PAGE 170

MIX WORDS

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"SOUND ON THE RACK"

ACROSS

- Thin
- "Alone _____, Naturally"
- Applications
- Wings
- California town in killer bee country
- Highlander wear
- Signal processor
- Palindromic European band
- Saw parts
- Tommy director _____ Russell
- Shanghai native
- WWII covert group
- Corrida sounds
- Motorcycle trickster
- Colliery opening
- Musician's instrument
- Fitting
- _____ Audio, NYC importer
- Board room abbr.
- Joint
- Sound effect
- Rasta's "we," or simple arithmetic of song
- "_____ See for Miles . . ."
- "Along Comes _____"
- Song syllable
- Those who wear us out
- Compass point
- Quilting event
- Produce quantity
- Cicatrix
- Pixie
- Swiss river
- Revolutionary Allen
- Pro
- Scandinavian
- Not long to occur
- Signal processors
- Instrumental, in a song
- Urban problem
- Edict
- Shopper adjective
- Royal _____ ("Short Shorts" group)
- 45-60 minute performance segments

- Retained
- Amaze
- Blow a _____
- Burros
- Religious momento
- Conjunction
- 64A in Russia
- De-esser problem
- Palindrome isle
- Laurel, with Hardy
- Girl's name, TV series
- Prayer
- Signal processor
- Signal processor
- Briny greeting
- "_____ When I Die," Blood, Sweat and Tears tune.
- Bosc or Bartlett
- Bo and others
- Precious items
- Sorrels

- Signal processing limitation
- "Time _____"
- Bottle" Croce hit
- Enterprise captain
- Metric measure
- Bakery sweetening
- Prohibit
- First, second, or third
- Indian pirogue
- Balance
- Bandleader Shaw
- Have _____ (find a chair)
- Spaces (mus.)
- Old logo for the Southern Oil Co.
- Word with hand or power
- Links word
- Boors
- _____ King Cole
- Printing measures

Solution to October Mix Words



DOWN

- Milky prefix
- Century plants
- Titles

well as 900 amps on the floor level, both of which can be increased for larger shoots. There is also an isolated audio service which is not included in the lighting, and they've gone to the trouble of piping in the air conditioning from a unit on another building to insure no noise leakage.

Another attractive quality in utilizing S.I.R.'s soundstage is the accessibility of musical instruments at a reduced fee when the facility is being used. It is equipped with their own lighting and audio if desired, so outside contractors don't have to be hired, hence cutting costs. The stage contains dressing rooms and production offices, as well as the convenience of being able to drive onto the stage.

Over the past two years, the stage has housed everything from Lionel Richie's road production in rehearsal, to sports car and airline commercials. Video-making, however, is perhaps its most popular usage. Such artists as Kenny Loggins, the Jacksons, Prince, Tom Petty, and Kim Carnes have shot videos at the facility, with Julio Iglesias' Coca-Cola commercial being the largest production.

"He decorated the inside of the entire studio as a gigantic recording studio," says Estby. "He had a full orchestra and recording studio gear and used about 8,000 of the 10,000 feet. He also had mobile dressing rooms outside the building, and used the courtyard to set up tables for a commissary and brought in catering trucks. There were a few hundred people involved in the production and it was certainly one of the more interesting ones as far as set design. When you walked inside the studio, you really did feel as though you were in a recording studio."

Within the next 12 to 18 months, Stage Two will also be converted into a soundstage of 5,000 square feet, not to phase out the rehearsal rooms, but simply to add options.

"There aren't always people to rehearse or people to shoot, so we want to be able to do everything," Estby says, adding that there are 11 rooms specifically for rehearsal purposes. "One of the other reasons Stage Three is as popular as it is, is that it was built and run by people who only do this. In other words, you're not going to an airplane hangar where they're used to building airplanes, and trying to do a music video. That's not what they're used to doing. We do this as our way of business, which makes it popular. When people come here to do their work, they're being handled by people who do this kind of thing every day—set up bands and set up studios. They know how to deal with questions and any problems that arise." ■

—FROM PAGE 168

chic set at the Lhasa Club came alive to Stone's heady DJ perversions of Motown music, digitally frayed and diced so as to be barely recognizable. It's all in a year's work for Stone, who traverses from the sublime to the ridiculous with the greatest of ease.

Despite his broad stylistic wingspan, Stone's music is characterized by at least a few common denominators. First, he tends to name all his pieces after Korean restaurants. (When asked about this idiosyncrasy, Stone hedges: "I eat at them. Basically, it's just a reflection of a quasi-obsession I have with eating, and with eating aural food.") Second, his compositional process usually involves the technological treatment of what he calls "prerecorded, found musical objects"—using existing music or environmental sound sources as raw materials—rather than conventional notation and execution. Third, Stone's principal compositional tool and instrument of choice is the Publison, an elaborate digital audio "computer" made in France and found in many state-of-the-art studios.

"I guess there isn't really a Stone style," the composer admits, in the office of New Music America in the bilingual heart of downtown LA. "I do have a certain approach that's similar in each case. But the results are always different, depending on the material I'm using and the equipment. My basic approach is to limit myself to a sharp degree, so that I have a limited number of options or available resources. I then work within those limitations to find out whatever I can."

A sense of restraint colors Stone's work, in a field where electronic overindulgence is an ever-present temptation. Stone admits that he may have gone through his synthetic overkill syndrome while attending the California Institute of the Arts, where he studied with composers Morton Subotnick and James Tenney, graduating in 1975. He had access to the sophisticated (for its time) Buchla 200, but Stone also developed resourcefulness as a key to independence. "I only had two tape recorders and a microphone," he recalls. "That got me to scale down my thinking in that direction. I never felt that was a compromise; it was rather an asset."

At KPFF (where he eventually served as music director for a few

years) Stone sharpened his compositional voice in relation to radio, making the most of the station's modest facilities to realize some heavily overdubbed pieces. He claims he was "using the station to compose, in the time-honored tradition of French and German radio."

But the real turning point for the composer was his first encounter with the Publison at an AES convention in 1980. It was a match made in New Music heaven: "I was struck, first of all, by the excellent sound quality and by the capabilities of its infinite loop. Most digital delays have it, but this is different because it has a selectable window into memory. You can [play back portions of stored sound] down to one millisecond, or open it up all the way to five seconds continuously, and even invert the sound so it comes out backwards. This, to me, was what digital sound processing was all about—that kind of manipulability of time."

Stone has essentially invented a real-time instrumental technique for the Publison. In performance, he punches in and out of its functions—as a stereo delay with expanded uses and as a high-end harmonizer—like an excited Herbie Hancock laying down a solo. The result is often mysteriously rich and textural, or—in the case of the Motown-based "Dong Il Jang," kinetically funky art hop music. "It's digital scratch music," says Stone. "I take an instrumental approach to it, frankly. I do have to practice, not only to keep my chops up but to learn new things about what it can do."

Not all of Stone's handiwork would win points with the pop crowd. Much of it has a subtle, ethereal quality with any conceptual audacity carefully integrated and understated. An upcoming fanfare piece commissioned for a flag-raising ceremony will involve *found* brass music. In a sense, Stone has taken his poor man's sampling technique to a unique and artful zenith.

"There's a very strong relationship between what you call vernacular music and contemporary classical music," Stone suggests. "A lot of what's going on in Black music—scratch and so on—is digital. We're hearing a lot of digital delay, keyboard-controlled sampled sound, things like that. Those ideas have already filtered into the so-called avant garde." Exhibit A: Carl Stone, a composer and a composer's best friend. ■

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For all its power, the SP-12 has been designed to be extremely easy to program. Flexible repeat and subsong functions greatly simplify the creation of complex song structures. A step programming mode lets you create intricate rhythm

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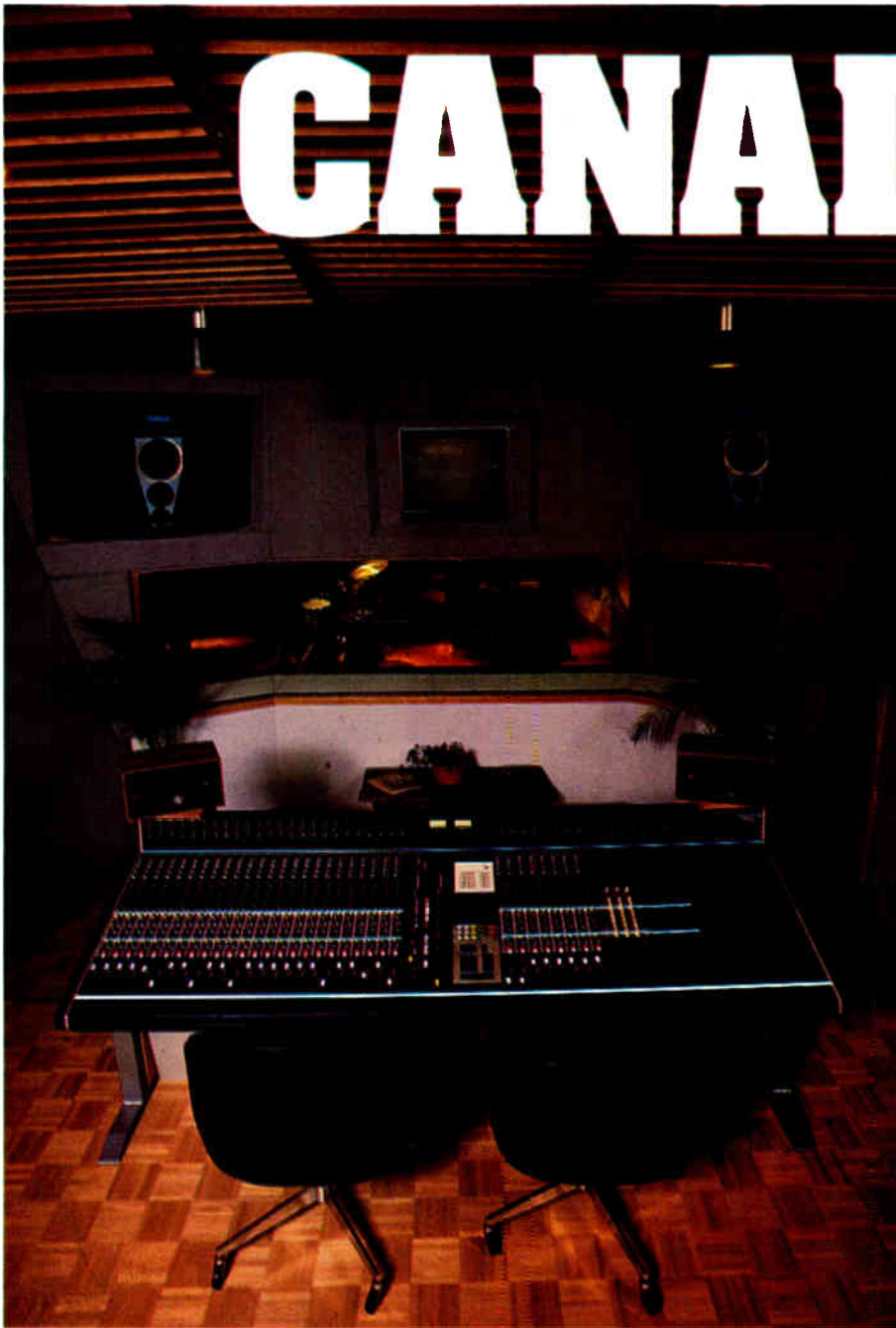
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CANADIAN

SUPPLEMENT



Above: Solar Audio and Recording Limited, in Halifax, Nova Scotia, features a Soundcraft TS24 in-line console with MasterMix automation, as well as a Studer A80 24-track recorder.

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World Radio History

DIGICON '85 and the ICMC

by Larry Oppenheimer

"Here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that."

—the Red Queen in Lewis Carroll's
Through the Looking Glass

This seems to be par for the course for today's professional in music and audio: it takes all of your time merely to keep up with the latest changes in equipment and techniques. Rarely is there an opportunity to actually get ahead and have some idea what might be coming down the road, or even what others consider the current state-of-the-art. Digicon '85, held August 15 through 17, and the 11th International Computer Music Conference (ICMC), held August 19 through 22, offered two such rare opportunities. Both of these conferences located themselves in the beautiful mountain setting of Vancouver, B.C., Canada and, although they had many mutual attendees, presented related yet different portraits of the role that computers are playing in the arts. This intrepid writer dared the rigors of seven solid days of meetings, concerts, and discussions to bring you, the reader, a report on "where it's at."

Digicon '85

This was the second Digicon, the first held in 1983. The conference, sponsored by the International Computer Arts Society (which also publishes *Digitaltalk*), is intended to further communication among those who are using computers in the arts. Approximately 280 people, mostly professionals and artists in the fields of computer music or graphics, attended the conference, and most of the presentations concerned themselves with some aspect of these areas. Far from being dry and theoretical, most of the speakers presented examples of their work, which peppered the conference with films, videos, slide presentations, recorded

works and live performances. The general level of technicality was less than at conferences that specialize in one field or the other (AES, ICMC, SIGGRAPH, etc.), but more than might be expected from the general public.

Digicon brought these groups of people together in an environment where they could interact and learn about work in areas that may be more closely related to their own than they had previously thought. Computer graphics masters, like David Em, Yoichiro Yawaguchi, Ed Emshwiller, Dean Winkler, Charles Csuri, and Ed Tannenbaum, mixed with synthesist Michael Boddicker, computer music whiz Andy Moorer, recording engineer Roger Nichols, composers Morton Subotnick, native Canadian Bill Buxton, and Herbert Brun, and engineers/instrument makers Bob Moog, Roger Linn, and Ralph Dyck.

Other speakers presented yet different views on working with technology

in the arts, from installation artist Myron Krueger with his interactive creations, to Marvin Minsky, founder of Massachusetts Institute of Technology's Artificial Intelligence (AI) laboratory, and the husband and wife team of Joan and Russell Kirsch, both of Sturvil Corporation (a non-profit, public interest think tank) discussing applications and implications of AI in the arts. All in all, over the course of three days, it was easy for the attendees to get acquainted both personally and professionally, resulting in many at Digicon commenting on how enjoyable it was.

The sessions each had a theme which was more or less adhered to by the speakers. "Commercial Opportunities with Evolving Technology," "Personal Approaches for Creative Expression," "Toolmakers Pioneering the Future," and "Using Digital Systems in Composition, Performance, and the Studio" were a few of the sessions' topics. In the course of discussing these topics and their work, a number of speakers brought up technical and aesthetic issues to be considered.

One example was the applications of MIDI and other musical technology like drum machines. Boddicker discussed current synthesizer studio techniques, including MIDI, and associated problems (processor delays, SMPTE-to-MIDI synchronization) in the context of his creation of the soundtrack to "The Magic Egg," a \$20 million computer graphics production filmed in OmniMAX. Nichols spoke on modern production methods from his experience with studio cognoscenti Steely Dan, particularly addressing techniques for introducing incremental delays into drum machines to give them a more realistic, less mechanical feel. Roger Linn spoke about his development of the drum machine, which prompted the inevitable question from the audience about drum machines replacing drummers. Spirited discussions arose on this issue, capped by Moog recalling the American Federa-

ICMC conference director Barry Truax of Simon Fraser University.



tion of Musicians' attempt to ban his instruments (by name, no less) in the late '60s, and on the manufacturer's role in MIDI problems, which eventually elicited remarks by Moog and TOA's Steve Cunningham (a member of the board of the manufacturers' MIDI association). One thing agreed upon was that problems will be addressed and new features implemented quickly if users write and/or call manufacturers to let their feelings be known.

Moorer discussed Droid Works' Sound-Droid and MusicDroid systems, which are full-scale digital studios capable of doing all recording, playback, editing and processing digitally. Moorer left some of the visual artists as amazed as the musicians. Space limitations prevent detailing the graphics side of Digicon here, but they were amazing indeed.

Digicon was not simply a technical conference with performances, however. Many of the speakers addressed important aesthetic issues which arise with these new technologies, such as the conflict between commercial realities and art, the role of visuals in accompanying music, and form versus content. These discussions often spilled out into the corridors and even to the dinner

tables of the speakers and attendees. Composer Morton Subotnick, involved in electronic music since its infancy, summed up the difference between the artist and the technologist, saying, "I see technology in all of its applications as an amplification of human gesture."

Bill Buxton further clarified the need for technology to serve art instead of the other way around with two forceful presentations in which he championed touch-pads as a more human method of getting information into a computer, and hailed the falling price of computer instruments as a sign of their becoming available to a wider audience. He also challenged the validity of some long-held assumptions about musicianship in the light of recent technology, citing the example of a conductor as a musician that does not need to play an instrument. "The technology of design," Buxton asserted, "whether it's instruments, art, or computers, is inherently an heuristic process."

In addition to the conference sessions there were other activities of interest. Several manufacturers, including Kurzweil, IVL Technologies, and Roland, had suites where demonstrations were conducted. In the evenings, ICAS sponsored several events. The first evening was a "networking party" at

the Expo Centre, Vancouver's preview exhibit from Expo '86. Expo Centre's Omnimax theater was used to show "The Magic Egg," followed by a sound collage and laser show. The presentation was marred by a poor sound system which was obviously distorting Boddicker's painstakingly constructed score. The second night was a gallery reception at the Arts, Sciences, and Technology Centre, a hands-on science museum in the spirit of San Francisco's Exploratorium.

All in all, the conference was well organized and ran smoothly, a real tribute to ICAS, considering that this was only the second time they had done it. The quality of the speakers, presentations, and attendees was exceptional.

11th International Computer Music Conference

The International Computer Music Conference is rather a different experience than Digicon. First of all, it has been established for far longer than Digicon and has been held all over the U.S. and Europe (the '86 conference is scheduled to be in The Hague, The Netherlands, the '87 conference at Stanford University); this one, hosted by the Centre for the Arts at Simon Fraser University (SFU), was the first

Computer Graphics at Digicon '85

Digicon '85, a conference sponsored by the International Computer Arts Society to further communication among those who are using computers in the arts, was held in Vancouver, B.C., Canada, August 15 through 17. The conference was pretty well split between presentations in computer music and graphics. The computer music side was examined in the main conference report in this issue; here are a few notes on some of the graphics.

