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THE RECORDING INDUSTRY MAGAZINE

Mix

Interview: Oak Ridge Boys

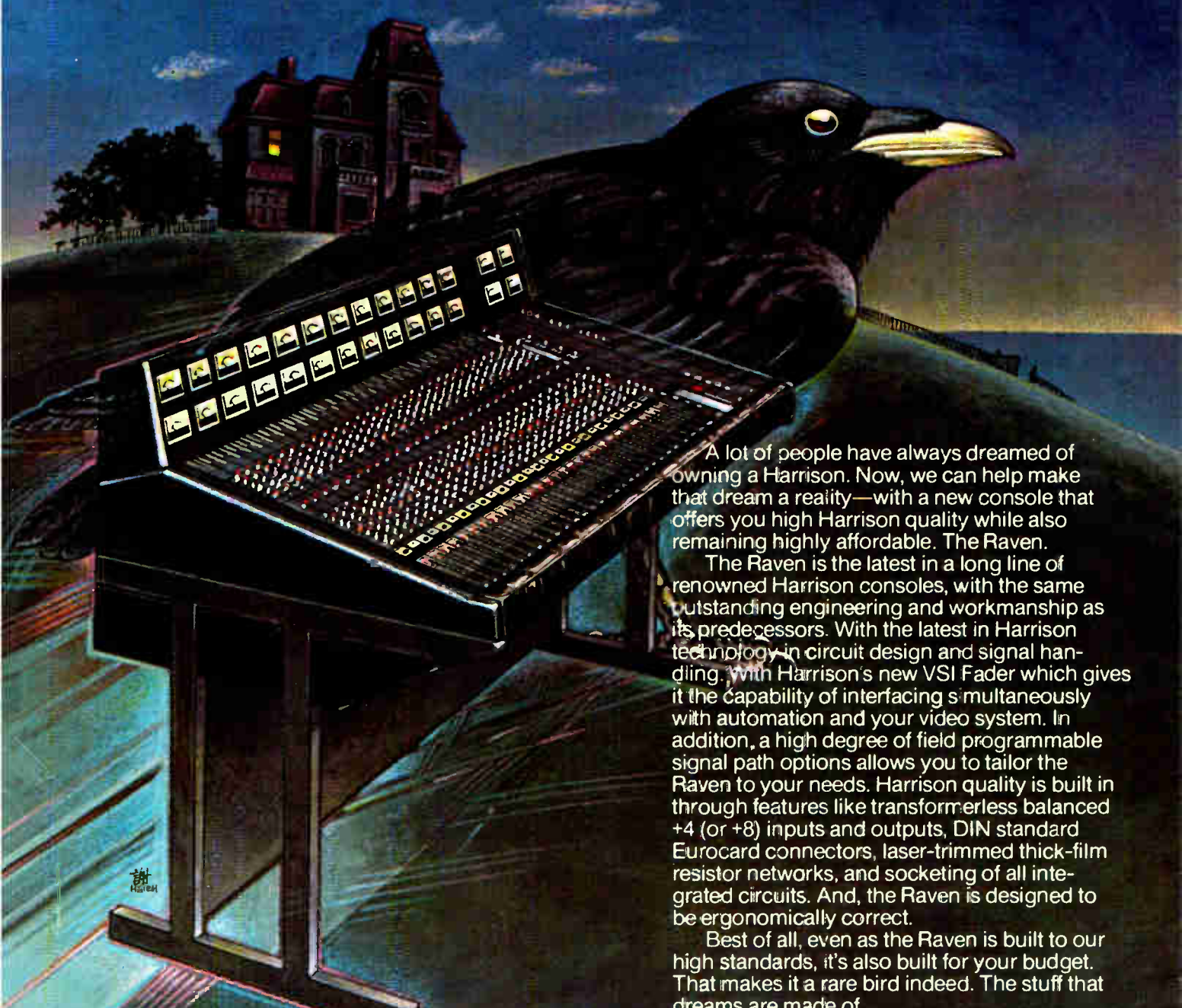
**Listings:
Southeast
Studios**

**Special Report:
Microphone Techniques**

**Religious Recording
Juluka**

**Australia Stage Sound
Buying Video Cameras
Spinal Tap**

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World Radio History



Cover: Suite 900 Studios, Nashville, TN
 Photo by: Edward Slater

Jerry Michael's Suite 900 Studios is the latest development in a rich musical career. In the early '60s Jerry was a performer who recorded for Smash and Capitol. He hit the Las Vegas and Tahoe circuits as a member of The Entertainers. In the early '70s he ran a theatrical agency while owning a small Florida studio. In 1978 he started Fifty Grand Music, a Nashville-based publishing company that has scored numerous hits. Suite 900 Studios began as a Tascam 8-track to support Fifty Grand's publishing efforts, but has, over the years, upgraded to include some of the best MCI equipment..



Our spotlight this issue is on studios of the Southwest. Margaret Dick looks at recent studio developments in the region, beginning on page 43, while Rose Clayton talks to the *Oak Ridge Boys* about this Tennessee studio (page 54). The Southwest listings start on page 58.

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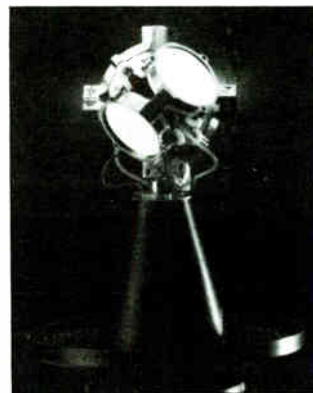
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In this month's forum, we turn our attention to microphones. George Petersen talks with several top engineers about their *miking techniques* for different instruments. Plus, we feature pieces on *buying tube mikes*, recent developments in *wireless systems*, a look at MS miking, and some new microphones on the market. The *mikestravaganza* opens on page 19.



Juluka is a South African band that is shaking things up all over the world, and especially in their native land, where their bi-racial line-up and anti-apartheid stance are controversial, to say the least. Laurice Niemtus looks at this pan-cultural phenomenon on page 118.

Last year, an Australian music invasion rolled across the U.S. with kangaroo speed. In our *Sound on Stage* column this issue, Phil Tripp takes us down under to talk about the fascinating world of *touring Australia*. There, he finds that the going sometimes get pretty rough for bands and sound crews alike. Page 110.



ONCE AGAIN, URSA MAJOR DOES THE IMPOSSIBLE.

Over the years, a small company in Belmont, Massachusetts has won a reputation for producing digital reverberation systems that offer leading-edge technology at prices other manufacturers apparently decided were impossible to match.

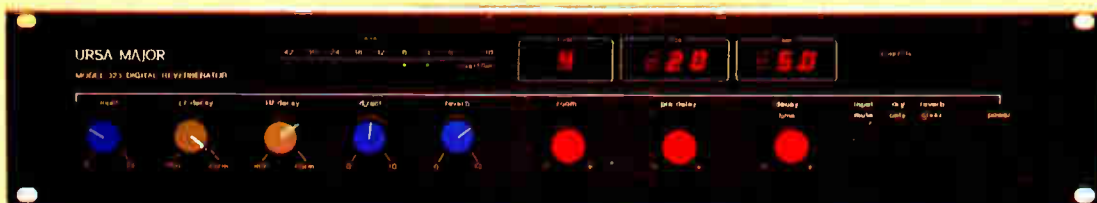
Now, Ursa Major has done the impossible again. The new StarGate 323 is a very high performance digital system, capable of synthesizing a range of acoustic environments ranging from tiny chambers to echoing spaces. The StarGate 323 has typically superb Ursa Major control panel engineering: all important reverb parameters can be adjusted, with full simultaneous display of settings. (Engineers who are already familiar with plate or spring

reverbs will find the StarGate 323 especially easy to operate.)

In addition, the StarGate 323 is competitively priced. For about what you'd pay for a good plate system, you can now have a full-featured digital reverberator.

The StarGate 323 is available for hands-on demonstrations at Ursa Major dealers worldwide. Production models are ready for immediate shipment, though quantities are somewhat limited.

StarGate 323



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Dear *Mix*:

I enjoyed Mr. Wilson's article, "Understanding the Audiophile" [Dec. '83], but wonder if I could offer a slightly different version of the "Meter Readers" credo: "If a sonic difference can be reliably heard (absent of perceptual distortions*), there will exist a physical manifestation of that difference which can be measured and therefore controlled."

If a piece of equipment measures well but sounds bad, not only is the equipment bad but so is the measurement. While I'm not about to claim we don't need any new measurements, the ones we already have are often poorly executed. Realistic input/output terminations as well as realistic signals should be used.

Very Truly Yours,
John H. Roberts
President
Phoenix Systems, Inc.

*Perceptual biases caused by visual or other stimuli should be studied and used as understood.

Dear *Mix*:

I have just seen the *Mix* magazine article by Lou CasaBianca [Music Video Production: Nocturne, Dec. '83] and feel that we have never had such an informed article written about us. The descriptions and the way the article flows are in my opinion brilliant and I want to thank you in advance for the positive results that I know this publicity will provide for us.

Warmest regards,
Pat Morrow
Nocturne, Inc.
SF, California

Dear *Mix*:

I recently became acquainted with your magazine while recording my second album at Sound Recorders in Kansas City, Missouri. The article in the November, 1983 issue covering studios in the North Central area was a welcome surprise.

Because so much of this nation's recording industry has traditionally been situated on either Coast,

people tend to forget the tremendous amount of musical and technical talent the Midwest has to offer. As a musician, I would like to commend the entire staff of Sound Recorders, whose abilities, both technical and creative, are equal to those of any in this country. Your work is a credit to the Heartland.

Sincerely,
Gerald Trimble
Kansas City, Missouri

Dear *Mix*:

Recently I needed to get information from anyone who knew anything about digital synthesizers, particularly the ones that had capabilities of displaying and printing musical scores as performed at the accompanying keyboard. Having slipped through back copies of *Mix* I was happy to find an article by David Gans from February, 1982, on the subject.

Calling some of the manufacturers of the products he reviewed I was quick to discover how hard it must be for some of these makers to survive, because the first three I called were out of business.

Gambling a bit I called your magazine to see if I could talk to Mr. Gans or anyone else who might be keeping up with what's happening in this area. I was pleased to find that honest-to-goodness real people staff your offices, and that they do try to please! A man named Craig was very helpful at suggesting where I might find more information and even called me back later after he'd done more checking with the ad sales department, giving me a list of the major systems being made today.

This kind of personal attention was a little surprising and I'm writing to commend you for it. Also, I'm writing to re-enter a subscription for one year, having inadvertently let my previous one lapse. Please send an invoice for the current rate. And thanks again for your help.

Sincerely,
Richard Huggins
Edmond, Oklahoma

CURRENT

Stereo TV Sound Systems Selected

After five years of study to determine the best way to broadcast high fidelity multichannel sound on television, the Electronic Industries Association's Multichannel Sound Subcommittee has unanimously recommended to the FCC the adoption of Zenith's transmission system and dbx Inc.'s (companding) noise reduction system.

The proposed systems permit the transmission of stereophonic sound programming and are compatible with existing television receivers. The systems also contain a separate audio program channel which can be used for

foreign language, educational or other purposes.

dbx's noise reduction uses a triple combination of fixed preemphasis and deemphasis, wideband companding, and the newly developed spectral companding system. The broadcast procedure consists of an encoder at the TV station's transmitter, and a matching decoder in the consumer's TV set. The decoding circuitry for television receivers is based on the 22-pin AN6291 integrated circuit jointly developed by dbx and Matsushita Electric Co.

RIAA Responds to Video Music

Current and prospective members of the Recording Industry Association of America/Video will become Associate Members of RIAA under a new structure approved by the RIAA Board of Directors, effective April 1, 1984. This action is a direct result of the growing importance of music video programming to the audio membership of the RIAA.

The current RIAA/Video Council will continue as a Policy Committee to periodically discuss priority projects and programs, review dues schedules and the changing functions for RIAA/Video Associate Members.

The RIAA/Video Gold and Platinum Awards Program will continue with the new criteria recently announced for 1984, available to Associate Members and Non-Members alike.

CES Becomes World's Largest Annual Trade Show

The 12th International Winter Consumer Electronics Show, recently held in Las Vegas, attracted a record 91,245 attendees and indicated a strong sales year for the industry.

1,312 exhibitors occupied the equivalent of 25 football fields for the event which is produced and managed by the Electronic Industries Association's Consumer Electronics Group (EIA/CEG).

"Among the highlights of this year's Winter Show were 8-mm video recorders, the digital audio disc (including CD players for the car), home computer software, and telephone equipment," explained Jack Wayman, EIA/CEG Senior Vice President.

Summing up his impressions, Wayman remarked: "What an industry! What a show! What a future!"

For information on the upcoming Summer Consumer Electronics Show, to be held Sunday, June 3 through Wednesday, June 6 in Chicago, contact Bill Glasgow or Dennis Corcoran, Vice Presidents/CES, Three Illinois Center, Suite 945, 303 East Wacker Drive, Chicago, IL 60601 (312/861-1040).

notes

Digital Entertainment Corporation (DEC), the U.S. affiliate of *Mitsubishi Electric Corp.*, has opened a New York City sales and support facility for its professional digital audio systems at 555 West 57th St., zip 10019, phone 212/581-6100.

Eventide Inc. has moved out of NYC to a larger facility at One Alsan Way, Little Ferry, NJ 07643, phone 201/641-1200.

W.R.A. Wyllie, chairman of *BSR International*, has announced the appointment of *David G. Kennedy* as president of *dbx, Inc.* *Electro-Voice* has added two engineers, *Cliff Henricksen* and *Paul Fidlin* to their loudspeaker group.

Yvonne Sewall has formed *I Contact*, an engineering referral service in the NYC area. For more info, call 212/799-0453. *Daniel Antonellis* has joined *Videotek, Inc.* as National Sales Manager.

Phil Hart has been named national sales manager of *Sony Video Communications*.

The International Radio Festival of New York is accepting programming entries for their third annual awards presentation. Call 212/246-5133 for details.

Gary Remal has announced the formation of *Remal Music Design*, a full service music production company at 975 Northpoint, San Francisco, CA 94109 and at 12140 Olympic Blvd., No. 3, Los Angeles 90064.

Trident, USA and *Wilson Audio Sales* have named *Trackside Engineering* in Atlanta as the exclusive Georgia dealer for the Trident audio consoles.

Andrew Belth has been named director of marketing at *Reeves Sound Shop* in New York City.

Dan Cole has been appointed the new Communications Coordinator at the *Group Four Companies* in Boston.

NARAS will be hosting a music video networking party on March 12. Call 415/777-4633 for details.

The fourth annual *WOSU Broadcast Engineering Conference* will be held at the Fawcett Center for Tomorrow, Columbus, OH, July 17-19. Phone 614/422-9678.

A short course on Digital Audio Fundamentals will be given April 16 & 17 by *Digital Music Systems* in Boston; 617/542-3042.

Joiner-Pelton-Rose, Inc., acoustical consultants, have moved to a new facility at 4125 Centurion Way in Dallas, TX 75234, phone 214/392-7800.

John J. Bubbers has been appointed Director of Marketing and *Rex Nathanson*, Director of Engineering for *Broadcast Technology, Inc.*

At *Everything Audio* in Encino, CA, *Lon Le Master* has recently joined the sales force and *Andrew Schatz* has been promoted to Chief Audio Engineer.

Tannoy has opened an American sales and service facility at 97 Victoria St. North, Kitchener, Ontario, Canada N2H 5C1, phone 519/745-1158.

The Talent Center has opened in Orange County, CA, to serve as a broad function information center for music and production; phone 714/830-6203.

Mark Cairo has been appointed Sales Director at *Crest Audio*.

C. Robert Thompson, Manager of Video Recording Systems programs for *RCA Broadcast Systems*, has been elected a Fellow of the SMPTE.

Bruel and Kjaer has opened a new regional sales office at 1151 Triton Dr., Suite B, Foster City, CA 94404, 415/574-8155.

George M. Kanda has been appointed quality assurance manager for *3M's* Magnetic Audio/Video Products Division.

WHAT DO THE MOST TALENTED FACES SEE IN OUR FEATURES?

Juice Newton has a critical ear for sound and a critical eye for quality. You don't achieve a reputation of excellence without them. And while Juice Newton could afford any 16 track console at any price, she and her producer chose the Series 1600 from Soundcraft.

They demanded a board that works hard on sound while making the mix easy. One that is designed to operate in a split configuration and is simple to understand and control.

Soundcraft's Series 1600 responds to every criteria in either 16, 24 or 32 input sizes. It integrates separate input and group output modules to facilitate the creation of audio subgrouping during the critical phase of mixing down. It offers the flexibility of returning 8 channels of effects through the monitor returns and in so doing, saves valuable input channels.

And when it comes to satisfying the most exacting studio engineers, the 24 channel patchbay model is right on track. The patchbay provides access for up to 32 signal processing devices and group output patching to any of 24 tape tracks.

In all formats, the Series 1600 features low noise amplifiers that deliver the cleanest sound ever, four band equalizers, eight auxiliary busses for cue and effect sends and a choice of long travel faders.

They are the kind of features that are changing the face of pro audio mixing consoles. And they're the kind of features that the most talented faces in the industry look for. Soundcraft: Appropriate Technology for the 80's.



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SOUTHEAST

HMC Studios in Charlotte, NC, has finished production on an album by the *Glenn Miller Orchestra*. *Clem DeRosa* produced with *Alan Kaufman* assisting. The engineer was *David Floyd*, with *Jim Brock* assisting. . . . Recent studio activity at Music City Music Hall in Nashville included: *Charly McClain & Micky Gilley* finishing up their first duet album for Epic Records with *Bill Harris*, behind the board; and Columbia's *Moe Bandy* completing his first album project with his new producer, *Blake Mevis*. Harris was the engineer. . . . At *Lamon Sound Studios* in Charlotte, NC, *Carlton Moody* finished up tracks on his upcoming album. Co-Producer *David Moody* was at the board. Also at Lamon, *Arron Lowder*, *Bill Wentz* and *Bruce Williamson* worked on single releases. . . . The mobile unit of *Full Sail Recording* of Altamonte Springs, FL has been on the road: in Champaign, IL, *Adrian Belew* completed a six-week project; *Gary Platt* engineered; *Rytt Hirshberg* assisted. Then on to Cincinnati, where Heartland Records artists *Prodigal* recorded and mixed their second album *Electric Eye*. Recording engineer was *Greg McNeily*. It was mixed by *Gary Platt*. . . . Country singer *Quentin Stacy* was in at *Sound Emporium Recording Studios* in Nashville to record his first album for the Phonorama label. *Ron Demmans* produced, with *Mike Poston* engineering. On the gospel side, *Steve Green* recorded several songs for Sparrow Records, with *Greg Nelson* producing and *Billy Sherrill* engineering. . . . At *Morrisound Recording Studios* in Tampa, FL *The Steve Morse Band*, featuring former Dregs members Steve Morse, Rod Morganstein, and new member Jerry Peek on bass, recorded tracks for an upcoming album. This is Steve's first album project since the Dregs disbanded. Morse produced, *Chuck Allen* engineered and *Jim Morris* was second engineer. . . . *Creative Sound Concepts* in Atlanta has completed sessions scoring and recording original music for Procter & Gamble's soap opera *The Catlins*. The music was written and performed by the staff of Creative Sound Concepts. *David Romine* was synthesist/programmer, with *Dennis Baxter* and *Spencer Herzog* producing. . . . At *Stargem* in Nashville guitarist *Bruce Dees* was in producing singer *Lisa Silver*. This project was mixed digitally on JVC's processor supplied by Masterphonics. And producer *Wayne Hodge* worked with hit singer-songwriter *Nat Stuckey* for his upcoming release on Stargem Records. . . . At the *Music Mill* in Nashville *Harold Shedd* and *Alabama* completed work on their new album *Roll On*. *Jim Cotton*, *Joe Scaifre*, *Paul Goldberg*, and *George Clinton* engineered. *Ricky Skaggs* and

Marshall Morgan put final touches on *The Whites* new recording project for RCA. . . .

NORTH CENTRAL

Multi-Trac Studios of Redford, MI has the techno-pop band *Safari* working on their new single "Better Stop," with producer *Phil Presotto*, and *Mark Nilan* doing work on tracks for a new jazz EP; accompanied by Maynard Ferguson's rhythm section and such notable session players as Bruce Nazarian and Joe Labuca. Nick Canzono was behind the board for both projects. . . . At *Solid Sound Studios* in Ann Arbor, MI, *The Hearn Sisters* are working on their debut album for The Flange organization. *Bill Talbert* is producing, *Bill Poppy* engineering. At *Hedden West Recorders* in Schaumburg, IL, Beach Boy *Bruce Johnston* cut tracks while the group was in town, with *Michael Freeman* engineering. Freeman also engineered and co-produced noted local artists *The Reverbs*. . . . Recording activity at *Studio A*, Dearborn Heights, MI, has included producer *Johnnie Mae Mathews* completing work on tracks for a release by the *ADC Band*; *John Goodwine* overdubbing vocals on his latest self-produced album project; and the *Abass Bros.* laying down rhythm tracks on their first single with *Eric Morgeson* engineering. . . . Action at *Suma Recording Studios* in Painesville, OH: LP projects for *David Thomas & The Pedestrians*, *The Mockingbirds*, *Michael Spiro*, *Tommy Glame*, *The Singing Angels*, *Cleveland Metal*, and *Pink Cadillac*. . . . At *Mixed Modes Production* in East Lansing, MI, Chicago-based solo acoustic artist *Jim Gary* finished work on a 4-song EP, with backing tracks by *Spinnaker & Friends*. *Jack Hamilton* produced the sessions, with *Dennis Jablonski* engineering. . . . At *Pierce Arrow Recorders* in Evanston, IL, several big names were at work on new projects, including *Debbie Harry*, *Stephanie Mills*, and *Loverboy*, all under the direction of *Georgio Moroder*; and Heart lead vocalist *Ann Wilson* working with *Keith Olsen*. Engineering was by *Paul Klingberg*, seconding was *Michael Blum*. . . .

NORTHWEST

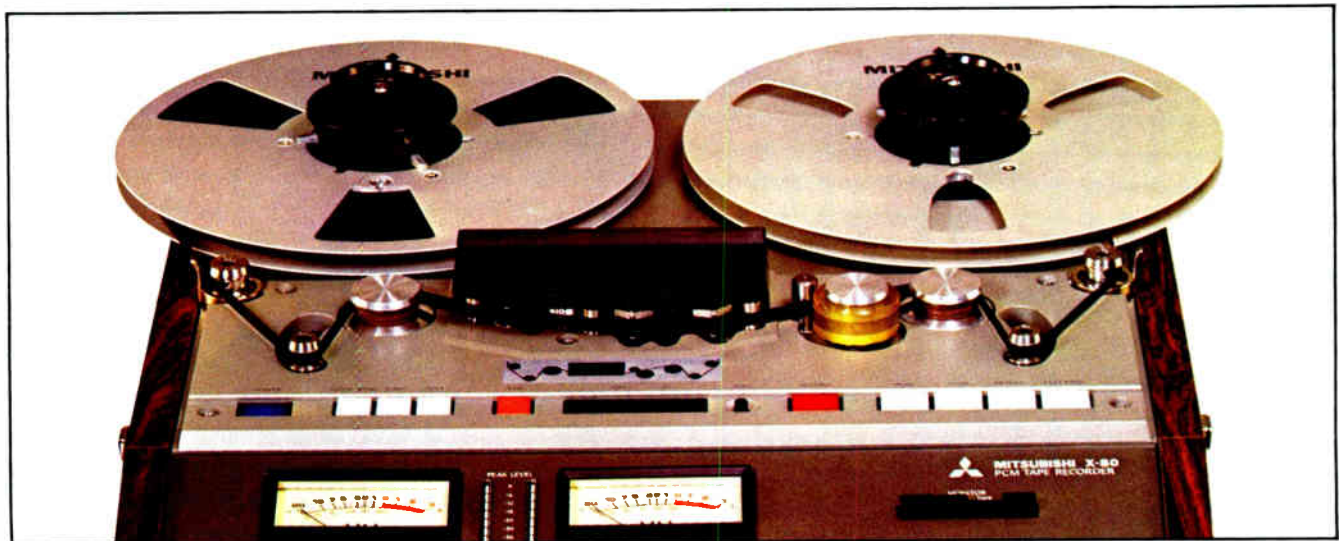
At *Tres Virgos Studios*, in San Rafael, CA, pop/rock band *Ariel* cut tracks for a self-produced six-song demo or possible EP project with *Bob Missbach* engineering and *Stuart Hirotsu* assisting. . . . *Spy vs. Spy* worked on some new material with producer *Jim Johnson* at *Bear West Studios* in S.F. in January. Geffen Records was impressed by the group's three-song demo and wanted to hear more.

. . . At *Beggar's Banquet Studios* in Santa Rosa, *Des Colares* has been working on their first album for Pajaro Records. The sessions have been engineered and co-produced by *Warren Dennis*. Dennis also worked with *Michael Beliar* on his "avant-electric-acoustic" album, *Time Infinite*. . . . *Triad Studios* of Redmond WA completed three projects at the beginning of the year: an album by the *Cozzetti/Gemmill Quartet*, *Larry Netzger* producer; an LP by *Adriel*, *Dan Foster* producer; and a single for *Lana Cole*. . . . At *Patchbay Studios* in San Rafael, *Tony Williams* worked in Studio A using his Simmons electronics drums and a slew of digital devices. Also in Studio A were Bay Area favorites *Yanks*, working on a demo with engineer *Karl Defler*. . . . Elektra artists the *Eric Martin Band* recorded new material for their second album at *Prairie Sun Studios* in Cotati, CA, with engineer *Allen Sudduth*. Also in at Prairie Sun were Chico-based rock/reggae band *Spark & Cinder*, who worked with producer/engineer *Mooka Rennick* and *Steve Buck*. . . . *Montage Recording Company* of Newark, CA, recently cut tracks for an album by *Vice* and an EP for *Dave Texeira*, both produced by *Will Mullins* with *Dave Hartzheim*, *Alan Tomlinson*, and *Randy Spendlove* assisting; and a single for *Country Rush* with *Larry Mann* producing. . . . The *Sonic Arts Mastering Room* in SF finished 1983 with a flourish of activity: *Chateau*, the group that won KBLX radio's "Hot Fun in the Sun" contest, mastered their new single, recorded at Tres Virgos; *The Champions'* third single, on Clayboard Records, was mastered; the *Ralph Shine Band* cut the master for an album on Blue Rock It Records, recorded at Oasis; a single by *Bob Pittman* and an LP by *Verbal Abuse* were mastered there for Fowl Records. *Independent Sound* in SF has had a busy time of it lately. Aside from landing a video of "My Boyfriend's Back" on MTV and other video outlets (more on that next issue), the studio, which jumped to 24-track last May, has seen a lot of activity, including *Barry Beam's* hit dance tune, "Lisa," and the last *Sylvester* album, *All I Need*. The studio recently purchased a Yamaha DX-7, which has been a great help on both music and recent advertising projects for the likes of Del Monte, Santa Cruz clothing and the Milk Advisory Board. . . . At *Starlight Sound* in Richmond, CA, a slew of people have kept the studio hopping. Among them are *Pete Escovedo*, the sensational vocal group *The Whispers*, *Roy Obeido*, Tubes synthesist *Michael Cotten*, who's working on a soundtrack, and *Elmo & Patsy*, of "Grandma Got Run Over by a Reindeer" fame. . .

NORTHEAST

At Power Play studios in Long Island City, NY, *Pete Warner* produced *Dave E. Dave* as "Ronald Cool Duck," with *Tony Arfi* engineering.

NASHVILLE & MIAMI SELECT THE X-80 STANDARD



MITSUBISHI X-80 EQUIPPED STUDIOS:

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Audioforce • New York
CBS Records • New York
Criteria Recording Corporation • Miami
Digital Music Products • New York
Eras Recording Studio • New York
Fantasy Recording Studio • Berkeley
Future Disc Systems • Hollywood
George Duke Productions • Hollywood
Lion Share Recording Studio • Hollywood
Masterdisk • New York
Power Station • New York
R&B Digital • New York
Soundcastle • Los Angeles
Soundworks • New York
Sterling Sound • New York
United Western • Hollywood
Tom Vicari • Hollywood
Woodland Sound Studios • Nashville
27 Other Premier Facilities
around the world.



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Digital Audio Stationary Head Studio Master Recorder
for immediate delivery to leading recording facilities.

REEL-TO-REEL AGREEMENT

The leading recording studios throughout the world are reaching agreement for superior digital audio mastering: The Mitsubishi X-80 Reel-to-Reel Digital Recorder. Unmatched reliability and the most desirable sound, razor blade splicing and the ability to monitor tape during record point to the X-80 as the primary choice for professional mastering applications. And with more and more Compact Disc manufacturing plants accepting X-80 studio masters, *the X-80 Digital Audio Stationary Head Recorder is certain to become a 2-track industry standard.*

X-80 SUPERIOR SOUND

In independent side by side A-B listening tests with all available digital master recorders, studio engineers pick the X-80 for *superior sound* time and time again. That's why studio and mastering facilities are turning to the X-80. In New York, Nashville and Los Angeles, the X-80 has been field proven in hundreds of demanding recording projects. In your quest for your share of the future recording business, we believe that the Mitsubishi X-80 Digital Master Recorder will give your studio the *competitive edge for success.* Please call or write.