Dean Winkler opened the conference by discussing some of the commercially available image processing devices (Ampex ADO, Quantel Paintbox, etc.) and illustrating with a light-hearted clip from the USA cable network made with his partner John Sanborn, in addition to several completed pieces. A lot of this processing gear finds use in network sports presentations, where they're used for trivialities like making synthesized football players run down a surreal field. As swirling patterns of sheer psychedelia unfolded on the screen,

Winkler commented on the progress rate of computer graphics, saying, "In 1983, I thought cubes were cool. In 1985, I'm bored with cubes." Winkler's works make extensive use of layering (roughly analogous to multi-track recording), sometimes using as many as 45 at a time. Formerly with VCA Teletronics, Winkler and Sanborn are currently building a video post-production facility in New York called Post Perfect.

Charles Csuri talked about sophisticated animation problems, such as simulating walking, muscle flexing, etc. The solution, which he is exploring, involves working in an Artificial Intelligence environment where an object on the screen is treated as a unified entity (as opposed to a bit map) and linked to programs which make it do specific things, such as move up, forward, down, etc. The object, then, "knows" how to do those actions and can be made to perform them merely by creating a program which names the object and the action.

Japanese artist Yoichiro Kawagu-

chi explained how his computer graphics are created by constructing models of animal and plant growth patterns and then manipulating parameters of the model to obtain intricate, organic shapes and patterns.

Ed Tannenbaum provided one of the highlights of the conference by performing live video processing of a camera aimed at dancer Karen Koyanagi. Koyanagi worked with several props—a staff, a ring, and a cross—which Tannenbaum turned into colorful trails and curves.

Myron Krueger discussed his interactive installation art, which explores human nature in subtle and often amusing ways. One work involved luring the "subject" into an on-screen maze which cannot be finished and then anticipating the obvious reactions (such as cheating). Another allowed subjects to "draw" on a screen by moving their fingers in the air appropriately.

The many demonstrations and finished works shown by the speakers made use of some very powerful computer technology, and were among the most beautiful things outside of nature ever seen by this writer.

—by Larry Oppenheimer

Canadian conference. The ICMC is organized in conjunction with the Computer Music Association (CMA) (among others), whose current president is the aforementioned Bill Buxton.

A second difference is the nature of the conference. The ICMC was four days (as opposed to Digicon's three), and consisted of intensive sessions which were typically at a highly technical level (even the artistic discussions), with concerts every day and night to fill in any spare moments in the schedule. The conference was truly international, with at least nine countries represented. The attendees are often from academic institutions and present papers on current facilities and research projects. The major centers, like CCRMA (Stanford), IRCAM (Paris), University of Illinois, and the Center for Music Experiment (CME) at University of California, San Diego (UCSD), were well represented both in numbers and papers. Some independent practitioners and representatives from commercial manufacturers also attended and presented papers.

The sessions were organized into slightly more concrete topics than were Digicon's, such as "Real-Time Applications and Personal Systems," "Hardware," "Compositional Processes

and Software," and "Synthesis and Signal Processing." Although some of the papers seem rather esoteric, virtually all are oriented to musical applications, and many trickle down eventually into off-the-shelf commercial products. As with Digicon, so much was said that it is impossible to mention everything here. For those who really are interested, the proceedings of the conference (and of past conferences) are available from the CMA by writing to them at the address given below. What will be mentioned here is events which may trickle down quite quickly.

The conference's keynote speaker was Herbert Brun (currently working at the University of Illinois), who likes to stir things up with his philosophical observations. In his speech, Brun made assertions about a composer's responsibilities, lack of communication between "pop" musicians and "serious" musicians, and even his own brand of revolution, saying, "revolutions without regret fail, while regrets without revolution stink."

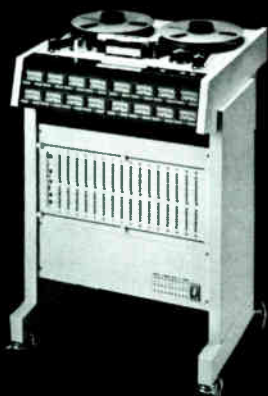
In the first day's sessions, engineers from two manufacturers explained some of their currently available technology. Anthony Agnello and Stephen Hoge discussed the architecture of the Eventide SP2016 digital signal proces-

sor and the SPUDSystem, a software package available from Eventide for software developers and researchers who wish to create their own programs for the SP2016. This writer had the unusual opportunity of witnessing an ad hoc demonstration of SPUDSystem's versatility when Agnello implemented with only 20 minutes of programming a new reverberation algorithm suggested in a paper presented by Julius Smith.

Dana Massey of E-mu examined the architecture of the Emulator II, and Dave Rossum discussed E-mu's cheap-but-not-too-dirty solution in the EII to the traditionally difficult problem of sample rate conversion. Also attending the conference and displaying (but not presenting any papers) were Digidesign's Evan Brooks (author of the Macintosh-based Sound Designer software package for the EII) and Peter Gotcher.

Two papers presented on the first day concerned systems that would allow a computer to act as a "smart" accompanist, playing its parts while following a performer's variations in tempo, stopping points, etc. This work represents a large step away from the traditional need for performers to follow the machine by playing along with a click track, drum machine, or sequencer. In

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fact, Cherry Lane Technologies has already announced a program along these lines for the new Commodore Amiga computer. The program will be called "Harmony," and was developed through consultations with several people in the field, including Buxton.

Digital reverberation is another fertile area which was discussed at the ICMC. As mentioned earlier, Dr. Julius O. Smith from the Center for Computer Research in Music and Acoustics at Stanford University (CCRMA) presented a paper on achieving reverb using closed waveguide networks, an application of transmission line theory in software. Two of this method's primary advantages are its computational and theoretical simplicity, and its inherent immunity to some artifacts found in traditional digital reverberation techniques. Bill Martens of Northwestern University spoke about sound localization using digital reverberation and recent research on the effects of the pinnae of the ears. In addition to playing some impressive demonstrations, Martens discussed the use of these techniques to process the theme music provided by the Grateful Dead for the new "Twilight Zone" television series and played the results.

Northwestern's Brian Schmidt presented a paper on synchronization of audio production in computer music, wherein he described a system involving SMPTE, MIDI, and mainframe computer music systems which were all tied to one clock. Schmidt's system involved the use of special processors for the SMPTE and MIDI information to allow the computer music system's sample clock to be synched to the SMPTE code, and MIDI to be locked onto the sample clock.

MIDI, of course, was a subject of discussion, with one recurrent topic being that of defining a standard data structure for MIDI files, enabling their easy transmission and processing by different systems. Przemyslaw Prusinkiewicz presented a fascinating paper looking at the problems associated with displaying and manipulating a number of MIDI parameters simultaneously in a way that can be easily and intuitively comprehended by the musician.

Of course, a number of papers pertained to designs for digital synthesis systems, with the most detailed presentation being made by the folks from UCSD, whose admittedly ambitious goal is to make a general-purpose computer music workstation capable of real-time work at a reasonable (\$10k?) price. Their presentation of the CARL (Computer Audio Research Laboratory) workstation encompassed four consecutive papers, constituting an entire session.

It is interesting to note that the trickle-



Dave Rossum of E-mu Systems explains the intricacies of sample rate conversion.

down phenomenon works in both directions. MIDI is one example. Although the limitations of MIDI keep it from replacing software synthesis, many computer music centers are finding it a useful vehicle for composing pieces that will be realized in final form through software synthesis. The relatively low cost of MIDI equipment is a formidable incentive for usage by centers which typically operate on very low budgets (one studio stated that their annual budget was \$400!).

Another very striking example is the Yamaha FM synthesis equipment. FM synthesis, of course, is a trickle-down from academia, specifically the work of John Chowning of CCRMA, but it has now trickled back in proportions that would better fit the description of a torrent. Perhaps as many as 50 or 60 percent of the presentations and compositions at the ICMC, and a sizable number of the ones at Digicon made use of the DX7 and TX816, among other tools.

Personal computers were also in strong evidence at both conferences. The most interest seemed to center around the Apple Macintosh and the Commodore Amiga. The Macintosh has been readily available for some time, so development on the machine is starting to produce some interesting results, such as Apple programmer Mark Lentzner's Sound Kit, programmed in Smalltalk 80 (an object-oriented language now available in Beta test version from Apple), and Sound Designer, a particularly potent and well-written example of Macintosh coding and applications. The Amiga, while unreleased at the time of this writing, captured a great deal of interest at both conferences. The Amiga promises very powerful graphics and sound capabilities, plus an open architecture, and a multi-tasking operating system, all at a low price. A good deal of software, music and otherwise, has already been announced for the machine.

Several manufacturers displayed

their wares at ICMC, notably Eventide, E-mu Systems, Yamaha, Roland, and Kurzweil. Aesthetic Research showed computer-controlled machines which mechanically played a real piano, vibes, or set of roto-toms. This was generally agreed by the attendees to be somewhere between interesting and embarrassing, but definitely useless.

Things flowed quite smoothly at the ICMC, which had greater logistics considerations than Digicon because of the fact that the papers sessions were held in downtown Vancouver, while the nightly concerts and the last day's sessions were held at Simon Fraser University, about 12 miles out of town. Attendees were bused between the two sites with no problem. Conference director Barry Truax and his staff are to be commended.

There were many concerts held throughout the day and into the evening at the conference, featuring live performances, tape pieces, tape and instrument(s), multimedia, even instrumental performances of computer-assisted compositions. Most of the music was dreadful (in this writer's opinion) and did not represent or live up to the capabilities that current technology allows composers. You can't win 'em all. The most pleasant concert was held on the last day outdoors in the Academic Quadrangle at SFU. With speakers in each corner and a blue sky overhead, this concert was a relaxing change from being closeted indoors all day and night.

Conclusions

"Nothing one can say in a few words can be as profound as the response of the listener to those few words."

—Marvin Minsky at Digicon '85.

Digicon '85 and the International Computer Music Conference were well-constructed meetings of the minds in the area of computers in the arts. Careful extrapolation from the presentations can yield a pretty good picture of where the state-of-the-art is, and some reasonable conjectures on where it is going. As the recording and music industries appear to be merging into one, it is important to keep abreast of technical and aesthetic innovations in the fields discussed at these conferences. Vancouver is a very nice city with many pretty sights, and excellent seafood.

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Canada: Land of hockey players, mounties, Eskimos, Moosehead beer, Bob & Doug McKenzie, and almost, this year, the World Series. Hardly the place for a thriving recording industry you say? Well, take off, hoser! Read on and find out why more and more international acts are . . .

RECORDING IN THE GREAT WHITE NORTH

by Doug McClement

Canada is a difficult market for the record industry to service. There are about 15 million people who speak English as a first language, which is a market with the same population as Ohio, but spread over 4,000 miles from coast to coast, mostly within 150 miles of the U.S. border. With this small a population, record making is a financial gamble. Although it costs about the same amount to record a world class LP in Canada as it does in the U.S., there are only one-fifteenth the number of people to sell it to. In fact, an artist receives a gold album for 50,000 sales, which is below the break even point for most LPs. To make a profit, an album must also be released in the U.S. and Europe.

Record distribution in a country this size is also prohibitively expensive. The American- and European-owned record companies account for 85 percent of Canadian record sales. The smaller independent Canadian labels (Anthem, Attic, Aquarius, Current, and True North) all rely on the multinationals for distribution and pressings, which leads to some awkward situations. If Michael Jackson released an LP, every press in town is tied up. Former Prime Minister Pierre Trudeau summed it up nicely when he said "Having the USA as a neighbor is like sleeping with an elephant. Every time the elephant twitches, you get thrown out of the bed." The Canadian branch offices of American record companies would rather spend \$50,000 on additional promo for an established act to push it from 200,000 sales to 300,000, rather than gamble the money for tour support and promotion for a new Cana-

dian act, which may result in 10,000 units sold. Very little of the money spent by consumers in record stores therefore stays in Canada.

Against these seemingly impossible odds, real talent does still rise to the top and some acts even break through to the U.S. market, as the recent success of Bryan Adams, Corey Hart, Loverboy, and Honeymoon Suite shows. The successful Canadian acts of the '50s and '60s (Joni Mitchell, Gordon Lightfoot, Percy Faith, Paul Anka, Neil Young, Steppenwolf, Rick James, Andy Kim, Buffy St. Marie, David Clayton-Thomas, etc.) had to move to the U.S. in order to further their careers.

In 1971, the Canadian Radio and Television Commission (CRTC, similar to the FCC) alarmed at this mass exodus of Canadian talent, and the lack of Canadian songs on the radio playlists, established minimum quotas of Canadian content. Thirty percent of all songs played on the radio had to be recorded in Canada, or performed or written by a Canadian. The radio stations kicked and screamed, but most would now agree that the real start of the Canadian music industry occurred at that time. Bands like the Guess Who, Bachman-Turner Overdrive, Rush, Triumph, and even Frank Mills were able to obtain a toehold on the Canadian market via the content quotas, receiving enough airplay to generate record sales in Canada for the American-based labels they were signed to. The head offices of these companies, having been shown that these acts could indeed sell records given adequate airplay, gave the acts promotional push in the U.S. market, and helped make

them international stars. A good analogy is a pitcher for a farm team having to pitch a good season in the AA league before being considered for a start in the majors.

In order to help ensure that plenty of good records are released so the radio stations can meet their Canadian content quotas, the Canadian Independent Record Production Association (CIRPA), a Toronto-based lobby group, got some of the major radio chains to finance a fund to provide matching loans to recording artists who were having trouble obtaining money from traditional sources. This Fund to Assist Canadian Talent on Record (FACTOR) receives about 50 demos and proposals monthly from across the country. A five-person jury, usually consisting of representatives from the radio, record company, personal management, studio and independent promotion sectors of the industry, will listen to each demo, rate it, and decide whether or not it is deserving of a FACTOR loan (up to 50 percent of a maximum budget of \$25,000). The loan plus a 1 percent royalty is paid back to FACTOR from record sales. So far FACTOR has had a great success rate relative to the record industry as a whole. A similar fund to assist the video industry (VIDEO-FACT), has recently been established.

Most radio stations feel that the content regulations have served their purpose in establishing an independent Canadian recording industry, and that the quotas should be relaxed or eliminated altogether. CIRPA, of course, is lobbying against any changes, and even encourages the CRTC not to renew the licenses of stations that are not

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meeting their Canadian content quota.

The Canadian content quotas did result in a remarkable growth in the number of recording studios. During the past ten years, more than 100 2-inch 24- or 16-track rooms have opened across the country. Three-quarters of these are concentrated in the three largest cities: Toronto (36), Montreal (20), and Vancouver (10).

Recording in the U.S. seems to be more specialized depending on the city. Traditionally, L.A. is television, film, and records; New York: records; Chicago: commercials and industrials; Nashville: country; etc.

The Canadian studios tend to be more generalized. Toronto offers a smorgasbord of studios, and is the fourth largest recording center in North America. Most major Canadian film production houses, television networks, record companies, and advertising agencies, have their head offices in this city of 2.5 million. There are about half a dozen multi-room studios. Sounds Interchange leads the pack with five 24-track studios under one roof, all with video interlock. They are a versatile shop, with plenty of LP, film, and TV projects, although the bulk of their business is jingles, as the studio is owned by a production company. Other multiple studios include Manta (three rooms), specializing in jingles and LPs; Eastern Sound (two rooms), audio post for video; McClear Place (two rooms), albums and jingles; Phase One (two rooms), rock albums; and Master's Workshop (two rooms), audio post for video. Both Phase One and McClear Place are in the process of installing SSL consoles, which will bring the Toronto total to four, the others being at CFTO-TV's post-production suite (where Bizarre and Fraggle Rock are mixed for American Pay TV), and another at United Media in nearby Thornhill. Amber Sound became the first multi-track digital facility in Canada this year with the installation of a Mitsubishi 32-track machine and a 2-track mixdown deck. All the studios in Toronto report that business is up this year, particularly at studios specializing in audio post for video. Due to the current low value of the Canadian dollar relative to the American (65¢ U.S. = \$1 Canadian), there are quite a few American-based productions being recorded here. There were eight feature films being shot in Toronto in September alone.

One thing the Toronto-area studios have in common is TRACS, the Toronto Recording Association for Commercial Studios. TRACS has been in operation since 1980 as a casual association of studio owners, meeting four times a year and publishing a quarterly newsletter. About half of the studio owners in Toronto are members, along with

freelance engineers, equipment suppliers, and students. Like the AES (which also has a strong Toronto chapter), TRACS meetings often feature demonstrations of new equipment or facility tours.

—PAGE 188

MAKING IT IN QUEBEC

"If Napoleon hadn't sold Louisiana to the British so he could continue to fight in Europe, the whole east coast of the United States would have been French! But he did, and today, North America's only remaining major French community can be found in the province of Quebec.

Montreal, the second largest city in the country (with a population of 2.5 million), has always been a bastion of fashion, arts, and innovative and creative concepts in Canada. Musically speaking, Montreal has been (and remains) a "test ground" for many British and other European bands touring North America. Incidentally, acts such as Supertramp and Yes were first acclaimed there. In the same frame of mind, the city has produced a wealth of internationally renowned artists such as Gino Vanelli, April Wine, Corey Hart, Men Without Hats, Aldo Nova, Mahogany Rush, Maynard Ferguson, Andy Kim (to name a few), not to mention all the local singers and musicians—mostly French-speaking—that have made it here and in Europe.

Since the population of the whole province is under eight million, it is difficult for local musicians and artists to make a consistent living. The consumer, swept up by a strong American influence, is also inevitably listening to and buying English products. Before an artist's career can mature, one may be forced to choose between an exile in Europe's French countries (a market already quite saturated) or a switch to a more "Americanized" product, using the English language as a communication medium. Either way, life is not easy and the apprenticeship often toilsome. But on the other hand, "it's in suffering that one may grow," as the saying goes.

Music in all of its forms is a vital form of art in Quebec, but the economical and cultural differences have always made it difficult to "make it." Fortunately, things are slowly changing... in a very positive way.

—Daniel A. Vermette



David Bowie cutting tracks for his Tonight LP, recorded last year at Le Studio.

Le Studio:

The Tradition Continues

At Le Studio, the 275 acre recording complex located on a quiet lake on the outskirts of Morin Heights in the Laurentian mountains resort area, the blaring of saws and the pounding hammers of work crews has stopped. It has been six months since the completion of their new 7,500 square foot video post-production building.

The two-story edifice, attached to the world-renowned audio facility favored by the likes of The Police, Asia, Corey Hart and David Bowie (among many others), houses editing suites, a computer graphics room, administration and conference rooms, a dining hall with terrace facing the lake, and an acoustic echo chamber. Over three million dollars were spent in the expansion, with no expense spared on video gear. The one-inch on-line suite features an Ampex ADC switcher, ISC editor, Ampex ADO, and NEC

E-Flex; computer graphics goodies include a Bosch FGS-4000, Quantel Paint Box, and an Abacus digital sequencer; an off-line room was installed mainly for in-house productions; and extensive audio/video tie lines connect the upstairs video suites to the studio complex for total flexibility.

According to Le Studio co-owner Yael Brandeis, the video division has been "working around the clock," busy with graphics for show openings and station IDs, as well as editing documentaries, variety shows and specials since opening last May. But does all this video activity mean that Le Studio is no longer interested in audio clients? Probably not, as Julian Lennon (now working with producer Phil Ramone on the follow-up to his *Valotte* debut LP) has recently joined the growing roster of artists who are attracted by Le Studio's unique combination of audio excellence and relaxed resort settings.

—George Petersen

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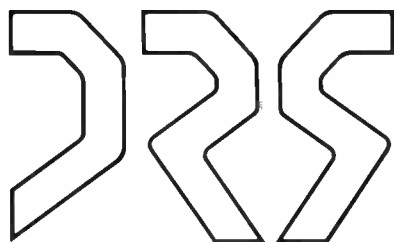
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NEWS FROM UP NORTH

In Vancouver, at *Little Mountain Studios*, the SSL console they installed over a year ago is really starting to pay off by attracting clients from all over. Superproducer David Foster was in to cut tunes with Donna Summer and Julio Iglesias, while English rockers White Snake completed an album, as did local heroes Loverboy, Honey-moon Suite, and The Arrows... At nearby *Mushroom Studios*, new acquisitions include an Emulator II with an Apple Macintosh and Sound Designer software, as well as Sony digital editing gear. Local bands cutting vinyl include Moev, 54.40, Jim Foster, and Bolero Lava; and an increasing number of U.S. acts, such as Mental Edge, Vice, and Perennial, who have been drawn northward... *Sundown Recorders* in Edmonton, Alberta has been a whirlwind of activity lately. Studio owner Wes Dakus produced Warner Bros. act Dark Room, with engineering aces Jim Gaines and Howard Steele; Paul Whitney has begun cutting music for an upcoming feature film; while Mavis McCauley, and the Rock-o-diles have both been completing projects. On the equipment front, construction of a new all-digital (with Mitsubishi 32-track) control room has begun and should be on-line early next year... *Studio West* in Saskatoon now offers full retreat recording, with the completion of a guest chalet that sleeps eight. Recent clients include Click, Northern Pike, and Deborah Lauren (well known as the host of the "Country West" show on CBC). Studio owner Blaine Wilkins is now completing a compilation album of 24 Saskatchewan artists, due for release the 19th of this month... *Elora Sound*, in Ferris, Ontario, is considering the purchase of a Sony PCM-3324 digital multi-track, and is offering workshops to gauge their client's reactions and comments about the recorder... Kevin Markland at *Phase One* in Scarborough, Ontario, reports the complete renovation of their Studio B, (designed by Terry Medwedyk), which is now fitted with an SSL 4000 console with Total Recall, Adams-Smith synchronization, and a

full PPG system with Waveterm B. Clients include Cats Can Fly (their new LP came out last month); Vital, a band from Paris; and Platinum Blonde, who cut their *Alien Shores* LP at the studio... Outside Toronto, in Rexdale, *Master's Workshop* has been busy with a variety of post-production mixes, ranging from the Imax film "The Freedom to Move" (running at Expo '86 in Vancouver), to the two-hour docudrama "The Making of Tears are Not Enough," mixed in Dolby stereo; and a plethora of music specials for The Police, Supertramp, Yes, and many others... September was the busiest month since the studio opened ten years ago, notes *Comfort Sound* (Toronto) owner Doug McClement, with video mixes for Gallin (shot at Canada's Wonderland); a Kid Creole & the Coconuts special for MuchMusic; CFNY radio mixes with Direct of 17, Propaganda, and New Order. Comfort just bought an Otari MTR-12 30ips half-inch mastering recorder with four and two track head blocks... Although they've been awash with jingle and film work lately, *Manta Sound* has found the time to host a number of album dates: Bruce Coburn and Murray McLauchlan, both on True North Records, have completed LPs; as have FM on Quality Records... Hayward Parrot, formerly with Manta, and now studio manager at *McClellan Place*, expects the construction of their two new rooms (designed by studio owner Bob Richards and acoustician Jack Edwards) should be finished by the end of this month. Both rooms will feature Claude Fortier monitors; one will have an SSL 6000 series console, while the other will have an MCI board. McClellan's Sony digital 3324 recorder will float between the rooms, depending on demand... Clearasil and Lee Jeans are among the growing number of agency clients specifying digital audio for commercials, says George Semkiw of Toronto's Mitsubishi-equipped *Amber Studio*. Recent album dates there include Johnny Lovesin and Colin Linden; while Wayne St. John, and the 20th Century Rebels cut digital EP and single projects, respectively... Toronto's *Stu-*

dio 306 is getting a lot more jingle and incidental music work and is now laying wiring for a SMPTE system in preparation of the building of a new room next spring . . . Master acoustician/designer Terry Medwedyk, of *Group One Acoustics*, Toronto, has kept his drafting table warm over the past year, having been involved with remodeling and new construction for Ocean Sound, Elora Sound, Comfort Sound, Mars Recording Studio (Toronto), Phase One, Cherry Beach (Toronto), and Wellesley Studios, who after many years on the forefront of the Toronto music scene, may be going 24-track next year. Artist-owned studios are also on the rise, as Medwedyk has assisted with Bill McDowell's OMS Studio in nearby Brampton, as well as Ian Thomas' 24-track home facility in Wimona . . . Montreal's *Cooney Tunes* has been inundated with jingle activity lately, for Purolator Couriers, Sergio Valente, the CBC, Benihana, and Mike's Restaurants, among many others. All were composed and produced by Ian Cooney, with Robert Heaney at the board . . . *Studio Vert* (Ubalde, Quebec) has

expanded its arsenal of electronic music production gear with the addition of an IBM 32-track MIDI system with Jim Miller software, along with a 150 port MIDI patch bay. The facility currently has over 10,000 sound effects and 1,200 Yamaha DX patches stored on floppy disk, and plans are afoot for a video/computer animation suite (equipped with a CompuSonics digital audio system) for next January. Recent clients at Studio Vert include Michele Lemieux, Michele La Lombe, and theme work for the Nordiques hockey team and the *Action de Bat* TV show . . . David Leonard, the president of the *Trebas Institute of Recording Arts*, with four campuses throughout Canada, reports that enrollment is now at an all-time high, and the school opened a branch in Los Angeles which began classes last month. Music legend George Martin has agreed to give a seminar at the Toronto campus next March, and instructor/music lawyer Paul Sanderson, who teaches courses on music business at Trebas has released an excellent new book, entitled *Musicians & the Law in Canada*.

—George Petersen

Vancouver's Ocean Sound, with two identical Studer/Trident-equipped rooms (completed a year ago), features a Terry Medwedyk design. The studio added SMPTE interlock and one-inch video sweetening gear last month.



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—FROM PAGE 184, WHITE NORTH

The most important part of the meetings, however, is the coffee break, which allows studio owners to get together and discuss common problems in a casual atmosphere. The newsletter includes a list of members' current projects, upcoming events of interest, used equipment for sale, and even a list of clients who don't pay their bills.

The recording scene in Montreal provides a paradox, because although more than two million people live there, three-quarters of them speak French, so most studios there service the French part of the Canadian market (about one-third of the Canadian population of 23 million, almost all of whom live in the province of Quebec). Since the Quebecers cannot rely on the U.S. to supply their entertainment needs because of the language barrier, the people there support the local records, films, and television programs. A major act like Beau Dommage can sell 350,000 albums in a province with only seven million people. This would be like selling 11 million LPs in the United States.

Vancouver studios have had a lot of success with hard rock over the years (Loverboy, BTO, Bryan Adams). The music scene in this city of one million people is run by Bruce Allen, who manages all three of the above-mentioned acts. The studios there are primarily album-oriented, with some audio-post for video work being done there as well.

Hopefully, the current boom is a trend and not a fluke. In any event, the Canadian recording scene seems to be thriving. ■

Author Doug McClement is the owner of Comfort Sound, a 24-track studio and remote recording business in Toronto.



Strength In Numbers

by Nelson Gareau

With much of the Canadian sound recording industry's research and development being directed by the U.S.

parent companies of multinationals, organizations have been established by the Canadian-owned sector to represent themselves in a more effective manner. This "collective pooling" of resources is deemed to be appropriate in responding to major issues and accepting the challenges of the ever-changing market demands.

As a result, Canadian sound recording groups can voice their own concerns and express their own views, in a more positive manner. By being unified, favorable responses are more likely to occur, even at the government level... strength in numbers.

One organization in the forefront of giving the Canadian industry a more definite Canadian identity is the Canadian Independent Record Production Association (CIRPA).

Formed in 1980, CIRPA is a non-profit national trade association that represents the independent sector of the record and music video industry. Members include: record companies, recording studios, agents, producers, managers, music video producers and directors, as well as others professionally involved in sound recording and video production.

Earl Rosen, executive director of CIRPA, describes its function this way: "Our objective is to increase the number and especially the quality of recordings and videos produced in Canada.

"We work collectively to help stimulate growth in our music/video industry, and we offer any support we can to our members who want to seek markets outside of Canada. Our organization is very unique in its overall role. No other country offers services similar to CIRPA. We administer both FACTOR (the Foundation to Assist Canadian Talent on Records) and VideoFACT (the Foundation to Assist Canadian Talent on Video)."

Commencing with its program three years ago, FACTOR was set up by CIRPA and several major broadcast companies to provide financial assistance to the production of quality Canadian recordings.

Each year, FACTOR awards and loans out between \$2,500 and \$25,000 to accepted applicants. In 1983-84, CIRPA members received more than \$210,000 in awards. This was 750 percent more than the total dues paid by all CIRPA members. To date, 128 sound recordings have been produced at a cost of \$805,000. And this is only the beginning.

Canadian-controlled record labels, production companies, producers, managers, and the artists themselves are eligible to receive up to 50 percent of the cost to produce a Canadian master tape, and up to 90 percent of the cost of studio musicians and the fees of an arranger.

All musical styles are eligible in seeking needed funds through these three programs: 1) New talent; 2) Factor loans; 3) Term loans.

Juries select projects on merits. Most loans must be repaid, and a one percent, on-going royalty rate is also charged.

Record companies may apply directly to the Board of Directors for approval of a FACTOR loan, thereby by-passing the jury process. An important stipulation is that these record companies must have a distribution agreement in place, with a national distributor, and the artist must have released at least one successful album to his or her credit.

FACTOR is affiliated with the Canadian Talent Library (CTL). Formed 23 years ago, CTL has produced some 263 albums and 18 singles. All have been released and played on the radio, and more than 250 Canadian radio stations and cable television companies subscribe to the CTL catalog of Canadian music content. Through the regulation, supervision and licensing by the Canadian Radio-Television and Telecommunications Commission (CRTC), Canadian radio is required to broadcast at least 30 percent "Canadian music between the hours of 6 a.m. and midnight—every day.

The supply of Canadian content is directly tied to the availability of sufficient quantities of quality Canadian recordings. FACTOR is vital in attaining this goal.

VideoFACT, established in 1984, was set up by CIRPA and the Much-Music Network, a national music video cable TV service. (Canada's answer to MTV.) VideoFACT's objective is to assist in the financing of Canadian music videos by providing awards of up to \$50,000 to Canadian record companies, video companies, and to the artists themselves.

During its first year of operation, VideoFACT awarded \$100,000; out of 297 interested parties, 17 videos were actually completed and shown. This represented 19 percent of all Canadian-made videos. Independent artists without a record release accounted for 40 percent of VideoFACT's awards, indicating that CIRPA works for nearly everyone.

Canadian-controlled record labels, record or video production companies, producers, managers, and artists are eligible to receive up to 50 percent of the cost of producing a music video—to a maximum of \$50,000.

All musical styles are considered, from rock to country to jazz to classical. (Productions in French are also accepted.) Awards are based on the creative presentations and financial requirements of the project. "We take great pride in the success stories of Helix, Lee Aaron, Jane Siberry, Kim Mitchell

and others," says Rosen. "Through our efforts, these artists were able to break ground in other countries, while being on small independent labels.

"CIRPA supported these acts and others in their infancy. It clearly shows what can be done with a little initiative."

CIRPA also represents the interests of its members in a number of other ways:

1. CIRPA acts as a forum for the discussion and the exchange of information concerning the Canadian record and video industry; to the press and public; to other music organizations around the world, and to all levels of government.

2. CIRPA is a resource center for its members; for industry contacts and international contacts, for information on production and government programs, and for industry news.

3. CIRPA organizes the Canadian booth at MIDEM—the world record industry trade show—held every January, in Cannes, France.

4. CIRPA conducts on-going discussions with the provincial governments and to the Federal government, on issues such as: copyright laws; tax laws and tariffs; cultural industry policies; Canadian content on radio and television; support for exports and the co-operation between the government and

the music sector.

This past summer, the Department of Communications of the Government of Canada issued its Discussion Paper on "the Initiatives for the Radio and Sound Recording Industry." In the outline, the Canadian government revealed a desire to "nourish the Canadian-owned end of the business." In straight numbers, the government wants to help finance the production of between 150 to 175 albums, and about 50 videos each year. Millions of dollars in federal assistance is proposed in the government's Discussion Paper.

Viv Wilson, CIRPA's president, welcomes the government's efforts. "Support for Canadian record and video productions, in a co-operative manner, is much appreciated," he says.

"The recording industry in Canada generates retail sales of over \$600 million annually, and directly drives an economy of \$1 billion, inclusive of live concerts, manufacturing, music publishing, recording studios, and associated merchandising revenues.

"Indirectly, recorded music accounts for an additional \$1 billion when you include radio broadcast revenues, home and professional audio equipment, and rentals related to produce music.

"It is very encouraging...that we are, at long last, being recognized as a major economic force of importance."

As for the future of CIRPA?

"I see only better and better times ahead," says Wilson. "We've built a good foundation in our first five years. The future is whatever the members want it to be...the ball is in their court.

"Newly-elected president Andy Hermant is a mover and he knows the Canadian music scene thoroughly," he concludes. "CIRPA is in good hands."

But CIRPA recognizes that the future of the Canadian recording industry actually lies in the hands of the Canadian-owned independent labels, for the simple reason that these companies are largely dependent on their success with the Canadian recording artists to remain in business.

Anyone wishing more information is asked to contact: The Canadian Independent Record Production Association, 144 Front St. West, Suite 330, Toronto, Ontario, Canada M5J 2L7. Attention: Earl Rosen, Executive Director. Phone (416) 593-4545. ■

**Nelson Gareau is a member of CIRPA and owner/manager of Nova Heart Recording Studio in Burlington, Ontario, Canada.*

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S T U D I O S

4 & 8 TRACK

The information in the following listings was supplied by those listed. *Mix* claims no responsibility for the accuracy of this information. Please verify critical information directly with the studios.

•• A CAPPELLA MUSIC STUDIOS

#14 Oriole Rd., Lethbridge, Alberta, Canada 21H 453
(403) 328-4261
Owner: Murry Nelson
Studio Manager: Murry Nelson

•• AIRLAB STUDIOS

also *REMOTE RECORDING*
109-B Portland St., Toronto, Ontario, Canada M5V 2N3
(416) 361-0562
Owner: Kenneth J. Kroeker
Studio Manager: Paul Knight

•• AIRWAVES AUDIO INC. RECORDING STUDIOS

15 Toronto St., Lower Level, Toronto
Ontario, Canada M5C 2E3
(416) 863-6881
Owner: Al Staurch
Studio Manager: Cathy Onyskiw

•• ALBATROS RECORDING STUDIO

11,870 Jean-Masse St., Montreal
Quebec, Canada H4J 1S3
(514) 332-1317
Owner: Richard Murray
Studio Manager: Ambroise Dufresne

•• ALDON SOUND-4-STUDIOS

also *REMOTE RECORDING*
1449 Redwood Ave, Windsor
Ontario, Canada N9C 3P2
(519) 256-3900
Owner: Don Lazurek
Studio Manager: Don Lazurek

•• ROBERT BOCKING PRODUCTIONS LTD.

75 Hucknall Rd., Downsview
Ontario, Canada M3J 1W1
(416) 636-9587
Owner: Robert Bocking

•• CCMC MUSIC GALLERY

also *REMOTE RECORDING*
1087 Queen St. W., Toronto, Ontario, Canada M6J 1H3
(416) 534-6311
Studio Manager: Paul Hodge

•• COONEYTUNES LTD.

1070 Bleury St., Suite 301, Montreal, Canada H2Z 1N3
(514) 397-8819
Owner: Ian Cooney

Studio Manager: Eden Polansky
Engineers: Robert Heaney, Ian Cooney, Mike Chamberlain
Dimensions of Studios: 40 x 32
Dimensions of Control Rooms: 20 x 16
Tape Recorders: Scully 280B, 8 track; Scully 280B, 2 track;
Ampex 351, 2 track; Ampex 350, mono; Nakamichi cassette.
Mixing Consoles: Neve BCM 10-2, 10 x 2.
Monitor Amplifiers: Crown DC-300, McIntosh 2100.
Monitor Speakers: Altec 604E, "Manta Ray," JBL 4311,
Auratones.
Echo, Reverb & Delay Systems: Live echo chambers,
Master-Room XL305, MXR digital delay, Lexicon PCM60.
Other Outboard Equipment: UREI LA-3A pair, UREI 1176,
dbx 162 stereo limiter.
Microphones: Neumann, AKG, Shure, Beyer, Audio-Tech-
nica, Sennheiser, E.V.
Instruments Available: Yamaha CP-70B electric grand
piano, Fender precision bass, Pearl drums, Fender Bassman
amp, Korg synthesizer, various percussion instruments.
Rates: \$50/hr. Block booking discounts available.