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Arfi also engineered sessions for *Jimmy Jones*, who is recutting his two previous hits, "Handyman" and "Good Times" . . . At *Ranch Recording Studios* in NYC Marianne Faithfull cut tracks for a movie with producer *Fernando Saunders* and engineer *David Ruffo* (assisted by *Robbie Norris*); lead Stray Cat *Brian Setzer* produced *14K Soul*, with *Norris* engineering, *Steve Griffin* assisting; and *David Johansen* produced himself, with *Jerry Thichava* engineering, *Norris* assisting. . . . At *Reel Platinum Studios* in Hasbrouck Heights, NJ, *The Undead* recorded seven new tracks for a 12" . . . Recent activity at the *19 Recording Studio* of So. Glatonbury, CT, included an album project completed for the bank *Thrasher*; and rhythm tracks for an upcoming album by *Mass-Conn-Fusion*. Both were engineered and produced by *Jonathan Freed*, with *Tony Santia* assisting. . . . *Kajem Studios* in Gladwyne, PA saw *Judy Mowatt*, formerly one of Bob Marley's I-Threes, mixing her new album with producer *Skip Drinkwater* and engineer *Mitch Goldfarb*. Also in at *Kajem* were three artists working under *Teddy Pendergrass'* Teddy Bear Enterprises: *Tenita Jordan*, produced by *Dexter Wansel*; *Jean Albert Renaud*, also produced by *Wansel*; and *Jimmy Carter*, who produced himself. *Goldfarb* and *Joseph Alexander* engineered. . . . *Warren Zevon* has been in Philadelphia's *Studio 4* cutting new tracks with *J.D. Souther*. *Phil Nicolo* is engineering. And *Rob Freeman*, producer of The Go-Gos' *Beauty & the Beat* and others, was in at *Studio 4* working with *Egdon Heath*. *Obie* engineered, *Gary King* assisted. . . . The *Aura Sonic* mobile audio production facility (based in Flushing, NY) was assembled on stage at the Roxy, NYC for the live film and audio recording of Elektra recording artists *Yello*. The performance was filmed and directed by *Ed Steinberg* of Soft Focus. ASL Mobile's *Steven Remote* recorded, engineered and mixed the show from the stage with voices and live Fairlight computer provided by *Yello*. . . . Singer *Jocelyn Brown* completed tracks for her Urban Rock release, "Hands Off," at Sorcerer Sound Studios, NYC. Joining *Jocelyn* in the studio were vocalists *Vivian Cherry* and *Connie Harvey*, engineer *Joe Ferla* and label President *Ira Cossin*. . . . An LP for Tampa singer *Michelle Baillie* was recently completed at *Red Rock Studios* in the Pocono Mts. of PA, with *Gary King* producing and *Kent Heckman* engineering. . . . At *Greene Street Recording*, NYC, *Shannon* did a followup EP to "Let the Music Play," for Emergency Records, *Mark Liggett*, *Chris Barbosa*, *Rod Jui* producing, *Hui* engineering, *Joe Arnold* assisting. *First Love* and the *S.O.S. Band* laid down tracks for a 12", *Bernard MacLean*, *Jason Bryant* producing, *Hui* engineering, *Arnold* assisting. . . . At *Secret Sound Studio* in NYC, *The Slickaphonics* mixed their new LP. *John Potoker* produced and engineered, with *Warren Bruleigh* assisting. *Grand Master Flash* is producing *Donald Dee*, with *Hugo Dwyer* engineering and *Jim Lyon* assisting, and the *Violent Femmes* recorded their next LP for Slash with producer *Mark Van Heke* and engineers *John Tanner* and *Warren Burleigh*. . . . Producers *Jim Steinman* and *John Jansen* have been in working at Skyline Studio in NYC on *Barry Manilow's* new Arista release with

Arthur Payson engineering and *Roger Moutenot* assisting. And producer *Richard Gottehrer* cut tracks for *Tim Scott's* new album on Sire Records. . . . At the *Sound Cottage* in Port Jefferson Station, NY, the band *M.T.A.* completed recording a tune entitled "Mosaic", which will appear on the forthcoming album of the same name. . . . The horn section *Chops* whose credits include the recent Rolling Stones release and Police world tour, recorded their debut album for Atlantic Records at *Unique Recording* in NYC. *Marvin Daniels* and *Fred "Funk" Mills* produced, *Chris Lord Algae* engineered and *Thomas Lord Algae* assisted. Former New York Dolls members *Sylvain Sylvain* cut tracks for Body Rock Records with *Tom Silverman* and *Robin Halpin* producing, *Shep Pettibone* mix engineering, *Frank Heller* engineering, *Cathy Gazzo* assisting. . . .

SOUTHWEST

At *Victorian Recording Studio* in Houston, *J.C. & Dirtts Band* cut a track for their upcoming single "Houston On the Dance Floor", with *Roger Cummings* producing and *Steve Brudnick* engineering. . . . *Tom Dooley*, DJ at country station KLIF, produced a new artist, *Billy Franks*, at *Sierra Recording* in Fort Worth, TX with *Tony Rodriguez* engineering. *Shanna Smith*, a popular young local singer, worked on a new album at *Sierra* produced by *Darrell Glenn*. . . . Correction: *Ron Cote* engineered for Epic recording artist *Aldo Nova* when the performer recently recut vocals and guitar and remixed at *Dallas Sound Lab*. We incorrectly listed the engineer as *Rusty Smith*, who was actually the assistant engineer. . . .

SOUTHERN CALIFORNIA

At *Group IV Recording* in Hollywood, singer *Stephen Bishop* laid vocal tracks on a song called "One Love," with producers *Trevor Veitch* and *Greg Mathieson* and engineer *David Leonard*, assisted by *Andy D'Addario*. "One Love" is the theme song for feature film *Unfaithfully Yours*, starring *Dudley Moore* and *Nastassia Kinski*. Producer *Ray Brown* was also in at *Group IV*, mixing a *Milt Jackson* album with engineer *Andy D'Addario* for *Pablo Records*. . . . Recent recording activity at *Larrabee Sound* in L.A. included *O'Bryan* tracking a new album produced by *Don Cornelius*, with *Barry Rudolph* engineering, assisted by *Tom Greene*; and *Jimmy Jam* and *Terry Lewis* mixing an *S.O.S. Band* single with *Rudolph* engineering. And *Ross Bagdasarian* produced yet another new *Chipmunks* album, engineered by *Randy Tominaga*, assisted by *Brad Coker*. . . . New MCA artist *Steve Crane* cut tracks at Hollywood's *Sunset Sound* for his debut LP. *Toto's Steve Lukather* and *Jai Winding* produced, with *Shep Lonsdale* engineering the project. Also at *Sunset*, Japanese artist *Iruka* recorded

tracks for her upcoming release with *Mr. Kambe* producing and *Kent Nebergall* at the board. . . . *Patrice Rushen* recorded various overdubs at *Conway Recording* in Hollywood for her new album on Elektra Records. *Charles Mims* and *Rushen* co-produced. *Peter Chaikin* engineered with *Jeff Stebbins* assisting. . . . *KSR Studios* in Hollywood had *Mark Craig* producing solo albums for *Karen Kelley* and *Johnny Hall*, both on Bread 'n Honey Records. *Chris Banninger* engineered and *Tim Robertstad* assisted. . . . At *Skip Saylor Recording* in Los Angeles, *Joe Foxworth* and *Darren Durst* cut tracks for *Motown Records*. *Foxworth* and *Durst* shared production duties, *Jon Gass* engineered. Also at *SSR*, *Elton John* guitarist *Davey Johnstone* produced tracks for *Pamela Moore* with *Jon Gass* at the board and *Tom McCauley* assisting. . . . Chic's vocalist, *Lucy Martin*, has been working on her first solo effort at *F.O.R. Studio* in Burbank. *Darryl Ross* and *Sheri Byers* are producing, while *Bill Poppy* and *Steve Gursky* are engineering. . . . *Westwood One's* Concertmaster mobile recording studio was on hand at the *Country Club* in suburban Los Angeles to record *Christine McVie* and her band in their first L.A. performance. The show, spotlighting songs from the *Fleetwood Mac* member's new solo album, was heard nationally January 28 in a simulcast with MTV, which shot the video portion of the concert. . . .

STUDIO NEWS

Audio Cassette Duplicator Co., owned and operated by *Steve Mitchell* and *Steve Katz*, has moved to a new location at 5816 Lankershim Blvd., Ste. No. 7, North Hollywood, CA 91601. . . . *Midcom*, in Arlington, TX, has appointed *Jim Smith* to the position of Sales Manager/Engineer. Previously, *Smith* worked with *Doug Brown Enterprises* in Tulsa. . . . *A&R Recording Services* of Rancho Mirage, CA has recently updated its facility with the addition of a *Neotek Series II 28x24* recording console. *Sonex* has been added to the critical walls of the control room, the monitors are now mounted in a loft, and an additional reverb plate is planned for the near future. . . . One of Nashville's busiest mastering studios, *Disc Mastering, Inc.*, has purchased the latest *Neumann* cutting amplifier, the *SAL-74-B*. . . . *Edenwood Recording Studios* of Dallas has taken delivery of its *Studer A-800 24-track*. This state-of-the-art 24 track is the only one in Texas, and one of only three in the five-state area. Other recent additions at *Edenwood* include a *Studer* phone patch system, and *Frame by Frame Associates*—a facility for stills, film, video and stock photography headed by *Gary Campbell*. *Frame by Frame* and *Edenwood* are combining efforts to form a better link with film and video clients. . . . *Bonneville Productions* in Salt Lake City has taken delivery on a new *MCI Audio Layback* machine for use in its multi-track audio sweetening facilities. *Dave Michelsen*, *Studio Manager*, says that the new machine is the first of its kind in the Utah market. *Michelsen* explains,
—page 141, STUDIO NEWS

CREATION



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World Radio History



Neve's Digital Sound Processing Console

by Barry J. Roche, President,
Rupert Neve Inc.

The spectacular progress in the audio industry over recent years has been especially marked in the field of digital signal processing and recording. The net result of such developments as digital delay, digital reverberation and digital recording has been the creation of digital "islands" in an "ocean" of analog technology.

Neve has been conducting a development program over the past several years to produce a digital console which would fully exploit the advantages of digital technology. This development comes at a time when production requirements are demanding more and more sophistication while stringent economic constraints demand that such tasks as recording and post-production are achieved more and more quickly and efficiently. In addition, the digital compact disc has brought to the home listener a new level of audio quality which will further increase the technical standards expected in the professional studio.

Neve has now not only produced a digital console but a digital studio system. Remotely controlled microphone amplifiers together with analog to digital converters are located in the studio itself, so that signals are translated into digital form at the earliest possible opportunity; signal transmission from the studio can therefore be in digital form, using optical fibre cables which are compact and highly reliable.

Digital signal processing allows for the first time the signal handling circuits of a comprehensive audio mixing system to be fully remote-controlled.

The control console is a compact unit situated in the control room, connected via 3 optical fibre cables to the digital signal processing racks which provide both digital outputs and analog outputs via digital to analog converters.

Once over the major hurdle of the analog to digital converter, digital technology offers what has now become established as new standards in music recording. The system is free from cross-talk, frequency response losses, and provides direct, distortion-free interfacing to digital recorders. This is the most obvious reason for digital mixing. Digital recording in itself is a virtually degradation-free process. Some distortion and noise do, however, arise in the conversions to and from analog signals, and although these degradations are relatively small, multiple conversions can lead to perceptible signal degradation. Intermediate conversions are rendered unnecessary by the use of a digital mixing console and thus the immaculate quality of digital recording is preserved through the processes of mixdown, post production, etc.

Digital signal processing is inherently accurate and free from the effects of variations in component tolerances. This means that the console controls can be as precise and repeatable as those in a laboratory instrument, giving a totally predictable performance.

The sound of the digital console is of course paramount. Exhaustive listening tests have been carried out, and we believe we have eliminated the problems which many engineers have referred to as a "digital sound". We have been able to take advantage of

very many "golden ears" to assist us in our evaluation of our technical achievement.

The versatile distributed studio system briefly outlined above is made possible by the inherent remote-control capability of digital processing. It is this revolutionary aspect which produces the exciting features which eliminate the ergonomic nightmare currently encountered with large analog consoles.

All program path control settings, including faders, equalizers, limiters, echo sends, cue feeds and signal routing are memorized, enabling the operator to store and recall instant snapshots of the full console setup. Full mixdown automation with time code synchronization is also available on all controls, greatly extending the power for both multi-track mixdown and post production dubbing. All control information can be stored on a removable floppy disk and console controls can be instantly set and reset as required at any time. Thus, hours of work can be saved at the beginning and end of recording and mixdown sessions because the tedious and time-consuming manual recording and resetting of controls is eliminated.

It is no longer necessary for every channel to have a separate set of controls for equalization, limiting, cue, echo sends, etc. Instead, one central comprehensive control panel containing just one set of channel controls is accessible from the relevant input fader when the adjustment is required. In this way the operator can effectively bring the controls to his hand instead of reaching out with some difficulty to the knob required. This valuable concept is an extension of the remote control and memory capabilities of the console. Access to any control on any channel is immediately obtained by touching an "access" button on the relevant fader which automatically allocates the central control panel to operate the functions of that channel. This principle has been likened to a window sliding instantaneously along a conventional console layout to expose the controls for the relevant channel. Not only does this speed up the operation of the console, it also assists in producing a better sound

Editor's note: Digital Discussions is an open forum for those intimately involved in the development of a digital recording technology, hardware and software. We welcome your comments and suggestions for topics to be covered in future installments.

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balance. The operator can remain in the optimum central listening position at all times, assisting stereo imaging and avoiding the effects of loudspeaker polar pattern variations.

In addition to providing a compact layout, assignable controls also facilitate an uncrowded panel design with ample space between the knobs—a pleasant change from today's complicated analog control panels. Associated with each control is an illuminated display, which may be analog or digital. A four-character display has, in our trials with many studio balance engineers, proved most valuable, giving high resolution and readability. It seems that the psychological jump for the operator from the perception of rotary knob position to reading a digital display is rather similar to the step in changing from an analog watch to a digital watch and is proving similarly acceptable.

Control knobs operate shaft encoders with no end stops, thus enabling them to rotate continuously, which of course is a vital feature of any rotary control with a memory facility. The display itself is the indication of control position, and the knob is at all times available for instant manual update of the setting.

Faders are the most critical controls on any console and here the functions of control and display have been intimately combined in the well established "robot" motor-driven fader. This technique, first developed for the analog Necam system, recognizes that the operator must frequently work by feel, so, with motor-drive, the knobs are always in the right places and are always available for updating any setting recalled from memory.

Now let's talk about some of the new features available on the digital console.

As the digital signal processing is conceived in the time domain, it has potential for all sorts of new facilities. One such example already fitted on the current production of digital mixing consoles is a continuously variable real-time delay control on every channel which has been found to give greatly improved auditory perceptive and phase coherence in a multi-microphone mix by optimizing the arrival times of all contributions. A comprehensive limiter and compressor is provided on every channel.

As the sampled and digitized audio signal is a sequence of numerical amplitude values, the functions of an analog mixing console are carried out by numerical calculations. For example, gain control is multiplication by a control constant. Mixing is achieved by adding numerical samples from one or more signals. Limiting is multiplication of the signal by a control number deriv-

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World Radio History

ed from the level itself. Filtering and equalization are implemented in digital filter arithmetic sequences involving time delay multiplication and addition to previous samples, a process which is the digital equivalent of the reactive circuits used in analog systems. The channel processor is the heart of the digital mixing console and is responsible for all these functions.

With the basic methods on how digital signal processing is achieved, it can be quickly understood that what we are producing in our digital console is the digital equivalent of existing analog components like equalizers and limiter/compressors. It seems likely that when operational experience is obtained in the use of a digital processing system, engineers will seek out new methods of enhancing and interpreting the recorded material. This may involved an entirely new type of equalizer, or let's say, an entirely new type of limiter/compressor. When this time comes, the Neve digital signal processing console will be able to cater for such changes in operational requirements by implementing software changes or hardware changes. The hardware changes may more than likely be only the change of a control panel. As the controls have been minimized, then this becomes a fairly inexpensive proposition.

Technical Considerations

The highly flexible architecture within the channel processor provides extremely versatile signal routing within the processor. The arithmetic logic unit uses bit-slices with a very fast typical instruction time of 100 nanoseconds. Processing speed is further enhanced by the "pipeline" technique where a new instruction can be given while a previous one is being processed. All the calculations required for the channel processor can be carried out in the time between the audio samples.

Particular care has been taken to provide ample dynamic range in all processing stages. In the same way as analog filters have an inherent noise floor and involve high peak voltages at resonance, risking overload in poor designs, mediocre digital filters can also exhibit quantization noise on the one hand and overflow of numbers on the other. Filter structures have been chosen to overcome these limitations and yet achieve a highly cost-effective system.

The channel processor has 16 inputs and 16 outputs, enabling the provision of insertion points and the flexible signal routing required in an audio console by enabling signals to leave the processor and return to it for

The digital console is more expensive than a fully-fitted top-of-the-line automated analog console; but, of course, we are not comparing apples with apples.

further processing. This signal routing is carried out by means of time-division multiplex, a technique which gives the digital signal a very powerful advantage over existing complex analog systems.

A significant portion of any professional audio system is concerned with the switching of signals from one route to another. In an analog console such switching is often combined with mixing busses or a crosspoint system. Digital systems on the other hand allow a simpler, cheaper approach whereby up to 128 signals are carried by a single 20-bit wide parallel digital buss. The 128 signals are arranged in sequence between sample clock sync pulses.

A selection of one of these 128 signals to a particular destination, for instance a monitor circuit, only requires the opening of an output gate at the right time to transmit the required signal. This flexibility in signal routing, avoiding the cost of crosspoints and relays, is the key to much of the versatility of the digital console. In analog systems it is very common when designing a new studio to require extra signal routing with the complications of additional wires and connectors added to an existing design of mixing console. In digital systems, on the other hand, additional routing can be simply implemented by timing changes carried out by software.

General use is made of a 16-bit plus 4 exponent bit signal buss. This format interfaces conveniently with 16-bit A/D and D/A converters, and yet amply fulfills the total dynamic range required of the processor. The high speed multiplier, which handles the

16-bit input signal, is used in conjunction with a bit shifter to operate on the full 16 plus 4 bit signal. The bit slice arithmetic unit handles a full 24 bit linearly encoded word, facilitating high speed addition. Conversion to or from floating point format is carried out by hardware and is computed in one cycle of the processor. The dynamic range available within the channel processor approaches the theoretical figure of 144 dB's, thus effectively eliminating the risk of internal overload.

Prior to the A/D converter, digital control of analog gain linked to the channel fader gives an extra 34 dB on top of the dynamic range of the 16 bit conversion to provide ample prefade headroom by the ideal method of gain control at 2 points in the system simultaneously. Every mixing "buss" in the system uses bit slices to provide for a 32-bit word length, thus overcoming the common analog problem of restricted headroom at the summation point where many signals are added together. The system is thus forgiving to the balance engineer so that he is unlikely to be "caught up" by an unfamiliar or unpredicted situation and cause audible overload or even unsuspected clipping of transient signals.

Our standard sampling rate will be 48 kHz. We are capable of producing other sampling rates to special order: for example the BBC uses 32 kHz. We have found that all tape machine manufacturers so far have been extremely cooperative and willing to work with us in any area to insure that their machines are totally compatible with the Neve Digital Signal Processing console.

Summary

The digital console is more expensive than a fully-fitted top-of-the-line automated analog console; but, of course, we are not comparing apples with apples. The automation system and programmability of a digital console far outstrips that which is available on even the Neve top-of-the-line console with Necam.

The digital console not only incorporates a more sophisticated totally instinctive Necam-type fader automation system, but it also includes total programmability with multiple memory and reset of all console controls.

The easier to operate digital console will be a long term investment. The audio quality, greater facilities and flexibility of the digital console will be in ever increasing demand. The digital console studio facility will be capable of providing a much higher utilization than a top-of-the-line analog console system. ■

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NEW PRODUCTS AND TECHNIQUES

by George Petersen

The subject of microphone placement and usage has always been a controversial one among engineers. There are probably at least ten thousand different ways to mike a drum kit, and yet no single method works in every situation. Room acoustics, the availability of microphones and console inputs/tape tracks, the sound of the drums themselves, and the playing style of the drummer are all interrelated factors to be considered.

For this report, we will look at some new products coming out and talk to a variety of top engineers and producers about their techniques and some of the microphones they use to achieve a particular sound.

The participants in this forum are Neil Dorfman, whose credits include engineering for Dire Straits,

The Audio-Technica AT 831A miniature unidirectional condenser microphone can be used as a lavalier or for the miking of acoustic instruments. The 831A can be battery or phantom powered, and comes with a clothing clip, guitar adapter, and low impedance XLR output plug.

Weather Report, and Bruce Springsteen; Jim Gaines, who has worked with The Spinners, Steve Miller, Santana, and Huey Lewis and the News; award winning British engineer Peter Kelsey, who has worked with Rupert Hines, Jean Luc Ponty, Cate Jacques, and Elton John; Bernie Kirsh is the chief engineer at Chick Corea's Mad Hatter Studios in Los Angeles and recently finished working on John Klemmer's new album; Ron Nevison, who has



engineered for The Who, Led Zeppelin, Bad Company, and is currently producing the new Jefferson Starship album; session synthesist Steven St. Croix is part owner of a world-class private studio, and is actively involved in film and television scoring and pro-

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WIRELESS MICROPHONES:

CUTTING THE CORD

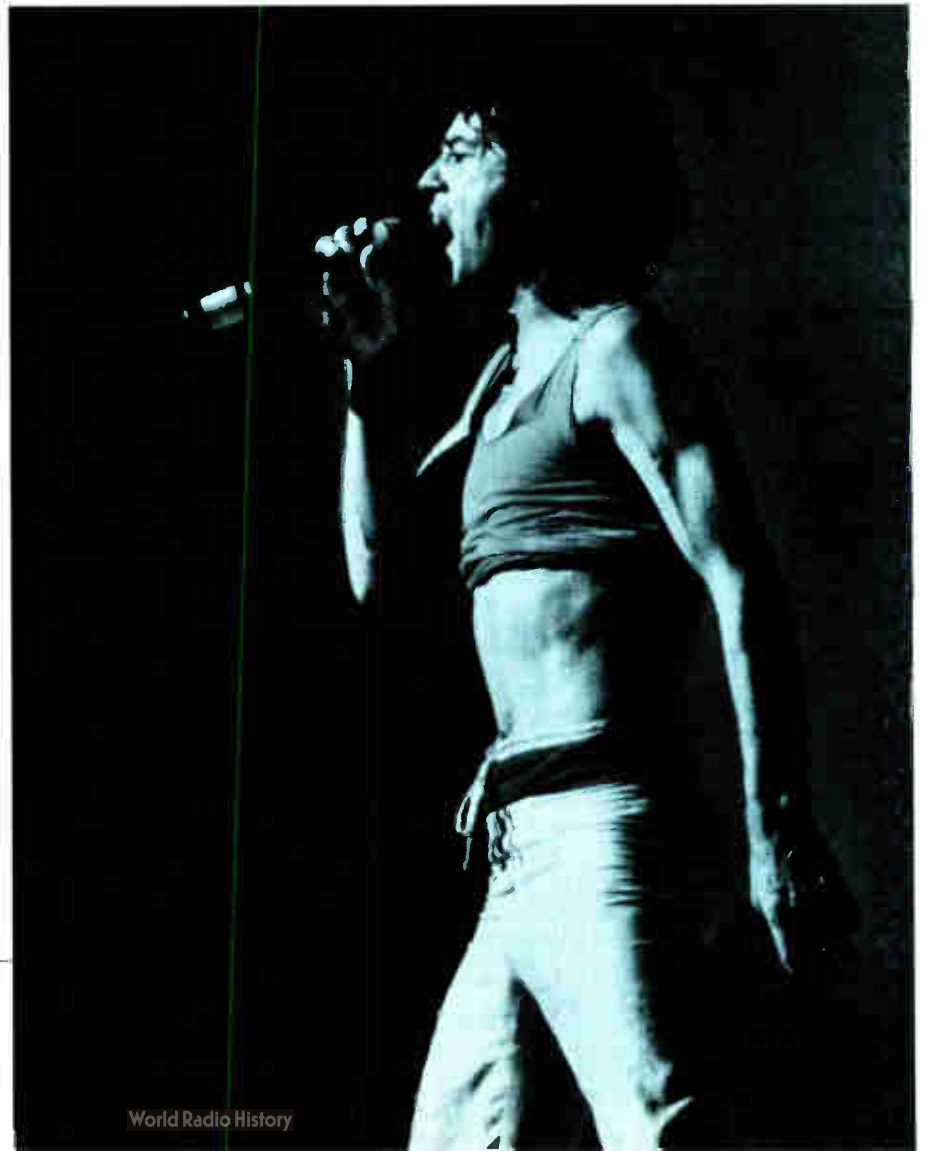
by George Petersen

Wireless microphone systems have undergone quite a complex evolution since their general introduction in the 1960s. Advances in electronics and miniaturization, in part borrowed from the aerospace and computer industries, have brought superb audio performance and vastly improved transmission characteristics into ever-smaller, more dependable wireless systems. The reliability of today's systems is such that they are often used in situations where a hard-wired microphone would suffice.

Performer acceptance of wireless microphones is also at a high level, and a number of bands use wireless systems for every member of

—page 20

Mick Jagger using a Nady VHF SM-58 wireless microphone during the Stones' 1982 USA tour.



—from 19, **WIRELESS**

the group except the drummer. While wireless lavalier mikes have been used for some time in the theatre and in broadcasting, a relatively new development is the use of the high quality headset microphones such as the Nady HeadMic™ or the Shure SM-10A, which when used with a wireless pack, can free a vocalist/musician from the constraint of a cord. Another factor which many performers like is the wide range of microphone cartridges which are available in wireless systems today.

Two of the biggest changes in wireless systems over the years have been a steady increase in dynamic range, and the reduction of multipath dropouts, says John Kenton of HME, a wireless manufacturer. "Sometimes multipath dropouts occur when listening to FM radio in your car while stopped at a red light. Another car pulls up next to you and your signal drops, but if you pull up a foot, the signal comes back in. Your radio is getting a reflected wave from the car next to you which cancels the primary wave. Obviously, if this can occur with a 50,000 watt radio station, it can occur with a 500 milliwatt wireless microphone."

The solution to the multipath dropout problem in wireless

Lawrence Welk vocalist Norma "Champagne Lady" Zimmer with HME System 85 wireless mike.



The HME system receiver World Radio History

microphones is achieved via diversity systems, which fall into two basic

Pictured below: Telex WHM-400 VHF wireless microphone.



categories. Some companies use multiple receivers with a switching system (which may be integrated into a single unit) and separate antennas; other companies use some form of matrix which switches or combines antennas fed into the same receiver. While each approach has its advantages and drawbacks, any type of diversity system is better than a similar system without diversity reception, especially in a situation where multi-reflective surfaces are present, such as a reverberant hall.

"Probably the worst place to use a wireless system is in a car lot," Kenton feels. "If you're doing a commercial and the announcer is running around amongst a lot of cars, you are almost assured of multipath dropouts unless you have diversity reception." HME makes a variety of wireless systems priced from \$1,500 to \$2,500 for a basic system and a three antenna diversity unit is optional.

In spite of all the advantages wireless systems offer in terms of mobility and staging flexibility, artists also have to be aware of the pitfalls which can occur when going wireless, according to Rick Gentry of Nady Systems. "Sometimes, on the first time wireless, performers flip out and run way out into the audience because they're so high on the experience. They end up getting away from the monitor mix and can't hear to stay in time with the band."

The Nady wireless line (with units for both instruments and voice) ranges in price from under \$300 to over \$2000. Their low-end system operates on the 49 MHz band (which is

becoming more and more crowded due to the proliferation of consumer-type wireless devices, cordless phones and such); the mid-priced system is a tunable-FM type and utilizes unused FM radio channels; and their top model is a VHF system operating on a 150-216 MHz fixed frequency.

Don Mereen, a spokesman for Telex Communications feels today's systems have made significant strides towards alleviating the fears and misconceptions some artists have about wireless. "In the past, there has been a sort of negative rapport among performers and users of wireless systems, but over the past two or three years there have been better products on the market with less interference of all types. Performers are starting to feel they can come up with something that sounds like them, operates dependably on a day-to-day basis and will give

Eddie Santini, chief sound engineer at Radio City Music Hall, performs a sound check on the theatre's Sony wireless microphone system.



them the freedom that only a wireless microphone will."

The Telex WHM-400 microphone/FMR-1 receiver combination is the result of the company's goal of producing a two-antenna system which operates on the high-VHF band and uses a "smart" antenna system which reads antenna phase differences and combines them for the best signal-to-noise ratios.

Samson has been building 49 MHz wireless systems for several years now and has recently unveiled their prototype for a high VHF system which



Cetec Vega T-82
wireless microphone

will be available in the next few months. This PR-50 receiver and HT-20 microphone features PLL (phase locked loop) tuning with a digital frequency readout, "phase reflex" (diversity) receiving, and a choice of mike capsules. The system should be priced at \$1250.

Kenneth Bourne of Cetec-Vega has noted a definite trend towards improving signal to noise ratios and dynamic range by integrating breakthroughs in companding circuitry and the infinite gain technology developed for the aerospace/telemetry industry. Cetec-Vega has introduced a new line of mike/transmitters (T-81, T-82, and T-83) to operate with their R-41/R-42 receiver line, which according to the manufacturer, was shown to be quieter than a hardwired system in an independent test. The cost of a basic mike/receiver system ranges from about \$2500 to \$4000.

Swintek has been making wireless systems for over ten years and their present line includes both UHF (450-467 MHz) and VHF models. The UHF system, popular for film and broadcast work, uses a lavalier mike with body transmitter pack, and an AC/battery powered receiver, and is priced at \$2350. VHF hand held microphone and receiver systems are marketed with a choice of mike capsules and are \$2275. An antenna switching diversity unit is optional.

Sony wireless microphones currently operate in the UHF 947-952 MHz band (Canadian models use

Telefunken's ELAM 251 tube microphone was actually made by AKG and employs the same capsule as that found on AKG C-12, C-12A, 414, 412 and CK-4.