•• DES NOVO PRODUCTIONS

199 Henderson Ave., Thornhill
Ontario, Canada L3T 2L8
(416) 731-0123
Owner: Claude Des Jardins
Studio Manager: Paul Novotny

•• GENSCH INTERNATIONAL PRODUCTIONS

436 Elmhurst Rd., Winnipeg
Manitoba, Canada R3R 0T9
(204) 888-4384
Owner: Michael Soloway
Studio Manager: Michael Soloway

•• I.C.A. INSTITUTE OF COMMUNICATION ARTS— AUDIO ACCESS ONE

5787 S.E. Marine Dr., Burnaby, B.C., Canada
Owner: I.C.A. Institute of Communication Arts
Studio Manager: Niels Hartvig-Nielsen

•• KIRKLAND SOUND RECORDING

also *REMOTE RECORDING*
9 Summit Ave., Kirkland Lake
Ontario, Canada P2N 1M6
(705) 567-3847
Owner: Bob May
Studio Manager: Bob May

•• LE SONOMAIRE

also *REMOTE RECORDING*
246 S. Elzear Blvd. E., Laval
Quebec, Canada H7M 4A2

(514) 668-0638
Owner: Claude Corbeil
Studio Manager: Claude Corbeil

•• L'OCTAVE

293 Place des Ormes, Pincourt
Quebec, Canada J7V 6M3
(514) 453-4945
Owner: Pierre Campeau
Studio Manager: Pierre Campeau

•• THE MIDI FOREST

58 Endesby Rd., Toronto
Ontario, Canada M4E 2S3
(416) 699-6105, 288-1271
Owner: Eric Kofler, Andy McNeill
Studio Manager: Eric Kofler

•• MODULAR MUSIC

26 Soho St. Suite #370, Toronto
Ontario, Canada M5T 1Z7
(416) 593-7676
Owner: Bruce Fowler, Luke Koyle
Studio Manager: Bruce Fowler, Luke Koyle

•• NEEPAWA RECORDING STUDIO

367 Roncesvalles Ave., Toronto
Ontario, Canada M6R 2M8
(416) 533-7384

•• NORTHERN SOUND PRODUCTIONS LTD.

also *REMOTE RECORDING*
551B 44th St., Yellowknife
N.W.T., Canada X1A 1H9
(403) 873-5403
Owner: Allan Bagelman
Studio Manager: Allan Bagelman

•• PALINDROME RECORDING SERVICES

c/o CKMS-FM, 200 University Ave. W., Waterloo
Ontario, Canada N2L 3G1
(519) 886-2567
Studio Manager: Bill Wharrie

•• PEEKUBE PRODUCTIONS

also *REMOTE RECORDING*
Box 2168, Dalhousie, New Brunswick, Canada E0K 1B0
(506) 684-4231
Owner: Peter P. Perkins (producer, engineer)

•• PERFECT SOUNDS

132 Ivanhoe, Pointe Claire, Quebec, Canada H9R
(514) 697-0235
Owner: Fred Grindley
Studio Manager: Keith Ferguson

•• PERRY'S RECORDING STUDIO

also *REMOTE RECORDING*
Box 731, 216 Lakeshore Dr., Chase
B.C., Canada V0E 1M0
(604) 679-3018
Owner: Doug Perry
Studio Manager: Doug Perry

•• RESMER RECORDING STUDIO

592 Almira St., Pembroke, Ontario, Canada K8A 4A2
(613) 732-3102
Owner: Ron & Elmer Resmer
Studio Manager: Ron Resmer

•• SOUND IDEAS RECORDING STUDIO

also *REMOTE RECORDING*
86 McGill St., Toronto, Ontario, Canada M5B 1H2
(416) 977-0512
Owner: Brian Nimens
Studio Manager: David Brandy

•• SPECTRUM PRODUCTIONS LTD.

also *REMOTE RECORDING*
10433-80 Street, Edmonton, Alberta, Canada T6A 3J5
(403) 466-2723
Owner: Gary Semaniuk
Studio Manager: Gary Semaniuk

•• STUDIO NORTH

also *REMOTE RECORDING*
12 Yorkville Ave., Toronto, Ontario, Canada M6S 3Y3
(416) 920-2009
Owner: Mitchell Gold

●●● STUDIO PLACE ROYALE INC.
 141 St. Paul St. West, Montreal, Canada H2Y 1Z5
 (514) 844-3452
 Owner: Brown & Rodrigue
 Studio Manager: Stanley Brown
 Engineers: Normand Rodrigue, Dale Robertson, John Smith, Stanley Brown
 Dimensions of Studios: 200 sq. ft, 150 sq. ft.
 Dimensions of Control Rooms: 600 sq. ft.
 Tape Recorders: Scully 284 Servo, 8 track; Otari MTR-10, 2 track; Otari 5050, 4 track; Tascam, 2 track; Scully 280, 2 track; Ampex 440B, 1 track; Scully 280B, 1 track.
 Mixing Consoles: Allen & Heath Syncon, (2B) 16 x 16; Allen & Heath, 12 x 2.
 Monitor Amplifiers: Bryston 400
 Monitor Speakers: Tannoy HPD
 Echo, Reverb & Delay Systems: MCS-1 Powertran (sampler); Space Station
 Other Outboard Equipment: Neve comp/limiters, Delta de-esser, UREI filter set.
 Microphones: (2) AKG C414 EB; Neumann U87, (2) U67; Shure SM81; various dynamics.
 Instruments Available: Roland Juno 106
 Video Equipment & Services: JVC 3/4" VCR; BTX Synchro 2/4/8 track ATR; BTX SMPTE code generator, jam sync.
 Rates: \$75/hr; video sync, \$125/hr.

●● STUDIO TRAX
 2207 Beaconsfield, Montreal
 Quebec, Canada H4A 2G9
 (514) 481-2630
 Owner: Richard Rosenbloom
 Studio Manager: Fred Berlin

●● UNDERGROUND MUSIC
 also REMOTE RECORDING
 62 Clive Ave., Guelph, Ontario, Canada N1E 3S7
 (519) 822-9403
 Owner: Willard Bond
 Studio Manager: Willard Bond

●● VENTURE TEAMS INTERNATIONAL
 Box 7430 Station E, Calgary, Alberta, Canada T3C 3M2
 (403) 286-3422
 Owner: Venture Teams International
 Studio Manager: Brian Delamont

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●●● B & C SOUND STUDIO
 Maitland Dr., Belleville, Ontario, Canada K8N 5B5
 (613) 962-0549
 Owner: Eric Baragar, John Collins
 Studio Manager: John Collins

●●● BEAVER MOUNTAIN PRODUCTIONS LTD.
 H157 Boundary Rd., Yarrow, B.C., Canada V0X 2A0
 (604) 823-4492
 Owner: Ron Lengert
 Studio Manager: Peter Kilgour

●●● BRIDGE RECORDING
 530 5th St. S., Lethbridge, Alberta, Canada T1J 2B8
 (403) 320-6784
 Owner: Vic Klonin
 Studio Manager: Vic Klonin

●●● BROCK SOUND PRODUCTIONS
 576 Manning Ave., Toronto, Ontario, Canada M6G 2V9
 (416) 534-7464
 Owner: Brock Fricker
 Studio Manager: Brock Fricker
 Engineers: Brock Fricker, Ken Lyons, Robert G. Hanson
 Dimensions of Studios: Bedtrack studio, 168 sq. ft.; piano & vocal studio, 120 sq. ft.
 Dimensions of Control Rooms: 12 x 14
 Tape Recorders: Studer A-80, 16 track; Otari 5050 Mark III, 4 track 1/2"; Ampex AG-440, 2 track; Sony PCM-F1 digital, 2 track.
 Mixing Consoles: Trident Trimix w/computerized mixdown.
 Monitor Amplifiers: HH (MOSFET), Crown, Quad.
 Monitor Speakers: Tannoy SRM-12B Super Reds w/Cambridge sub-woofer, Yamaha NS-10M, Auratone 5C.
 Echo, Reverb & Delay Systems: MXR 01A stereo digital reverb, Klark-Teknik stereo analog reverb, DeltaLab Effectron ADM 1024 digital delay.

—LISTING CONTINUED ON PAGE 192

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●●● **SOUND ART MUSIC PRODUCTION**
7181 Delmonte Crescent, Mississauga
Ontario, Canada L4T 3L4
(416) 677-8478
Owner: Arthur H.B. Atkinson
Studio Manager: Arthur Atkinson

●●● **SOUND PATH PRODUCTIONS LTD.**
1100 Invicta Dr. Unit 21, Oakville
Ontario, Canada L5C 1C7
(416) 842-1743
Owner: Bill Drew
Studio Manager: Bill Drew

●●● **STUDIO STRATOLAB**
4824 Cote Des Neiges Suite 101, Montreal
Quebec, Canada H3V 1G4
(514) 738-4214

Owner: Jeff Stettner
Studio Manager: Jeff Stettner
Engineers: Jeff Stettner, Koolch Trochim
Dimensions of Studios: 25 x 25 x 20 (ceiling)
Dimensions of Control Rooms: 25 x 12 x 20
Tape Recorders: Ampex MM 1000 w/16 tracks dbx noise reduction, 16 track; Tascam 32-2 w/dbx noise reduction, 2 track; TEAC V-800X, cassette.
Mixing Consoles: Tangent Series IV, 20 x 8 x 2.
Monitor Amplifiers: BGW 250
Monitor Speakers: JBL 4312, Auratones, DB Plus
Echo, Reverb & Delay Systems: MICMIX XL-305 reverb, Loft delay-line, Roland SE 1000 digital delay, Lexicon PCM60 digital reverb.
Other Outboard Equipment: Symetrix 501 comp/limiter, Loft noise gate/limiters.
Microphones: Electro-Voice, Sennheiser, Shure, Audio-Technica, Milab, AKG.
Instruments Available: Electric & acoustic guitars, synthesizers, Simmons drums (available upon request).
Video Equipment & Services: Jingle production & session musicians on staff
Rates: \$35/hr, Canadian funds. Block rates available.



TOURIST PRODUCTION INTERNATIONAL
Montreal, Quebec

●●● **TOURIST PRODUCTION INTERNATIONAL**
also **REMOTE RECORDING**
Suite 415, 250A St. Paul St. E., Montreal
Quebec, Canada H2Y 1G9
(514) 878-0956
Owner: Unseen Management
Studio Manager: M3
Engineers: Louis Watson, Vladimir Noiz (ess'l. eng.)
Dimensions of Studios: (A) 24 x 14 x 8; (B) 16'6" x 14' x 8'
Dimensions of Control Rooms: 20'8" x 14' x 8'
Tape Recorders: Fostex B-16 w/remote, 16 track; Tascam 58 w/remote, 8 track; TEAC 34 w/remote, 4 track; Technics / Sony SV-100 PCM, 2 track; Harman Kardon cassette decks.
Mixing Consoles: Allen & Heath CMC-24, 24 x 16; Allen & Heath System 8, 16 x 16.
Monitor Amplifiers: Haffer amplifiers
Monitor Speakers: Polk audio studio monitors, various reference monitors; Auratones
Echo, Reverb & Delay Systems: Korg, Roland and Lexicon delays, Lexicon reverb, misc. echo units.
Other Outboard Equipment: Aphex Aurel Exciter Type B,

Aphex compellers, Roland SBX-80, outboard parametric EQs, de-essers, noise gates, noise reduction systems (Dolby, dbx), misc. compressors, limiters, Gollien-Krueger and Roland amps, SMPTE time code units.
Microphones: AKG, Beyer, Electro-Voice, Neumann, Sennheiser, and Sony mikes.
Instruments Available: PPG Wave 2.3 music system w/waveterm, PRK and EVUs. Roland JP-4, JP-8, JX-8P, Minimoog, Korg 770. Memorymoog Plus w/producer series computer software. Yamaha CP-35, DX7, PS-3, Linn, Oberheim and Roland drum machines. Simmons SDS-9, Fender & Ibanez guitars, misc. percussion, Fairlight CMI IIX available in Jan. '86.
Video Equipment & Services: Remote and in-house video production, sweetening & editing is available.
Rates: Call or write for our reasonable rates.

●●● **WELLESLEY SOUND STUDIOS**
316 Wellesley St. E., Toronto, Ontario, Canada M4X 1M1
(416) 968-0940
Owner: Jeff McCulloch, Roger Sleinin
Studio Manager: Roger Sleinin

●●● **WINFIELD SOUND STUDIOS INC.**
120 Sheridan Ave., Toronto, Ontario, Canada M6K 2H2
(416) 533-8316
Owner: Aubrey Winfield, Rick Perrotta
Studio Manager: Aubrey Winfield, Rick Perrotta

Jane Siberry talks about her new album, No Borders Here. See page 166.

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Direction: We are an environmental studio specializing in long term album projects. We offer total privacy and security to our guests as well as a comfortable and relaxed atmosphere in which to work.

ENDEL STUDIOS
11 de Bretagne, St. Lambert, P.Q., Canada J4S 1A2
(514) 672-4507

Owner: Endel Corporation Ltd.
Studio Manager: The Secretary, Endel Corp. Ltd.
Engineers: Robin Black (upon request)
Dimensions of Studios: 20 x 25
Dimensions of Control Rooms: 20 x 25
Tape Recorders: Soundcraft 760 MK III, 24 track; Sony PCM-F1 digital, 2 track; Otari 5050, 2 track; TEAC CX cassette.
Mixing Consoles: Soundcraft 2400, 24 x 24
Monitor Amplifiers: H & H/Yamaha/Quad
Monitor Speakers: UREI 813, JBL, Auratone, Realistic.
Echo, Reverb & Delay Systems: (2) Lexicon PCM60, Yamaha Rev-7, Roland delays, ADA delays, Loft delays, Master-Room.
Other Outboard Equipment: dbx comp/limiters, Symetrix comp/limiters, Ashly audio stereo parametric equalizer, Loft noise gates, Roland stereo flanger/Vocoder/Dimension "D", Roland MSQ-700, Franklin 1200 computer (DX Pro).
Microphones: AKGs, Sennheiser, Neumann, Shure.
Instruments Available: OB-Xe, Oberheim expander, (2) DX7, Roland IX8P, Yamaha CS-80, modified DMX, Roland TR 808/TR 727 (perc. comp.), Minimoog, Korg CX-3, Yamaha CP-70, ARP 2600/Omni, Polymoog, full MIDI operation ready.
Rates: Available upon request

E-NORM-US SOUND STUDIOS
28 b Howden Rd., Scarborough
Ontario, Canada M1R 3E4
(416) 757-8775
Owner: The E-Norm-Us Corp.
Studio Manager: Carlene Osborne

**I.C.A. INSTITUTE OF COMMUNICATION ARTS
AUDIO ACCESS THREE**
#82-2182 W. 12th Ave., Vancouver, B.C., Canada
(604) 734-5474
Owner: I.C.A. Institute of Communication Arts
Studio Manager: Niels Hartvig-Nielsen

INCEPTION SOUND STUDIOS
3876 Cheswood Dr., Toronto
Ontario, Canada M3J 2W6
(416) 630-7150
Owner: Chad Irschick, Jeff Woldert
Studio Manager: Chad Irschick, Jeff Wolpert
Engineers: Chad Irschick, Jeff Wolpert, Michael Haas
Dimensions of Studios: 30 x 20 (main room), piano iso room & drum iso room.
Dimensions of Control Rooms: 19 x 16
Tape Recorders: MCI JH24-24, 24 track; MCI JH110-B, 2 track; Scully 280, 2 track; Sony PCM-701 digital, 2 track;

—LISTING CONTINUED ON PAGE 196

ADB STUDIOS INC.
3880 de Courtrai Ave., Suite 200, Montreal
Quebec Canada H3S 1C1
(514) 340-1994
Owner: Al Di Buono
Studio Manager: Al Di Buono
Engineers: Mike Fedenko, Al Di Buono, Glen "The Snake" Robinson

Dimensions of Studios: 350 sq. ft.
Dimensions of Control Rooms: 170 sq. ft.
Tape Recorders: MCI JH-16, 24 track; Studer Revox B77, 1/2 track; Alpine AL 55, 4 track cassette.
Mixing Consoles: Quantum Audio Labs QA 1010, 26 x 24.
Monitor Amplifiers: Bryston 4B; Crown D150; BGW Systems 100B.
Monitor Speakers: Tannoy SRM 12B; Auratone 5Cs.
Echo, Reverb & Delay Systems: DeltaLab 1024, DeltaLab 256, AMS digital reverb.
Other Outboard Equipment: UREI LA-3A comp/limiters; UREI 527A graphic equalizers; Loft 401 parametric equalizer; Loft 400 noise gates/limiters; Aphex Aural Exciter; pitch transposer; Fetish, Sub-Sonik II.
Microphones: (2) AKG 414EBs, (2) 452EBs, CK1, D12E; (2) Electro-Voice RE20s; (2) Sennheiser MD421s, (2) MD 441s; Shure SM57.
Instruments Available: Oberheim OB-Xe; Korg Poly-Six; Fender Rhodes; double Rogers, Premier, Tama-kits; Marshall amp; Fene cabinets; percussion, etc.
Rates: \$55/hr or fixed rate.

AMBER STUDIOS LTD.
735 Queen St. W., Toronto, Ontario, Canada M6J 1G1
(416) 362-6472, 362-6473

Owner: George Semkiw
Studio Manager: George Semkiw
Engineers: G. Semkiw, B. Nevin, S. Traub, G. Fishman
Dimensions of Studios: 35 x 30 w/iso booths
Dimensions of Control Rooms: 25 x 24
Tape Recorders: Mitsubishi X-800 digital, 32 track; Ampex MM-1200, 24 track; Mitsubishi X-80 digital, 2 track; Ampex ATR-102, 2 track.
Mixing Consoles: MCI 500-C, 32 x 32.
Monitor Amplifiers: AB Systems, Bryston, Phase Linear
Monitor Speakers: Augsburg Custom JBL
Echo, Reverb & Delay Systems: EMT-140S, AMS digital reverb.
Other Outboard Equipment: Pan-Scan; Eventide Harmonizer 910, dbx 160/165 comp/limiter; Marshall Time Mod.; DeltaLab DL-3, DL-4; Eventide flanger; Adams-Smith synchronizer; Symetrix gates.
Microphones: AKG, Calrec, E-V, Sennheiser, Beyer
Instruments Available: Steinway 6' grand piano, Haines upright honky-tonk piano, Hammond B-3 organ, Fairlight CMI.
Video Equipment & Services: Adams-Smith 2600 synchronizer, JVC 3/4".
Rates: 24 track analog, \$140/hr; 32 track digital, \$200/hr. Block rates on request.