902-928 MHz), and a wide variety of system configurations can be assembled for either studio or portable applications. The UHF band offers more freedom from interference, but is more susceptible than VHF to the effects of multipath cancellation from reflected waves. Keeping this in mind, Sony offers a number of diversity tuners, switching units, and antenna styles which effectively reduce UHF dropouts.

The Sony WRT-57 wireless microphone and WRR-57 receiver combination is priced under \$3,000. Antenna systems range from \$100 to \$1,300, and a full diversity set-up would require a second antenna, a \$1,500 diversity switcher and a second tuner. A compact portable diversity system (WRR-37) is especially well suited for film and broadcast applications and lists for \$6,995.

For more information on wireless microphone systems, contact:

Cetec-Vega
Box 5348
El Monte, CA 91734

Eddor
16782 Hale Avenue
Irvine, CA 92714

HME (HM Electronics)
6151 Fairmount Avenue
San Diego, CA 92120

Nady Systems
1145 65th Street
Oakland, CA 94608

Samson Wireless
124 Fulton Avenue
Hempstead, NY 11550

Sony Communication Products
Sony Drive
Park Ridge, NJ 07656

Swintek Enterprises
1180 Aster Avenue, Unit J
Sunnyvale, CA 94086

Telex Communications
9600 Aldrich Avenue, South
Minneapolis, MN 55420

Zehrtronic, Inc.
3 Mapleton Drive
Greenville, SC 29607

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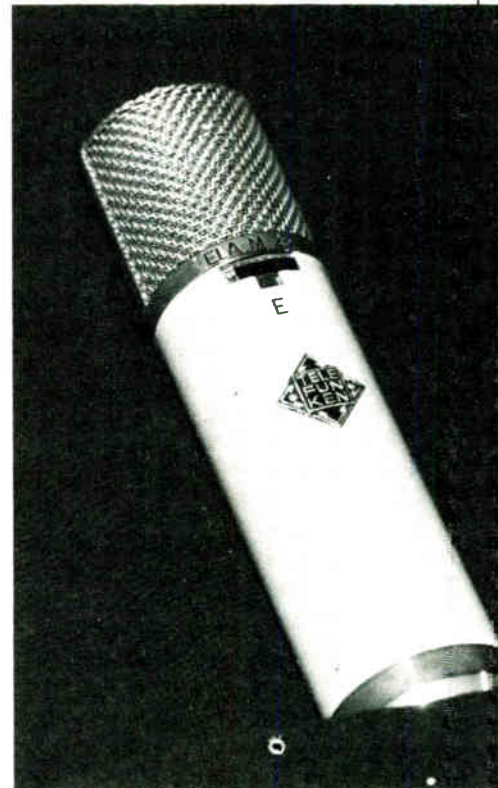
A T U B E M I C R O P H O N E

*Use Caution and
Common Sense*

by **Sye Mitchell**

First of all, with the exception of the new AKG re-make of the C-12, also know as "The Tube", most tube microphones have been out of production for the past 20 years. What killed the tube microphone was the transistor. That technology vastly improved recorded sound. The transistor could reproduce sound better with higher resolution, because of its high slew rate. Tubes would tend to filter higher frequencies, rather than pass them. All the microphone manufacturers joined the transistor revolution, and converted their popular tube microphones to solid state. The Neuman U-67 became the U-87, the U-47 became the U-47 FET, the AKG C-12 became the C-414 EB, the Sony C-37 A the C-37 P, and the list is endless. For many years, these changes were well received. No one really cared that the tube microphone

—page 24





Beyer provides typical condenser accuracy

At Beyer, we maintain the singular notion that a condenser mic *can* combine typical precision and sensitivity with a smooth, natural sound. Beyer Condenser Microphones give you the accuracy and higher output of a condenser without a "hyped," larger-than-life sound. Beyer condensers offer the high-performance specs required by digital recording without reinforcing the occasionally clinical aspect of this process.

More Options – More Versatility

The Beyer MCM Condenser System's comprehensive selection of interchangeable mic capsules means total applications versatility in the most logical and cost-effective format. A choice of mics with cardioid, lobe, omni or figure-8 patterns and

the option of integral shock-mounting is instantly available for use in the studio *and* out in the field.

New Super High Performance Mics

The ongoing technical evolution of Beyer condensers has produced several newly designed mics offering matchless performance and long-term reliability. The new MC 737 long shotgun (lobe pattern) and MC 736 short shotgun (cardioid/lobe) utilize a built-in switchable bass rolloff to effectively suppress low end noise and rumble below 200 Hz and provide increased intelligibility for optimum speech and music recording. A 12 dB attenuator prevents high sound pressure levels from overloading the mic's internal electronics without coloration. These mics also feature an extended frequency

The Dynamic Decision



without typical condenser sound.

response of 40 Hz to 20 kHz (± 2.5 dB) and an excellent signal-to-noise ratio of 74 dB.

The new MC 734 is the only "studio" condenser mic that delivers the highest standards of performance in any recording or live concert situation. An extremely flat frequency response from 20 Hz to 18 kHz (± 2.5 dB) insures total accuracy while a 3-step filter compensates for proximity effect in close-miking situations. To maximize the MC 734's performance onstage, a unique stage resonance filter which reduces rumble and extraneous noise is combined with the mic's ability to withstand sound pressure levels of 138 dB (1 kHz \leq 0.5% THD).

Condenser System Accessories

For added back-up flexibility, the Beyer Condenser

System includes a full complement of accessories including windscreens, power supplies, pistol grips, suspension mounts and our one-of-a-kind MZA 716 telescoping "fishpole" boom with an adjustable tilt variable from 0 to 360°.

Beyer Dynamic has firmly established itself as a leading force in moving-coil and ribbon microphone technology, but don't let our name mislead you. Instead, consider the uniquely natural sound, applications versatility and wide variety of accessories that make up the Beyer Condenser System.

Visit one of our select professional dealers for a complete demonstration. To obtain a Beyer Condenser Dealer List, please write to: Beyer Dynamic, Inc., 5-05 Burns Avenue, Hicksville, New York 11801 or call us at (516) 935-8000.

beyerdynamic

—from page 21, *BUYING MICS* was dead; it was long live the new technology.

Several years ago, our industry experienced a return to the tube microphone, and at one point it seemed as though there would never be enough old tube microphones to go around. The sudden demand for the out-of-production microphones drove up prices to an all time high. Tube mikes were truly worth their weight in gold, and a studio's prestige was determined by how many it owned.

Are tube microphones a trend, or just another hype used in the never ending battle to exploit more business for ailing recording studios? Your guess is as good as mine, but just this past year I've noticed a deterioration in tube microphone sales, and I expect sales this year to fall off even more. My feeling is that an ailing economy and lack of manufacturer support have started the eventual destruction of the entire tube microphone market (again). It's this chain of events which will make buying good tube mikes in years to come more difficult. If you're interested in acquiring a good tube microphone,

the time to buy is *now*. Take heed, read on, and we will tell you what to look for.

The Obvious

"The obvious" is the cosmetic appearance. The microphone that looks good generally has been well maintained. Look for fresh paint or metal cleaner residue, because these are sure signs that the microphone may have been damaged or abused. Painting and polishing are methods used to disguise a below-average condition microphone. If you spot a suspicious looking microphone, be prepared to have it thoroughly checked electronically by an experienced maintenance engineer, or pass on the microphone. Microphones such as Telefunken ELMA 250-251 were painted a light green. The paint job on these microphones was superb, and with good care should last 30 years or better. Microphones which are left mounted for prolonged periods of time on stands risk capsule deterioration due to exposure to moisture, dust, and smoke particles in the air. Microphones left unattended usually are vulnerable to all kinds of accidents. Remember, these

microphones are rare and very delicate. That's why I'd rather buy a microphone from a person who keeps them safely secured in their original factory container under lock and key.

What to Look For

Be cautious of microphones which have quick disconnects on them. This invention was designed to speed up the set-up time for sessions. In reality this device has been responsible for damaging more tube microphones than any other single cause. The quick disconnect has a small locking pin, which sometimes doesn't engage with the lock up device on the microphone. The unit usually holds for a short period of time, long enough for the engineer to be too far away to catch the microphone as it slips off the stand and crashes to the floor. I have seen it happen. The results range from crushed cases to fractured capsules. You can always spot this connector, so if you see one on a microphone that interests you, take caution.

I remember selling a beautiful Neumann M-49 to a client. It was cherry mint. I suggested to him that in order to protect his investment to never use a quick disconnect. Two months later he called claiming that the microphone needed a new capsule. I was surprised to hear this and suggested he bring the microphone over for me to examine. When he opened the box I noticed the quick disconnect on the microphone yoke. I turned to him and said, "This microphone doesn't work because it had a severe fall and fractured the capsule, as well as shifting the wind screen." I continued, "Your engineer used a quick disconnect, and failed to lock it securely, so the microphone slipped off and you see the results." He looked at me and said, "Yes, I know."

Here is how to determine whether a Telefunken/AKG ELAM 250-251 or C-12 or C-24 has been dropped. Find a flat surface and roll the microphone across it. Watch for wobbling. The construction of these microphones is delicate and dropping will put them out of shape. Once again, use your good common sense. If you suspect that the microphone you are examining has been re-painted, ask to see the microphone box. If the microphone box is as mint as the microphone, then you are probably getting a mint microphone. If there is no box, or the container looks well worn, then insist on having the

—page 26

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

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

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

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

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



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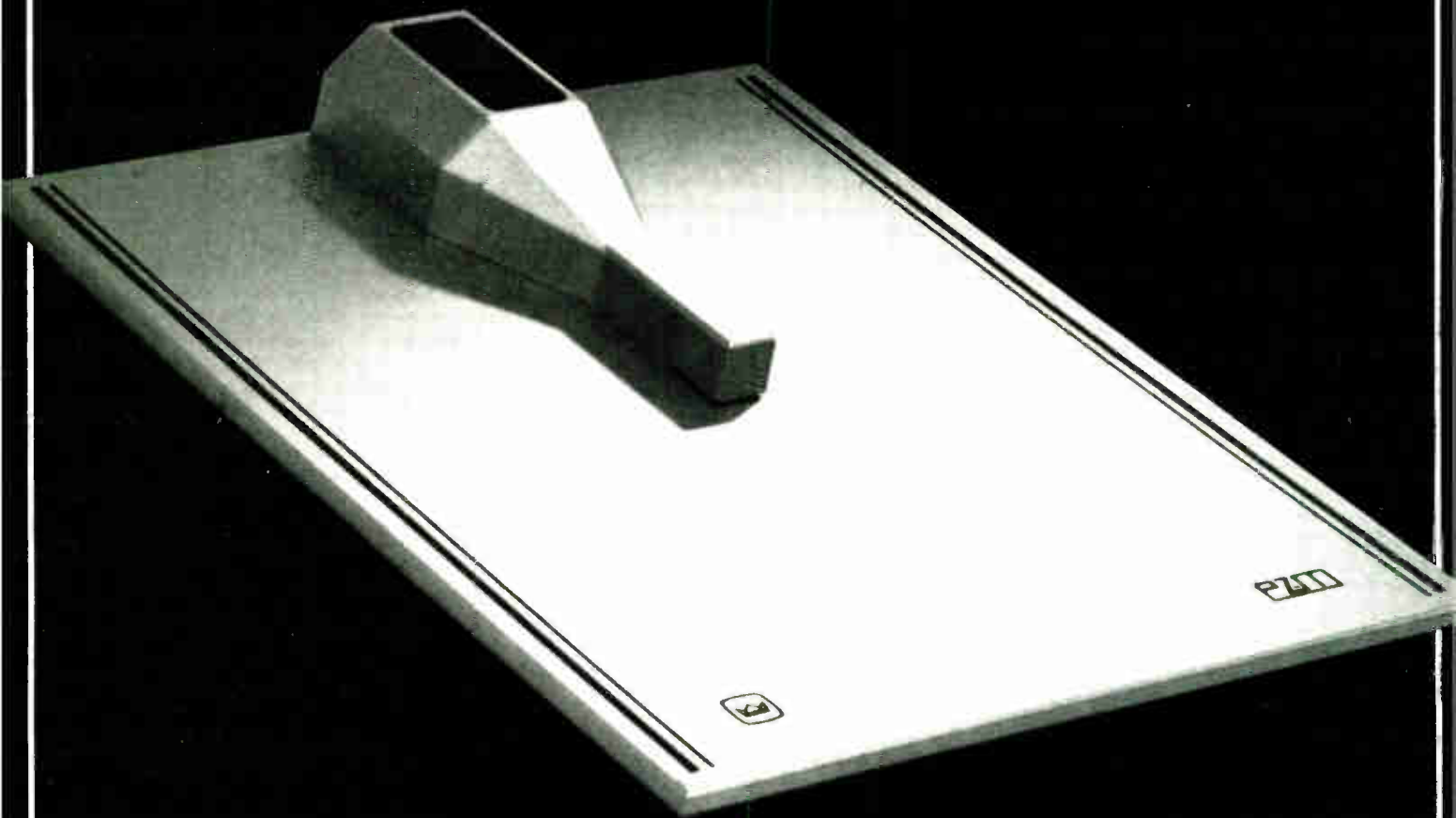
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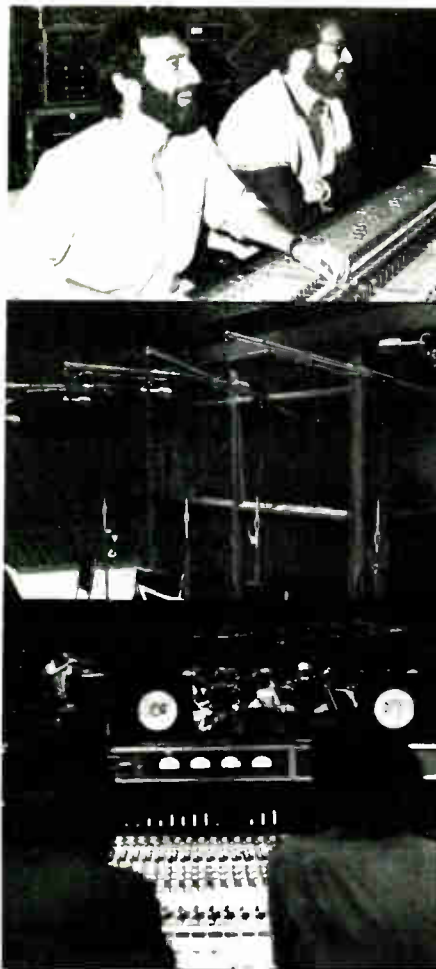
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PHIL RAMONE

ON MICROPHONES



M88RP
Printed Ribbon
Microphone

"A critical link in the recording chain is the choice of microphones. If that first stage is wrong or distorted, no amount of equalization or processing will give you back the sound that you originally intended to record.

"There are no hard rules or scientific formulas. No single mic is best for every sound. So I try to make a point to stay in touch with current microphone technology, and I'm impressed by the Fostex Printed Ribbon mics — for a number of reasons.

"First, they have a very open, clean sound, plus they can absorb the hard drive that rock 'n' roll demands. I know this is a subjective opinion, but I've used the M88RP, for example, on strings, guitars and vocals with fine results.

"Secondly, the workmanship and quality show the care taken by Fostex in making these finely-crafted tools.

"Finally, I think the Printed Ribbon technology is just as impressive in Fostex headphones. Musicians simply like to work with them. One of the best moments in the studio was when we tried the T-Series headphones and the musicians said how great it was to be able to play and really hear themselves.

"In fact, it was the Fostex T-Series headphones that prompted me to try their RP microphones.

"Now we're both glad, because I bought them, not vice-versa."

Fostex
PRO SOUND DIVISION

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

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The Crown PZM 180 is a new pressure zone microphone introduced for the semi pro market. Priced at \$169, the 180 offers phantom or on-board battery powering, a frequency response of 50 to 16k Hz, and 150 ohm balanced line operation.

—from page 26, *New Techniques*

Yeager: "We've strapped two (Crown 30 GP) PZMs together in a wedge configuration to form a stereo pair. This generally works out well with a group of four or more singers on background vocals—it lets the singers balance themselves into the microphones. We generally use the wedge overhead and a foot to 20 inches away, but sometimes we'll have a guy eight feet away as the producer helps construct the singers' balance."

Dorfsman: "I use whatever sounds appropriate on a guy's voice—AKG 414s, Neumann FET 47s, or maybe a couple of tube mikes—if I have a producer who's willing to spend a couple of minutes to audition some mikes. On some records, a Shure SM-57 sounds great on vocals, especially if you're cutting the stuff live. A lot of times, a dynamic sounds better than a condenser."

"I bought a couple of old M-49 Neumann tube mikes that sound really good. I also just bought the AKG 'The Tube' tube reissue mike. It's bright—maybe too bright for lead vocals, but on background vocals it's great."

Piano Miking

Schmitt: "On the *Toto IV* album, I used (AKG) 414s on the piano, but I've also used a Neumann FET 47 on the low end, with a 414 on the high end. I've used (AKG) 451s, 452s—it all depends on the piano. On the Bill Evans album I did, I used a (Neumann) stereo SM-69 on the piano and a couple of 87s off the piano to pick up a little more presence. It also varies by the type of music—if you're doing a loud rhythm section and you need a lot of isolation, you have to mike closer. On

something like the Evans project, I was able to mike back and get an open piano sound."

Williamson: "I use PZMs exclusively on piano at this point. I have them bolted to the piano. I get excellent stereo and to me it's one of the finest innovations in microphones in years."

Gaines: "Lately I've been using AKG 414s on piano. I still use Neumann 87s every once in a while if I want a warm sound. I'll use PZMs if I want a very bright sound, and sometimes, for a certain type of sound, I'll tape a PZM inside and mike the hammers fairly close so I can work with the

combination of two sounds."

Kirsh: "We have a few microphones we like to use—Schoeps microphones, AKG 414 P-48s and tube C-12s, and the Bruel and Kjaer mikes. The B&K microphones are omnidirectional measurement mikes, so they're flat all the way out. I keep the piano open to the full stick as much as possible—you can always throw blankets over the piano if there's leakage problems. If you're going to listen to a piano, you need to hear as much air as possible, unless you're miking very close to the strings for a bright percussive sound."

—page 30

TRULY WIRELESS

NADY SYSTEMS, the Wireless Innovators, leaves the competition dangling with the introduction of the new 49-HT Handheld Microphone. With all transmitting elements self-contained, the 49-HT eliminates the unsightly wire antenna found on other 49MHz 'wireless' mics, while featuring Nady's exclusive 3-channel capabilities and an Audio-Technica PR60 mic element. The truly wireless 49-HT offers the discriminating musician, vocalist or speaker proven Nady technology and extra features at a price so low, you'll look twice. Go with the choice of the pros. **GET NADY NOW.**

Nady 49 Systems also available with lavalier microphone and for musical instruments.

The Wireless Innovators
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The Beyer MPC 50 acoustical boundary microphone has a hemispherical polar pattern and is designed for situations where several voices are to be picked up by a single mike, such as in conference rooms. The wooden base houses the mike capsule, electronics and 9 volt battery. The MPC 50 is priced at \$529.95.

—from page 29, *New Techniques*

Guitar Miking

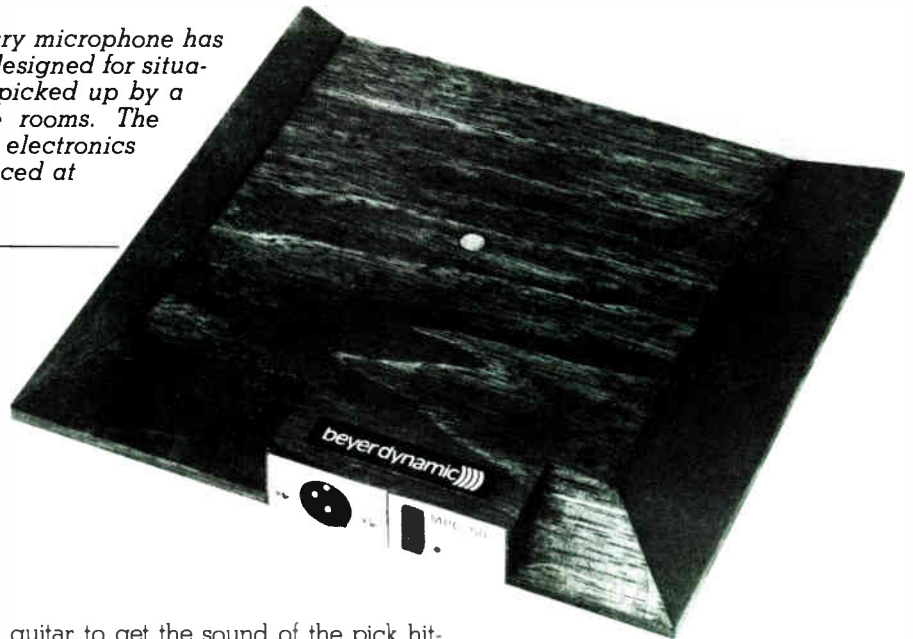
Nevison: "On electric guitar I like (Shure) SM-57s, right up against the amp, sometimes combined with a room mike. If it's a real quiet thing, I'll use something of a condenser variety. For acoustic guitars, I use (AKG) 452s. It depends on the room, but you can get them remarkably far away and have it sound real good. The farther, the better, usually."

Gaines: "My favorite mike on amps is a Sennheiser 421, my second favorite is a 414 (AKG), and I still use Neumann 87s. Lately I've been miking a lot of Marshall cabinets, and I may put all three up there and pick and choose. I also like the way the English use 87s on Marshalls. It seems to be a good sound."

Dorfman: "For acoustic guitar I'll use a tube mike. If it's a picking part, lately I've been putting a Sony ECM-50 inside the soundhole and using an outside mike—a 451, 414 or an 87. Once you roll off the bottom of the inside mike, you have a nice string sound and you just mix that in, although sometimes you have to reverse the phase of the inside mike."

Kirsh: "For acoustic guitars I've been successful with the AKG 414 P-38s. I did some gut string guitar miking for a Paco De Lucia project and put a P-48 about three feet away with a Schoeps another six feet back. That worked out well. I've also used the Schoeps in close, and Bruel and Kjaers, and Sankens as well. It just depends on what you're up against."

St. Croix: "I've been using the Fender M-1 miniature mike on electric



guitar to get the sound of the pick hitting the strings. The M-1 has a pronounced high end clarity, and you can really feel the physical contact with the strings. I mix this signal with what's coming out of the amp. On the guitar amp I usually aim the amp up towards a glass wall or window in the studio, and place a Neumann U-87 in a figure-8 pattern about four feet away, and let the reflected sound return to the back of the pattern. This way, I get a warm room sound, but still full of transients and punch when you add in the string mike. I usually use a AKG 451 on Marshall stacks and a U-87 on a Fender amp."

Horn Miking

Gaines: "I used to do all the Tower of Power sessions and a lot of jazz stuff. A (Neumann) U-47 FET for the bari gets a nice honk sound. For trumpets, bones and sax, I use 87s or an RCA 77DX if there's going to be flugelhorn. I'll use an (Electro-Voice) RE-20 for sax if I want a bright rock and roll sound—that seems to give a nice middle punch."

Kelsey: "If possible, I like to use ribbon mikes, especially on trumpets. There were some BBC ribbon microphones I used at Trident that were quite good. On saxophones I've used a (Neumann) U-87 or Sennheiser 441 with good results. On a horn section I would mike the horns individually and depending on the sound needed, I would put up some room mikes as well."

Dorfman: "I'm partial to an RCA 77 ribbon mike on trumpets and bones, and pretty much Neumann 87s the rest of the way around. I've also tried (Beyer) M-160s on trumpets, those are pretty nice; and AKG 414s on bones and French horns. With a solo sax or trumpet, I'll usually put up three or four different mikes and balance between them, usually winding up with two or less."

Williamson: "For horns, I like to use an RCA 77DX ribbon mike. I think it's the great horn mike ever made, if you don't stick it down the bell. I have also used the 44DX on a big section as a composite or ambience mike with 77s a little closer for more control with individual section miking."

Leslie Miking

Dorfman: "I'll use four mikes on the organ—on the vented side, not the open side—with either a pair of SM-57s on top and a pair of Neumann 87s on the bottom, or 87s all around. Sometimes if I'm tight for inputs, I'll use a single mike on the low end."

Yeager: "With a Leslie, I like the deeper, throatier sound. I put one PZM on the floor, and place another three to five feet above, pointing downward towards it to get more of the room 'swirl.' It's an interesting effect."

Drum Miking

Williamson: "Drum miking depends on the drummer, the sound of his ax, how he plays it, and whether he's hopping or laid back. The Sennheiser 421 has been a pretty good overall drum microphone, and I also use the Shure SM-81 and (E-V) RE-20 quite a

—page 33



The Fostex M505, pictured left, is the first in the company's new line of dynamic microphones. The M505 is designed for vocal applications, has a cardioid pickup pattern and is available in black or gray. List price is \$139.

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condensor microphone is designed for applications requiring the widest dynamic range. With its low self-noise (15dB SPL), the C460B captures sounds from silence to the most demanding sound pressure levels (140dB) with no change in THD even with selectable attenuation. For information on additional unique features, write to us.



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Calrec Soundfield Microphone

The Calrec Mark IV Soundfield microphone, introduced late last year, is a unique system utilizing four condenser capsules mounted in a tetrahedral array, which are remotely controlled by a versatile control unit. The result of the microphone arrangement is a vast reduction of random phase errors and a stereo output which achieves true coincidence—the two signals appear to have originated from the same point in space. In addition, the signal from each of the capsules can be combined to yield an almost infinite variety of polar patterns.

The Mark IV Control Unit (which must be used with the microphone) allows the manipulation of the soundfield in four separate dimensions, referred to as the B-format: the X axis is front and back; Y is left and right; Z is up-down; and W is an omnidirectional composite. The use of the B-format permits the "steering" of the microphone, perceived sonically as rotation, tilting, and moving the mike forward and back. The soundfield steering controls can be used in stereo during a session,



or the signals can be recorded on four individual tracks and be operated during post-production mixing. B-format signals may also be encoded for Ambisonic Surround Sound reproduction with the UHJ system of multichannel broadcasting developed by the BBC.

Independent engineer Rudolph Chalupa recently purchased a Mark IV Soundfield microphone, and used it the first time for a direct-to-two track recor-

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ding of Northwestern University's choir and brass ensemble, performing the Bruckner Mass in E minor at Chicago's Holy Name cathedral.

"I found the microphone to be very useful there," Chalupa explained, "because I could set it up and change the tilt and polar pattern of the microphone by remote control while monitoring. That is a very useful function when you go into a building for the first time and don't know what the sound is going to be like. Since I was using it as a stereo mike, I started with all the soundfield controls at neutral, and then played around with all the polar patterns and angles between them until I got a good sound."

Asked about the mike's sound quality, Chalupa commented that "It is probably the most natural sounding mike I've ever heard, even ignoring all the special things it can do. The unrestrained quality of the high end really appeals to me, and another thing is that you can adjust the polar patterns, even post-session."

The Calrec Mark IV Soundfield microphone is distributed in the U.S. by Audio + Design, of Bremerton, Washington; and by Calrec Audio Limited in West Yorkshire, England. The microphone/control unit, with a 100 meter connecting cable is priced at \$4880.

—George Petersen

—from page 30, *New Techniques*

bit for bass drum. Snare is the most critical and I like to use dynamic mikes, but a lot of time I use condenser microphones on drums if I'm looking for a compressed sound, because the capsules overload pretty readily. For overheads I use a 635-A, a \$65 E-V microphone. Sometimes I've turned everything else off and just used that. If you have a hip drummer with a good stereo cue, who's really into his thing and listens for balance, you can go with just two overheads, a kick microphone, and maybe sneak one in on the snare for presence to override the leakage factor."

Yeager: "I mike a kit with conventional mikes, but in our drum booth I use PZMs overhead because they're very tight and make the sound of the booth quite good. If I want more of a



Drum miking arrangement for recent Ariel session at Tres Virgos: Back-to-back Crown PZMs in "wedge" configuration overhead; Shure SM-57 on snare; AKG 452s on toms; Sennheiser 421 on concert toms; Sennheiser 441 on high hat.

room sound and more separation, I'll use (AKG) 414s. I used two PZMs on the front studio wall for Stewart Copeland during *Rumblefish* for room mikes, because Stewart likes a very live sound and I compressed them very heavily, which is also part of his sound. We used 414s for overheads and the PZMs were 15 feet away, near the ceiling of the live part of the music room."

Nevison: "For kick drum, it depends on what the drum sounds like—whether the front head is on or off, or if it's stuffed with blankets. I get down and listen to it. Generally you get a better sound out of a smaller kick drum—more definition. I don't have any normal range of microphones that I use, but sometimes I use a (Neumann) U-47 on the kick. On the rest of the drums I generally use (AKG) 452s—sometimes I'll use 452s on everything but the kick, although if there are a lot of tom-toms, I'll use (Sennheiser) 441s."

Dorfman: "I've experimented a lot and always come back to this particular set-up: a Sennheiser 421 on kick, sometimes mixed in with an AKG D-12 shoved inside close to the skin. I leave the 421 just peeking inside the

—page 34

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—from page 33, *New Techniques*

drum, about a foot from the skin. That placement is crucial and radically changes the sound of the drum, so I have the assistant move it around while the drummer plays the bass drum. On snare drums I've been using an SM-57 on the top, with another 57, (Sennheiser) 441 or 421 on the bottom. I have a Countryman EM-101, a little cardioid mike, and tape it to the rim of the snare opposite the high hat. I don't print that signal, but use it to trigger my Kepex to turn on the snare mike, which eliminates a lot of leakage. On high hats and overheads, I use 451s with at least a 10 dB pad. I pretty much stick to 421's for tom toms."