BLUE WAVE SOUND RECORDERS
34 W. 8th Ave., Vancouver, B.C., Canada V5Y 1M7
(604) 873-3388

Owner: Tom Lavin
Studio Manager: Carlton Lee

CENTURY 21 STUDIOS LTD.
also REMOTE RECORDING

1085 Salter St., Winnipeg, Manitoba, Canada R2P 0S5
(204) 334-4304
Owner: Harry & John Hildebrand
Studio Manager: John Hildebrand

CHERRY BCH SOUND LTD.
16 Munition St., Toronto, Ontario, Canada L1T 1G2
(416) 461-4224

Studio Manager: Carman Guerriem, Rob Netele

COMFORT SOUND
also REMOTE RECORDING

26 Soho St., Suite 390, Toronto
Ontario, Canada M5T 1Z7
(416) 593-7992
Owner: Doug McClement
Studio Manager: Doug McClement
Engineers: Corby Luke, Dave Hillier, Gabe Lee, Andrew St. George
Dimensions of Studios: 30 x 30, 10 x 10
Dimensions of Control Rooms: 19 x 19

Tape Recorders: Ampex MM1200, 24/16 track; Tascam 80-8, 8 track; Otari MTR-12, 4/2 track; (2) Technics RS 1500US, 2 track (1/2", 1/4"); (10) Sony TCM-81, cassette; Senyo 7300 Beta HiFi.

Mixing Consoles: MCI JH-636, 36 x 24
Monitor Amplifiers: BGW, Amcron, Fostex
Monitor Speakers: JBL 4343, JBL 4311, Yamaha NS-10, Auratone

Echo, Reverb & Delay Systems: Lexicon 200, Lexicon PCM60, Effector 1024, Lexicon PCM41, DeltaLab 92, Fostex, Echotron, Urse Major Space Station, Eventide Harmonizer, Urse Major, Star Gate.

Other Outboard Equipment: (2) Ashly compressors, (2) Ashly parametric EQs, (2) Ashly noise gates, ADR stereo comp/limiter, Omni Craft noise gates, (2) Soundcraftsmen graphic EQ, Mobile: 54 input 3-way transformer isolated 200-foot mike snake w/ground lifts on each input (all equipment used in studio is built for easy loading into our remote truck.)

Microphones: (2) Neumann U87, (2) Crown PZMs, RCA DX-77, 1953 Telefunken tube U47, Neumann U87, (3) AKG 451s, (7) Sennheiser 421s, (3) Sennheiser 441s, (2) Sony ECM 22Ps, misc. Shure, AKG.

Instruments Available: Emulator II, baby grand piano, Hammond organ w/Leslie, Gretsch drum kit, LP congas, Fender and Acoustic amps, misc. percussion, Roland rhythm machine, PPG 2.3 wavetern synth, Yamaha DX7, Oberheim OB-8, Roland JX-1P, Moog 55 modular synth, Simmons electronic percussion.

Video Equipment & Services: BTX 7500 SMPTE synchronizer, Proton monitor, JVC 3/4" U-matic recorder, Panasonic color camera, Sony Beta HiFi recorder, Sony and Panasonic monitors. Can record single camera remotes. Adams-Smith 2600 SMPTE synchronizer.
Rates: Not as much as you'd think!

E.A.R.S. AUDIO
only REMOTE RECORDING
1393 Boyer Rd., Orleans, Ontario, Canada
(613) 824-6090

Owner: Ken Fraser, John Cybanski
Studio Manager: Ken Fraser, John Cybanski

EASTERN SOUND CO. LTD.
also REMOTE RECORDING
48 Yorkville Ave., Toronto, Ontario, Canada M4W 1L4
(416) 968-1855

Sales Contacts: John A. Rowe, Andy Sykes, Fred Van Velsen
Studio Manager: Peter Mann

ELORA SOUND STUDIO
122A St. Andrew St. W., Fergus
Ontario, Canada N0B 1S0
(519) 843-4178

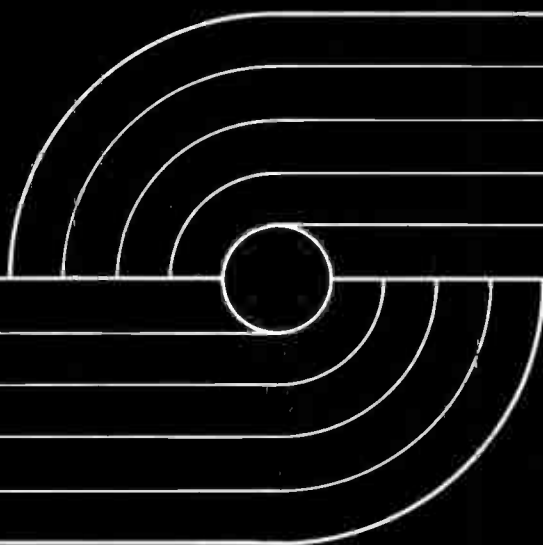
Owner: William J. Mather
Studio Manager: Wendy Miller
Engineers: William J. Mather
Dimensions of Studios: 25 x 30 (main room), 9 x 12 (drum room), 6 x 7 (iso booth), 9 x 10 (piano booth)
Dimensions of Control Rooms: 20 x 10
Tape Recorders: MCI JH-24, 24 track; Ampex ATR-102, 2 track.

Mixing Consoles: MCI automated JH 636-28, 28 x 28.
Monitor Amplifiers: Bryston 4B, Quad, Sony
Monitor Speakers: JBL 4430s, Yamaha NS-10s, Auratone 5Cs.

Echo, Reverb & Delay Systems: Lexicon 224X
Other Outboard Equipment: dbx 162 stereo compressors, UREI LA-4As, Lexicon & DeltaLab DDLs, Scamp noise gates, Nikko graphic EQ, Orban Sibilance controller, Aural Exciter, Harmonizer.

Microphones: Neumann U87, KM84; AKG 414, 452; Electro-Voice RE20, RE15, 660; Sennheiser 421, 441; Shure SM57, SM61; Crown PZM, Beyer M500, Countryman Isomax II-0, other assorted condensers and dynamics
Instruments Available: Kawai 7'4" grand piano, Hammond M3 organ w/147 Leslie, Milestone drum kit, assorted drums and percussion.

AS SIMPLE AS SOUNDING GREAT



MANTA SOUND COMPANY 3-24 TRACK STATE-OF-THE-ART STUDIOS

311 ADELAIDE STREET EAST, TORONTO, ONTARIO CANADA M5A 1N2
(416) 863-9316 TELEX 06-218665 CONTACT: LU ANN LEONARD

MANTA ELECTRONICS GROUP THE PEOPLE WHO BUILT IT FROM THE GROUND UP

Manta Electronics evolved from a group of specialists assembled in 1970 to design and supervise the construction of Manta Sound's world class recording facilities in downtown Toronto. We have been growing and strengthening our areas of expertise for 15 years.

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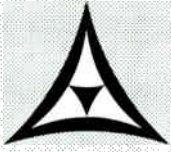
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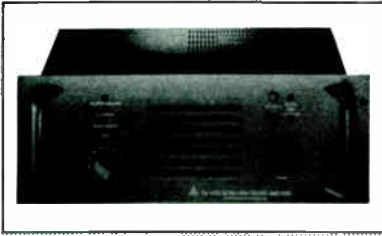
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CANADIAN STUDIOS

—FROM PAGE 194

Sony TC-K777 cassette.
Mixing Consoles: MCI JH 428, 40 x 24.
Monitor Amplifiers: Bryston, BGW, Crown, AB
Monitor Speakers: Modified Fostex w/JBL drivers; Yamaha NS-10; Auratone SC/T5/T6; ESS.
Echo, Reverb & Delay Systems: AMS RMX, EMT 240, live chamber, (2) Lexicon Prime Times, Eventide 949 Harmonizer, (2) Effectron 1024, Echotron 4096.
Other Outboard Equipment: Aphex Compellor, Valley People 610, Kepex; UREI 1176, LA-4, parametric EQ; Orange County comp/exp; dbx 160; Trident parametric EQ; Ashly parametric EQ; EXR Exciter.
Microphones: Neumann U47, U87, KM84, KM86, U47 tube; AKG 414, 452, D12, The Tube; Sony tube C-37; Beyer M500, 360; Shure SM57, SM58; Calrec 1050-C, 1001-C; E-V RE20; Bruel & Kjaer 4007; UREI direct boxes; PZM 30a, 31s.
Instruments Available: 1929 Steinway 9' concert grand piano, 1964 Fender Jazz Bass, Gretsch drums, any other instruments available on a rental basis.
Rates: Upon request.

◆◆◆ **INSIDE TRAK STUDIOS LTD.**
 7490 Edmonds St., Burnaby, B.C., Canada V3N 1B4
 (604) 525-3422
Owner: Rick Picard, Gordon Ross
Studio Manager: Lisa Barton
Engineers: Bill Buckingham, Francis Thievin, Gary Tole
Dimensions of Studios: 35 x 22 x 11
Dimensions of Control Rooms: 18 x 14 x 10
Tape Recorders: MCI JH-24, 24 track; MCI JH-110B, 2 track; Otari MTR-10, 2 track.
Mixing Consoles: MCI JH-636, 32 x 24.
Monitor Amplifiers: (2) BGW 750C, (2) BGW 250.
Monitor Speakers: Tannoy Big Reds, Yamaha NS10M, Auratones
Echo, Reverb & Delay Systems: Lexicon 224 digital reverb, AKG spring reverb, Lexicon Prime Time, PCM41, etc.
Other Outboard Equipment: UREI, dbx, Valley People, Roland, Aphex, MXR, etc.
Microphones: Neumann, AKG, Shure, Sennheiser, Sony, etc.
Instruments Available: Yamaha grand piano, Tama 9-piece drum kit w/hardware, Marshall 100 watt amp; synths: DX7, Oberheim; almost anything on request.
Video Equipment & Services: Audio Kinetics: Q.Lock synchronization, Sony 3/4" video machine, Sony 27" video monitor, MCI 2 track audio ATR, MCI JH-110C, 1" C-format playback machine. Services: multi-track editing & computerized synchronization to 3/4" video and 1" C-format audio layup to final picture, dialogue over-dubbing-sound-SFX & music scoring to picture, dual-language mixes to video (C-format), custom scoring & music sound SFX recording to picture, audio transfers to 3/4" & 1" video, production assistance, playback-dubbing of audio reel to reel to cassette.
Rates: On request.

◆◆◆ **KENSINGTON SOUND**
 170A Baldwin St., Toronto, Ontario, Canada M5T 1L8
 (416) 593-9607
Owner: Mike Alyanak
Studio Manager: Zezi Tayyeb

◆◆◆ **LE STUDIO (MORIN HEIGHTS) INC.**
 201 Perry, Morin Heights, Quebec, Canada J0R 1H0
 (514) 226-2419
Owner: Andre Perry & Yael Brandeis
Studio Manager: Yael Brandeis
Engineers: Paul Northfield
Dimensions of Studios: 1,300 sq. ft. hexagonal walls
Dimensions of Control Rooms: 284 sq. ft.
Tape Recorders: Studer A-800 MK II, 24 track; Studer A-80 MK III, 24 track; Studer A-80, 2 track; (3) Studer B-67, 2 track; JVC BP-900, 2 track.
Mixing Consoles: Solid State Logic 4000E 37.

Monitor Amplifiers: Studer A-68, BGW 750A, McIntosh MC2105, McIntosh MC2505, McIntosh MC2300, BGW 250B.

Monitor Speakers: UREI 813 (main monitors); playback monitors: Tannoy, Altec, Philips, Baby Reds, KLH, Advent, Acoustic Research, Yamaha.

Echo, Reverb & Delay Systems: Lexicon 224X, EMT 140S, EMT 140M live echo, MasterMix.

Other Outboard Equipment: (4) Pultec EQ, Klark-Teknik, analog time processor, NTP Phase Scope; (2) Loft 440 DDL/flanger, Eventide DDL; Eventide Harmonizers, Eventide flanger, UREI digital metronome; (3) RCA tube limiters BA6A; (2) dbx 161; Orban Parasound stereo synthesizer; Orban Parasound de-esser; Survival automated panner; Vocoder synton 222; Altec dual compressor; (2) UREI LA-3A; (2) Orange County vocal stressors; (2) DeltaLab Effectron; Lexicon PCM-41 (DDL); AMS-DMX harmonizer, and 30 channels of Dolby.

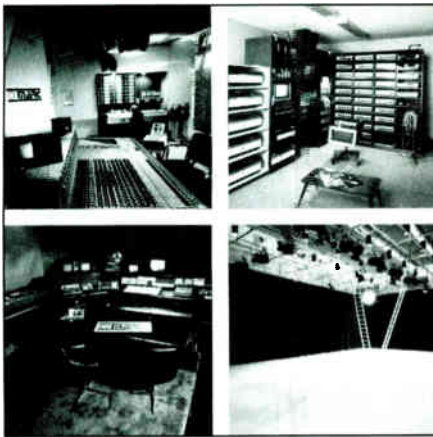
Instruments Available: Yamaha 9' concert grand piano, Hohner clavinet, Fender Rhodes 73, Hammond direct injection Leslie, Gon Bop congas (set), Latin Percussion bongos (set), Roland SH1000 synthesizer, various amps, snares and drums. Instruments easily available from Montreal and N.Y.
Video Equipment & Services: Under separate division, same complex, a state-of-the-art, on-line video editing suite.
Rates: Please call for information.

◆◆◆ **LES STUDIOS MARKO**
 910 E. La Gauchetiere, Montreal
 Quebec, Canada H2L 2N4
 (514) 282-0961
Studio Manager: Cliff Balson
Engineers: Serge Lacroix, Sulvain Jacob, Richard Belanger, Serge Gaudet, Serge Ovellet
Dimensions of Studios: (A) 42 x 32; (B) 20 x 32; (C) 20 x 18; (D) 20 x 16.
Dimensions of Control Rooms: (A) 30 x 22; (B) 20 x 22; (C) 20 x 22; (D) 20 x 16.
Tape Recorders: Otari MTR-90, 24 track; Otari MTR-12, 4 track; (2) Otari MTR-12 Super Analog, 2 tracks.
Mixing Consoles: NEOTEK, 48 x 24; Sound Workshop 30, 28 x 8; Sound Workshop 30, 16 x 8; Sound Workshop 30, 12 x 8.

Monitor Amplifiers: Bryston
Monitor Speakers: JBL 4435, JBL 4430, Tannoy SRM-12X
Echo, Reverb & Delay Systems: Lexicon 224X, Lexicon PCM60, EMT 250, EMT 142, Eventide H949, Ursa Major Space Station SST-282.
Other Outboard Equipment: Scamp rack; Dyna-Mites; Symetrix 501, S22; EXR Exciter; Roland sync box SBX-80, SDE-3000, SDD-320; Korg SDD-3000.
Microphones: Choice of over 50 microphones, such as AKG, Neumann, Sennheiser, etc.
Instruments Available: Yamaha 6' & 9' pianos.
Video Equipment & Services: BTX Shadows and Softouch, JVC 8250, Sony monitors, full high-speed film mixing system by Multi Track Magnetics.
Rates: From 2 track at \$75/hr. to 24 track/video interlock at \$180/hr.

◆◆◆ **LITTLE MOUNTAIN SOUND STUDIOS**
 201 W. 7th Ave., Vancouver, B.C., Canada V5Y 1L9
 (604) 873-4711
Owner: Bob Brooks
Studio Manager: Bob Brooks
Engineers: Roger Monk, Bob Rock, Lindsay Kidd, Pat Glover, Ron Obvious
Dimensions of Studios: (A) 66 x 38 x 22 semi-live, 1 iso. room; (B) 38 x 38 x 22 live amb, 2 iso. rooms.
Dimensions of Control Rooms: Both are 20 x 18 x 10.
Tape Recorders: Studer A80 Mark III, 24 track; Studer A80III, 1/2" track.
Mixing Consoles: (A) Neve A2069 (Spitfire), 24 x 8 x 24; (B) Solid State Logic 4000 (Total Recall), 48 x 48.
Monitor Amplifiers: Studer A68, McIntosh 2120, BGW.
Monitor Speakers: UREI 813 time aligned, Yamaha NS-10, JBL 431L, AR-18.
Echo, Reverb & Delay Systems: Lexicon 224XL; AMS-Rev, AMS-DDL (10 sec.); EMT 140s, 240s; Prime Time; GML EQ, lim/comp; LA-3; Trident EQ; Yamaha Rev. 1; etc.
Microphones: 86 mikes total including Neumann, AKG, Sennheiser, Shure, PZM, Electro-Voice.
Instruments Available: Marshall, Fender, Mesa Boogie-guitar amps, Minimoog, Fender P-bass, Camco and Pearl drum kits.
Video Equipment & Services: BTX video lock, w/JVC 8200 3/4" deck, SMPTE generator, etc.
Rates: \$180/hr (Canadian)

◆◆◆ **MARC PRODUCTIONS LTD.**
 also **REMOTE RECORDING**
 1163 Parisien St., Ottawa, Ontario, Canada K1B 4W4
 (613) 741-9851
Owner: Marcel Tessier
Studio Manager: Guy Tessier
Engineers: John Cybanski, Peter Burns, Guy Tessier, Richard Blakin (freelance), Dave Poulin.
Dimensions of Studios: (Sound Stage A) 35 x 56; (Studio B)



MARC PRODUCTIONS LTD.
Ottawa, Ontario

28 x 19; (Audio Booth C) 6 x 10
Dimensions of Control Rooms: (A) 25 x 20; (B) 24 x 21
Tape Recorders: Studer A-80, 24 track; Studer A-80, 2 track; MCI JH-110, 4 track; MCI JH-110, 2 track; Ampex AG-440-C, 2 track; (8) Ampex AG-440-B, 2 track.
Mixing Consoles: MCI JH-600 automatic, 36 x 24; Chilton QM-212, 12 x 4.

Monitor Amplifiers: Bryston 4Bs, Bryston 2Bs, H&H, Crown, Wardbek, Sony, Amcron.
Monitor Speakers: State-of-the-Art Electronik Inc. (MARC II) (JBL & Dynaudio Components); Yamaha NS-10s; Auratones.

Echo, Reverb & Delay Systems: EMT, (2) AKG BX-20, Sony DRE-200E, (2) Lexicon Prime Time, Yamaha D1500, Yamaha R1000, Roland reverb, DeltaLab DL-1.