String Miking

Schmitt: "On a huge string section, say at Capitol, I'll use (Neumann) KM-86s on the violins, some U-67s on lower strings, or if they have enough U-67s, I'll use them on violins also. Sometimes I'll put a Neumann SM-69 stereo up high if it's a big room. On cello, sometimes I'll use (AKG) 414s. On a solo violin I would use a U-67—it's a good sounding microphone—but it depends on the kind of instrument the guy's got. You can't always do everything the same way."

Gaines: "I just finished a string date for the new Steel Breeze album, and I like to work with Neumann 87s for violins. For cellos I use (AKG) 414s, 451s, 452s, because they seem to have a brighter edge for the attack of the cello. Most of the guys nowadays have direct set-ups for string bass, but if they don't, I'll use an 84 (Neumann) near the bridge or a tube mike farther back."

Kelsey: "I did quite a lot of string miking at Trident. I'd usually use one mike per pair (of players), with U-67 Neumanns on violins, U-87s on violas and AKG C-12As on cello. The AKGs are bright, but they have a lot of bottom end as well. They were one of my favorite mikes at Trident, but I find very few studios in Los Angeles that have them."

Williamson: "For strings, the collaboration of a tube U-47 with a PZM has been an excellent combination. I usually use the PZM up high in our high ceiling room, with the U-47 tighter for a little more rosin. For section miking of strings, I have also used the AKG 414, but it depends on the producer's concept—whether we're going for a lead-type string sound or a laid back sound. This tells me what kind of miking to use, because I try to use no more EQ than I have to. I let the microphone and the position of the microphone do the work."

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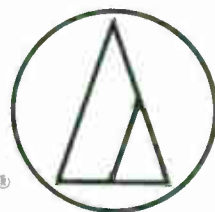
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AUDIO-APPLICATIONS

The secret of MS lies in the unique method of combining the middle and side patterns."

by Ken Pohlmann

Digital recordings are really hot right now—hot in terms of consumer acceptance, and hot in terms of diehard professional skepticism. Some people in the industry are convinced that the Compact Disc is a giant step backward for mankind; they claim that the CD represents a new altered fidelity which is artificial sounding.

However, it isn't clear that such criticism is being directed to the proper cause of their complaints. Before we condemn the new medium, I think we should re-evaluate our recording technique with an open mind toward doing some house cleaning. All of

totally inane technique—by the time the signal appeared on an LP in the record store, we were happy to have boosted the high end. With digital we don't need it to preserve high end through the recording chain, furthermore with more tracks available for overdubbing and good studio acoustic design, we don't need close microphones for isolation. I think it's time to pull the microphones back a little, and rediscover what the art of microphone placement is all about.

One of the most versatile and exacting microphone techniques is the MS stereo pair method in which two capsules are placed coincidentally and their patterns mixed to provide the desired perspective. Stereo pairs have traditionally been used in classical recording to employ amplitude and/or time cues to provide a stereo panorama. A pair of cardioid capsules spaced apart encodes most of its spatial information from the time differences between the two capsules. If we move them closer together to a near-coincident position and angle them apart, both time and amplitude differences come into play. Finally, if the capsules are placed together coincidentally and angled, only amplitude differences from the patterns themselves create the panorama. The latter technique is very appealing because of the absolute monaural compatibility of such a recording. The MS technique is a variation on the coincident cardioid but instead of two cardioids, a figure eight capsule oriented at 90 degrees is used to cover the sides and an omnidirectional or cardioid capsule is used for the middle. When the outputs are combined, the signal appears as if picked up by two crossed cardioids as with the XY technique (see figure one), however the relative balance between the middle and side may be varied to effectively change the angle of the stereo spread, and of course left and right channel outputs may be individually varied to shift the stereo center laterally. If the left and right channels are combined, a single cardioid pattern results (see figure two).

In MS, the side microphone is always a figure eight, but the middle microphone may be either cardioid or

REDISCOVERING

MS

these years, in an effort to persevere through the nonlinearity of the analog recording chain, engineers have been performing all sorts of unnatural acts. For example, they have been pressing cardioid microphones against instruments and vocalists alike to enable transients and high frequencies to cut through the analog medium. Now that we've found a linear, transparent medium, no wonder the music sounds funny—for the first time we're hearing what the inside of a saxophone bell really sounds like. Wow, talk about an unnatural sax sound!

Clearly, the new digital mediums dictate an overhaul of analog recording technique, and I think the place to begin is at the microphone. Specifically, I don't think it's a good idea anymore to always use a cardioid condenser with a jacked-up high end response, in a close microphone application. We should re-examine the specification sheet that comes with the U-87, one of the world's most popular close microphones, and note that it was initially designed for medium distance pick-up—from ten to 20 feet. The rise in its high end response is intended to deal with air absorption; of which there is very little one inch from the lead vocalist's mouth. But that wasn't a

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omnidirectional; the relative balance between M and S determines the resultant pattern. With a cardioid and a 50:50 balance between the figure eight, the result is a pair of hypercardioids angled at 127 degrees. With more M microphone (70:30), two cardioids result and the angle narrows to 81 degrees. With more S microphone (30:70), the patterns are more bidirectional and the angle is 156 degrees. With an omnidirectional middle microphone, the resultant angle is always 180 degrees, only the pattern shape varies. With 50:50, two back-to-back cardioids result, with more M microphone (70:30) a pair of subcardioids result, and with more S microphone (30:70), the result is a pair of hypercardioids. In any case, the center image is always excellent because the M microphone is always on-axis; with the XY technique, both microphones are always off-axis with resulting coloration and instability of the center image.

As we have seen, the secret of MS lies in the unique method of combining the middle and side patterns. The middle microphone is used as a sum signal and the side microphone as a difference signal. When those input patterns are added, a left-facing

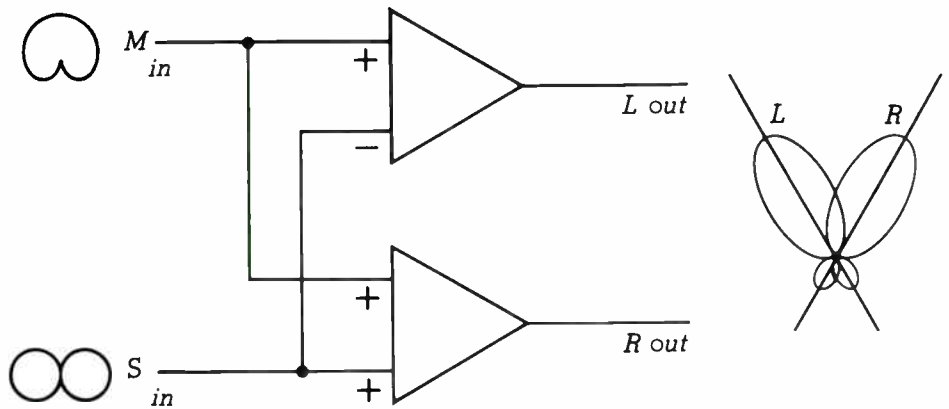


figure one—MS decoder

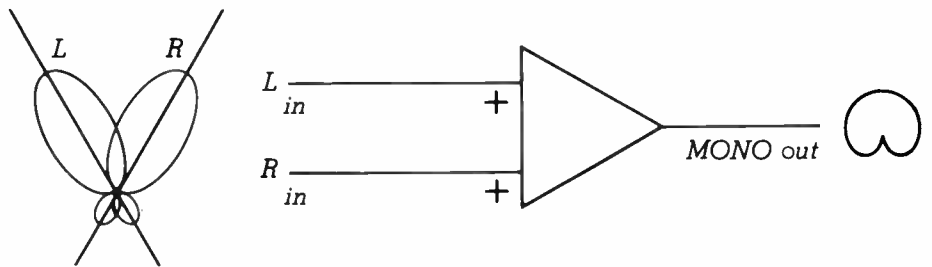


figure two—MS monaural compatibility

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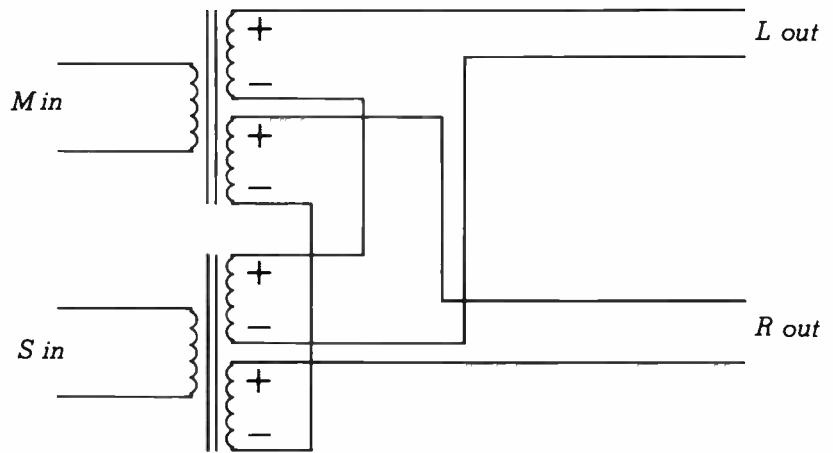


figure three—transformer matrix

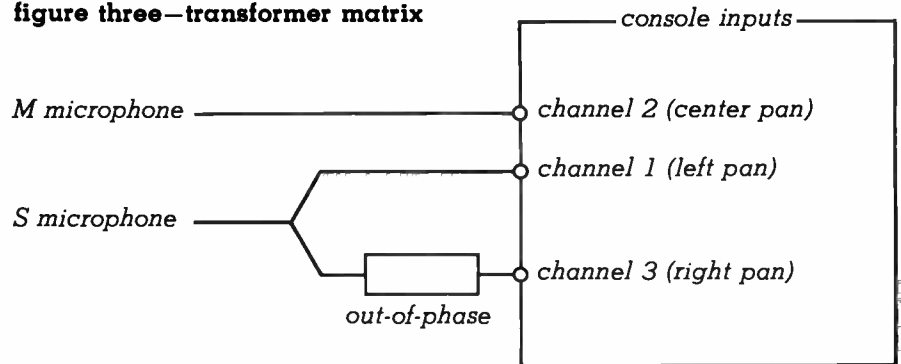


figure four—MS with phase reversal cable

cardioid results ($L=M+S$) and when they are subtracted, an identical right-facing pattern is obtained ($R=M-S$). Fortunately, there are a number of easy ways to accomplish this addition and subtraction. A transformer matrix (figure three) is the classic method; a pair of transformers with dual secondary windings realizes the design. A pair of 600 ohm T pads could be added to vary M and S levels.

Rather than put transformers into the microphone lines, it is better to go to preamps, and use active circuitry to accomplish the matrixing; several manufacturers sell such MS decoders. On the other hand, all consoles already have decoders built into them—provided there is an in-line phase reversal switch onboard, or an out-of-phase cable handy. Figure four shows the hook-up. The middle microphone is panned to the center while the side figure eight is split and null balanced, then the constant polarity signal is panned to the left and the reverse polarity panned to the right, thus accomplishing the MS decoding. There is a possible drawback—the S microphone is seeing half its normal impedance, which might increase noise or distortion. Fader two controls the level of the

middle pattern, and as one and three are brought up, the sound opens out into a stereo panorama. That balance decision is mainly a question of aesthetics and how much out-of-phase information your cutting engineer can deal with. For the uninitiated, it might be wise to look at an oscilloscope.

Meanwhile you can sit back and enjoy some of the best stereo imaging you've ever heard; imaging is phase independent at any angle of horizontal incidence and/or any time or distance variable. If you want to try a different perspective, don't leave your seat—just move faders for a different panorama angle. And if you think MS is good only for orchestras, I wish you'd think again. Consider the M microphone as an on-axis solo microphone, and the S microphone as a null side ambient microphone. You could mix those for a great sounding solo track, or record both microphones separately before decoding and make the direct/reverberant decision in post production, varying it for just the right effect. If you haven't tried MS lately, I think you'll be surprised at the realism it can bring to your tracks. Now that digital is here, we'll have to make that sax sound like a real sax. ■

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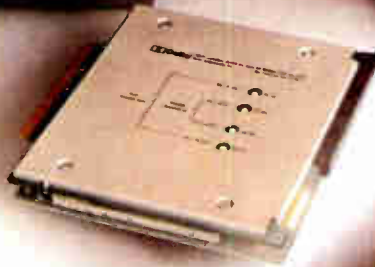
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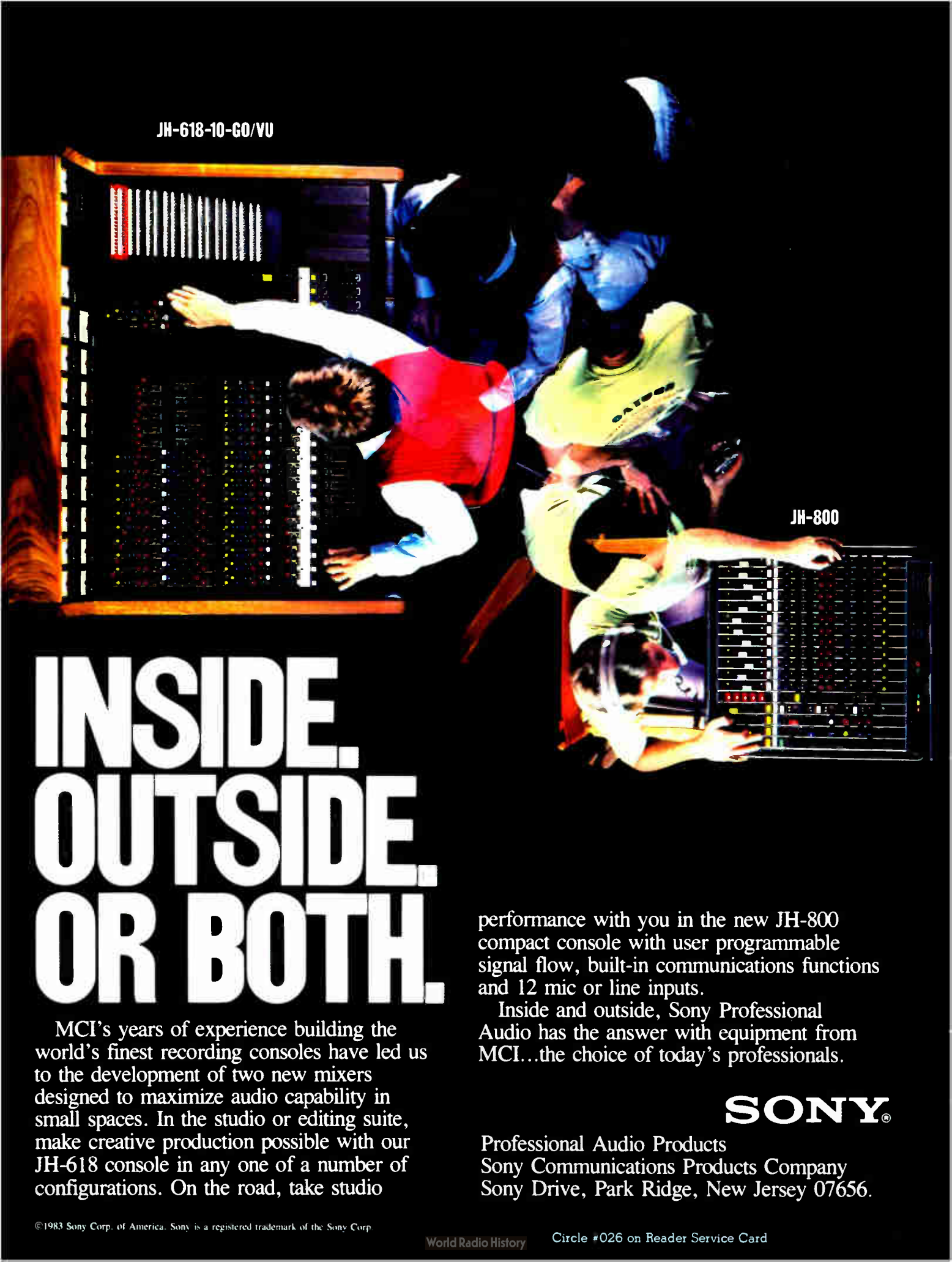


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Southeast Studios

by Margaret Dick
and Stephen Tocknell

On the surface it looks like 1983 was another year of business as usual for Southeast recording studios. Some changed hands and/or names, some added new facilities or equipment, and most just kept rolling along. But 1983 was also a year marked by critical decisions, either to get involved with music videos and digital audio, or to wait for further developments.

Among the major studios in Nashville, there was only one closing. After a rough year, Quadrafonic finally shut its doors and did not reopen after the end of the Christmas holiday season. Its phones were disconnected, and the property was listed with a local real estate agent. A big "For Sale" sign stood waiting to be erected in the studio's front yard.

The old Soundlab studio was sold late in the year to Pat Patrick Productions, and at press time was still waiting for a new name. Kent Madison, the chief engineer there, reports that a 24-track Sound Workshop Series 30 console, an MCI JH 24 machine, and new monitoring equipment have all been installed recently. The monitoring speakers—JBL 4430 biradials—are said to be one of only two pairs of biradials in Nashville. The studio will be used mainly for in-house jingle work by Pat Patrick Productions, although Madison says the studio will also be available for outside work.

The 16-track Cedarwood Sound Studio was retained by the Denny family when Cedarwood Publishing was sold to Mel Tillis Enterprises. The new name for the studio is "The Den (a relaxing place to record)." Its old Suburban console, originally installed at Woodland, still has a surprisingly clean sound, according to at least one industry insider. "Maintenance-wise, it's immaculate," claims John Denny, president of the newly renamed studio. Denny says the relatively small studio is ideal for demos, jingles, and string over dubs, but he adds that he's not looking for custom work.

The Oak Ridge Boys' Superior Sound Studio is now known as Acorn Sound Recorders, Inc. Acorn is just now gearing up to go after outside work, according to Jimmy Tarbutton, the studio manager and chief engineer. As of the end of 1983 the back walls of a new studio were just about to go up.

The new control room, designed by Bob Todrank of Valley Audio, keeps Superior's Studer A80 tape machine, and adds a new Harrison MR4 console, an Otari MTR 12 2-track, UREI 813B time-align monitors, an Eventide SP 2016 digital processor, Kepex units, digital reverb, and several new microphones. The old control room was converted to an isolation booth. [For more on Acorn, see p. 54.]

Sound Stage added a third studio to its operation early in 1983, and was already working to enlarge it before the year was out. When the additional work is complete, the new studio will include two new isolation booths and a new lounge. It's housed in an old building behind Warner Bros., away from the rest of the Sound Stage physical plant. The highly modified MCI 500 series console came out of Sound Stage's Studio A when a new Trident console was installed there. Chief engineer Brent King says Studio A is due for a total renovation soon. "We'll try to get it done sometime this year."

At Studio 19, chief engineer Skip Shimmin plans to handle a steady volume of custom work and jingles with

all new equipment, out of a control room that has been rebuilt and doubled in size. Studio 19 now features an Auditronics 501 console, an Ampex ATR 500 machine, and new UREI 813B monitors. In contrast with most other studios, Shimmin reports that at Studio 19, "Our custom work has been real consistent. We never saw a dramatic letdown."

Although Sound Stage's Brent King believes that custom work is still on the decline in Nashville, most studios are looking ahead to a resurgence in custom sessions, now that the economy is turning around. "I think it's coming back," says Roger Holmes, engineer at Fireside. Holmes reports that custom work accounts for about 20 percent of Fireside's business. The rest is mainly country records and jingles. Holmes says Fireside is off to a slower than expected start this year, after "a real good year" in 1983.

Danny Mundhenk, Bullet's acting studio manager, says the outlook for custom work is good, but adds that he's still waiting to see hard evidence of a recovery.

The jingle business is more definitely on the rise. "In the past two years," says Fred Vail, president and general manager of Treasure Isle, "Nashville has really opened up as a jingle center." Vail says jingle business at Treasure Isle is up by 50 percent over year-earlier figures. Overall, Vail reports that bookings ran 15 to 20 percent above what was projected for last year. The artist list there included T. G. Sheppard, Louis Mandrell, and Johnny Cash.

Bob Todrank, president of Valley Audio, says that the biggest trend he sees in Nashville is toward diversification. "These days, hit records just aren't keeping the studios alive. They have to look at video, film, commercial sound, audio post-production, audio visuals, and remote work." That's

Having opened just over a year ago, business is really picking up at New River Studios, according to general manager Virginia Coyia. The Fort Lauderdale facility, equipped with Neve/Necam II, twin Studer 24 tracks and video sweetening gear, has so far played host to projects for the Bellamy Brothers, IMXS (this Australian band mixed their MTV concert video there), John Denver, and Eastern Airlines.



good news for equipment suppliers, including Valley Audio and Studio Supply, Inc.

Bullet Recording reports that it is adding a video editing suite to its studio, although no equipment decisions have been made yet. "We're hopefully getting in on the ground floor of country music videos," says Danny Mundhenk. In the meantime Mundhenk says Bullet is looking ahead to a busy season of sessions, with Gary Morris and Emmylou Harris among those who have been booked.

Video production facilities are already available in Nashville at Southern Productions, which just added a second shift and a fourth Sony BVH 2000 to its video editing suite, and at Scene III, which has already produced music videos for the Kendalls, the Statler Brothers, and Amy Grant. The Amy Grant video is a 90-minute gospel music concert available in VHS or Beta at Christian bookstores. Scene III is about to open its own TV studio in a converted Nashville movie theater. The Nashville Network, a cable channel and production company, already operates a TV studio in Nashville at the Opryland entertainment complex.

Those already in the video

production business in Nashville say they are looking forward to the entry of additional competitors as the market for Nashville video work continues to develop. "We're not in a position to do all of it," says Mike Arnold, Scene III's chief engineer.

Anticipating a growing demand for remote work in Nashville, Johnny Rosen has added to his fleet of mobile units at Fanta Professional Services. Besides updating the 40-foot trailer he's had for almost 7 years now (with new limiters, vocal stressors, Yamaha NS10M speakers, and video editing equipment), Rosen has entered into an agreement with Criteria Recording Studios of Miami to use their 24-foot truck. The smaller truck is quicker and easier to set up, and costs less to use. It has an MCI Model 636 console and MCI 24-track tape recorder. A third mobile unit is equipped with a console with a "very sophisticated" IFB system. The third unit can go ENG or EFP audio. Although Rosen says he handled fewer bookings in 1983 than in 1982, he feels that 1983 may have been more profitable. He's very optimistic about 1984.

"Last year we had only one truck," he says. "Now we have three."

As others diversify, Tom Semmes is specializing. In 1983 he opened Master Mix, Nashville's first dedicated remix facility. Hank Williams, the mastering engineer there, says Master Mix features a totally transformerless Neumann cutting amplifier, a Zuma computer for pitch-depth control, a Technics quartz locked motor for the lathe turntable, and John Meyer 833 monitors in the mastering room. The remix room features a Neve console with Necam II automation, Otari tape machines, and a four way all-cone speaker system.

The end of 1983 left most Nashville studios still thinking about digital recording equipment. The first two studios to go with digital recorders were Bennett House and The Castle. Both chose the 3M 32-track model. But Norbert Putnam, owner of the Bennett House, says he sent his back because of practically continuous problems with drifting. He brought back Studer-800s to replace the 3Ms, and doesn't plan to buy any more digital equipment until Studer comes out with its own digital machine later this year.

Until then Putnam is trying out

Cheshire Sound Studios: Plenty to Smile About

Fifteen years ago, Tom Wright didn't know he would someday head one of the biggest studios in Atlanta. He was an electronics wizard who had invented a unique burglar alarm system that was so sophisticated that it actually notified the local police station of robberies in progress. This system is now popular nationwide, but in one of those quirks of fate and bad luck, Wright didn't get a patent on it and in the early days of 1967 he found himself out of a job. He had made jazz recordings at local clubs for a couple of years, enjoyed it thoroughly, and so Tom Wright took a gamble that would pay off some years later—he opened a recording studio. "I had no qualifications except that I had made these live tapes," he says, "and I'm a real fast learner." With his great technical mind, he learned about studios on the job, essentially. His many early clients, most of whom were cutting demos, didn't even notice that the studio owner was almost as green as they were.

Wright's 16-track, located behind one of three record stores he owned, grew slowly but steadily,



Cheshire Sound Studios' Tom Wright

helped no doubt by the late '60s, early '70s boom in Southern-based rock and pop acts such as the Allman Brothers, Wet Willie, the Marshall Tucker Band and other groups that made it abundantly clear to teenagers all over Dixie that they, too, could have a shot at the rock big time. In 1970, Wright sold the first facility and the stores and moved to Cheshire Sound Studios' current location. Their Ampex MM1000 16-track gave way to 24-track MM1100 in 1975. The studio also has an Ampex 440, which Wright enthusiastically describes as "the best two-track machine ever built."

Atlanta still does not have a major studio equipped with a digital recorder, and Wright thinks it may still be a ways off: "There has been some curiosity, but I just don't think most studios or clients want to pay the price just yet—at least in this market."

Wright and Cheshire's first big break came when Joe South, who is locally based, cut two albums there. South's name and reputation brought others into the studio, and three years ago Cheshire notched its first gold record—Cameo's "Alligator Woman." Once over that hump, Cheshire swung into full gear and the bookings have been steady ever since. Recent projects have included Peabo Bryson, a group called Atlanta, and the reigning king of funkrock, Prince. Wright says that '83 "was a great year for us and it's looking very good for '84, too."

In addition to running the studio, Wright also has a little manufacturing arm that produces Wright Microphones, which are used extensively in local studios and by the likes of engineer Shelly Yakus (Tom Petty's cohort) and others. Wright says that the advantage of his mike is that it needs very little EQ. "Anytime you put a mike up," he comments, "the first thing you reach for is the high-end EQ. Ours has a rising high-end curve, though."

And so, a decade and a half after he helped revolutionize the alarm business, Tom Wright is applying his technical knowledge to improve the recording industry. Maybe this time he'll get some credit for it. ■

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Sony's 24-track on a trial basis. One of Bennett House's former 3M's has been installed at Treasure Isle. So far Putnam says he hasn't had any drifting problems with the Sony.

Besides the in-again, out-again recorders, Bennett House added a remix room, John Meyer monitors, and new outboard equipment in 1983. According to Putnam, Bennett House was booked solid last year, and even more artists may have to be turned away in 1984. Among those not turned away were Dan Fogelberg (back again in 1984), Janie Fricke, and gospel artist Amy Grant.

At The Castle, Jozef Nuyens, vice president and studio manager, says that along with their 3M digital equipment, virtually all the other hardware there is new as well, including an SSL 4000 ETR mixing console with 56-track possibilities, new monitors with JBL biracial speakers, and a complete new assortment of mikes. The Castle can handle analog as well as digital sessions. While preparing to handle more audio-for-video work using the new SSL board, The Castle keepers are staying busy recording acts like Mel Tillis, Dr. Hook, Jerry Reed, and Johnny Rodriguez.

Digital is still in the experimental stage as far as Harold Shedd, president of The Music Mill, is concerned. He says he's waiting for prices to stabilize, and for an agreement among manufacturers on a standard format. In the meantime, Jim Cotton, the Music Mill's chief engineer, is making digital mixdowns from analog tracks on most major projects, using JVC and Mitsubishi 2-track digital machines. He's

also used the 24-track Sony digital console, and has an eye on the Mitsubishi 32-track model. 1983 was the biggest year ever for the Music Mill. Almost 60 charted hits were recorded there. Besides Alabama, Charly McClain, Mickey Gilley, John Anderson, T. G. Sheppard and many other artists logged in at the Music Mill last year.

At Woodland, 1983 was a year of ups and downs. After a strong start, president Glen Snoddy says "There were a couple of months this Fall when I didn't think things were going well." But December was strong, and the first quarter of 1984 looks good to Snoddy too. Woodland recently recorded a Barbara Mandrell/Lee Greenwood duet that's generated a lot of talk in country music circles. Other recent Woodland visitors include Charlies Daniels, Dave Loggins, and the Oak Ridge Boys.

The Studers at The Sound Emporium were recently converted to transformerless operation, and the consoles were rechipped, but studio manager Jim Williamson says there weren't any big equipment changes there in 1983. 1983 included both the best month ever for The Sound Emporium, in February, and at the end of the year, one of their worst quarters ever, according to Williamson. He blames the troubles of the last quarter on the threat of musician's strike. Like Shedd, Williamson is waiting to see digital equipment become more standardized before he'll be willing to consider investing in it. Lee Greenwood and Don Williams were among the artists who recorded at The Sound Emporium in 1983.

The Eric Martin Band recording Sucker for a Pretty Face last year at Studio One, in Doraville, Georgia. The album was co-produced by Kevin Elson and Rodney Mills.



PHOTO SANDY EINSTEIN



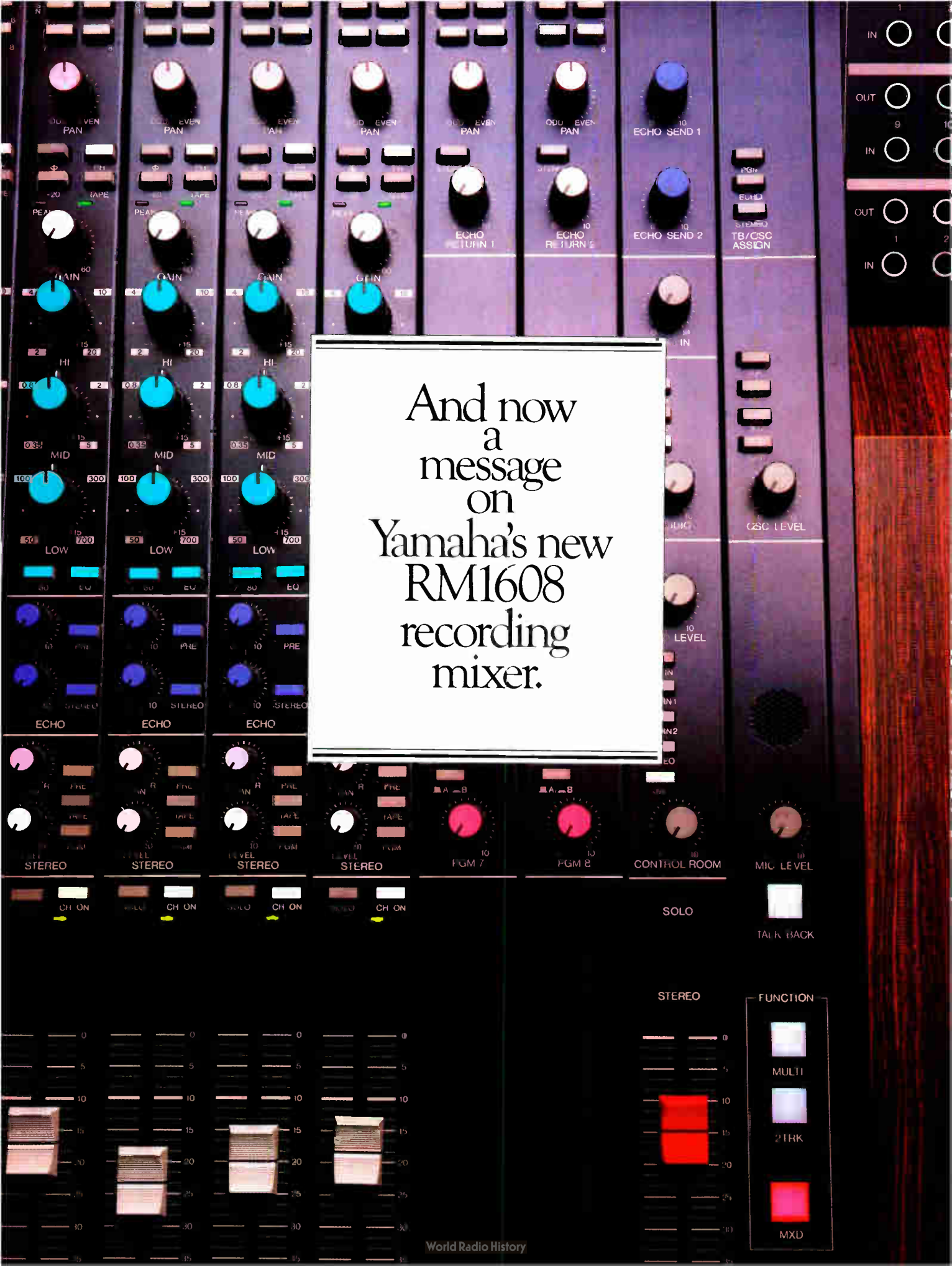
Lynn Fuston, Studio Manager, Hummingbird Studios

The folks at Hummingbird Studios in Nashville are excited these days, Lynn Fuston reports. They are closing their present 8-track and opening a new 24-track with a Trident console in hopes of getting into more album session work. At the same time, the studio will open a new 8-track room (with Otari and Sound Workshop gear) under the Eagle Studio banner. That studio will most likely be used primarily for the jingle work they do. Fuston says that '83 was an "incredible year for us," and that, no doubt, explains the ambitious expansion plans of this up-and-coming force on the Nashville studio scene.

At Crawford post-production in Atlanta, studio manager Steve Carlisle, too, says that '83 was an excellent year for the facility. Carlisle has nothing but raves for their BTX Softouch shadow system, which he says has been perfect for their extensive synchronization work. New purchases at the studio include a Lexicon 224X digital reverb. And Crawford is just about to take delivery on a Neve 8128. The studio primarily does commercial work (recent clients include Coca-Cola, Lockheed and IBM) but they hope to get more into scoring in the coming year.

Conti Production Studio in Edgewater, FL is opening a brand new 40x15x17 soundstage to go along with their video facility. They purchased an MCI JH-24 recorder, perfect for their album, jingle, film and commercial work. Located on three acres near Daytona Beach, the Conti operation is a family affair—for 17 years they've toured as a family act, working with Danny Thomas for many of those years. They're taking the act off the road now, however, to devote more time to developing the studio.

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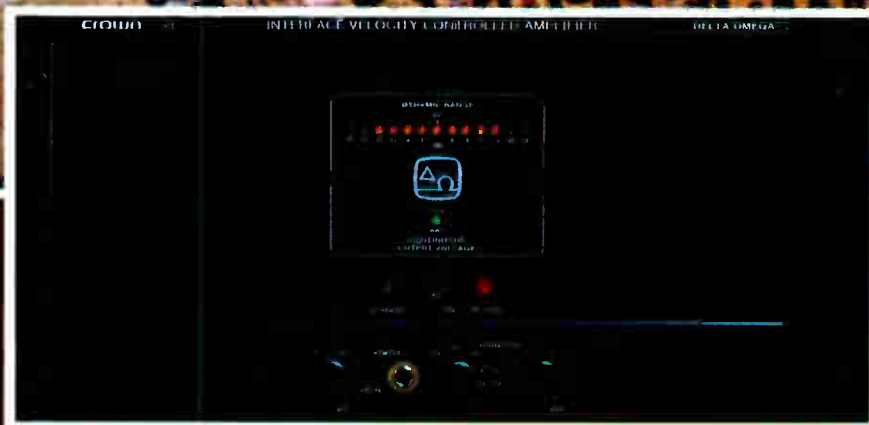


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World Radio History
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Reflection Sound Studios in Charlotte, NC joins the list of studios that are highly optimistic about '84. And well they should be: one of the most popular new bands in the country, R.E.M., has recorded its past two records there. *Murmur*, the group's '83 release, was almost universally well-received, and with the release of R.E.M.'s next LP in April, Reflection is certain to get another shot of good publicity. In addition, the band shot a video for their first single from the new album in Reflection's large Studio A. Other recent clients at Reflection, says Cliff Atchison, have included the locally hot Spongetones, and the Jamaican



Reflection Sound, Studio C

Are You Ready for Twitty City?

by Rose Clayton

Even a person who is not a country music fan can name at least a half dozen artists credited with popularizing that particular musical genre. Somewhere close to the top, along with the other greats, stands Conway Twitty.

Twitty has earned that enviable spot not simply by enduring a recording career that is approaching its 28th year (by the age of 12, Twitty had his own radio show, featuring his first band), but by being the most consistent hit maker on the country music singles record chart—46 Number Ones—more than any other artist. And seventeen of those chart topper's list Twitty as a writer.

Twitty has been successful for many reasons—he is obviously talented, he has been able to anticipate trends, and he has remarkable business savvy. Twitty's business ventures include a restaurant, travel agency, booking agency (in partnership with Loretta Lynn), gift shop on Music Row, and music publishing companies. He is majority stockholder in five minor league baseball teams, (only an Army stint kept him from being a ball player himself), including the Nashville Sounds, one of the most successful minor league teams in America.

His most recent venture, however, may prove to be the most successful yet for the recording giant. Anticipating the population shift to Hendersonville, a suburb north of Nashville's Music Row and its Opryland USA theme park, Twitty constructed a unique nine-acre complex called Twitty City. It is the first phase of Music Village USA, where

other country entertainers are currently constructing establishments of their own.

Since it opened in May 1982, 600,000 fans have visited Twitty City, where Twitty's residence, his children's homes, his business offices, his showcase museum, and a pavilion and gift shop are located, literally, in his front yard. It is an entertainment center that depicts Twitty's life story through an effective blend of multimedia presentations and authentic mementos. And so far, a quarter-million fans have paid the price (from \$2 to \$5) to see Twitty City's show.

As if all that wasn't enough, Twitty, being the entrepreneur that he is, had a vision for utilizing the plant to its maximum, even attracting visitors during the winter season, when the tourists are not about. His strategy has drawn 46,000 visitors in just two years to his Christmas fantasy.

Christmas at Twitty City (from Nov. 25-Jan. 1) finds 60,000 holiday lights glittering throughout the grounds amid giant candy canes and lollipops, animated elves, a life-size nativity scene, Santa Claus and live reindeer, and even snow (if the weather's below freezing) from Twitty's own snow guns.

As a spin-off of Twitty City's Christmas, Twitty spent 17-months producing a *Merry Twistmas* LP, featuring his emblematic yellow-feathered Twitty Bird, making his singing debut with his other friends, (and Twitty himself, of course), from fantasy land. Plans are already underway for a television special slated for Christmas '84 based on the album's concept.

Today Nashville; tomorrow the world? ■

band Awareness Art Ensemble. The studio continues to add to its collection of state-of-the-art equipment: recent acquisitions include a Lexicon 224X digital reverb, an MCI JH-45 with SMPTE capability, and a JH 636 mixing console.

According to Ardent Recordings owner John Fry, his Memphis-based studio "didn't really get hit too hard by the recession to begin with, but our business has picked up." He suggests that one reason for this is that Ardent has managed to maintain a good mix of different kinds of clients—acts on major labels, smaller local performers, plus, since they started a video production arm, commercial work. Every Z.Z. Top album since that group's second disk has been recorded at Ardent, so the studio enjoyed the nearly triple-platinum success of the group's latest LP, *Eliminator*. Other recent clients include The Bar-Kays, contemporary Christian performers Farrell & Farrell and Mylon Lefevre. They have also done video work for Johnny Holiday, who Fry describes as "sort of a French Elvis." The most important recent addition to Ardent's audio studio has been a Fairlight, which Fry says is "a super machine that has been tremendously useful on a wide variety of projects."

At Mastercraft, also in Memphis, co-owner and engineer James Craft, Jr. is enthused over that studio's conversion of a former control room and lounge into a studio that houses a JH-24, an upgrade from the studio's 16-track capability. Craft was excited that the first couple of months of '84 have shown a marked increase in bookings, primarily from gospel and contemporary Christian clients. One of the biggest bands in those circles, the Degarmo-Key Band, is among those recording at Mastercraft.

Gary Ham, studio manager of Atlanta's Crescendo Recorders, says that while '83 was a great year for that studio, "1984 is looking like it'll be ten



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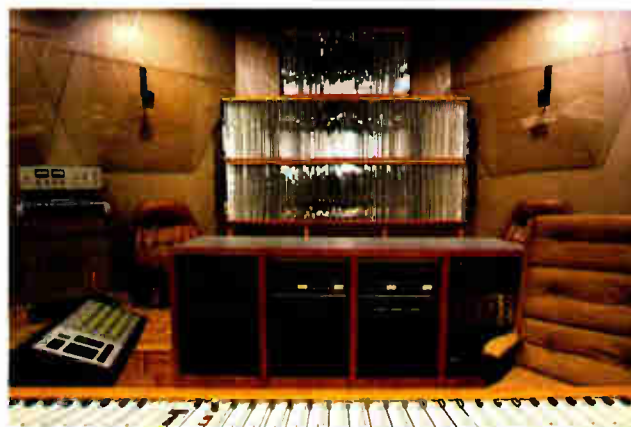


Jimmy Tarbutton, Chief Engineer

'Come On In'

When the Oak Ridge Boys wanted a new control room for their Acorn Sound Recorders in Hendersonville, Tn., they entrusted their chief engineer, Jimmy Tarbutton, with the responsibility of contracting the best services available for the job. He chose Bob Todrank and Valley Audio.

"I wanted the latest in control room technology with a large functional space. Since we were building from the ground up, it had to be right. I chose Bob to completely design the room and oversee the construction. I wanted Valley Audio's technical services to do our equipment interface because of their more than ten years' experience in audio installations, and selected the new Harrison MR-4 32-24 console based on its flexibility and innovative design. We then selected a long term associate, Jim Aanderud of Viking Enterprises as our contractor."



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Todrank says, "Since Jimmy wanted a large, open room with a very "live" feel, I designed a control room incorporating the latest *LEDE (Live End/Dead End) concepts. I chose a rear wall diffuser system designed by Peter D'Antonio of RPG Diffusor Systems, Inc., to accomplish a widely dispersed sound field around the console. We built and installed the very first of its kind anywhere and I was thrilled with the results. I also used our TECRON TEF equipment to place the final room interior treatments. The proper implementation of the LEDE design theory along with the use of on-axis monitoring, correct room geometry and accoustical equalization (selective diffusion/reflection/absorption techniques) has resulted in a room I'm very proud of."

The Oaks are proud of it too. Duane Allen's reaction... "It's like a dream come true."

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The Oak Ridge Boys



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times better!" The studio has been attracting a number of top soul performers, including Major Lance and Eddie Kendricks, who recorded his *My Eye's On You* LP there. Sam Dees was in the studio during January. New purchases include a Studer A80 Mark III, JBL 4313 monitors, an AKG mike and "a bunch of PZMs." "The whole Atlanta market seems strong right now," Ham says. Crescendo is also benefitting from its business affiliation with Henderson-Crowe, the video post-production company which is a steadily growing concern in that area.

Ochoa Studios in San Juan, Puerto Rico have been reaping the benefits from their association with that island's best-known export—the pop group Menudo, who recorded vocal tracks at the studio. (They record their main tracks in Spain, for some reason.) According to Tony Ochoa, "1983 was up over '82 for us, but we haven't been exempt from the problems the entire industry faced." Although big names like Julio Inglesias and Al DiMeola have worked there, Ochoa draws most of its business from local groups "and we get a surprising number of clients from the Virgin Islands, too," Ochoa says. Among the more popular local performers to use Ochoa recently are Danny Rivera, Sophy, and Wilkins. Additions to the studio lately include a Simmons drum machine and Orban parametric equalizers. Ochoa is the oldest studio on the Island.

A new business in the region that is certain to become a power in the near future is Mobile Audio, based in Rome, GA. Owned by Rick Norwell, the company is jumping into the highly competitive mobile recording market with a formidable weapon: a custom-designed 45-foot air-ride trailer that was, unlike most mobile units, designed and built to be a recording facility. Norwell says that the trailer is equipped to handle both audio-only and audio-for-video productions. Among the state-of-the-art equipment housed in this mobile monster are a Sound Workshop Series 34 console, two Otari MTR-90 24-tracks, and MTR-12 4-track that is used primarily for synchronization work, an MTR-12 2-track, and a BTX Softouch synchronizer. (They had the second one made.) "It's a Hyatt Regency!" Norwell enthuses, likening his mobile studio to the elegant and innovative hotel chain. Included in the trailer is a 120 sq. ft. lounge that not only serves as a good hang-out place for friends and family of artists utilizing the remote facility, but a video monitoring lounge and it can also be used as an overdubbing studio. The trailer was completed in early December and since then, Norwell and Co. have been breaking it in, perfecting it and gearing up for a number of possible projects that look to be coming their way. ■

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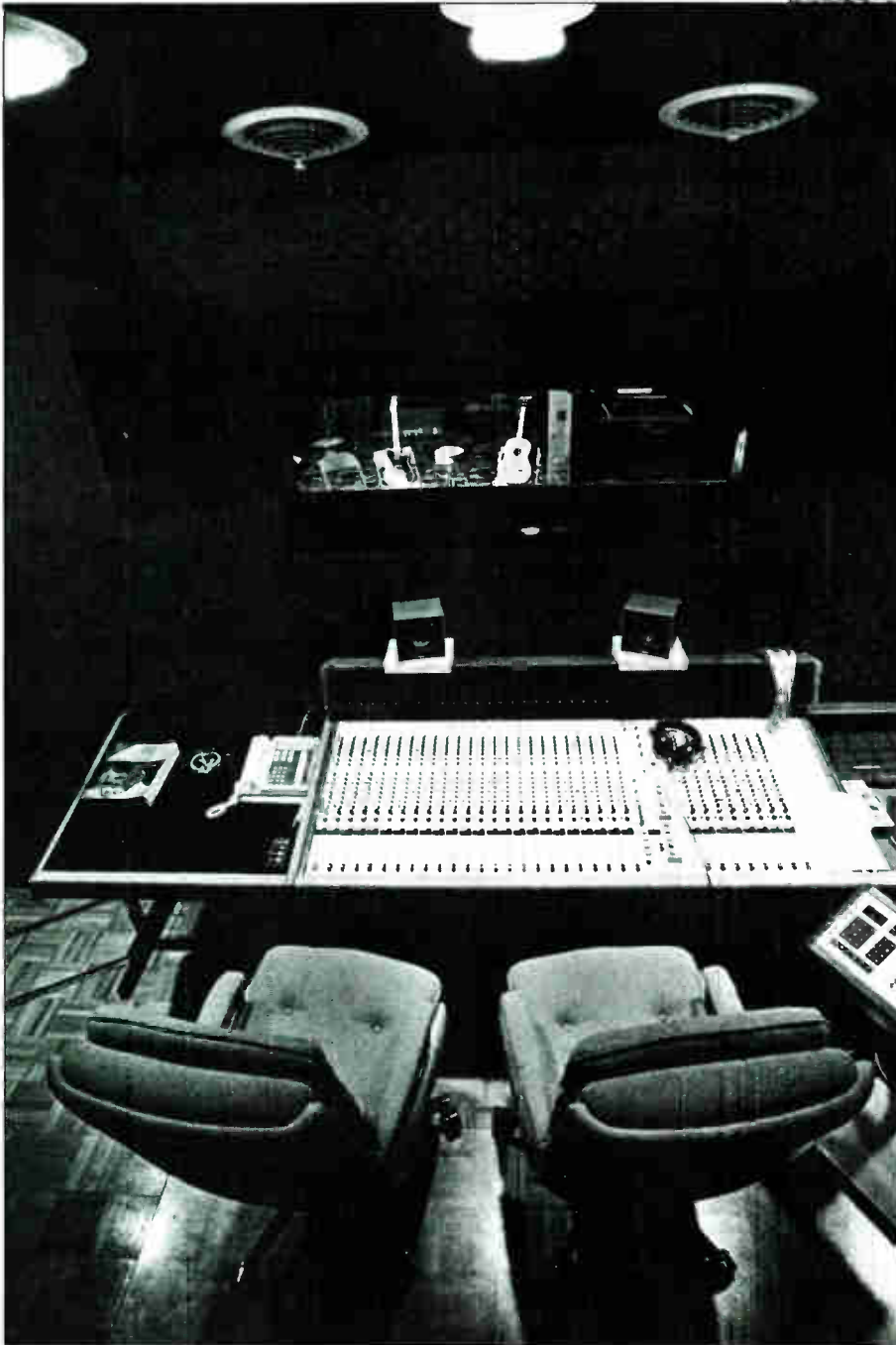
Duane Allen of the Oak Ridge Boys and (left) the Acorn Sound Recorders Studio.

Acorn Studios

by Rose Clayton

During the past decade, the groundwork has been laid for the construction of Acorn Sound Recorders, Inc., yet another planting in the Oak Ridge Boys' bountiful empire which already includes two radio stations, two production companies, a publishing firm, and numerous other offshoots. Nestled in a sprawling complex in Henderson, Tennessee, a suburb of Nashville, Acorn operates under the cover of Oak Ridge Boys Music Group. Originally, the studio was called Superior Sound. That was when it was owned solely by the ORB's Duane Allen. About a year ago, Allen sold equal shares to the other Oaks—Joe Bonsall, William Lee Golden, and Richards Starban. Working together, the group formulated plans to create a totally new studio that would be up-to-the-minute state-of-the-art.

Acorn is more than an investment in the future of the Oaks' production and publishing entities; it is a vital component in the growth of the group



itself. "The most important thing in a person's career is a hit record," Allen explains. "For a writer to be comfortable with his creative gifts there must be a stability that a studio brings, so that once his ideas are completed in his head, there is a place he knows he can go into and be able to hear them back as well or better than he hears them in his head."

Obviously the Oaks know what it takes to make hits. The foyer of their facility has a nook where numerous awards and trophies are displayed, and the walls of the reception area are covered with gold nuggets—eight albums to be exact. Even more enviable is the platinum replica of their *Fancy Free* LP and platinum single for "Elvira," the lady that made the Oak Ridge Boys a household name.

"We like to think we have a place where we can go and experiment with creative ideas," says Allen of the studio. "We're forced to come up with creative ideas, and we're glad to be working for an audience that demands it."

"It's good to have a place to go without a time clock. The clock is not the thing; the music is. I've learned to live with the system, but it does affect you. If it takes longer to get it done, I just pay for the extra time. But, you have to stop and make that decision."

Although Acorn Sound will feature the latest technology, Allen does not foresee the Oaks recording their tracks in their own studio. When it was operated as Superior Sound, the group cut some albums there, as well as some commercials and tracks for TV appearances. Other country greats, such as Johnny Cash and Conway Twitty, also recorded there in the '70s. But Allen says he prefers to use a studio other than their own for personal reasons. He cites the example of a drummer who once kicked in a drum during a session. "It created a negative air," Allen explains. "When things don't go right in our studio, I take it personally. I don't want my voice to sound like, 'Hey, someone just kicked in my drum.'"

What the Oaks do plan to do in the studio, besides honing their craft, is work with potential artists in their publishing company (Silverline-Goldline) and their production companies (Oak Ridge Boys Productions and Rockland Roadhouse Productions). Expectations will be high, since three of their artists have already landed major record deals: Paulette Carlson (RCA), Larry Willoughby (Atlantic), and Michael Foster (MCA).

Since the Oak Ridge Boys spend most of their time on the road, Acorn will also be available on a rental basis to serve a community that is quickly becoming as well-known to tourists as Music Row. The administra-

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The Oak Ridge Boys (l to r): Joe, Duane, Bill, and Richard.

tive offices and museums of Johnny Cash and Conway Twitty are just minutes away from Acorn; and under construction in that same vicinity is Music Village, U.S.A., which will house the enterprises of other country music celebrities, including Tammy Wynette and the late Marty Robbins.

"One of the major reasons for doing this whole thing was to have a studio close to home," says Jimmy Tarbutton, Acorn's general manager and chief engineer. "Everybody associated with the Oak Ridge Boys' organization lives here in Hendersonville. A lot of artists, producers, and musicians have moved out here. We wanted to provide a good facility, close to home, that's competitive with the ones in town."

Tarbutton says he worked step by step with studio designer Bob Todrank, president of Valley Audio in Nashville, to mold Acorn's control room from Superior Sound's shell. "We wanted a large room with space to work," says Tarbutton. "The trouble with our other control room was that it was too small to support low frequencies. We wanted optimum total frequency response."

The focal point of the new control room is the Harrison MR-4 24 track recording console. "We chose the Harrison," Tarbutton explains, "because they make a console that's not astronomically priced and has all the flexibility we need. We felt that since they are local, it would give us a more personal relationship with them if we needed service or an update of any kind."

"It's capabilities are far superior to what we're accustomed to. It's like going from the Stone Age to High Tech. Superior Sound was state-of-the-art at the time it was built, but things have advanced so quickly that there's no comparison with now."

Brad Harrison, the company's venue productions representative, was,

coincidentally, a freelance maintenance engineer at Superior Sound after traveling with the Oaks for three years as head sound mixer.

According to Harrison, the MR-4 was built from the ground up to be a sonically superior machine. It utilizes thick-film, laser-trimmed resistor networks to increase the efficiency of its construction, as well as the long-term stability of the critical circuits. The use of these laser-trimmed networks, Harrison says, insures that the initial balance of the amplifier is maintained without the necessity of adjustment, throughout the life of the mixing desk.

"These thick-film, laser resistors also make the tolerance within the networks so tight that we can get better signal performance," Harrison emphasizes. "The new series meets and exceeds any digital specifications. It also incorporates new grounding technology, making it the latest generation of high-speed, low-noise, low-distortion amplification."

In considering other equipment for the renovation of the control room, Tarbutton evaluated the strengths of each piece on hand. "Obviously, the Studer tape machines [an A-80, 24-track and B-67, 2-track recorder] were just fine. They'll probably last for years and years," says Tarbutton. "We added an Otari MTR-12 2-track recorder. We kept some of the outboard equipment and added a great deal more."

Outboard gear includes: dbx noise reduction, Lexicon 224-X digital reverb, Lexicon Super Prime Time, Kepex II noise gates, Eventide digital processor/reverb, dbx 160 compressor/limiters, Eventide harmonizer, ADR stereo equalizer, and White graphic equalizers.

Monitors are UREI 813 Time Align, Auratones, Eastern Acoustic Works MS-50, and JBL. Power amps

are Crown and Hafler. An assortment of microphones include Neumann, Studer, Sennheiser, AKG, Sony, Shure, and EV.

"I tried to purchase equipment that would give us a good overall package with the budget that was available," says Tarbutton. "If a producer comes in and wants something special, it can usually be rented."

Acorn has a LEDE (live end/dead end) control room constructed to advance a theory conceived and touted by Synergetic Audio Concepts in California. "It's a totally new idea and definitely a radical departure from the old theory," says Todrank. "It is a whole rethinking of the design of a control room. There are actually two structures in the control room. There is an outer isolation structure around the control room as you see it. The interior is combined with the outer layer to create a better acoustic structure. The inner walls totally float, isolated on rubber."

Covering the walls that present six angular surfaces are textures carefully selected to enhance the sound. "We used Sonex [for the three forewalls] because it's highly absorptive," says Todrank. "It's fairly expensive, but it has a nice finish while being a highly-effective absorptive material."

"The center of the rear wall will contain a four-octave diffuser system," he continues. "The sides of the rear wall will get reflector panels that are set on mounts that can be aimed and focused during the set-up to aid fine tuning. This is something that most other rooms cannot provide."

From an engineer's standpoint, Tarbutton sees two features of Todrank's design that he considers real pluses. "Bob made the outboard gear rack in wood to avoid the grounding problems of metal. He located it directly behind the console where everything can be reached from the chair. It even has drawers at the bottom for storage." The top also doubles as a coffee table for those who will be seated a tier above, observing the action.

"The control room monitors are located at ear level. They are fitted into boxes, recessed in the wall, that are just large enough for them to slip into. Then they are mounted on springs in concrete that totally separates them from the walls. The vibration is transferred into the concrete that's not going to move."

"The main thing I like," concludes Tarbutton, "is the way it sounds even as it sets now. It's a good, solid, tight sound. The control room is so solid virtually nothing moves, even when the volume is at ear-splitting levels."

Acorn Sound can't get a better compliment than that. ■

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All studio information listed has been supplied to the Mix by studios responding to questionnaires mailed in November, 1983. People, equipment and locations change, so please verify critical information with the studios directly. The Mix does not take responsibility for the accuracy of the information supplied to us by the studios.

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The Orban 424A Gated Compressor/Limiter/De-Esser.

Explained by us.

GAIN REDUCTION: Shows gain of the VCA (0 to -25db). Shows the effect of any control but OUTPUT TRIM and DE-ESSER.

INPUT ATTENUATOR: Adjusts drive to compressor/limiter, determining amount of G/R.

ATTACK TIME: Adjusts speed of response to input level increase. Fast: Peak limiter & compressor. Slow: Compressor only.

GATE THRESHOLD: Determines the input level that causes "gating"; VCA gain then moves slowly to IDLE GAIN setting.

OUTPUT TRIM: Adjusts VCA gain to control or prevent clipping as required. Effect is seen on VCA LEVEL meter. Not an Output Attenuator (Output Attenuator is located on rear of unit).

DE-ESSER OPERATE/DEFEAT: Activates or defeats de-esser control circuitry.

COUPLED/INDEPENDENT: Couples A and B gain and gating circuits for accurate stereo tracking.

COMPRESSION RATIO: Adjusts compressor from "looser" (2:1) to "tighter" (∞ :1).

RELEASE SHAPE: Linear: Compressor releases at constant rate. Exponential: Release starts slower, then accelerates.

VCA LEVEL: Shows peak operating level of VCA. Clipping occurs above approximately +2.

IDLE GAIN: Presets VCA gain when in gated condition or anytime unit is DEFEATED. Used for smoothing out transitions and for decreasing audible action of compressor.

OPERATE/DEFEAT: Activates or defeats gain control circuitry. Does not bypass any circuitry.

DE-ESSER SENSITIVITY: Adjusts threshold of de-essing. De-essing increases as control is turned clockwise.

Also available as a single-channel unit: Model 422A. Ask your dealer for a detailed brochure.

Reviewed by others.

"In addition to the measured performance being very good the subjective impressions of the unit were excellent. This product has many novel and highly practical features all of which are quite simple to use but need not be used if simplified operation is required. Overall a very good compressor/limiter, well made and easy to service."

Hugh Ford, *Studio Sound*
November, 1983

"Overall, the 422A/424A should prove to be a system of diverse capabilities, able to tackle the widest variety of material—once the user masters its operation. In addition, its solid construction and excellent service documentation should insure years of reliable operation. Such qualities are typical of timeless designs that tend to retain their value long after the accountants have depreciated them away."