Other Outboard Equipment: (4) Roger Mayer gates; Aphex Aural Exciter "B"; UREI 1176LN, 565 filter set; Neve compressors; Orban 516EC silencer controller; Systec flanger; Audio Design Selective Processor ES00-RS; (2) Scamp ADTs; Nakamichi BX-100 cassette recorders; metronome, etc.

Microphones: Neumann U87, KM85, KM84, KM88; AKG C-422, C-414EB, C-412, C-451E, D-190; E-V RE20, RE16, 635, 644; Shure SM59; Sennheiser MD211U, 421; PZM; D12E; etc.

Video Equipment & Services: 35 x 56 sound stage w/cyc wall and full lighting grid, dressing rooms, set design, full audio & video crews, 1" & 3/4" recorders, full editing suites, full EFP & ENG service, audio & video interaction (BTX Softouch), full audio visual production facilities. In short, MARC is a multi area recording complex in all communication fields.

Rates: Call for rates.

Extras: Reel-to-reel copies, audio cassette duplication on bin-loop system, blank audio cassette manufacturing, 3/4" & 1/2" video duplication by the 1000s, Steenbeck film editing table, telecine transfer, slide transfer to video, record distribution, music videos, out of town music or video recordings. In-house producer, writers, musicians, composers, directors.
Direction: Audio department: Guy Tessier (manager); video: Pierre Larabie (program director), Jim Laforce (technical services director).

●●●● **THE MASTER'S WORKSHOP CORPORATION**
also **REMOTE RECORDING**
306 Rexdale Blvd., Units 5, 6, 7, Rexdale (Toronto)
Ontario, Canada M9W 1R6
(416) 741-1312
Owner: Doug J. Mckerzie
Studio Manager: Bob Predovich, Chief eng: Paul Massey

●●●● **McCLEAR PLACE STUDIOS**
225 Mutual St., Toronto, Ontario, Canada M5B 2B4
(416) 977-9740
Owner: Bob Richards
Studio Manager: Hayward Parrott

●●●● **METALWORKS RECORDING STUDIO**
3611 Mavis Rd., Unit #5, Mississauga
Ontario, Canada L5C 1T7
(416) 279-4008
Owner: The Metalworks Recording Studios, Inc.
Studio Manager: Alex Andronache
Engineers: Ed Stone, Hugh Cooper, Noel Golden, David Dickson
Dimensions of Studios: 22 x 50 (2 iso. booths)
Dimensions of Control Rooms: 22 1/2 x 19
Tape Recorders: (2) Studer A-800, 24 track; Revox, 1/4 track; (3) MCI JH-110B, (2) 1/4" & (1) 1/2"; (2) Studer A-820, 1/4" & 1/2"; TEAC cassette deck.
Mixing Consoles: MCI JH-652 LM, 56.

Monitor Amplifiers: Crown
Monitor Speakers: (Main) JBL 4350s (modified), JBL 4312s, Yamaha NS10Ms, Minimus 7s, Auratones.

Echo, Reverb & Delay Systems: Lexicon Prime Time II, AMS digital delay/harmonizer, Marshall Time Modulator, Urse Major Space Station, AMS phaser, Roland Dimension, D chorus, Lexicon PCM 42, Eventide Harmonizer, Sony digital reverb, EMT 140 tube plate, EMT 140 solid state plate.

Other Outboard Equipment: (2) UREI LA-4s, (2) 1176 LNs, 1178 stereo limiter; (2) dbx 161s; (2) Neve 2254A compressor /limiters, (16) outboard 1064 EQ strips; Orange County Vocal Stresser; (4) Aphex County compressor/expander/gates; Allison Gain Brain; (2) Symetrix gates; Orban de-esser; (2) LA-2A limiters; (4) Kepex gates; (4) Pullec tube EQs; (2) Trident EQs; Adams-Smith synchronizer
Microphones: Neumann U67, U89, U87, U47, KM84; Shure SM58, SM57; Electro-Voice RE20, RE15; Crown PZM; Sennheiser 421; AKG 567E, C535EB, C460B, C452EB, C451EB, C422, C414EB-P48, D224E, D190E, D12E, Tube; Beyr M500.

Instruments Available: Yamaha grand piano, Fender Rhodes 88 electric piano.

●●●● **MUSHROOM STUDIOS**
also **REMOTE RECORDING**
1234 W 6th Ave., Vancouver, B.C., Canada V6H 1A5
(604) 734-1217

Owner: Charlie Richmond
Studio Manager: Linda Nicol
Engineers: Dave Ogilvie, Rob Porter, Dale Penner
Dimensions of Studios: 50 x 30 x 20; piano room, 14 x 20 x 12; vocal booth, 15 x 11 x 8
Dimensions of Control Rooms: 15 x 20

Tape Recorders: Studer A80 II, 24 track (plus extra set of 16 tr. heads); Studer A80 II, 16 track; Studer B67, 2 track; Ampex ATR-100, 2 track (1/4" & 1/2" heads); Revox A77, 1/4 track; Nagra III film sync, 1 track; Revox A77, 1/2 track; Sony PCM digital, 2 track.

Mixing Consoles: Richmond Sound Design, 48 x 22 x 8; VCA sub-groups w/30 Universal Audio tube pre-amps.
Monitor Amplifiers: (2) Richmond Sound Design APA-368 180 watt; (10) Richmond Sound Design APA-128 60 watt amps.

Monitor Speakers: Altec 604E w/time align horns and Mastering Lab crossovers, Yamaha NS-10M, Auratone SC Super Sound Cube, BIC Venturi Formula 5, Realistic Minimus 7, Visonik Ambassador 100 (Big David).

Echo, Reverb & Delay Systems: EMT 240 "Gold Foil" plate reverb w/remote, Eventide H910 Harmonizer digital effects unit, Lexicon 224 digital reverb w/30 programs, Lexicon 93 Prime Time digital effects, RSD APA-120 echo chamber amps, Sound Barrier Concord live echo chamber loudspeakers, UREI Cooper Time Cube analog delay unit, 2 stereo acoustical echo chambers, Korg SDD 2000 programmable MIDI sampling delay.

Other Outboard Equipment: Allison Research Kepex noise gates, Allison Research Gain Brain, Altec program EQ, Dolby 361 noise reduction, Furman PQ-3 parametric EQ, Langevin graphic EQ, Langevin high & low pass filters, MXR auto flangers, NEI 341 4 band parametric EQ, Omni-Q TL-1 time code sync unit, Orban Parassound 516EC de-esser, RSD graphic EQ, RSD VCA noise gates, RSD VCF noise gate/filters, Roger Mayer RMBOX noise gates, Technics SH9010 10 band parametric EQ, U.A. 175B tube limiter, U.A. 176 tube limiter, U.A. 550A high & low pass filters, UREI 1176LN compressor/limiters, ITL CDH-100 "Memory Pack" studio lighting controller.

Microphones: ADG C-12, C-61, D-12E, D-24E, D-202E, D-224E, D-900E; Beyr MC-713; B&O 200; Electro-Voice RE15, RE20, 635A; Neumann KM84, U47 (original vacuum tube), U87; MILAB CL-4, DC-63, DC-73, F-69, VM-41, PZM nser; RCA e77BX, 10001; Sennheiser MD-421U; Shure SM57, SM58; Sony C-17B, C-37A, C-38B, C-57, C-220A; ECM-22P, ECM-377; Synchron/Fairchild AU-7A.

Instruments Available: Yamaha C-7 7' grand piano, Fuehr & Stemmer upright piano, Marshall 4 x 12" loudspeaker cabinet, Polytone bass amplifier, Traynor Bass Mate amp, keyboard stands, Tama studio drum kit, miscellaneous percussion.

Video Equipment & Services: Video monitors and cameras, video tape machines on request.
Rates: Please call for rates.

●●●● **PERCEPTIONS RECORDING STUDIO**
11 Canvarco Rd., Toronto, Ontario, Canada M4G 1L4
(416) 423-9990

Owner: 450564 Ontario Limited
Studio Manager: Peter Akerboom
Engineers: Peter Akerboom, independents
Dimensions of Studios: 34 x 21 x 14 containing two isolation booths.

Dimensions of Control Rooms: 19 x 14 x 12
Tape Recorders: Studer A80, 24 track; Sony PCM701 PRO, 2 track digital; Tascam 80-8, 8-track; TEAC 3440, 4 track; TEAC A6100, 2 track.

Mixing Consoles: Soundcraft Series II, 32 x 16 x 24
Monitor Amplifiers: Bryston
Monitor Speakers: JBL Custom 4333, Yamaha NS-10s, Auratones, Bose 301.

Echo, Reverb & Delay Systems: Lexicon PCM60, MCMIX XL-305, EMT-type plate reverb; Roland SDE 1000 DDL, DeltaLab DL-4 DDL, Omni Craft GT-4 noise gates, (2) dbx 165 comp/limiters, (2) dbx 163 comp/limiters. Assorted parametric and graphic EQs.

Other Outboard Equipment: AMS digital reverbs, delays; Eventide Harmonizers, etc. All available at reasonable rental rates.

Microphones: AKG C-414EBs, 451Es, D-12; Sennheiser 421s, 441s; Electro-Voice RE20, RE15, 635AC; Shure SM57, SM58.

Video Equipment & Services: Complete audio/video sweetening utilizing JVC 3/4" VCR w/Studer TLS 2000 tape lock system 3/4" video to audio, audio to audio interlock. SMPTE time code readers, generators, synchronizers
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 also **REMOTE RECORDING**
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 (418) 831-1595

Owner: Jacques Rheume
 Studio Manager: Jacques Rheume
 Engineers: Jacques Rheume, PhD; and freelance
 Dimensions of Studios: 30 x 40 x 14; (booth) 9 x 13 x 8
 Dimensions of Control Rooms: 18 x 24 x 13
 Tape Recorders: Otari MTR-90, 24 track; Studer B67, 2 track; Otari 5050, 2 track; Nakamichi cassette, TEAC cassette.
 Mixing Consoles: Amek Angela, 28 x 24
 Monitor Amplifiers: Hafler, QSC.
 Monitor Speakers: SOTA CF-2000, Aurstone, Tannoy.
 Echo, Reverb & Delay Systems: AKG BX-20, Lexicon 224, Lexicon Prime Time.
 Other Outboard Equipment: Compressors: UREI LA-3A, UREI 1178; Eventide flanger.
 Microphones: Neumann, AKG, Sennheiser, Electro-Voice, Sony
 Instruments Available: (2) Yamaha 5'6" grand pianos, Yamaha DX7.
 Video Equipment & Services: Sony 5850, audio/video sync; laser video disc premastering.
 Rates: \$100/3 hrs. (Canadian)

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 Ontario, Canada M9L 1N8
 (416) 743-9979
 Studio Manager: Victor Rivera

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also **REMOTE RECORDING**
 6065 Cunard St., Halifax
 Nova Scotia, Canada B0J 1N0
 (902) 423-0233
 Owner: Russell F. Brannon
 Studio Manager: Jeanne Miller
 Engineers: Harold Tsintinas
 Dimensions of Studios: 35 x 60 x 15
 Dimensions of Control Rooms: 27 x 20 x 13
 Tape Recorders: Studer A-80 Vu, 24 track; MCI JH-110, 2 track; Yamaha Real-Time cassette dubbing.
 Mixing Consoles: Soundcraft TS-24 w/MasterMix automation, 40 inputs.
 Monitor Amplifiers: Yamaha
 Monitor Speakers: Sola CF-2000
 Echo, Reverb & Delay Systems: Yamaha Rev-1, Rev-7, D-1500, Eventide Harmonizer, DDL flanger, ADR comp/limiter, Scamp system, AMS reverb.
 Microphones: Neumann, Beyer, AKG, Shure, E.V., Sennheiser, Crown PZMs.
 Instruments Available: Yamaha grand piano, Gretsch drums.

●●●● **SOUND KITCHEN LTD.**
 3805 Weston Rd., Toronto, Ontario, Canada M9L 2S8
 (416) 749-2365
 Owner: Hugh Ferguson, David Moyles, Calvin Savro
 Studio Manager: Hugh Ferguson

●●●● **SOUNDS INTERCHANGE LTD.**
 506 Adelaide St., East, Toronto, Canada M5A 1N6
 (416) 364-8512
 Owner: Syd Kessler, Salim Sachedina
 Studio Manager: Karen Guluche
 Engineers: Mike Jones, Les Bateman, Kevin Doyle, Steve Convery, Mark Stafford, Vic Pyle, Paul Deley.
 Dimensions of Studios: (1) 56 x 32 (2 iso. booth) 22' ceiling; (2) 45 x 30 (2 iso. booths)
 Dimensions of Control Rooms: (1) 21 x 26; (2) 27 x 20
 Tape Recorders: Studer (4) A80 24 track, A800 24 track, (2) 8 track, (2) 4 track; 1/2" 2 track mastering, (4) 2 track mastering; (4) A810 2 track (4) speed, (plus 3rd track 1/2), (3) A80RC mono/stereo (butterfly heads), A80RC stereo, (2) A80RC mono/pilotone, A80RC mono/pilotone w/resolver; Ampex AG 440C 4 track, ATR 100 stereo/mono; sony PCM 100 2 track digital mastering; Mitsubishi & JVC systems available upon request.
 Mixing Consoles: MCI JH-532, 32 x 24; Neve 8028, 24 x 16 x 24 monitors; (2) MCI JH-636, 24 x 24, Sound Workshop Series 34, 24 x 24.
 Monitor Amplifiers: H & H MOSFET, Crown, BGW, McIntosh, Bryston, Phase Linear, Harman Kardon
 Monitor Speakers: 4-way custom-made time aligned, Custom JBL, JBL, UREI, Super Reds, Aurstone, Yamaha NS10s.
 Echo, Reverb & Delay Systems: (2) EMT Plates 140, (3)



S T U D I O S



SOUNDS INTERCHANGE LTD.
 Toronto, Canada

EMT gold 240, AKG BX-20 echo, AMS RX-16 digital reverb w/remote, AMS DMX 15-80s harmonizer, Eventide H910 Harmonizer, (2) Eventide 949 Harmonizer, (3) Space Stations, Lexicon Prime Time Delta-T, (2) Eventide 1745 digital delays, Eventide phaser, (2) Marshall time modulators, Eventide flanger.

Other Outboard Equipment: Pultec EQ (program mid range), UREI limiters (LA-2A, -3A, -4A, -5), Ashly limiters, Innovonics limiters, (2) Pye limiters, Telefunken LA-2A limiters, Aphex Compellor, API 550A, EQs, Scamp rack, Flickenger EQ, Klark DN 27A graphics, UREI 527A graphics, White 3rd octave EQ, Quad 8 gates, (2) 24 track Dolby racks, Dolby 36ls, UREI digital metronomes.

Microphones: Neumann U87, U67, KM86, KM84; Telefunken U47, SM2; AKG 451E, 452E, 414, 224E, D20D, D12E, C24, C12A; Shure SM58, SM57, SM53, SM81, SM76, SM7, SM54, SM60, 300; Sennheiser 421, 441; Crown PZM; Studer (Schoeps) SM5, SKS 501B, CMCs; Sony C-500, C-37, C-38, ECM 22P; Electro-Voice RE16, RE20, RE15; Beyer M 160N.

Instruments Available: Petrol concert grand piano, Yamaha C-3 grand, Heintzman tack, Hammond B-3 organ w/Leslie, Fender Rhodes, Yamaha DX7 synth, Oberheim OBX-A synth, LinnDrum, Jupiter 6, Roland MSQ 600, Dr. Click, Simmons drums.

Video Equipment & Services: Audio post-production for video, computerized SMPTE 1", 3/4" video to audio, audio to audio interlock, MCI/Sony JH-110B 1" C-format audio re-stripe, Ampex VPR 80/TBC 2 1" C-format video recorder, Sony BVU 200 3/4" VCR, JVC 8250/6650 3/4" VCR, Magna-Tech 2000 series 35/3 track master pickup recorder, (3) Magna-Tech 2000 series 16/35 reproducers.

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 Extras: Studio one new LEDE™ concept, designed by Chips Davis. Complete sound effects and stock music library. High speed and Real Time audio dub and cassette duplicating and distribution. All studios fully interlocked by computer. Information regarding hotel accommodations, etc., for out-of-town clients available upon request. Kitchen and lounge with color TV, pinball. Central location with free parking.

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STUDIO ST. CHARLES
 Quebec, Canada

Dimensions of Studios: (A) 50 x 25 (plus 2 8 x 12 booths), (B) 11 x 13
 Dimensions of Control Rooms: (A) 27 x 20; (B) 16 x 12
 Tape Recorders: Studer: A80 MK III, 24 track; Studer A80 VU, 2 track; Studer A80 RC, 2 track 1/2"; Studer A810, 2 track (time code); Studer A80 MK III, 8 track; Studer B-67, 2 track; Revox B-77, 2 track; Revox B-77, mono (pilotone).
 Mixing Consoles: Trident TSM, 32 x 24; Chilton QM 3, 12 x 4.

Monitor Amplifiers: UREI 6500, Crown DC300A, (LS) Quad 303, Quad 405
 Monitor Speakers: UREI 815, JBL 4310, Tannoy Academy Lockwood, Mission, WHD, Aurstone, others.
 Echo, Reverb & Delay Systems: Lexicon 224, EMT 240, Yamaha R 1000, (2) Lexicon Prime Time, Lexicon PCM42.
 Other Outboard Equipment: Eventide Harmonizer, Eventide flanger, (2) Dyna-Mites, (2) dbx 160, (2) dbx 165, (4) Neve comp/limiter, Orban de-esser, Eventide Omnipressor, (8) Scamp gates, (2) Scamp auto-pan, (2) Vocal stresser, Orban parametric EQ, UREI graphic EQ, (2) Symmetrix comp/lim/gate, Dolby M-16, (6) Dolby 36l, Beyer headphones w/custom individual cue mixers.

Microphones: (4) Neumann U87, U47, KM88; (2) AKG C-414, (4) C-452, C-451 EB, C-422, D-12; (2) Sennheiser MD-441, (5) MD-421; Beyer M-160; (2) Crown FZM, (2) Shure SM53, (5) SM56; (3) Electro-Voice RE20.
 Instruments Available: Yamaha DX7, Roland Jupiter 5, Roland MSQ-700 sequencer, E-mu Drumulator, IBM computer — all with MIDI; Baldwin SD-10 9' concert grand piano

Video Equipment & Services: Audio Kinetics Q.Lock (4 interfaces), JVC 8250 VCR, UREI click track; Eiki 16mm projector.