John Monforte, *db Magazine*
July-August 1983

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••FXL SOUND STUDIOS INC.
also REMOTE RECORDING
7766 NW 44 St., Sunrise, FL 33321
(305) 741-7766
Owner: Frank X. Lovvato

••G.E.M. RECORDINGS
also REMOTE RECORDING
307 Southwood Dr., Columbia, SC 29205
(803) 799-8235
Owner: Dr. G.R. (Dick) Goodwin and John V. Epps
Studio Manager: John Epps

••GIZMO RECORDING, INC.
Vienna, VA 22180
(703) 938-6692
Owner: Bob Durbar
Studio Manager: Bob Durbar

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

••HAPPY FACES PRODUCTIONS
also REMOTE RECORDING
419 Lanier Lane, Winter Haven, FL 33880
(813) 324-3487
Owner: Charlie Massey
Studio Manager: Charlie Massey

••HIDDEN MEANING STUDIOS
also REMOTE RECORDING
1134 Watson Blvd., Warner Robins, GA 31093
(912) 923-5507 or 922-8229
Owner: David Norman
Studio Manager: David Norman
Engineers: David Norman, Maurice Owens, Leonard Glynn, Meehan Rzepcki
Dimensions of Studios: 22 x 24
Dimensions of Control Rooms: 12 x 22
Tape Recorders: Tascam Model 88 8 track, Tascam Model 32 2 track, TEAC 3340S 4 track
Mixing Consoles: Canary 32 x 8 Soundcraft 12 x 4 Yamaha PM 700 & Yamaha EM 300 12 x 4
Monitor Amplifiers: Yamaha 2200, (2) BGW 750s, (6) Crown DC 400As & D 75s
Monitor Speakers: JBL 4311s, Custom MR O 52T triamp Echo, Reverb, & Delay Systems: Eventide H 910 Harmonizer, Lexicon Super Prime Time 97, EXR Exciter, Sound Workshop vocal doubler, Bamp reverb Electro-Harmonix flanger
Other Outboard Equipment: dbx 150 noise reduction, dbx noise reduction (8-channels), (2) Soundcraftsmen RP 2215 EQ, Furman, Crown VFX 2A Active Crossover, (2) Furman 3-way stereo 5 way mono active crossover, 16 channel remote split snakes Yamaha active parametric preamp & crossover
Microphones: Sennheiser MD 421s, Sennheiser MD 441s, Shure SM 57s, SM 58s 565-DS 566s, 588s, 65s, Electro-Voice PL 95s, AKG 414
Instruments Available: Hammond M-101 organ, 2 MiniMoogs, Lab Series, Ampeg V 4 and Acoustic 370 amps, Slingerland drums, Fender Strat, Congas, timbales, Korg Poly 61, Fender Rhodes 73, Ovation 6-string acoustic, Wuritzer electronic piano, Wuritzer acoustic piano, Octobans, windchimes, Conn Strobotuner Leslie cabinet (RV-122), Rickenbacker 4001 bass, Oberheim DMX drum machine (extra), live sound reinforcement system
Rates: Call for rates.

••HTI (Harrison Tyner International)
P.O. Box 25083, Nashville, TN 37202
(615) 833-6693
Owner: Sue & Harrison Tyner
Studio Manager: Harrison Tyner

••HOFFMAN MUSIC
also REMOTE RECORDING
1723 W. Innes St., Salisbury, NC 28144
(704) 636-5670
Owner: Sandy Hoffman and Mark Hoffman
Studio Manager: Mr. Sandy Hoffman

••HORIZON EIGHT TRACK RECORDING ARTS STUDIO
170 Kenner Ave., Nashville, TN 37205
(615) 297-6210
Owner: Richard Owens
Studio Manager: Richard Owens

••HUMMINGBIRD RECORDINGS
113-A Nelson Ave., Melbourne, FL 32935
(305) 259-6576
Owner: John Foley
Studio Manager: John Foley

••ACCURATE RECORDING
also REMOTE RECORDING
952 Poplar Dr., St. Albans, WV 25177
(304) 727-4008
Owner: Bill Stevens
Studio Manager: Bill Stevens

••ACOUSTIC CREATIONS
6307 Jasper Rd., Greensboro, NC 27409
(919) 294-1785
Owner: Kip Williams
Studio Manager: Kip Williams

••ALPHA RECORDING
also REMOTE RECORDING
207 South Mulberry, Elizabethtown, KY 42701
(502) 765-7899
Owner: Alpha Recording Inc
Studio Manager: Jim Cottrell

••AUDIOIMAGE RECORDING
also REMOTE RECORDING
210 East Franklin St., Richmond, VA 23219
(804) 644-7700
Owner: AudioImage Productions, Inc
Studio Manager: John

••BARNEY-CLARKE SOUND
832 "B" Sutton Hill Rd., Nashville, TN 37204
(615) 383-0416
Owner: B.C. Ink
Studio Manager: Clarke Schleicher

••BONNER JINGLES
1110 16th Ave. So., Nashville, TN 37212
(615) 259-4024
Owner: The Franklin Group
Studio Manager: Jerry R. Atrup

••CARSON TOWNE RECORDING STUDIO
also REMOTE RECORDING
P.O. Box 5485 Old Wilkesboro Rd.,
Statesville, N.C. 28677
(704) 872-1619
Owner: Mike Daniels and Kent Wooten
Studio Manager: Mike Daniels and Kent Wooten

••CATFISH BAY SOUND STUDIOS
also REMOTE RECORDING
111 17th Ave. South, Nashville, TN 37203
(615) 244-8137
Owner: Charles Emery
Studio Manager: Chuck Emery

••CLOUD NINE RECORDING
also REMOTE RECORDING
1221 Baker St., Mt. Dora, FL 32757
(904) 383-1888
Owner: Steven A. Farrell
Studio Manager: Sharon O. Farrell

••COLEY RECORDING STUDIO
10 Harris St., Carrollton, GA 30117
(404) 834-0616
Owner: Phil Coley
Studio Manager: Phil Coley

••COMMERCIAL MUSIC PRODUCTIONS, INC.
also REMOTE RECORDING
P.O. Box 2703, Columbia, SC 29202
(803) 732-0979
Owner: Dr. G.R. Goodwin and Dr. Richard L. McMahan
Studio Manager: J.V. Epps

••COTTON PATCH
Nashville, TN 37211
(615) 832-0111
Owner: Jack Cotton
Studio Manager: Mike Reeder

••EAGLE SOUND STUDIO
50 Music Square W., Suite 801, Nashville, TN 37203
(615) 320-7161
Owner: Bob Farnsworth
Studio Manager: Lynn Fuston

••EARNIE EARNEST PRODUCTIONS
932 Shirley St., Smyrna, GA 30080
(404) 432-3875
Owner: Earnie Earnest

••ESSENCE RECORDING
1663 Raines Rd., Memphis, TN 38116
(901) 396-3582
Owner: Essence Recording Inc
Studio Manager: Vic Miller

••404 MUSIC GROUP
also REMOTE RECORDING
941 Cherokee Rd. S.E., Smyrna, GA 30080
(404) 432-3043
Owner: Don Bryan and Ron Stanley
Studio Manager: Ron Stanley

••FRESH TRACKS RECORDING STUDIO
1748-B Pocahontas Trail, Williamsburg, VA 23185
(804) 253-2992
Owner: Cabot Wade and Dick Smith
Studio Manager: Dick Smith

Engineers: John Foley
 Dimensions of Studios: 12 x 15 x 8
 Dimensions of Control Rooms: 16 x 14 x 8
 Tape Recorders: Fostex A-BLR 8 track; Fostex A-2 2 track;
 AKAI M-9 ¼ track; Realistic cassette
 Mixing Consoles: Fostex 350 8 x 4 x 2, Tapco 6 channel
 Monitor Amplifiers: Pioneer SX-550
 Monitor Speakers: Ohm, Magnavox
 Echo, Reverb, & Delay Systems: Fostex 3050 digital delay,
 Fostex 3180 reverb
 Other Outboard Equipment: Fostex 3030 stereo graphic EQ,
 Fostex 3070 compressor/limiter, Rane HC-6 headphone console,
 Dolby noise reduction, Fostex 3010 Patch Bay, dbx noise reduction,
 turntable
 Microphones: Shure SM57s, 58s, PE 54D, Audio-Technica Pro
 Five Hs, Pro Four Ls, AKG D200 E, D200 E1, Electro-Voice
 SR0-671
 Instruments Available: Korg Poly-61 synthesizer, acoustic
 piano, Ibanez artist electric guitar, 6 and 12 string acoustic
 guitars, classical guitar, Fender precision bass, 5 piece drum set
 with roto-toms, chimes, and cowbell Korg KPR-77 programmable
 rhythm machine, Marshall 50-watt amp, Peavey Studio Pro 40,
 Kustom bass amp, various effects pedals, alto and tenor sax-
 aphones, trumpet, trombone, flute
 Rates: Call for rates

HUMMINGBIRD RECORDINGS
 Melbourne, FL



• **IDH RECORDING**
 also **REMOTE RECORDING**
 6804 Starkenburg Lane, Memphis, TN 38115
 (901) 795-5048
 Owner: Israel Hill
 Studio Manager: Israel Hill

• **J.B.G. AUDIO PRODUCTIONS**
 St. Rose, LA 70087
 (504) 468-9200
 Owner: Bob Himmaguch
 Studio Manager: Glen Himmaguch

• **KENTUCKY DEPT. OF THE ARTS,
 AUDIO-VISUAL SERVICES**
 Berry Hill Mansion, Frankfort, KY 40601
 (502) 564-8076
 Owner: Kentucky Dept. of the Arts
 Studio Manager: Fred Gooding

• **KEY RECORDING STUDIO**
 2969 Edison Ave., Jacksonville, FL 32205
 (904) 388-TAPE
 Owner: John L. Key II
 Studio Manager: Laura Lacagnina
 Engineers: John Key and independents
 Dimensions of Studios: 19 x 20 x 10 (main studio), 8 x 8 x 10, 7
 x 12 x 9, 3 x 8 x 10
 Dimensions of Control Rooms: 9 x 14 x 10
 Tape Recorders: Fostex A-2 2 track, A-BLR 8 track, Sony
 TC399
 Mixing Consoles: (2) Tascam 10 Modified 24 x 8
 Monitor Amplifiers: Roland SPA 120, Technics SUV 303
 Monitor Speakers: Altec-Lansing Model 3, Auratones
 Echo, Reverb, & Delay Systems: LT Sound TAD-4 echo reverb
 with microplate
 Other Outboard Equipment: LT sound ACC-2 stereo compres-
 sor/limiter w/expander
 Microphones: Sennheiser 441, ATM31, AKG B1000 E, SM57
 EV RE 15
 Instruments Available: Kawai Grand, Roland JP-4, Tama
 Drums, Music man HD65
 Rates: \$16/hr., block rates. Some deferred cost production deals



KEY RECORDING STUDIO
 Jacksonville, FL

• **LIFE PRODUCTIONS AUDIO**
 750 E. 25th St., Hialeah, FL (Miami) 33013
 (305) 940-9197
 Owner: A M I Corporation
 Studio Manager: Theo French
 Engineers: Theo French, Roger Shrack
 Dimensions of Studios: 25 x 22 x 12
 Dimensions of Control Rooms: 19 x 12 x 7.5
 Tape Recorders: MCI JH110 8 track, Otari 5050 B 2 track,
 Technics 1506 US 2/4 track, Technics M260 cassette
 Mixing Consoles: Sound Workshop 2012 12 x 18
 Monitor Amplifiers: BGW 750 B (mains); BGW 100B
 (reference)
 Monitor Speakers: UREI 811 A (mains), Auratone SC
 (reference)
 Echo, Reverb, & Delay Systems: AKG BX10E, Real Time delay
 Other Outboard Equipment: dbx 160 X compressor, 162 com-
 pressor; Orban 622 B parametric; UREI 530 Graphic EQ
 Microphones: (3) Neumann U-87 (4) Sony ECM-50 (4), AKG
 CK-9, E.V. 635A
 Instruments Available: Acoustic guitars, acoustic bass viol
 Video Equipment & Services: Complete 1" and ¾" edit field
 production, and creative direction MTV tapes a specialty. All
 state of the art
 Rates: 8 track \$75/hr., 2 track \$50/hr

• **LOST RIVER RECORDING STUDIO**
 631 N. 9th St., Paducah, KY 42001
 (502) 444-7594
 Owner: Clyde Wood
 Studio Manager: Andy Wood
 Engineers: Laddie Wood
 Dimensions of Studios: Studio A 14 x 12, Studio B 12 x 7
 Dimensions of Control Rooms: 9 x 12
 Tape Recorders: TEAC 3340S 4 track; TEAC 3300S 2 track,
 TEAC A-170 cassette, Technics M270X cassette, Panasonic
 RS 808 8 track cartridge
 Mixing Consoles: Tapco (4 mixers in 6' console) 6000R series,
 24 in x 4 out, TEAC/Tascam Model 1, TEAC meter bridge MB20
 Monitor Amplifiers: Crown D-60
 Monitor Speakers: Custom built, also cubes
 Other Outboard Equipment: dbx 155, (4 track), dbx 152 (2
 track); Dolby, (8 track tapes), Tapco 2200 graphic EQ, TEAC
 PB-64 patch bay; (6) AKG K-140 headphones
 Microphones: Audio-Technica AT 813, Shure 58s, E.V. DS-35,
 Barcus-Berry 1355 guitar transducer
 Instruments Available: Baldwin acrosonic piano, Fender-
 Rhodes piano-bass, synthesizer, electric piano, small organ, Leslie
 tone cabinet, Fender Bandmaster amp, Fender Bassman amp, two
 Sunn amps 6 & 12 string Alvarez acoustic guitars, bass guitar
 Gibson classic guitar, steel guitar, violin, conga drums, percussion
 (All instruments in studio)
 Rates: Call or write for prices

• **LUNDY RECORDING STUDIO**
 P.O. Box 485, Barbourville, KY 40906
 (606) 546-6650
 Owner: David Lundy
 Studio Manager: David Duane Lundy

• **MAUW-BOGGS RECORDINGS**
 667-669 Hawthorne, Memphis, TN 38107
 (901) 278-5003
 Owner: Bobby Davis, Vikki Davis, Tom Davis
 Studio Manager: Bobby Davis

• **MAYS COUNTRY DEMOS**
 340 North Broadway, Georgetown, KY 40324
 (502) 863-1533
 Owner: Elmer L. Jones
 Studio Manager: Norman L. Mays

• **THE MUSIC FACTORY**
 104 Lauten Court, Mobile, AL 36606
 (205) 471-5088
 Owner: The Decker Corporation
 Studio Manager: Tom Decker

• **ORANGE STREET RECORDERS**
 also **REMOTE RECORDING**
 305 Orange St., Tuscaloosa, AL 35401
 (205) 752-3191
 Owner: Brook Clement
 Studio Manager: Brook Clement

• **PARADISE STUDIO**
 5543 Old Hickory Blvd., Nashville, TN 37218
 (615) 244-3467
 Owner: Dana C. Belser
 Studio Manager: Dana C. Belser

• **PDA AUDIO**
 also **REMOTE RECORDING**
 2500 Alabo St., New Orleans, LA 70117
 (504) 943-3085
 Owner: Joe Parker, David Decuir
 Studio Manager: David Decuir

• **PROGRESSIVE MUSIC STUDIOS**
 also **REMOTE RECORDING**
 2116 Southview Ave., Tampa FL 33606
 (813) 251-8093
 Owner: Kenneth Veenstra
 Studio Manager: Kenneth Veenstra

• **QL MOBILE RECORDING**
 ONLY **REMOTE RECORDING**
 314 Romano Ave., Coral Gables, FL 33134
 (305) 446-2477
 Owner: Rob Burr
 Studio Manager: Robin Burr

• **RAGDOLL RECORDING STUDIO**
 205A Television Circle, Savannah, GA 31406
 (912) 927-1761
 Owner: Rocky Evans
 Studio Manager: Rocky Evans

• **RON SOUND CO.**
 333 Butterfly Forest Rd., Ovideo, FL 32765
 (305) 349-5832
 Owner: Ron Schrader
 Studio Manager: Ron Schrader

• **SOUND LAB**
 2319 Fernwood Dr., Greensboro, NC 27408
 (919) 288-0185
 Owner: Sound Lab Inc
 Studio Manager: JT Rowan
 Engineers: JT Rowan
 Dimensions of Studios: 19 x 21 and 10 x 12
 Dimensions of Control Rooms: 11 x 15
 Tape Recorders: Tascam 80-8 8 track (dbx), 3440 4 track, 32 2
 track, 2300 SX ¼ track; Technics RSM-228 cassette
 Mixing Consoles: Tascam 2 (M35's) 16 x 8
 Monitor Amplifiers: Crown D 150 A
 Monitor Speakers: JBL 4411, Auratones
 Echo, Reverb, & Delay Systems: Ursa Major digital reverb; Lex-
 icon PCM 41 MXR flanger/doubler, DeltaLab Super time line
 Other Outboard Equipment: (2) dbx 160X comp/limiter; Syme-
 trix SG 200 dual signal gate, Sound Craftsman 2245 graphic EQ,
 Ashly SC-50, dbx 8 track; Technics SL-D2 turntable complete
 patch bay; Orban de-esser, Loltech TS 1 test set
 Microphones: AKG 414s; Electro-Voice PL 20s, Sennheiser
 421s, Shure SM 81s, 58s, 57s, others available, Countryman ac-
 tive direct boxes
 Instruments Available: Fender P. bass, Fender Rhodes, Korg
 Poly Six, Korg Poly 61 Wuritzer acoustic piano, Fender amps,
 E-mu Drumulator, other instruments available upon request.
 Video Equipment & Services: Available upon request
 Rates: \$30/hr. Block rate discounts available

• **SOUNDTECH TECHNICAL SERVICES**
 DeKalb/Peachtree Airport, Bldg. 34A,
 Chamblee, GA 30341
 (404) 458-0503 and 455-0968
 Owner: Lewis Frisch
 Studio Manager: Lewis Frisch
 Engineers: Lewis Frisch, Brian Davis
 Direction: Soundtech Technical Services offers musicians and re-
 cording studios an affordable real-time tape duplication facility. Two
 studio, five open-reel decks (Technics, Tascam) and 20 direct
 drive cassette decks (Technics, Onkyo, Denon) dbx Type I and
 Type II noise reduction, stereo compressors, EQ, JBL, HOR and
 Celestion monitors. Specializing in high quality duplication from 1
 to 500 copies. Fourth year of operation. Professional engineering
 and scheduled maintenance.

••SOUNDS OF WINCHESTER
 P.O. Box 574, 314 Lanny Dr., Winchester, VA 22601
 (703) 667-9379
 Owner: Sounds of Winchester
 Studio Manager: Jim McCoy

••SOUND SHINE PRODUCTIONS
 723 W. Sunrise Blvd., Ft. Lauderdale, FL 33311
 (305) 463-9882
 Owner: Thomas M. Carate
 Studio Manager: Paul Avakian

••THE STICK® SHOWROOM STUDIO
 1014 17th Ave. S., Nashville, TN 37212
 (615) 327-4981
 Owner: SYNAPSE!
 Studio Manager: Arcoy W. Anders Ellis

••STONEBRIDGE RECORDING
 Rt. 15 Box 54, Maryville, TN 37212
 (615) 938-7448
 Owner: Michael Ishibashi
 Studio Manager: Michael Ishibashi



••STUDIO FOUR RECORDING
 P.O. Box 1686, Albemarle, NC 28001
 (704) 983-2277
 Owner: Gene Hearne
 Studio Manager: Gene Hearne
 Engineers: Gene Hearne
 Dimensions of Studios: 13 x 30 including 2 vocal isolation booths and 1 drum booth

Dimensions of Control Rooms: 10 x 10
 Tape Recorders: Tascam 80-8 8 track, 40-4 4 track, 32 2B 2 track
 Mixing Consoles: Tascam Model 15 24/8
 Monitor Amplifiers: Sherwood
 Monitor Speakers: Alter CDS Customized Cabinets Auratones
 Echo, Reverb, & Delay Systems: Ibanez digital delay, Tapco 4400 reverbation
 Other Outboard Equipment: dbx noise reductions for all tape machines, 2 dbx compressor limiters, outboard EQ
 Microphones: Beyer AKG Shure, EV Sony AT
 Instruments Available: Kohler Cambell 5 foot baby grand piano, all other instruments available upon request
 Video Equipment & Services: 1/2" and 1/4" available upon request
 Rates: \$15/hr for 8 track, \$12.50/hr for 4 track

••SUNSHINE SOUND RECORDING STUDIO
 also REMOTE RECORDING
 2826 Whitlock St., Louisville, KY 40213
 (502) 968-8757
 Owner: Carl Sandler
 Studio Manager: Debra Sandler

••SURPRISE PRODUCTIONS
 P.O. Box 80, Monticello, FL 32344
 (904) 997-2573
 Owner: Scott S. Carswell
 Studio Manager: Joe Cuda

••SWEETSONG RECORDING
 also REMOTE RECORDING
 P.O. Box 2041, Parkersburg, WV 26102
 (304) 489-2911
 Owner: Roger Hoover
 Studio Manager: Marvin Parsons

••T & S STUDIO
 2898 Susan Ave., P.O. Box 12115,
 Lake Park, FL 33410
 (305) 622-5981
 Owner: Tom Green
 Studio Manager: Tom Green

••TRUSTY TUNESHOP RECORDING STUDIO
 Rt. 1, Box 100, Nebo, KY 42441
 (502) 249-3194
 Owner: Mrs. Else T. Childers
 Studio Manager: Michael Cain

••TWIN OAKS STUDIO
 also REMOTE RECORDING
 P.O. Box 187, Rocky Point, NC 28457
 (919) 675-9226
 Owner: Tempo I, Inc.
 Studio Manager: Leo J. Teachout

••USC SOUND ENTERPRISES
 also REMOTE RECORDING
 190 Waynoka Lane, P.O. Box 11211, Memphis TN 38111
 (901) 458-0275
 Owner: Rodney Peppenhorst
 Studio Manager: Rodney Peppenhorst

••VICTORY STUDIO
 683 Huntington Parkway, Nashville, TN 37211
 (615) 331-0643
 Owner: Gary Carter, Jimmy Carter
 Studio Manager: Gary Carter

••VILLAGE MEDIA STUDIO
 156 Drakes Lane, Summertown, TN 38483
 (615) 964-2286
 Owner: The Farm Foundation
 Studio Manager: Michael Tassone

••WILKERSON SOUND STUDIOS
 3794 Park Ave., Memphis, TN 38111
 (901) 458-1624
 Owner: Skip Wilkerson
 Studio Manager: Skip Wilkerson

••WOODRICH RECORDING STUDIO
 P.O. Box 38, Lexington, AL 35648
 (205) 247-3983
 Owner: Woody Richardson
 Studio Manager: Woody Richardson

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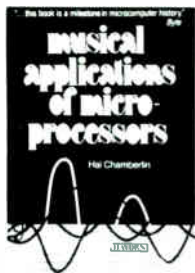
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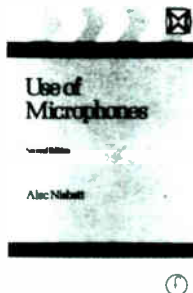


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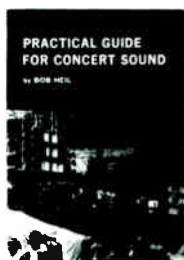
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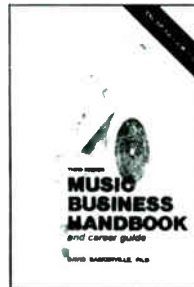
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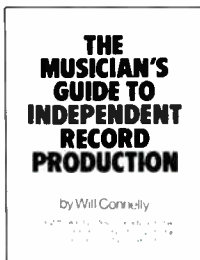
BUILDING A RECORDING STUDIO
Jeff Cooper
M. Arch, S.M., S.B., B.S.A.D.
 A step by step guide to studio construction for small or large budgets. Detailed and fully illustrated (5) \$30.00



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David Baskerville
 Required reading covering all phases of the music industry. Current and comprehensive. (6) \$18.95



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Sherman Keene
 The most comprehensive treatise on the "real world" of recording. Thorough, in-depth, understandable. (7) \$29.75



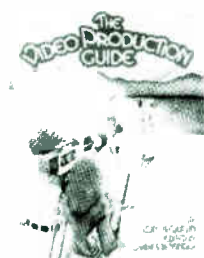
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John Tabler & Stuart Grundy
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 An audio training course, 10 self-study lessons, text, and 5 pre-recorded cassettes. Fine tune your hearing to recognize audio subtleties. (10) \$129.95



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Lon McQuillin
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16 TRACK

The Southeast

•••ALIVE RECORDINGS
1251 Virginia Ave., Harrisonburg, VA 22801
(703) 434-6703
Owner: Mennonite Board of Missions
Studio Manager: Abe Rittenhouse

•••AMERICAN RECORDING CENTER
also REMOTE RECORDING
515 W. 18th St., Orlando, FL 32805
(305) 425-1342
Owner: Jeff Pratt
Studio Manager: Jeff Pratt
Engineers: Jeff Pratt
Dimensions of Studios: 10 x 13 and 4 x 8 (2 vocal booths) 15 x 10 (keyboard room), 11 x 12 (drum booth) 12 x 20 (Studio A) 15 x 44 (Studio B)
Dimensions of Control Rooms: 22 x 13
Tape Recorders: TEAC Model 8516 16 track 25 2 track, Technics 1520 2 track, 1500 2 track, (2) Nakamichi cassette 582 2 track, TEAC 3440 4 track
Mixing Consoles: TEAC M16 24/16
Monitor Amplifiers: Crown 150, BGW 250
Monitor Speakers: JBL 4315B, Technics, Auratones
Echo, Reverb, & Delay Systems: DeltaLab DL4 echo, Eventide H-910 Harmonizer, 4 channels of Aphex Exciters, Master Room 305 reverb; Master Room 404 plate synthesizer reverb, AKG BX20 reverb
Other Outboard Equipment: Orban Parametric EQ, (2) Spectra Sonics 610 limiters; (4) dbx 160 limiters, 2 UREI 1176 LN stereo limiters; UREI 964 digital metronome, GT4 noise gates, White 13 octave EQ; Custom 10 channel headphone mixer by Stevenson designed by American Recording Studio
Microphones: Neumann U89 U87, AKG 414 (5), AKG 452 Sennheiser 441; Crown PZM (4), Sennheiser 421 (4), E-V PL 20, E-V RE 20; Countryman direct boxes
Instruments Available: Yamaha 7 1/2 ft conservatory grand, 5 ft Chickering piano; full set of Slingerland drums, DMX drum synthesizer, C-3 Hammond organ
Video Equipment & Services: 3 camera 3 tube 1/4" video recorders, 28 ft mobile unit
Rates: 2 to 8 track \$35/hr 16 track \$55/hr Video 3 camera \$200/hr For block rates call

•••AMERICAN SOUND STUDIO
827 Thomas St., Memphis, TN 38107
(901) 525-0540
Owner: Glolite Enterprises
Studio Manager: William E. (Bill) Glorie

•••AUDIO INC.
820 East Blvd., Charlotte, NC 28203
Owner: Frank Rogers and Jay Howard
Studio Manager: Sandi Rogers

•••AUDIO CONCEPTS, INC.
also REMOTE RECORDING
Eastgate, Chapel Hill, NC 27514
(919) 968-4471
Owner: Vic Lipscombe
Studio Manager: Vic Lipscombe

Engineers: Vic Lipscombe, Tim Hilderbrand
Dimensions of Studios: 20 x 20
Dimensions of Control Rooms: 16 x 11
Tape Recorders: Tascam, w auto locator 8516 w/4 line amps 16 track, Otari 5050B II 1/2 track 5050B 1/2 track; Sony TC K cassette 777
Mixing Consoles: Sound Workshop series 40 16/16, Tascam Model 58 B/4
Monitor Amplifiers: Crown NAD Acrom
Monitor Speakers: JBL L 4's, Altec 604C/E, Auratones
Echo, Reverb, & Delay Systems: AKG BX 10F II reverb, Eventide Harmonizer H949, Lexicon 93 digital delay, Eventide instant flanger FL201, Tapco 4400
Other Outboard Equipment: UREI 546 dual parametric, Bantam RTA, (2) dbx 161 compressors, Dynamic noise filter, (2) Gain Brain II compressors, (2) Kexel II noise gates, Omnicraft GT4 noise gates, (2) 13 octave graphics (4) 1 octave graphics
Microphones: AKG 414s, Crown PZMs, Sennheiser 421s E-V RE20, Shure SM 54 57s
Instruments Available: Yamaha grand, Fender Rhodes, Prophet 600, Casio keyboards, Ludwig drums, Drumulator
Rates: Write or call for brochure and rate card



CROSS-OVER RECORDING STUDIOS INC.

CROSS-OVER RECORDING STUDIO, INC.
Miami Lakes, FL

•••CROSS-OVER RECORDING STUDIO, INC.
8060 W. 21st Ave., Miami Lakes, FL 33016
(305) 822-9708
Owner: Mr. Carlos Oliva
Studio Manager: Mr. Keith Morrison
Engineers: Keith Morrison
Dimensions of Studios: 25 x 20 x 20
Dimensions of Control Rooms: 14 x 12
Tape Recorders: Sully 100 16 track; Ampex ATH 800 2 track, TEAC 3440 4 track, Sony TC 766 2 track
Mixing Consoles: MCI JH 528 automated 28/24
Monitor Amplifiers: McIntosh 2300, Crown DX 400, Yamaha P2050
Monitor Speakers: JBL 4343, Auratone BC

Echo, Reverb, & Delay Systems: Lexicon Prime Time model 93, Furman RVT reverb, Master Room LX-305 stereo reverb, Lexicon model 200 digital reverb
Other Outboard Equipment: Eventide 949 Harmonizer, dbx 900 series compressor/limiters & de-essers, Aphex Aural Exciter.
Microphones: Sennheiser 441, 421, Shure SM81, SM57, AKG D12E, C414EB, Neumann U87, Electro Voice RE20
Instruments Available: Kawai 6' grand piano, Fender Rhodes, Jugs perc, Octaplus drums, Musser vibes, LP congas & timbales, various guitar amps available, Prophet 5, Hohner clavinet, Roland Juno 60, other synthesizer available on rental basis
Video Equipment & Services: 3/4" Panasonic video cassette recorder NV9300A, Sony 19" monitor PVM1900. We offer audio sweetening to edited video in 3/4" format.
Rates: \$40-\$80/hr., depending on usage

•••DERBYTOWN SOUND STUDIOS
5900 Outer Loop, Louisville, KY 40219
(502) 968-2320
Owner: John Wesley
Studio Manager: John Wesley

•••FALK RECORDING SERVICE
also REMOTE RECORDING
7914 Fegenbush Lane, Louisville, KY 40228
(502) 239-1010
Owner: Gary Falk

•••FINK/PINEWOOD RECORDINGS
P.O. Box 5241, Chesapeake, VA 23324
(804) 627-0957
Owner: Executive Producer Bill Johnson
Studio Manager: (Ms) Carolyn Hoss (Religious Gospel Productions)

•••GULF COAST SOUND STUDIO
P.O. Box 3062, Pensacola, FL 32506
(904) 478-4361
Owner: Wayne Blackmon
Studio Manager: Mike Sheller
Engineers: Mark C. Purser & Mike Sheller

•••JALEX RECORDINGS
also REMOTE RECORDING
319 Clematis St., West Palm Beach, FL 33401
(305) 832-1538
Owner: Jon A. Lind
Studio Manager: Susan Elliott
Engineers: Bill Harris, Jon A. Lind
Dimensions of Studios: 38 x 17 plus vocal booth
Dimensions of Control Rooms: 17 x 14
Tape Recorders: Ampex MM1100 16 track, Ampex AG 440B 8 track, Ampex AG 440 4 track, Ampex AG440 2 track, MCI JH 110B 2 track, Ampex 351 2 track, Nagra SD 2 track, Nagra 4 2 mono, several other 1/4" machines
Mixing Consoles: MCI 416 w/5534's, 24 in x 24 out
Monitor Amplifiers: AB Systems, Peavey, Crown
Monitor Speakers: JBL, Auratones
Echo, Reverb, & Delay Systems: MICMIX XL 305
Other Outboard Equipment: Graphics, limiters, noise reduction, DDL, var-speed, etc.
Microphones: Neumann U 47's (tube), U-87's, KM-84's, Sony C-500, C-37P's, ECM-22P's, ECM 50P, Shure SM-57's, SM-76's, Sennheiser MKH 405 MD 421's MD-21, AKG C-412, D-224E DE119LS; E-V 649B, 635A, HE-55, Beyer M-500, Crown PZM's, The Co. direct boxes
Instruments Available: Steinway grand, Hammond B-3, Rhodes piano, drums, congas, marmba
Rates: \$20 to \$100 per hour. Block time available. Call (305) 832-1538

•••LAMON SOUND STUDIO
also REMOTE RECORDING
6870 A Newell Hickory Grove Rd., Charlotte, NC 28212
(704) 537-0133
Owner: Dwight L. Moody Jr. & sons
Studio Manager: David B. Moody
Engineers: David Floyd, David Moody
Dimensions of Studios: A. 20 x 30 (also a fully sealed, 8 x 10, comfortable isolation booth, and a special, very live, percussion annex) B. 10 x 8
Dimensions of Control Rooms: 18 x 20
Tape Recorders: MCI JH 100 w Autolocator 16 track, Ampex AG 440B 2 track, Technics SL-1500LIS 2 track, TEAC X-7 2 track, Kenwood KX 1030 cassette
Mixing Consoles: MCI JH 400 (light meters), 24 in x 24 out, console has been extensively modified with reciprocal mid-band EQ, channel mutes, mike padding, individual buss-tape return solos, large producer's desk, stop clock
Monitor Amplifiers: Yamaha P-200
Monitor Speakers: E-V Sentry V, Auratone 5C, also E-V Sentry V in studio. Also JBL's available
Echo, Reverb, & Delay Systems: AKG BX10, Eventide Harmonizer & keyboard.
Other Outboard Equipment: (3) UREI 1176LN, Orban 622B
Microphones: (4) AKG C-414, (2) C-451 w/accessories, (2) E-V HE-20's, (4) 635-A's, (2) Shure SM-81's

Instruments Available: Yamaha 6' conservatory brand Flingerland drums, conga and various percussion instruments, Fender bass and electric guitars, Martin acoustic, various Guild guitars, amps, and Oberheims (rental), many other instruments available on loan or rent from related company.

Rates: \$65/hr. base with special record packages and block time packages always available. 2" tape may be rented or purchased.
Direction: Lamon Sound Studios was opened by professional musicians for use by professional musicians. Experienced engineering, competent production assistance, truly top grade equipment, and a comfortable environment are available at about half the price of competitive studios in Charlotte. Our clients are our only sales people.

LAMON SOUND STUDIO
Charlotte, NC

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Charlotte, N.C. 28212



(Founded 1962)

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Rt. 2, Box 356, Denham Springs, LA 70726
(504) 664-3746
Owner: Lyle W. Simms
Studio Manager: Will Simms

•••MAJOR RECORDING STUDIO
P.O. Box 2072, Waynesboro, VA 22980
(703) 949-0106
Owner: John H. Major
Studio Manager: John H. Major

•••MERIT RECORDING STUDIO
3475 Buena Vista Rd., Columbus, GA 31906
(404) 689-9629
Owner: I. W. Merritt
Studio Manager: I. W. Merritt

•••MIAMI SOUND STUDIO
2819 N.W. 7 Ave., Miami, FL 33127
(405) 635-4890, 4891
Owner: Carlos D. Granda
Studio Manager: Andre D. Granda
Engineers: Carlos D. Granda, Jr., Andre D. Granda, Paul Ehrlich
Dimensions of Studios: 17' x 15' x 28'
Dimensions of Control Rooms: 12' x 10' x 15'
Tape Recorders: MCI B16 16 track, Ampex 480B 2 track, Studer B60 2 track, Studer 4 track
Mixing Consoles: NEVE 4024 24 x 16, 24 x 16
Monitor Amplifiers: M. Linn 2 x 6, 2 x 6
Monitor Speakers: JBL 436, JBL 431, JBL 431, JBL 431
Tannoy
Echo, Reverb, & Delay Systems: Echo delay tank, 2 EMT 4" echo chambers
Other Outboard Equipment: Four Channel Harmonic Sine Ring 34k, UREI Tenor mix, IATA limiters, A-A limiter, limiter, equalizers, compressors, NEVE limiters, vocal limiter, all effects possible, fully outboard, equipment, 400-2000
Microphones: Neumann U 47s, U 67s, KM 44s, AKG 451, V 87, RE 20, Sennheiser, Sennheiser, Sennheiser, Sennheiser, Sennheiser
Instruments Available: Yamaha grand piano, Tenor, Baritone, saxophone, synthesizer, guitars, violas, cellos, trumpets, Square Keytar, Box Harmonica, Striped drums, Harmonica, Etc.
Rates: Rates upon request, including block time.
Extras: Comp. 1/2" Stereo master tapes, 1/2" stereo master tapes, no. and shipped, complete art dept. for label, label and large format. In-house producers, artists, and engineers. Columbia, Capitol, Island and labels with the TV. All equipment is totally newly furnished fully with latest equipment and accessories.

Direction: Studio philosophy: simply that our engineers strive to treat every record as if it were their own. Aspiration to be recognized as a hit making quality studio. Local. We've got the
 • 1 2 6 1 4 5 7

MIAMI SOUND STUDIO
Miami, FL



•••MIRROR IMAGE RECORDING
619 S. Main St., Gainesville, FL 32601
(904) 376-1688
Owner: Robert McPeak, Paul Pavelka
Studio Manager: Robert McPeak

•••THE MISSISSIPPI RECORDING COMPANY
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(601) 354-0857
Owner: Jerry Purker
Studio Manager: Lane Dinkins

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•••MORNING SUN RECORDING STUDIO
416 North Orange Ave. Mail: P.O. Box 935,
Deland, FL 32720
(904) 736-0300

Studio Manager: Greg and Nancy Rike
Extras: We do music videos!¹¹
Direction: We have done numerous ads, albums, and A/V shows
as well as work for Warner Brothers and Waylon Jennings. Our
philosophy is to enjoy the recording process, encouraging a re-
laxed atmosphere conducive to creativity.

•••OCEAN OPRY RECORDING STUDIOS
8400 W. Hwy. 98, Panama City Beach, FL 32407
(904) 234-5464

Owner: Wayne Rader
Studio Manager: Dennis Rader

•••OCEAN SOUND STUDIOS
548 N.E. 42nd St., Ft. Lauderdale, FL 33334
(305) 563-2597

Owner: David Shelley and Mike Couzz;
Studio Manager: Mike Couzz

•••PARAGON RECORDING
Rt. 13 West Hills #00, Hattiesburg, MS 39401
(601) 264-3905

Owner: Jeff Everett and Tomi Carter
Studio Manager: Jeff Everett

•••PICKIN' POST SOUND STUDIOS
239 B Exit I-40 East, Lebanon, TN 37087
(615) 449-1770

Studio Manager: Joe Nave

•••PLAYGROUND RECORDING STUDIO
103 Westview Ave., Valparaiso, FL 32580
(904) 678-7211

Owner: Finley Duncan
Studio Manager: Brine Duncan

•••PRESTIGE PRODUCTIONS, INC.
also REMOTE RECORDING
2717-19th St. So., Birmingham, AL 35209
(205) 871-7328

Owner: Kenny Wallis, Rick Maze, Henry Strzelecki
Studio Manager: Kenny Wallis

•••THE PROCESS RECORDING STUDIOS
also REMOTE RECORDING
3404-E West Wendover Ave., Greensboro, NC 27407
(919) 855-1941

Owner: The Process Inc. Ron Schrank, President
Studio Manager: Renee Selman
Engineers: Ron Schrank, Chief, Bobby Kelly, Renee Selman,
Editing & Duplication, Jim Schnell, Associate
Dimensions of Studios: A 30 x 40 x 16, isolation booth, 12 x
15 x 9, vocal booth; 10 x 9 x 9 B 10 x 11 x 9
Dimensions of Control Rooms: A 22 x 22 x 14 B 16 x 14 x 9
C 14 x 12 x 9 D 10 x 9 x 9

Tape Recorders: 3M M79 16 track; Tascam 80-8 8 track, Otari
MX 5050BQII 4 track, (2) MX 5050B 2 track MX 5050 mono
track, TEAC A 3300SX 2 track, ITC PD II mono; Technics RS
1500US 2 track

Mixing Consoles: Tangent 3216 20/16, TEAC 5B 8/4,
2B/MB-20 6/4

Monitor Amplifiers: UREI

Monitor Speakers: JBL 4430, 4311, Auratone, Bose, Altec
Echo, Reverb, & Delay Systems: MICMIX XL-305, DeltaLab
ADM 1024, Loit 440

Other Outboard Equipment: (3) Technics SL 1800 MK2, (3)
TEAC V-35, Orban 526A, (2) Ashley SC-50, (2) Roger Mayer
RM-68, Symetrix SQ-200, Audioarts 4100, Symetrix TI-101,
Stanton model 310 Soundcraftsmen 20-12A Fender SRA 200,
Marantz 240, dbx type A on all recorders, Dynaco SE-10 EQ
Microphones: AKG, Sennheiser, Electro-Voice, Crown PZM,
Shure Beyer

Instruments Available: 5' grand piano, Fender Rhodes Stage,
Crumar Performer, Crumar DS-2, Rogers drums w/Tama hard-
ware, percussion kit, Fender twin reverb

Rates: Call for information and rate card

•••REAL TO REEL
4911 B N. Henry Blvd., Stockbridge (Atlanta), GA 30281
(404) 474-4776

Owner: Bill Turpin and Mrs. H.R. Turpin
Studio Manager: Scott Long and Ed Roland

•••RICK PAINTER SOUND STUDIOS
also REMOTE RECORDING
2826 Iroquois Ave., Jacksonville, FL 32210
(904) 388-7649

Owner: Christian Alternative Music Company
Studio Manager: Rick Painter



•••SANDCASTLE RECORDING STUDIO
also REMOTE RECORDING
Wade Hampton Mall Suite 109, Greenville, SC 29609
(803) 235-1111

Owner: Chris Cassels, Rob Cassels, Rick Sandridge
Studio Manager: Chris Cassels

•••SATURN SOUND STUDIOS INC.
511 S. Olive Ave., W. Palm Beach, FL 33401
(305) 832-2148

Owner: Allen Peerson, Clinton Smith
Studio Manager: Clinton Smith
Engineers: Allen Peerson, Clinton Smith, Charles Cook
Dimensions of Studios: 20 x 38 x 10
Dimensions of Control Rooms: 14 x 16
Tape Recorders: MCI JH-114 16 track, JH-10 8 track, JH-110 2
track, Technics 1520 2 track, RS M85 MKII cassette, TEAC 3440
4 track

Mixing Consoles: JH-416 w/5534 IC's 24/24, and transformer-
less mike preamps

Monitor Amplifiers: Crown DC 300 (2), D-150, D-75

Monitor Speakers: Control room JBL 4411 & Auratones, Studio
Bozak monitor C

Echo, Reverb, & Delay Systems: Master-Room CR series echo,
Lexicon Prime Time model 93, Eventide 910 Harmonizer

Other Outboard Equipment: Gain Brains & Kepex's (4 each),
Eventide Harmonizer, Orban Parasound 622B parametric, Coun-
tryman direct boxes

Microphones: AKG, Crown PZM, E.V., Neumann, Shure
Instruments Available: Hammond B 3, Fender Rhodes Ludwig
drums, 1914 Wing & Son upright grand piano

Rates: 2 track \$25/hr., 4 track \$35/hr., 8 track \$50/hr., 16 track
\$80/hr.

•••SINGLETON SOUND
3106 Belmont Blvd., Nashville, TN 37212
(615) 385-1960

Owner: The Shelby Singleton Corp
Studio Manager: John A. Singleton

•••SOUND OF BIRMINGHAM RECORDING STUDIOS
also REMOTE RECORDING
3625 5th Ave. So., Birmingham, AL 35222
(205) 595-8497

Owner: Corporation
Studio Manager: Don Mosley, President

•••SOUND LABS
5808 Columbia Pike, Bailey's Crossroads, VA 22041
(703) 820-2025

Owner: Don Daugherty
Studio Manager: Steve Bramley

•••THE SOUND ROOM, INC.
also REMOTE RECORDING
325 Patterson Ave., Fort Oglethorpe, GA 30742
(404) 866-2432

Owner: Steve Mullinx
Studio Manager: Steve Mullinx

•••SOUND TRAX, INC. RECORDING STUDIOS AND
PRODUCTION SERVICES
1626 Glenwood Ave., Raleigh, NC 27608
(919) 832-9953

Owner: Sound Trax Inc.
Studio Manager: Don Stone

•••SOUTHERN SOUND PRODUCTIONS
also REMOTE RECORDING
717 Dauphin Island Parkway, Mobile, AL 36606
(205) 476-1171

Owner: Jerry Powell
Studio Manager: Jerry Powell

•••STRAWBERRY IAMM STUDIO
also REMOTE RECORDING
3964 Apian Way, W. Columbia, SC 29169
(803) 356-4540

Owner: Bob and Mary Curlee
Studio Manager: Bob Curlee

•••STUDIO B
also REMOTE RECORDING
1119 Bell St., Montgomery, AL 36104
(205) 834-6881

Owner: Harold and Jayonn Bearden
Studio Manager: Jayonn Bearden

•••TANDEM RECORDING STUDIO
13 Moore St., Bristol, VA 24201
(703) 466-8675

Owner: Tandem Records, Inc.
Studio Manager: Joe Deaton

•••THRESHOLD RECORDING
410 Elm Ave. S.W., Roanoke, VA 24016
(703) 345-2539

Owner: F. Howard Beasley, J. Harold Thompson
Studio Manager: F. Howard Beasley
Engineers: J. Harold Thompson
Dimensions of Studios: 30 x 25
Dimensions of Control Rooms: 20 x 12
Tape Recorders: Ampex MM1100 8/16 track, ATH 102 2 track
440 B 2 track, Ampex 440 B 2 track, 440 B full track
Mixing Consoles: Loit modular devices, model 440 24 x 16
Monitor Amplifiers: Ashly audio FET, AB systems
Monitor Speakers: F.V. Sentry III, Altec 9845, Auratones
Echo, Reverb, & Delay Systems: (2) BAE LP 140 plate, AKG
BX-20, (2) Loit 450X, Eventide 1745

Other Outboard Equipment: Ashly SC-50 limiters/compressors,
Symetrix 501 limiter/compressor, Allison Gain Brains & Kepex
Ashly SC-66, parametrics, Ashly SC-33 noise gates
Microphones: AKG 451, Neumann U 87, Shure 57, 58, E.V. 15
20, Studer 5U, Warrenbrook PZMs, RCA 77BX, BK5

Instruments Available: Steinway grand piano, Hammond B-3
organ, Rhodes 88, Hohner D 6 clavinet, assorted guitars, Fender
P bass

Rates: Available on request

•••TOP FLOOR RECORDERS
1614-16th Ave., Nashville, TN 37212
(615) 292-9035

Owner: Rob Montgomery
Studio Manager: Howard Toole

•••TRACK-16 RECORDING
also REMOTE RECORDING
118 Constitution, Lexington, KY 40508
(606) 253-0588

Owner: Thomas Tandy
Studio Manager: Thomas Tandy

•••WILLOW CREEK RECORDING STUDIOS
2228 Redmond Circle, Rome, GA 30161
(404) 232-6954

Owner: Morqan Ayers
Studio Manager: Morqan Ayers

HAVE A RECORDING STUDIO PROBLEM? Call DataLine (213) 651-4944

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ing Studios, a non-profit organization,
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studio operations including business prac-
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Telex: 92-2522.

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TRACK

The Southeast

••••ACORN SOUND RECORDERS, INC.
329 Rockland Rd., Hendersonville, TN 37075
(615) 824-4924

Owner: Oak Ridge By:
Studio Manager: Jimmy Tarbutton
Engineers: Jimmy Tarbutton. Independents welcome
Dimensions of Studios: 25 x 30 including booths, drum room
14 x 15

Dimensions of Control Rooms: 22 x 24
Tape Recorders: Studer A 80, 24 track, Studer B 67, 2 track
C in MTR 12 2 tra x Sony cassette
Mixing Consoles: Harrison MR4 42 x 24
Monitor Amplifiers: Haller D 500 Crown
Monitor Speakers: UREI 815s time aligned JBL Eastern
Acoustic Works Auratones

Echo, Reverb, & Delay Systems: Lexicon 224X w 1 and remote
Eventide SP 2011s Super Prime Time, Eventide 1745A DDL
Other Outboard Equipment: Kpex II, ADR Stereo Swing EQ
(4) dbx 160 limiters UREI 1176 limiter, Eventide Harmonizer, 2)
White 1/2 octave graphic EQ, (2) Lind EQ

Microphones: Neumann U47s U89s U87s U64s KM86
KM88 Studer Stereo Sennheiser 421s E V RE 20s AKG 451s
Sony C42 AKG D12/E (4) Shure 545s Shure SM57s

Instruments Available: Yamaha C7 grand piano, Wurlitzer elec-
tric piano Rhodes electric piano Hamner Clavinet Hammond organ
B3 organ AHP string ensemble Fender guitar amp Pearl
drums

Video Equipment & Services: Emerson 14" Panasonic 12"
VHS Sony 1/2" Beta

Rates: Call for rates

ACORN SOUND RECORDERS, INC.
Hendersonville, TN



••••ALLEN-MARTIN PRODUCTIONS AUDIO
also REMOTE RECORDING
9701 Taylorsville Rd., Louisville, KY 40299
(502) 267-9658

Owner: Ray Allen Hardy Martin
Studio Manager: Martin L. Andersen

••••ALPHA AUDIO
also REMOTE RECORDING
2049 West Broad St., Richmond, VA 23220
(804) 358-3852

Owner: Alpha Recording Corporation
Studio Manager: Joe Horner

••••AMERICAN MULTIMEDIA, INC.
Route 8, Box 215A, Burlington, NC 27215
(919) 229-5559

Owner: American Multimedia Inc
Studio Manager: Lance Abar



ARDENT RECORDINGS, INC.
Memphis, TN

••••ARDENT RECORDINGS, INC.
also REMOTE RECORDING
2000 Madison Ave., Memphis, TN 38104
(901) 725-0855

Owner: John Fry
Studio Manager: Trish Hardy
Engineers: William C. Brown, Robert Jackson, John Hampton,
Eddie Degarmo, Dana Key, Joe Hardy, Larry Nix, Jack Holder,
Henry Bush, Terry Manning, Al Smith
Dimensions of Studios: Studio A 25 x 40 x 16, Studio B 25 x
20 x 16, Studio C 25 x 35 x 14, Mastering 15 x 20 x 10. Each
studio with two isolation booths

Dimensions of Control Rooms: Studio A 16 x 25 x 10, Studio B
16 x 25 x 10, Studio C 18 x 25 x 10
Tape Recorders: (3) MCI JH 1624 24 track, (3) MCI JH 110 2
track, 3M M79 2 track, (2) 3M M64 2 track, (3) Scully 280 2
track, MCI JH-110B 1/2" 2 track

Mixing Consoles: MCI 542 42 in x 32 out, Spectra Sonics
24 16, 28 in x 24 out, Spectra Sonics 22-16 24 in x 24 out,
Mastering room equipped with Neumann VMS 70 lathe with
Zuma digital control

Monitor Amplifiers: BGW Crown

Monitor Speakers: JBL 4350, Audicon, JBL 4311, JBL 4340,
Auratones, Advent, Braun

Echo, Reverb, & Delay Systems: 3 EMT 140, 3 acoustic
chamber, (2) H949 Harmonizer, Lexicon, Allison, Eventide, Mar-
shall, ADR, Quantech room simulator

Other Outboard Equipment: Limiters and compressors Neve
dbx, ADR, Fairchild, UA, EMT, EQs: Neve, Orban, ADR, Pultec,
Noise gates Kpex, ADR outer ear. All multi-tracks and two tracks
equipped with Dolby A, (dbx optional for two tracks) All rooms
tuned with UREI filters and B&K spectrum analyzer. Studio equip-
ped with MCI automation

Microphones: Neumann U87, U67, U64, M249, KM86, KM84,
AKG C-414, C-451, D224, D12, D-200, Sennheiser MD-421,
MD-441, E-V RE-20, RE-16, Shure SM-53, Beyer M201, AKG
C-422 stereo

Instruments Available: Steinway grand, Yamaha grand, Chick-
ering grand, ARP 2500; Hohner clavinet, Hammond organ;
Fender Rhodes 88, Gretsch drums, Fender, HiWatt, Acoustic,
Ampeg amplifiers

Video Equipment & Services: Complete video production serv-
ices and sweetening

Extras: MCI SMPTE synchronizer, cable television, kitchen, two
lounges, Fairlight digital synthesizer

Rates: Upon request

Direction: Clients ZZ Top, Bar-Kays, Parliament/Funkadelic,
Robin Trower, Led Zeppelin, Con-Funk-Shun, Emerson Lake &
Palmer, Bootsy's Rubber Band, Cheap Trick, Memphis Horns,
Commodores, Leon Russell, Isaac Hayes, Black Oak, Roy Clark,
Charlie Rich, Amazing Rhythm Aces, De Garmo & Key, Too Tall
Jones, Shaun Cassidy, Ebonee Webb, Chocolate Milk, Kwick,
Johnny Cash, Staple Singers Bobby Blue Bland, Glad,
Blackwood Brothers, Mylon LeFevre



ARTISAN RECORDERS, INC.
Pompano Beach, FL

••••ARTISAN RECORDERS, INC.
REMOTE RECORDING ONLY
1421A Southwest 12th Ave., Pompano Beach, FL 33060
(305) 786-0660

Owner: Peter J. Yanilos
Studio Manager: Rey Monzon
Engineers: Chief Engineer Peter J. Yanilos, Independent
Engineers Kevin Ryan, Vincent Oliveri, Larry Janus, Stan
Johnson, Chris Carlton

Dimensions of Vehicle: GMC 260 Transmode, length 27 feet,
width 8 feet, height 10 feet, gross weight approx. 13,000 pounds
Tape Recorders: (2) MCI JH16 114 24 track, (2) JH110-14 2
track, Nakra IV-S 2 track, Nakamichi 550 cassette, (2) Technics
M 65 cassettes, M-45 cassette

Mixing Consoles: MCI JH416-24LM, 24 x 24, Midas 16 x 4 x 2
Monitor Amplifiers: McIntosh 2125, Crown D60, Crown D40
Monitor Speakers: UREI 811A, Beyer DT100 and Fostex T-20
headphones

Echo, Reverb, & Delay Systems: MXR DDL, Ursa Major Space
Station SST-282, Eventide H-949 Harmonizer

Other Outboard Equipment: UREI LA-4, Allison Gain Brain and
Inovonics 201 Compressor/Limiters, Eventide Omnipressor and
phaser, Allison Kpex noise gates, UREI 545 parametric EQs,
Dolby M 24 noise reduction, Orban de-esser and Clear-Com
Communications

Microphones: Neumann U-87, AKG C12, C414, C412, C451,
D224, D140, D200, D12; Sennheiser 435, 441, 421, Sony
ECM-56, ECM-989, Schoeps CMT-26, Electro-Voice DS35,
RE20, 635A, Shure SM57, SM58, SM81, Beyer M101,
Telefunken U-47, Crown PZM DI boxes with Sescam and Jensen
transformers 40-input 3-way splitter/stagebox

Instruments Available: Upon request
Video Equipment & Services: CCTV monitor in truck, camera
onstage. Video equipment and services available upon request

Rates: 24 track recording \$2200 per day. Live soundmixing and
2 track recording \$1500 per day Rates include engineer, crew
and all outboard equipment. Tape costs and travel expenses are
additional

Credits: Pat Benatar "Live from Earth", Jaco Pastorius "Word of
Mouth", Blackfoot "Strikes", Pat Travers "Go for what you Know",

Heart "Dog and Butterfly", The Commodores "Live", Allman Brothers MTV Special, The Police, Supertramp, Weather Report, Triumph, Third World, Steel Pulse, George Martin, Kenny Rogers, Linda Ronstadt, Crosby, Stills & Nash, Roy Clark, Al Jarreau, Willie Nelson, Tammy Wynette, The Bee Gees, Wayne Newton, Lou Rawls, Kenny Rankin, Melissa Manchester, Rita Marley, Musical Youth, The Outlaws, Leon Russell, Taj Mahal, Black Uhuru, The Oak Ridge Boys, etc.
 Direction: For the past seven years, Artisan Recorders has provided location multi-track recording and mixing services to the music, film and television industries, specializing in large-scale events such as tours, festivals and telethons. At every job, in every way, our goal is perfection.

****AUDIOFONICS, INC.
 also REMOTE RECORDING
 1101 Downtown Blvd., Raleigh, NC 27603
 (919) 821-5614
 Owner: Larry Gardner
 Studio Manager: Bebe Davison

****AUDIO MEDIA RECORDERS
 808 19th Ave. South, Nashville, TN 37203
 (615) 327-9301
 Owner: C.E. Jackson
 Studio Manager: C.E. Jackson
 Dimensions of Studios: #1 20 x 28 #2 14 x 13
 Dimensions of Control Rooms: #1 22 x 16 #2 13 x 16
 Tape Recorders: #1 Studer A-80 24 track, Studer B-67 2 track, #2 Studer A-80 24 track, Studer B-67 2 track
 Mixing Consoles: #1 Harrison 3232C, 28 in x 28 out; #2 Harrison MR-2.28
 Monitor Amplifiers: BGW, Phase Linear
 Monitor Speakers: Westlake TM1, JBL 4310, and Auratone in both studios.
 Echo, Reverb, & Delay Systems: (3) EMT stereo units, Lexicon 102, Lexicon 224X, Super Prime Time
 Other Outboard Equipment: Eventide Harmonizer; (6) dbx 160's, dbx 165, Dolby noise reduction, UREI 1176L.N's (2), (2) LA-2A's, LA-3A's, stereo Orban EQ, Pultec EQ
 Microphones: Shure SM-57's; Sennheiser 421, Neumann: 87 FET, 47 FET, 67's, 249's, 84's, AKG 414's, 451's, 202E, C-60, E-V RE-20's, RE-15's, 635's, Studer, Schoeps SKM5s
 Instruments Available: Yamaha 9' grand, B-3 organ, Fender Rhodes, Hohner clavinet, Wuritzer electric piano, ARP Axse and Omni, Pearl drum set, 50 percussion instruments
 Rates: Supplied on request and based on volume

****AUGUST RECORDING STUDIO
 also REMOTE RECORDING
 2136 Kings Ave., Jacksonville, FL 32207
 (904) 399-8283
 Owner: Wayne Fanning
 Studio Manager: Wayne Fanning

****AXIS SOUND STUDIO (Division of Spire Audio-Visual)
 1314 Ellsworth Ind. Dr., Atlanta, GA 30318
 (404) 355-8680
 Owner: Spire Audio-Visual, Miami, FL
 Studio Manager: Chuck Allen
 Engineers: George Pappas, Chuck Fedonczak
 Dimensions of Studios: 40 x 60 x 20
 Tape Recorders: Studer A80 VU 24/16 track, A80 RC 1/2" 2 track, B67 1/4" 2 track; Ampex AG440 1/2" 4 track, AG440 1/4" 2 track, Sony TC 756 1/4" 1/2 track
 Mixing Consoles: Neve 8068 32 x 16 with Necam Automation
 Monitor Amplifiers: Crown PSA 2, MacIntosh 2125, 2 Leach Superamps, Studer, White Crossover & graphic EQ
 Monitor Speakers: Main-custom JBL each w/2 2215 15" woofers, 2441 mid driver and 2405 H F drivers. Also 1 pair Ed Long MDM4, 1 pair JBL 4313B, 1 pair JBL 4311, 1 pair Auratones.
 Echo, Reverb, & Delay Systems: 2 EMT stereo plates (tube type), AMS digital reverb, plus miscellaneous DDL's & echo units Harmonizers, etc.
 Other Outboard Equipment: 4 Neve limiters, 1176 UREI, 162 dbx, 160 dbx, Allison Gain Brains & Kepex units, Sontex parametric EQ
 Microphones: AKG, Neumann, Shure, E-V, Studer, Schoeps, PZM, C-Ducers, Sennheiser
 Instruments Available: Yamaha C-3 grand piano, Hammond B-3 organ, Hohner clavinet, Rhodes 73, Mini Moog, Rogers drum kit, assorted Fender and Marshall amps.
 Video Equipment & Services: 1/2" and 3/4" editing and production, 1" available on request
 Rates: Call George Pappas or Chuck Fedonczak at (404) 355-8680.