STUDIO TEMPO INC.
 Montreal, Quebec

●●●● **STUDIO TEMPO INC.**
 0707 Charlevoix, Montreal, Quebec, Canada H3K 2Y1
 (514) 937-9571
 Owner: Yves Lapierre (pres.), Francois Cousineau, Bernard Scott
 Studio Manager: Dawn Corbett
 Engineers: Ian Terry (chief), Michel Lachance, Billy Szawlowski
 Dimensions of Control Rooms: 23 x 27; booths: 14 x 8, 10 x 10
 Dimensions of Control Rooms: 16 x 32 approx. (irregular)
 Tape Recorders: Studer A800 MK III, 24 track; Ampex

440B, 4 track; Studer B-67 stereo-mono, 2 track; Studer B-67 stereo/mono, 2 track w/pilotone; Otari MTR 12-11 1/2" 1/4", 2 track, 1 w/pilotone; Otari MTR 12-11 1/2" 1/4", 2 track w/Time Code; MCI JH-110 stereo/mono, 2 track; MCI JH-110 mono stereo, 1 track
Mixing Consoles: Helios custom, 32 x 24.
Monitor Amplifiers: Crown, Studer, Quad, Caz-Tech, QSC.
Monitor Speakers: Westlake, JBL, EPI, Auratone, ESS.
Echo, Reverb & Delay Systems: EMT Plate 104, (3) MIC-MIX Master-Rooms, Lexicon 224, Lexicon Prime Time, (2) Lexicon PCM 42, Roland 3000, Loft 450, many type machines.
Other Outboard Equipment: Eventide phase shifter, Eventide flanger, Eventide Omnipressors, UREI compressors, A&D compressors, dbx 160, Allison Gain Brains & Kepex, Orban Parasound de-essers, parametric EQs, Amber Spectrum analyzer, Thorens turntable, digital metronome.
Microphones: AKG, Beyer, Crown P2M, Electro-Voice, Neumann, Shure, Sennheiser, Studer.
Instruments Available: Yamaha grand piano.
Video Equipment & Services: SMPTE interlock system, BTX Cypher & Shadow, JVC 3/4" VCR w/26" color stereo monitor, center track time code.
Rates: Recording/mixing, \$150/hr (Canadian); 2 track editing, \$65/hr (Canadian); BTX additional \$40/hr (Canadian).

◆◆◆ STUDIO 306 INC.
 306 Seaton St., Toronto, Ontario, Canada M5A 2T7
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 Studio Manager: Brian Mitchell

◆◆◆ STUDIO WEST CANADA LTD.
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 Saskatchewan, Canada S7K 3K2
 (306) 244-2815
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 Studio Manager: Wayne Wilkins
 Engineers: Mitch Barnett (chief eng.), Clarence Deis (staff eng.)
 Dimensions of Studios: 25 x 50 x 18, (1) iso booth, (1) live room.
 Dimensions of Control Rooms: 20 x 30 x 12
 Tape Recorders: MCI JH-114, 24 track; MCI JH-114, 8/16 track; (2) MCI JH-110, 2 track; (2) Otari MX 5050 II, 2 track; Sony PCM-F1 digital audio processor, 2 track.



STUDIO WEST CANADA LTD.
 Saskatchewan, Canada

Mixing Consoles: Soundcraft (modified) with 2400, 24 x 24.
Monitor Amplifiers: H & H V800 MOSFET, H & H 100D, Bryston 2B
Monitor Speakers: UREI 813 "Time Aligns", JBL 4312, Auratones
Echo, Reverb & Delay Systems: Audicon "The Plate", Lexicon PCM 60 digital reverb, (2) Master-Room B, AKG BX-10E, (4) DeltaLab II digital delays.
Other Outboard Equipment: (4) Valley People Model 610 dual compressor expander, Eventide H949 Harmonizer, Roland Dimension D, Eventide Instant Flanger, UREI 535, Klark-Teknik DN3030, Klark-Teknik DN60 Real Time Spectrum analyzer, Aphex Aural Exciter.
Microphones: Neumann, AKG, Electro-Voice, Shure, Sennheiser, Crown P2M.
Instruments Available: Yamaha grand piano, Yamaha recording series drum kit, other instruments available upon request.
Rates: \$115/hr (min. 4 hrs); \$80/hr (50 hrs), \$70/hr (100 hrs); \$60/hr (200 hrs). Rates include deluxe on-site accommodations.
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 Owner: Wes Dakus
 Studio Manager: Caryl Dakus
 Engineers: Staff and independents
 Dimensions of Studios: 36 x 24
 Dimensions of Control Rooms: 22 x 21
 Tape Recorders: MCI JH-24, 24 track; MCI JH-110, 2 track 1/2" heads; MCI JH-110, 2 track 1/4" heads; MCI JH-140, 4 track.
Mixing Consoles: MCI JH-428-24, 28 x 24
Monitor Amplifiers: Crown DC300A
Monitor Speakers: JBL 4350, Yamaha, Auratones.
Echo, Reverb & Delay Systems: EMT 140, AKG BX 20E, Acoustic chambers
Other Outboard Equipment: Eventide Harmonizer, flanger, phaser, digital delays, de-esser, vocal stressers, compressors, UREI limiters, Prime Time, equalizers, filters, Kepex, Pultec.
Microphones: Neumann U47, U67, U87; Sennheiser; AKG; Shure; Electro-Voice.
Instruments Available: Baldwin grand piano, concert harpsichord, Rhodes piano. Other equipment and instruments available on rental basis.
Rates: Available upon request.

◆◆◆ TRITON
 3886 Chesswood Dr., Toronto, Canada M3J 2W6
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a \$2,500 inheritance from his grandfather as a springboard, Iglauer went into Sound Studios in Chicago with one-time Chess Records engineer Stu Black and worked with Hound Dog and his band for two nights, recording 2-track direct to stereo. In all, about 40 tunes were tracked. Total cost of the recording: about \$900.

Rather than simply hoping that blues aficionados would eventually find out about his record, Iglauer took it upon himself to promote the disk vigorously on college radio and on the few progressive commercial FM stations that remained in 1971. He took a 3,000-mile road trip, talking to any station that expressed the slightest interest in the record, and managed to snare quite a bit of airplay for Hound Dog in the process.

"I'd only imagined running a mail-order business and maybe selling a couple of thousand copies a year, because for a label like Delmark, to sell 3,000 the first year was a pretty big deal," Iglauer says. "Well, we sold 10,000 Hound Dog Taylor records the first six months. Within nine months I was booking Hound Dog and managing him. So with one record and one band, a one bedroom apartment with a walk-in closet, and just enough money to produce a Walter Horton album, I started my own business." The company got its name from an affectionate nickname of Iglauer's—"I have a habit of playing drums on my teeth to the radio, and my girlfriend said it was like an alligator. On a good day, I can still do an octave!"

Iglauer's original concept for the label was to never record the same performer twice, but not surprisingly, once his label was a proven success, blues players were eager to record for him, and Iglauer found himself with a dependable group of blues greats including Hound Dog (who went from working for \$15 a night, six nights a week, to selling some 70,000 copies worldwide of his last record and becoming a top touring blues attraction), Fenton Robinson, Son Seals, the "Ice Man" himself—Albert Collins—and several others. Alligator Records sold well because Iglauer never approached his company as an historical archive, but rather promoted his artists as living, breathing, purveyors of visceral contemporary music.

"Looking at Delmark and Arhoolie and the other 'collectors' labels, I saw that basically those companies were packaging the records in a way that said, 'This music is for people who already know about it.' A lot of them looked like they were made for \$300, which might have in fact been the case, but records made on limited budgets can still look and sound good. I always wanted to expand the audience for blues. We're trying to convert

people. That's always been my mission."

This sort of zeal is typical of the spirit that drives everyone who works at Alligator. What they may lack in financial resources and formal expertise, they make up for in determination, hard work and common sense. This even applies to the sound of the records the label puts out. Iglauer wasn't a trained engineer when he started producing records, so to get the sounds he wanted, he relied on his instincts as a music listener and his ability to communicate well with musicians.

"In the beginning," he says, "I was just trying to capture the sound I heard on the bandstand. When what I heard in the control room wasn't what I heard on the bandstand, I'd say to the engineer, 'Go out and listen to the sound of the snare drum out there, and then make it sound like that in here!' I'd assume the engineer would know what I was going for, and almost always he did. I've always had great luck in finding engineers who were easy to work with and who understand what I want." Among Iglauer's favorites have been Justin Niebank of Streeterville Studios (where most of Alligator's records are cut), and Fred Breitberg, who worked at such diverse area rooms as Chess Records' last studio, Curtis Mayfield's Curtom studio, and Red Label.

What does Iglauer look for in a studio? "I look for a fairly intimate room," is his immediate reply. "But mainly I like high ceilings and as many hard surfaces as possible so I can get natural sound bounce. When we worked at Curtom, we had to fight the paddedness—it was sort of a late-'60s-style studio. So we brought in big sheets of fiberglass; whatever we could find."

Asked if the sound of the classic Chess sides by greats like Muddy Waters, Howlin' Wolf, Buddy Guy, Little Walter, Bo Diddley and others was a model in his own production, Iglauer hesitates, then responds:

"Yes and no. I liked the sound the Chess engineers got on Little Walter's harmonica; I considered that to be a model harmonica sound. I like drums to sound real live, and I like to do distant miking as well as close miking to get some room feel; I like to be able to 'feel' the space around the drums. I object very strongly to the generally popular neo-disco' snare drum sound that's around, with the heavy white noise component. I like clearly recorded, natural distortion on guitars. I don't like to get too gimmicky. I like the bass to come through the floor and kick me in the chest. Basically, I like everything to feel like the world's best live performance.

"The thing is, though, that sometimes you can use fairly technical means to help achieve that natural-sounding end.

"Let me give you an example. On

our new Koko Taylor album, *Queen of the Blues*, most of the recording situation was fairly straightforward. We put the guitars on hardwood surfaces to get a little natural bounce. We put the drums right next to the wood floor so we'd pick up a little bounce, but not too much. Now then, Koko insists on hand-holding her mike, but the best possible mikes for vocal recording are too big to be hand-held, so we had to make some compromise mike decisions. The other thing we had to deal with was, like many blues players, she'd worked mainly with cheap mikes. When she gets to her highest volume, she naturally backs off the mike because with a cheap mike, her voice would break up. So the dynamic varied a great deal. To handle that we used a fair amount of compression on her vocal, a small amount of slap echo, some digital reverb, and a little plate also, all mixed together so that it's virtually undetectable."

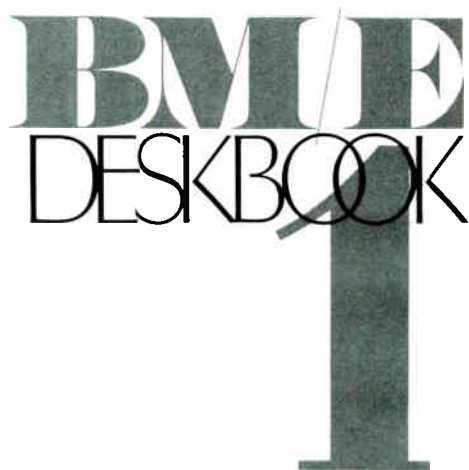
Iglauer says that he tries to make the musicians feel as comfortable as possible in the studio, frequently setting them up in a rough circle for maximum eye contact and visual communication. "I like a relaxed atmosphere," he says. "I almost always record at night, which is when most of the people I work with are used to playing, anyway. I'll bring in some beer and fried chicken, whatever. I don't look at my watch, though I *think* about it a lot," he jokes.

Whatever the make-up of the Iglauer-Alligator-style—call it loose, instinctual even—it is clicking with both artists and record buyers. The company's first Johnny Winter album, *Guitar Slinger*, sold more than 100,000 copies following its release last year, and Iglauer expects Winter's latest, *Serious Business*, to double that. Just three months after Lonnie Mack's blazingly hot *Strike Like Lightning* album was released this summer, it had sold some 45,000 copies, with many more sales expected. Koko Taylor's *Queen of the Blues* is an out-of-the-box success for Alligator, and most critics seem to agree that Roy Buchanan's *When a Guitar Plays the Blues* will be his best seller in many years. Then, of course, there are albums by lesser-known blues artists and reggae disks by everyone from Mutabaruka to Pablo Moses, and it suddenly becomes easy to see why Alligator is growing at such an amazing pace: the company is allowing its artists to make exactly the kinds of records they want to make.

"The magic in our records is in the performances," says Iglauer. "We're not a label famous for our great technical work, but our records always sound good. What we try for, and hopefully succeed at, is getting the emotion to shine through. At least that's what I'm after." ■

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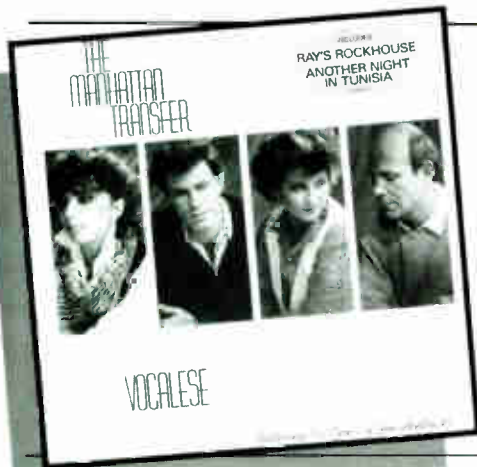
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“In terms of ability, the record shows the group at its peak. I don’t mean to sound arrogant, or like I’m bragging, but this is the state-of-the-art for vocal music.”

by Zan Stewart

It was Christmas in August for both fans of the Manhattan Transfer and lovers of the art form of vocalese as the premier contemporary jazz/pop singing group’s long-anticipated, aptly-titled *Vocalese* (Atlantic) LP hit the streets. The one-of-a-kind album, which spotlights singers Tim Hauser, Janis Siegel, Alan Paul and Cheryl Bentyne bursting forth with intricate, popping lyrics and athletic vocal artistry on 11 jazz classics, is the first single genre project for the Transfer (their prior efforts have offered blends of jazz and pop material), and, in the minds of more than a few, their best.

Hauser, who produced *Vocalese*, is one of the true believers. “In terms of ability, the record shows the group at its peak,” he said during a recent conversation at his Beverly Hills home. “I don’t mean to sound arrogant, or like I’m bragging, but this is the state-of-the-art for vocal music.”

The style of vocalese, where lyrics are added to an already recorded jazz solo (the first to do this was Eddie Jefferson, who in 1941 wrote words to Coleman Hawkins’ immortal tenor sax opus, “Body and Soul”), has long been a favorite of the Transfer, and for this stunning album, the singers selected both old favorites and less familiar pieces.

The program includes “Ray’s Rockhouse,” based on Ray Charles’ instrumental blues, “Rockhouse,” with very modern synthesizer scoring by John Barnes and a shouting Siegel solo that will curl your toes; “Another Night in Tunisia,” adapted from a 1946 Dial date by alto sax genius Charlie Parker and done a cappella; “That’s Killer Joe,” based on the Jazztet’s 1959 recording of “Killer Joe,” with Hauser slipping into his El Dorado Kaddy alter ego for a little jive talking; “To You,” with a cameo

MANHATTAN TRANSFER'S VOCALESE

The Manhattan Transfer joins The Four Freshmen at Oceanway Studio in Hollywood with the Count Basie Orchestra backing them up on “To You.”



appearance from the Four Freshmen, and the Count Basie band; and "Oh, Yes, I Remember Clifford," Benny Golson's gorgeous number dedicated to the late trumpeter Clifford Brown, also taken from the 1959 Jazztet date that debuted that tune.

Jon Hendricks, who after Jefferson, became the most prodigious vocalese lyricist, and the man responsible for the words to the Transfer's Grammy winner, "Birdland," was chosen to write the words for *Vocalese*. "We felt that since he was the foremost exponent of lyric writing in the jazz idiom of vocalese, he should write the whole album," Hauser said.

With Hendricks aboard, the long (15 months!) process of pre-production began. "We began with the selection of material," Hauser related. "Everybody got to do at least one tune they wanted. Then we picked the arrangers. Janis did five, Alan did two, Dick Reynolds of the Four Freshmen [who do a guest slot] did two, Phil Mattson, who arranged our 'Body and Soul' [the Transfer's version of the Jefferson opus, which appears on the 'Extensions' LP] racked up another, and Bobby and Cheryl did 'Tunisia.'

"Last September, we started rehearsing. Five days a week, three to four hours a day. In January, I started picking the musicians." Hauser compiled an impressive list of guest artists: the Basie Band, trumpeter Dizzy Gillespie, pianists McCoy Tyner and Tommy Flanagan, drummer Philly Joe Jones, bassist Ray Brown, saxophonist James Moody, et. al. The producer decided he'd contact these musicians personally, rather than employ a contractor.

"I called them myself," the group's 43-year-old founder explained, "because it was a jazz album and I was calling men who don't do a lot of sessions rather than strictly session players. I was trying to custom tailor the musicians for the personality and feeling of each song."

Before stepping into the studio, Hauser wanted to try a new tack, designed to getting less-fettered performances during the sessions. "I booked the group for 20 club dates, so we could test out the material before we recorded," he said. "The nature of this music is spontaneous, and nowadays, with state-of-the-art recording, it's hard to get spontaneity in the studio. But performing live gave an edge to all those tunes which really helped in the recording process."

Once in the studio, Hauser had the band attempt to recreate that "live" sound. "We mostly used one mike, a Neumann U-67," he pointed out. "We had to stand in a semi-circle in front of it, because you can't sing sideways into the Neumann, you've got to hit it from the front. We did the ensembles on one mike, together, because we like to create the blend out there on the floor,



Ron Carter works with Transfer founder and Vocalese producer, Tim Hauser.

ELLIOT SCHEINER

Engineer Elliot Scheiner, an 18-year recording studio vet who's done projects with Rufus and Chaka Khan, Diana Ross, Donald Fagen, and copped two Grammys (*Aja* and *Gaucho* for Steely Dan), helped Tim Hauser mix the Transfer's 1983 *Bop Doo Wopp* package. Scheiner turned out to be such a congenial fellow to deal with that Hauser hired him to do the nuts-and-bolts board work on *Vocalese*, too.

"I did all the basic tracks, with the vocals," Scheiner said from his home in New York, "and all the mixing. Brian Maloof, from Los Angeles, did almost all the overdubs.

"Most of the vocals were live but others were overdubbed. The singers were looking for a pure, original sound like back in the old days, when bands and singers cut tracks live. And since they created their own blend, rather than relying on the engineer for the mix, it made my job infinitely easier. And, really, it actually sounds better than mixing through the board, since they balance perfectly every time."

As the responsibility for mixing the vocals was taken off of Scheiner's shoulders, he found his major concern to be keeping the overall sound as full as possible.

"My main problem was making the band, which was usually no more than piano, bass and drums, sound as big as the singers. There was no way that three pieces could overshadow the voices. The band would leave holes, which sometimes created an emptiness, and so it took really fine balancing during the mix to make the group sound like more than three guys." On some tracks, the Count Basie orchestra deftly took care of this situation.

Scheiner also concentrated on keeping the album's sound as contemporary as possible, while still trying to keep it pure. "We wanted the same feeling you might have gotten 20 years ago," he explained, "but we wanted a modern snappiness to it. The live recording gave it the traditional feel, and the use of really good studios, like Clinton in New York, helped the hi-fi end of things. I think everything came together nicely."

—Zan Stewart

rather than have four people sing into separate tracks and then blend it in the studio. You can do it that way, but you lose an aggregate dynamic.

"We doubled all the voices on the ensembles but we only used a portion of those doubles, to give the sound a little fullness. The LP doesn't give off that real slick quality you get with full doubles. I used maybe half of the effect of the doubles when we mixed."

Due to budgetary considerations, the sessions for *Vocalese* were recorded analog, but Hauser and engineer Elliot Scheiner, who worked with the Transfer on its previous *Bop Doo Wopp* album, mixed the album digitally. The head of the Transfer has found that his initial apprehensions about using the digital process have fallen by the wayside. "I've come to realize that digital is really clean and it's nice," the singer revealed, breaking into a characteristically broad smile. "Even recording direct to 2-track digital instead of analog, there's a great difference. There's no noise, and that's just great."

Having command over so many genres—doo wop, pop, jazz, vocalese—will the Transfer now feature vocalese because it's the singers' strongest suit? "I don't think so," Hauser postulated. "You see, vocalese is much harder technically than doo-wop, but doo-wop is fun, so we're going to keep doing it. The thing about this band is that it changes directions. We felt we needed to do this album because vocalese is something we all really love to do. Now we're thinking about an album of love songs, maybe an a capella album, who knows what. The fact that we love so many kinds of music is what's kept this band happening so long, and it's what will sustain us in the future." ■

—FROM PAGE 63, MASSENBURG

fact that it survived when people said you couldn't make an equalizer without steps. When I first started showing it in 1968, they said it couldn't work—it didn't have detents. I'm proud of the fact that technology prevailed.

Bonzai: A major contribution...

Massenburg: Not at all. It was evolutionary—a circuit that was waiting for the right kind of op-amp. Francis Darwin said that the person who is recognized isn't the inventor but the person who convinces the rest of the world. My first console had parametrics, and a free group switching system. You could press an input and an output and do assigning. People thought it was a terrible idea at the time, but now it's common. We did the *Feets Don't Fail Me Now* album on that console with Little Feat.

Bonzai: You go way back with Bill Payne, don't you?

Massenburg: Yeah, and I guess he's forgiven me for introducing him to his first wife. I was living and working in Paris and had come back to Washington to do a Seldom Scene and a Mike Auldridge record. I met Lowell George because Linda Ronstadt was friends with Dr. John Starling and his wife. Linda was sick but was there at the session anyway. We did a Linda cut for "Heart Like a Wheel," and I headed back to Paris and then Corsica where my wife was making a picture. Weeks later when I returned to Paris, my mailbox was stuffed with telegrams from Clyde Bakkemo requesting me to work with Little Feat—each telex upping the previous offer. I took the best offer and flew to Baltimore to work with Lowell and later, Earth Wind and Fire. If it weren't for Lowell George I would be working for IRCAM and probably be able to speak decent French.

Bonzai: You've designed a controversial automation system. What distinguishes your particular approach?

Massenburg: My approach as a designer is to supply me with things that I need as a mixer. The automation fulfills certain needs, as does the equalizer and the mike pre-amp—products that my company is currently marketing. The equalizer is the product of a lot of mistakes. We have mucked it up nine or ten times, and finally I think it's right.

Bonzai: How is it different?

Massenburg: I started sorting it out in '68 and I've rebuilt more often than most people. Actually, Ron Pendragon and I came up with the design; he is as responsible for it as I am. But having designed some really bad equalizers, I was the one who knew the pitfalls, what

we should stay away from in terms of circuitry. It has parallel topology, minimum op-amp, it's discrete with DC servo and extremely high quality components. We really burn it in and make it to last a very long time.

Bonzai: In your production company, how are the roles determined?

Massenburg: Each of us does what we do best. Russel does percussion and drums, Bill does keyboards. They both arrange. I engineer and do a little arranging. We all work on the production, calling out ideas, adding what we can. If you hear something, generally it gets tried. If you don't hear something, you can shut up and you've got two people who you believe in and trust and can depend on.

Bonzai: What constitutes a great engineer—and who are the greats?

Massenburg: It will take some distance from where we are right now to see who has achieved greatness. It's not like baseball, which has been around for years. We know that Reggie Jackson and Pete Rose will be Hall of Famers, but this is a new business. Twenty-four track recording, synthesizers, and sophisticated processing made it a new business. It will take 20 years to realize who had true vision. Off the cuff, I would say that Bruce Swedien has vision. From the standpoint of early electronics, maybe Phil Ramone will be seen as a great engineer. Maybe there is a handful of Englishmen who will be considered great.

Bonzai: What is the quality of greatness?

Massenburg: What I listen for is transparency, where the idea moves from its inception to the listener with the least amount of forces impeding it.

Bonzai: As if you were really there?

Massenburg: But it's all illusion. The whole idea is creating an illusion, taking the idea—the spark—and making it come alive for a listener sitting at home in Davenport, Iowa.

Bonzai: Can you think of some engineering breakthroughs?

Massenburg: The easiest shot is always *Sergeant Pepper*. An engineering triumph because it was done 4-track to 4-track and there was no reason to assume that it would sound good. And it did sound good, and it had amazing ideas. I think Doug Sax's direct-to-disk with Thelma Houston was a real engineering breakthrough that everybody played, and their conceptions of what could be done changed. The great engineer may be someone who accidentally comes up with a sound that means something new is possible. There were a few records in the '60s that really

changed my ways of thinking. *The Last Record Album* with Little Feat did a couple of new things. We got a low end sound on "Long Distance Love" that was influential.

But I don't have nearly the respect for engineers that I have for people on the leading edge of technology. I'm very excited now about working with Dr. Andy Moorer, who is with the Droid Works and is affiliated with Lucasfilm. I think he has a seminal architectural sense about digital signal processing. It inspires me, and I think he casts a longer shadow than people making music. Musicians inspire me, but there aren't many producers that I even like to work with.

Bonzai: Name an inspiring musician...

Massenburg: Philip Glass, whom I have the pleasure to work with soon. I can't wait. David Lindley covers a lot of area—his view of music and life, and his tremendous command of many instruments.

Bonzai: Can you remember your most dangerous session?

Massenburg: We were working during the '60s in Baltimore during the riots. If you worked late, you had to get out of the studio after curfew and there was a lot of shooting in the streets.

Bonzai: Most ridiculous session?

Massenburg: With David Franks sometime in the '60s. He was a poet and had written some songs about pig slaughter and we went to a slaughterhouse with a Nagra. We edited the sound into the "fatback loop" that the musicians played along with. It's easy to do now, but back then it took a lot of editing and work. At the session, he showed up with handfuls of raw hamburger and threw it all over the studio to give us the right "ambience." That was fairly ridiculous.

Bonzai: What is your strongest characteristic?

Massenburg: Compassion, I guess. I really love the people I work with. I'm in this business for people.

Bonzai: Is there anybody in the world you would like to meet?

Massenburg: The former ambassador to the United States from the U.S.S.R. I've always wanted to sit down with a guy who knew Stalin in the early days, and across all the years of the Cold War, and all the build-up of the arsenals. I'd like to know what the Soviet side was, without the media.

Bonzai: What do you do for relaxation from this high-powered business?

Massenburg: It's not high-powered, because I don't get wrapped up in the excesses. I just work at many things:

engineering, mixing, managing, producing, designing...

Bonzai: Can you remember any personal engineering breakthroughs?

Massenburg: One had to do with the noise mechanism in the console. The design had amazingly low noise specs, but we were coming up 20dB off—magnitudes off. I figured it out in the shower after thinking about it all night long. There is something mystical about the shower where you are completely relaxed, with white noise in the background. I also come up with ideas while I'm sleeping. I dream a certain way when I have a complex problem. And there are amazing problems in designing electronics, and the automation system, and troubleshooting. Since I use the system, you know I want to make it work. There are some very prominent companies that have had the same bugs for a number of years—I can't tolerate that.

Bonzai: It sounds like you program your brain and then go to work with the subconscious...

Massenburg: There is also something that happens in the studio that I find very interesting. Sometimes there is a binding among artists when they are willing to throw down and sublimate their egos and feed their energy into the group. That's why I work with Russel and Bill—the possibilities are tremendous.

Bonzai: How can all this technology truly improve the human condition?

Massenburg: In the same way that the arts do. It's a mechanism that allows us to observe ourselves, a reflection of our politics, our daily lives. It helps show us at our best and our worst, and pushes us to develop ourselves. Music has such power to make the best of life. The future lies in dealing with each other through knowledge and wisdom.

Bonzai: What do you think about music video?

Massenburg: I don't think they are often in the right hands. At some point, some amazing conceptual artist, who is also a technician, will take command of the form, like the Beatles did with recording, and then we'll move on at a faster clip.

Bonzai: Are there any new recording gadgets you're fond of?

Massenburg: No, not really, because I think the best sounds are the ones that are made by just hammering away at combinations of old sounds. You create by trying things out and listening, and reacting, and changing your ideas. There develops a pattern match with your ideas. It's a lot easier in the studio

now, but you don't make as many mistakes—and that's what I learn from. The more difficult the idea, the more extreme the tangents.

Bonzai: Do you have any idiosyncrasies?

Massenburg: I'm perverse—if there is an easy way to do something, I will choose it last.

We tossed the empties in the trash and I asked if we could take a little tour of the studio and the workshops. We traipsed through a few relatively small shop areas with benches and parts and a few dozen units ready for shipping. When George says he "burns" his equipment in, he isn't kidding. He

actually stashes the equipment in a disconnected refrigerator with an electric heater and tests it under ridiculously adverse conditions. He doesn't exactly have a GM assembly line, but his modest factory has a definite professional atmosphere.

When I asked if we could tour the studios, George hesitated and then hustled off to see if there were any breaks coming up. He returned and we poked our heads into the first control room to find Sting sitting at the console with some engineers hammering out the soundtrack for an upcoming feature. He turned around and spotted us watching, smiled, and started pelting us with grapes. I took the cue and exited as gracefully as possible. ■

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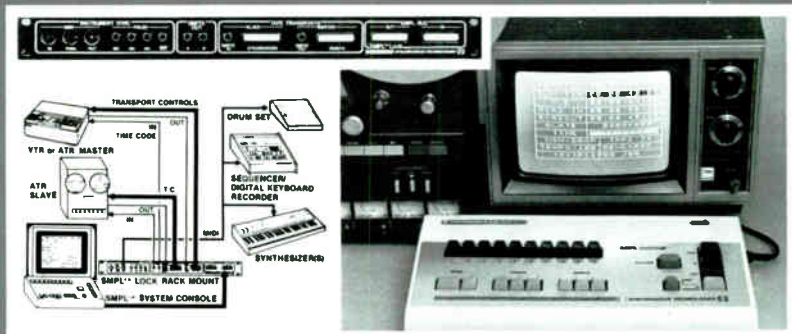
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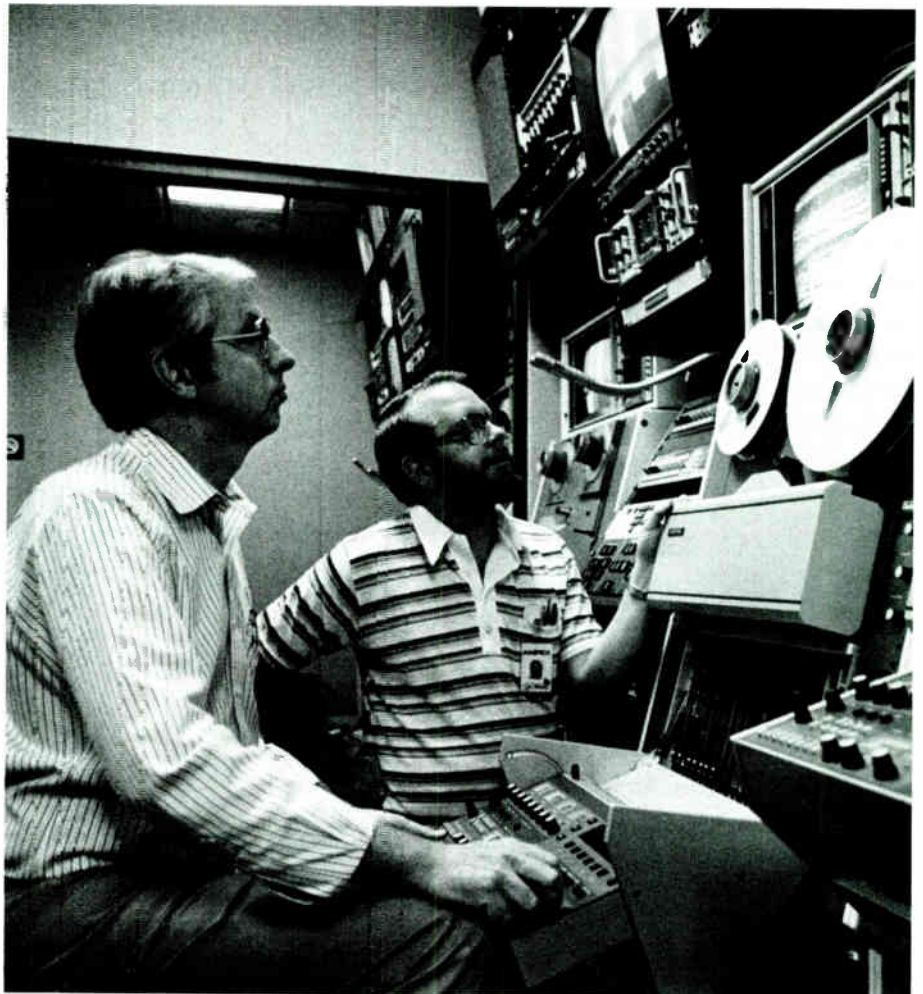
THE SMPTE TYPE C BROADCAST-QUALITY VTR:

Consolidated Video's digital time-base corrector in 1973 allowed the helical scan VTR and VCR to come of age. For the first time, the jittery, unstable, and unduplicable helical picture could be made into rock-solid, broadcast-quality video. For Ampex, Sony, and other VTR manufacturers, the digital TBC put helical into a new, legitimate light. In 1977, the Society of Motion Picture and Television Engineers, SMPTE, united the Ampex Type A one-inch and Sony one-inch formats into a common standard, called "Type C." Bosch in Germany still builds the incompatible "Type B" VTR, a format originally patented by Alex Maxey at Ampex. The photo shows an Ampex VPR-2 at KSL-TV in Salt Lake City.

THE STATE-OF-THE-ART AND THE FUTURE:

Among state-of-the-art Type C VTRs available today are the Ampex VPR series (VPR-3 pictured here in use at the ABC Broadcast Center for the 1984 Olympics Summer Games) and the Sony BVH series. Other companies manufacture Type C machines under license from Ampex and Sony. The Type C one-inch and U-matic $\frac{3}{4}$ -inch standards will dominate the broadcast and production market until video research and development produces practical digital recorders. The SMPTE, the originator of the Type C standard, has recently set the basic standards for a digital VTR using 19mm-wide tape. We also await industry standards for a broadcast version of the 8mm videocassette, as well as a resolution of the problem of incompatible half-inch and $\frac{1}{4}$ -inch professional VCR formats.

[Ed. note: The Ampex Museum of Magnetic Recording in Redwood City, CA and other organizations dedicated to media history research are always on the lookout for photos and information on the origins and development of our industry. Should you find any photos or information on the subject—even material covering recent audio and video history—and want to place the material in an archive or museum, please contact author Peter Hammar directly at (415) 941-0295 or via *Mix*.]



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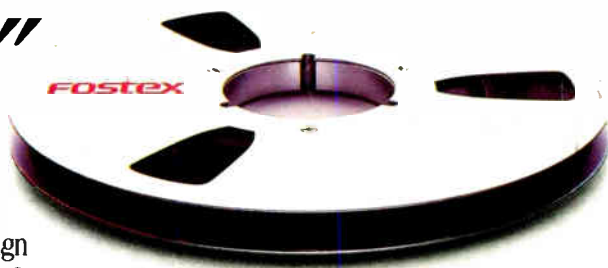
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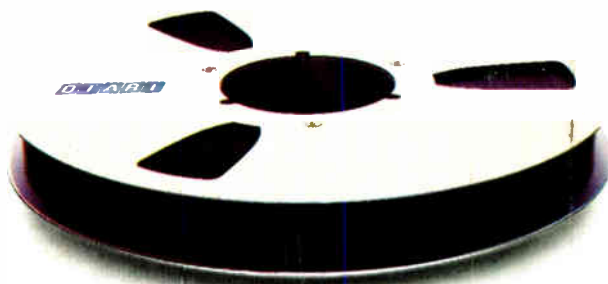
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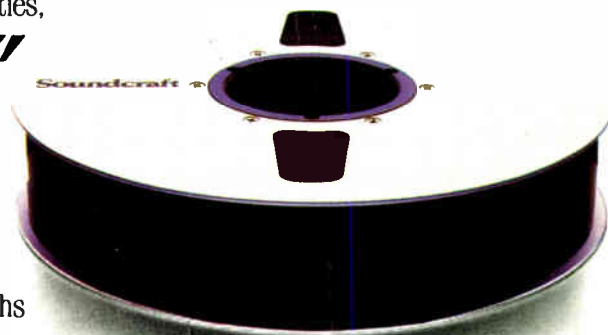
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