****BAYSHORE RECORDING STUDIOS, INC.
 2779 Bird Ave., Coconut Grove, FL 33133
 (305) 856-5942
 Owner: Bill Szymczyk
 Studio Manager: Harnet Della Casa

****THE BENNETT HOUSE
 134 4th Ave. N., Franklin, TN 37065
 (615) 790-8696
 Owner: Norbert Putnam, Bob Montgomery
 Studio Manager: Brenda Daniels
 Engineers: Call for list of independents. Studio provides tape assistant
 Dimensions of Studios: Studio A 44 x 18 two isolation booths; Studio B: 9 x 12, overdub booth
 Dimensions of Control Rooms: 20 x 26
 Tape Recorders: (2) MCI transformerless w SMPTC lock up, BTX sync 24/46 track; (2) Studer B62 2 tracks, Ampex ATH 100 1/2 2 track, (4) Technics cassettes (2) Studer 800s, Studer cassette
 Mixing Consoles: Studio A 28 in x 24 out; Studio B, Bud Wyatt Trident Series 80
 Monitor Amplifiers: Yamaha
 Monitor Speakers: JBL 4411s John Meyer Monitors Yamaha NS10s; Bruin t-way, Auratones.
 Echo, Reverb, & Delay Systems: EMT 250 Digital, Lawson Plate, AMS DDL, Eventide 949, Lexicon 224
 Other Outboard Equipment: Scamp Rack with 10 noise gates (2) EQs, (2) limiter/compressors, time shape module, auto pan, vocal stressor and misc.
 Microphones: Tube M-249 87s 414 421s 224s etc AKG Tube
 Instruments Available: Baldwin 7' and Eclaire Reynolds Rhodes
 Rates: Call for rates

****BIAS RECORDING COMPANY, INC.
 also REMOTE RECORDING
 5400 Carolina Place, Springfield, VA 22151
 (703) 941-3333
 Owner: Bill McElroy, Bob Dawson
 Studio Manager: Glona Daniels
 Engineers: Bob Dawson, Bill McElroy Jim Robeson, Chuck Rohrer, Norm Rowland
 Dimensions of Studios: Studio A one 16 x 25 room, one 20 x 30 room, Studio B one 16 x 25 room
 Dimensions of Control Rooms: Studio A 12 x 16; Studio B 12 x 16
 Tape Recorders: Ampex (Studio A) MM 1200 24 track, Ampex (Studio B) MM-110 16 track, Studer (7) B-67 2 track A-67 2 track, Ampex 440-B 4 track, Technics (2) M 280 cassette
 Mixing Consoles: API (Studio A) Modified 2488 w Allison Fardex

24/8 API (Studio B) Modified 1604 16/4.
 Monitor Amplifiers: Studio A: Bryston, Studio B: Crown.
 Monitor Speakers: Studios A & B Sierra/Hidley and Auratone
 Echo, Reverb, & Delay Systems: (2) EMT 162, AKG BX20E, Eventide Harmonizer, Lexicon Prime Time
 Other Outboard Equipment: UREI 1176 LN, UREI LA-4, UREI 964 digital Metronome, dbx 160, Teletronics LA-2A; Kepex, Dynamite, MXR studio phaser, MXR studio flanger
 Microphones: Neumann, Sony, AKG, Shure
 Instruments Available: Yamaha C-5 grand piano, Hammond C3 w/Leslie Fender Rhodes, Hohner clavinet, Slingerland drums, Fibes drums, Fender precision bass, Fender jazz bass, Fender twin reverb, blonde Fender Pro, tweed Fender Deluxe (2), tweed Fender Vibrolux Music Man 410
 Rates: Studio A 24 track, \$95/hr; 2/8/16 track \$80/hr Studio B: 8/16 track, \$60/hr, 2 track, \$40/hr

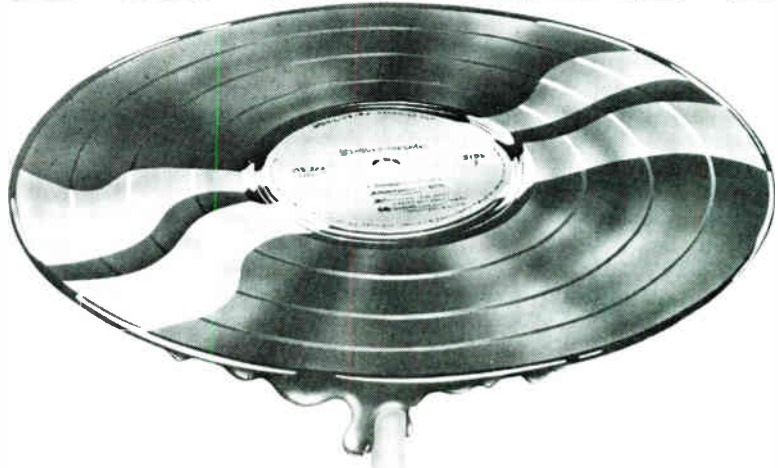
****BIG MAMA RECORDING STUDIO
 400 Enslay Dr., Knoxville, TN 37920
 (615) 577-5597
 Owner: Norbert Stovall

****BLACKWOOD/CASINO RECORDING STUDIOS
 also REMOTE RECORDING
 Box 17272, Memphis, TN 38187-0272
 (901) 767-2220
 Owner: Ron Blackwood, Carl Friend
 Studio Manager: Dee Laxton

****BOUTWELL RECORDING STUDIOS INC.
 also REMOTE RECORDING
 720, 726 23rd St., South Birmingham, AL 35233
 (205) 251-8889
 Owner: E. Boutwell, G. Bass, C. Haden, M. Harrelson, T. Wachter
 Studio Manager: Dianne Queen, Tony Wachter

****BROADWAY SOUND STUDIO
 1307 Broadway St., Sheffield, AL 35660
 (205) 381-1833
 Owner: David Johnson
 Studio Manager: Steve Rickard

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ARDENT
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••••BROKEN DOOR STUDIO
 also REMOTE RECORDING
 5405 Stanford Dr., Nashville, TN 37215
 (615) 269-0727
 Owner: Keeble Media Group
 Studio Manager: Peter Keeble

••••BULLET RECORDING
 49 Music Square West, Nashville, TN 37203
 (615) 327-4621
 Owner: Randy A. Holland
 Studio Manager: Merrisa Lide



THE CASTLE RECORDING STUDIO, INC.
 Franklin, TN

••••THE CASTLE RECORDING STUDIO, INC.
 Rt. #11, Old Hillsboro Rd., Franklin, TN 37064
 (615) 791-0810
 Owner: Joseph Nuyens
 Studio Manager: Jozel Nuyens
 Engineers: Chuck Ainlay, David Cherry
 Dimensions of Studios: The size of a castle
 Dimensions of Control Rooms: The size of a castle
 Tape Recorders: 3M digital DMS 32 track, (2) Studer A 80 Mark III 24 track, A 80 MK2 1/2" 2 track, (2) B 67 2 track, A 710
 Mixing Consoles: Solid State Logic, 4000 ETR 48/32
 Monitor Amplifiers: System is biamped with Yamaha 2100 and 2201 amplifiers crossed over at the white 1/2 octave EQ, HGW 250 on cue and alternate speakers
 Monitor Speakers: 4430 JBL bi-radials, Yamaha NS10 Auratones, JBL 4312
 Echo, Reverb, & Delay Systems: Lexicon 224X and 224 digital reverb; two large echo plates, Lexicon Super Prime Time, Prime Time model 93, Eventide H910 Harmonizer
 Other Outboard Equipment: (2) ADR vocal stressers, Trident stereo limiter/compressor, (2) UREI 1176LN, (4) Valley People Kepex II, (2) SO4 Scamp parametric EQ, S25 Scamp de esser
 Microphones: Complete assortment of Neumann, AKG, Sennheiser, Shure, Altec, PML, and Studer
 Instruments Available: Bosendorfer grand piano, Yamaha DX 7 digital, Roland Jupiter 8, Sequential Circuits Pro I, Yamaha DX-1 digital, (2) Fender Rhodes Seventy Three, tack piano, Hammond B 3 organ, D 6 Clavinet, Oberheim DMX, full set of Simmons, SDS-6 sequencer, full kit Pearl drums, etc.
 Rates: Please call
 Extras: The castle is secluded on a 45 acre country estate, only 15 minutes from downtown Nashville and 10 minutes from the town of Franklin. It offers full kitchen facilities, television lounge and office areas.

••••CHESHIRE SOUND STUDIOS
 also REMOTE RECORDING
 2093 Faulkner Rd. NE, Atlanta, GA 30324
 (404) 321-3886
 Owner: T.G. Wright, Jr.
 Studio Manager: Tom Wright
 Engineers: Director of Engineering, Tom Race, Engineers Tom Wright, Russ Fowler, Don Radick
 Dimensions of Studios: A 32 x 44 x 16, B 18 x 15
 Dimensions of Control Rooms: A 18 x 24, B 14 x 10
 Tape Recorders: Ampex MM1100 24 track, Ampex (4) 440B 24 track, Ampex 1200 24 track
 Mixing Consoles: MCI 428B automated, 28 in x 24 out, MCI 636C automated complete cassette production facility, 1/2 master inq 24 track to 24 track dubbing
 Monitor Amplifiers: SAE, Yamaha, Crown
 Monitor Speakers: JBL, Eastern Acoustic Works Auratone
 Echo, Reverb, & Delay Systems: Live echo chambers Lexicon 224, Model 93, Model 92, DigitalLab DL-1, DL-2, Eventide Harmonizer, MXR transposer
 Other Outboard Equipment: Parametric equalizers, UREI 1176N, dbx 160, Orban 245E, 111B, 24 channels dbx and Dolby
 Microphones: Wright microphones SR-1 and TSR 2, Neumann, AKG, Sony, etc.
 Instruments Available: Send for brochure.
 Rates: Send for brochure

••••CINDERELLA SOUND STUDIO
 1108 Cinderella St., Madison, TN 37115
 (615) 865-0891
 Owner: Wayne Moss
 Studio Manager: Wayne Moss

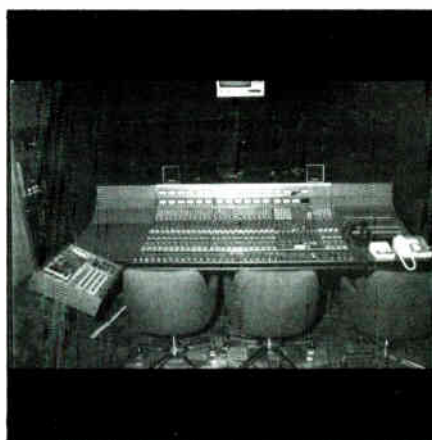
••••CLIMAX RECORDING STUDIOS, INC.
 2994 North Miami Ave., Miami, FL 33127
 (305) 576-6888
 Owner: Pablo Cano, President
 Studio Manager: Pablo Cano
 Engineers: Armando Terron, Pablo Cano, Rudy Perez
 Dimensions of Studios: 50 x 35 x 16
 Dimensions of Control Rooms: 17 x 15
 Tape Recorders: MCI JH 114 24 track JH 110 2 track, Tascam 122 cassette
 Mixing Consoles: MCI 428B 24 i/o
 Monitor Amplifiers: Yamana, McIntosh, UREI
 Monitor Speakers: Custom built biamped Tads, 4311, 4312 Auratones
 Echo, Reverb, & Delay Systems: Lexicon 224, AKG BX1C, 949 & 910C Harmonizers
 Other Outboard Equipment: ADC vocal stressor, UREI, DBX Valley People limiters, Kepex II gates, Aphex others upon request
 Microphones: Neumann, AKG, Sennheiser, RCA, E-V, Sony, Shure
 Instruments Available: 9' Steinway concert piano, Fender Rhodes, Yamaha electric pianos, Prophet 5, clavinet, drums, others upon request. Also, Alpha Syntram Metatrak program with Apple II computer, Oberheim DX computer drums, and Fender twin amplifier
 Rates: \$100/hr. or bulk rates. We work 7 days a week and 24 hours a day. Free estimates on productions
 Direction: Besides our studio facilities, among the finest in South Florida, our staff, number one in creativity and different musical and technical talents, is working together with Producer Orlando "Papi" Hernandez servicing bulk rates, estimates on single writing, musical arrangements and compositions and other musical American and Latin services. Among them are Al Caioia, Emmanuel, Armando Manzanero, James Earl Jones, SIN TV Net, works WRHC radio station and others.

••••COCONUTS RECORDING CO., INC.
 1830 N.E. 153rd St., N. Miami Beach, FL 33162
 (305) 940-4656
 Owner: Shirley P. Kaye
 Studio Manager: Shirley P. Kaye

••••COMMERCIAL AUDIO
 also REMOTE RECORDING
 77 South Witchduck Rd., Virginia Beach, VA 23462
 (804) 497-6506
 Owner: Alar Sawyer
 Studio Manager: Tom Sykes

••••COMPASS POINT STUDIOS, LTD.
 P.O. Box N-4599, Nassau, Bahamas
 (809) 327-8282
 Owner: Christopher Blackwell
 Studio Manager: Lorraine Fraser

••••CONTI PRODUCTION STUDIO
 509 N. Ridgewood, P.O. Box 958, Edgewater, FL 32032
 (904) 427-2840
 Owner: Conti Organization
 Studio Manager: Dirk Conti



COOK SOUND STUDIOS
 Fort Payne, AL

••••COOK SOUND STUDIOS
 1419 Seismic Rd., Fort Payne, AL 35967
 (205) 845-2286
 Owner: Jelt Cook
 Studio Manager: John Estes

Engineers: John Estes, independents
 Dimensions of Studios: 28 x 47
 Dimensions of Control Rooms: 14 x 16
 Tape Recorders: Studer A80 VU MK II 24 track, A80 VU MKII 1/4" 2 track, A80 VU MK II 1/2" 2 track, A710 cassette, Revox PH99 2 track
 Mixing Consoles: Neve 8058 28 in x 24 out
 Monitor Amplifiers: McIntosh 2300, McIntosh 2105, Yamaha 2200, Yamaha 2050
 Monitor Speakers: UREI 813, Yamaha NS 10M, Auratones
 Echo, Reverb, & Delay Systems: EMT plate, Lexicon Super Prime Time, Ursa Major 8x 12
 Other Outboard Equipment: Eventide Harmonizer, (2) dbx 160x compressors, EXR EXIV Exciter, Orban 622B parametric, UREI 1176LN compressors, SCAMP rack w gates, compressors, de essers, sweep EQ, Neve compressor/limiter, telephone distort module, notch and correction filters, and background noise suppresser
 Microphones: Neumann M49 (2) U48 (2) U47, (4) U87, AKG (4) 414 (4) 452, Shure (2) SM7, (3) SM81, (8) SM57, Electro-Voice (2) RE-20, Audio Technica (2) ATM 31R, Sennheiser (4) 421, Studer SKM 5
 Instruments Available: Yamaha acoustic piano, Oberheim OB XA w/DSX, Yamaha SK 15 Music Man, Fender and Carvin Amps, Bloedel 73, Gretsch drums
 Rates: \$75/hr

••••COTTON ROW RECORDING
 1503 Madison Ave., Memphis, TN 38104
 (901) 276-8518
 Owner: Warrt Archer Jr.
 Studio Manager: Nikos Lyras

••••CRAWFORD POST PRODUCTION
 535 Plasamour Dr., Atlanta, GA 30324
 (404) 876-7149
 Owner: Jess Crawford
 Studio Manager: Steve Carlisle

••••CREATIVE ARTS STUDIO
 P.O. Box 2764, Spartanburg, SC 29304
 (803) 576-9081
 Owner: Jerry Eubanks, Doug Gray, George McCorkle
 Studio Manager: Doug Gray
 Engineers: Billy Sherrill
 Tape Recorders: MCI 24 track
 Mixing Consoles: MCI 24 outputs
 Monitor Amplifiers: McIntosh Crowsns
 Monitor Speakers: UREI 813A's
 Echo, Reverb, & Delay Systems: Lexicon 224 plates
 Other Outboard Equipment: Prime Time, Eventide
 Microphones: Neumann's
 Instruments Available: Pianos, organs
 Rates: Call for rates



CRESCENDO AUDIO PRODUCTIONS, INC.
 Puerto Nuevo, Puerto Rico

••••CRESCENDO AUDIO PRODUCTIONS, INC.
 also REMOTE RECORDING
 #707 Calle Constitution, Puerto Nuevo, Puerto Rico 00920
 (809) 792-1970
 Owner: Brooke F. Cadwallader
 Studio Manager: Maya Armani
 Engineers: Chief Alar, Manager, Davia Rodriguez
 Dimensions of Studios: Studio A 50 x 40 x 20, Studio B 29 x 23 x 20
 Dimensions of Control Rooms: 22 x 24 x 14
 Tape Recorders: MCI JH 24 24 track transformerless, MCI JH 110B 2 track, MCI JH 110B 4 track, Ampex 440 2 track, Scully 280B 4 track, Revox B77 2 track, Studer A80RC 1/4" 2 track
 Mixing Consoles: MCI 5/8B 28 in x 24 out, Spectra Sonics 1024 24 in x 24 out
 Monitor Amplifiers: Crown M 600, McIntosh MC2120

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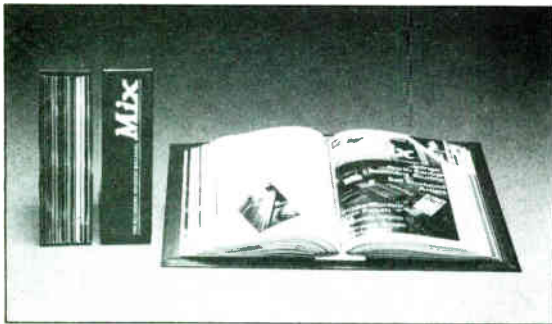
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**24
TRACK**
The Southeast

Monitor Speakers: UREI 813 URF1 811 Ray Reds Auratone & Ed Long

Echo, Reverb, & Delay Systems: Echoplates, AKG BX10

Other Outboard Equipment: Eventide H 949; DeltaLab DL 2 Acousticcomputer, dbx 165 compressor/limiter dbx 160 compressor/limiter, Valley People Gain Brain II, Valley People Keyex II, Valley People Dynamite 410, Ashly SC 68 parametric notch filter, Dolby 24 track, Dolby 2 track, UREI 964 digital metronome, MCI time code

Microphones: Neumann U67, U48, U47 FET, U89, Sennheiser 406, 416, 421, 441, AKG 414, C406, Beyer M 500, Shure AM-57, E-V H820, RCA 77D, BKS, 44

Instruments Available: 9' grand piano, marimba, vibes Fender bass Roland guitar synthesizer Yamaha Oberheim Crumar synthesizers, Fender twin reverbs, Les Paul, Fender Bassman, Yamaha bass amp, Fender Rhodes 88 electric piano

Video Equipment & Services: Magnatech 16-35 mm Xenon lamp projector, Sony BVU-200 U-Matic videotape recorder, Advent large screen & Sony Trinitron monitors; Magnatech high speed film mixing system, Audio Kinetics Q Lock 310 3 Time Code Computer, Off Line Video Editing

Rates: Available upon request



CRESCENDO RECORDERS/HENDERSON-CROWE PROD
Atlanta, GA

****CRESCENDO RECORDERS/HENDERSON-CROWE
PROD. INC.

125 Simpson St., Atlanta, GA 30313
(404) 223-0108 and 223-0021

Owner: William J. Hay, Randy Rude; Charles Henderson, Jerry Crowe

Studio Manager: Gary W. Ham (Audio), Bob Head (Video)

Engineers: Gary W. Ham, William F. Johnston (Audio), Bill Head (Video), Jim Boring (Audio)

Dimensions of Studios: A 41 x 28 B 18 x 13

Dimensions of Control Rooms: A 22 x 18, B 14 x 9

Tape Recorders: Studer A 80 MK III 24 track, Otari MTR 90 II 24 track, MTR 10 4 track, MTR 10 2 track (2), 3M M64 2 track (2), dbx Model 700 Digital Audio Processor 2 track

Mixing Consoles: Harrison 3232 w/ Automation 32 42 Soundcraft 2400 24 24 out, 40 input mixing

Monitor Amplifiers: Crest, BGW, Crown, AB systems, Sierra Sonics

Monitor Speakers: Westlake, custom JBL, TAD, EAW MS 50, JBL 4411, Auratone, TOA

Echo, Reverb, & Delay Systems: 2 live chambers EMT 140 stereo Master Room XI, 515 DeltaLab 256 1024 4096, DL 5 410 Eventide 910 Holand DDL, Marshall time modulator Lexicon Prime Time

Other Outboard Equipment: dbx 902, 903 904 906, 160X, 165, UREI LN1176, LA-3A, Teletronix LA 2A, ADH Vocal Stressor, Orban 602, 245E, 516FC, SAE 2700S, Dolby A noise reduction, dbx Type 1 and Type II noise reduction

Microphones: Neumann, AKG, Sennheiser, Beyer, Sony Audio Technica, Shure E-V, Neumann and AKG tube mikes RCA DX 77, DX 44, Ribbon microphones

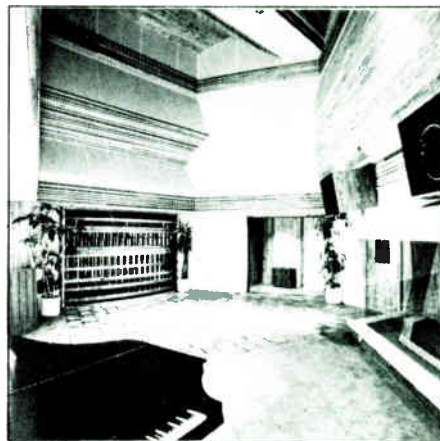
Instruments Available: Bosendorfer 7' grand Yamaha C 3

grand, Hammond B-3 organ w/2 Leslies, Musser vibs, full set Gretsch drum, all types of synthesizers, drum computers and electronics available locally

Video Equipment & Services: (2) Sony BVU 800s, (1) Sony BVU 820 w/DT, NEC II 8000 1" Type C digital squarer, Arvin DPS I A frame storage crosspoint-latch 6139 video switcher, color graphics camera, Q7A graphics generator, control video lightfinder plus computer editing system w/SMPTC lock (4) video machines

Rates: A 24 track, \$125/hr. Audio/Audio Video hookup \$175/hr., B 24 track \$100/hr., Audio-Video hookup \$150/hr. Block booking rates upon request

Extras: Our primary objective is to provide a creative atmosphere, personnel, and facilities for any type of audio/video production. From simple radio spot to a full music video, we have the staff and equipment to take your creative idea from conception to a finished product. All studios are fully interlocked and we are equipped to handle any project



CRITERIA RECORDING CO., INC
Miami, FL

****CRITERIA RECORDING CO., INC./
CRITERIA VIDEO SERVICES, INC.

also REMOTE RECORDING

1755 N.E. 149th St., Miami, FL 33181
(305) 947-5611

Owner: Mack Emerman

Studio Manager: General Mgr. Richard Lee, Marcia Latta (traffic), Marjorie Curry (Studio Mgr.), Scott Phillips (Technical), Richard Lee (Remote Video)

Engineers: Dennis Hernandez (Senior), Bob Castle, Jim Sessody, Patrice Levinson, Mastering Mike Fuller, Technical Scott Phillips (Chief), Oliver Masciarotte, Stan Lambert

Dimensions of Studios: A 50 x 75 x 20 high, B 30 x 40 x 16 high, C 25 x 32 x 16 high, D 15 x 22 x 10 high, E: 40 x 50 x 28 high

Dimensions of Control Rooms: A 13 x 16, B 12 x 24, C 15 x 16 (modified LEDE), D 17 x 19, E 24 x 25 (modified LEDE)

Tape Recorders: (5) MCI JH 114 24 (transformerless) 24 track Otari MTR 90 MK2 24 track, Mitsubishi X 800 32 track digital, (6) MCI JH 110B (transformerless) 2 track, (2) MCI JH 110B (transformerless) 2/4 track, Otari MTR-12 2 track, Ampex ATR-100 1" 2 track, (2) Mitsubishi X-80 2 channel PCM Recorder DDL, (3) Magna Tech dual dubbers 16/35mm, Magna Tech 4000 16/35mm recorder, Norelco Magna Tech 16 & 35mm projectors

Mixing Consoles: (3) MCI JH 542, 32 in x 32 out, MCI JH548, 48 in x 48 out, MCI JH636 (custom remote) 48 in x 42 out

Monitor Amplifiers: McIntosh, Crown, Crest, UREI, and Acoustal

Monitor Speakers: Custom designed 3-way, biamped EM Long Time Aligned System, also used in dedicated amplifiers systems using Ceter JBL and TAD computers UREI TARI's JBL 4311's Acoustics Visonik David 100's Auratones Visonik David 9000's

Echo, Reverb, & Delay Systems: (4) Stereo Echoplates, Stereo EMT plate, (1) Stereo "Live" chambers, (2) Master Rooms

Other Outboard Equipment: Normal studio complement includes (2) UREI 1176 limiters or dbx 160 limiters, Eventide 1745 A or M delay, (2) Keyex I noise gates, Inventory of rental out board gear available through Rent A Sound includes: Lexicon 224X, EMT 250, EMT 251, Eventide H949 Harmonizers, Teletronix LA 2A limiters, UREI 1176 and LA 4 limiters, dbx 165 and 160 limiters, dbx 900 series gates, de-essers and compressors, Pultec equalizers, Trident equalizers, Lexicon 93 Prime Times, Keyex II Gain Brain II noise gates, ADH Vocal Stressor, MXR Flangers Lexicon PCM 41 delays (3) MCI JH 45 SMPTC synchronizers, Audio Kinetics Q Lock Synchronizer

Microphones: Neumann U 47, U 67, U 87, KM 84, KM 86, U 47 FET, Sony ECM-22, 50, 51, 377, C-37P, C-55P, C-500; Beyer M 88, 101, 160, 260, AKG C-12, 414, 414EB, 452EB, 224E, D12; Schoeps M-21B (tube), CMT 54, 55, 501, CMI-03, Collette Series, Shure 984 Stereo, PML DC 7451 B48, Altec 633

Instruments Available: 9' grand piano available in studios A, C and E, Baldwin, Mason Hamlin and Baldwin SD10X Complete in

ventory of rental instruments available through associated company. Rent A-Sound

Video Equipment & Services: Complete video production available '84 4 machine 1/2 C & 1/4" computer controlled video tape editing suites, Rank Cintel Film to tape transfer; Video tape duplication—all formats, 50 x 50 soundstage with Strand Century Lighting & Ikegami cameras, Chyron graphics & titling, Ampex ADO II digital video effects

Rates: Our rates are very flexible—depending on the individual situation. Please call Richard Lee, General Manager, or Marcia Latta, Traffic Manager for information.

Extras: Private lounge with pool table for East Wing studio, sun deck, pinball, TV's, coffee, tea. Miami Beach mansions with pool and docks available through Home At Last with meals and maid service.

Direction: Criteria is a full service audio video film production facility with over 100 gold and platinum awards. The facility which encompasses studio recording, remote recording, disc-mastering, media services, video and film production has the firm belief that diversification is the way of the 80's.

••••DB RECORDING STUDIO, INC.
14207 N.E. 18th Ave., N. Miami, FL 33181
(305) 949-8918
Owner: Seth Snyder
Studio Manager: Seth Snyder

••••DOPPLER STUDIOS, INC.
1922 Piedmont Circle, N.E., Atlanta, GA 30324
(404) 873-6941
Owner: Pete Caldwell
Studio Manager: Pete Caldwell
Engineers: Bill Quinn, Chief Engineer; Joe Neil, Steve Davis, Jeff Brugger, Curt Bush, Ed Clawson, Michael Bennett, Chief Technician.
Dimensions of Studios: A 35 x 50 (with 2 isolation booths and live end dead end), B 25 x 45 (with 1 isolation booth and live end dead end), C 15 x 20, D 12 x 15.
Dimensions of Control Rooms: A 15 x 25, B 15 x 17, C 10 x 15, D 15 x 13.
Tape Recorders: Otari MTR-90 II 24 track, Otari MTR-10 2 track, 3M 79 24/16 track, Ampex ATR 100 2/mono, Scully 280 4/2 mono.
Mixing Consoles: Sphere Eclipse C, 40 in x 40 out, Sphere A, 28 in x 24 out, Audiotronics 110-A, 12 in x 4 out, custom, 8 in x 8 out.
Monitor Amplifiers: Crest, Yamaha.
Monitor Speakers: URH 813, JBL 4311, Auratones.
Echo, Reverb, & Delay Systems: Lexicon 224, Lexicon Prime Time, EMT 140 plates, Eventide 1745M, Marshall Time Modulator.
Other Outboard Equipment: ADR Vocal Stressor, dbx 160, 163, 165 and UREI 1176 compressor/limiters, Kepex, Gain Brain, dbx noise reduction, Orban Parametric equalizers and de-essers.
Microphones: Neumann, AKG, Studer, Sennheiser, Shure, and F.V.
Instruments Available: Steinway grand and Baldwin baby grand pianos, Ludwig and Rogers drum sets, Hammond B-3 w/Leslie cabinet, Fender amps.
Video Equipment & Services: Video Sync with Sony 5850 3/4" VCR, BTX Shadow system, 35 mm stripe and 16 mm ir 3 rooms.
Rates: Upon request.



EAST AVALON RECORDERS
Muscle Shoals, AL

••••EAST AVALON RECORDERS
2815 Avalon Ave., P.O. Box 2746,
Muscle Shoals, AL 35660
(205) 381-7404
Owner: Steve Moore
Studio Manager: Steve Moore
Tape Recorders: MCI JH-24 w/Autolocator III; MCI JH-110 2 track, Ampex ATR-100 2 track, Ampex ATR-700
Mixing Consoles: MCI JH636/28

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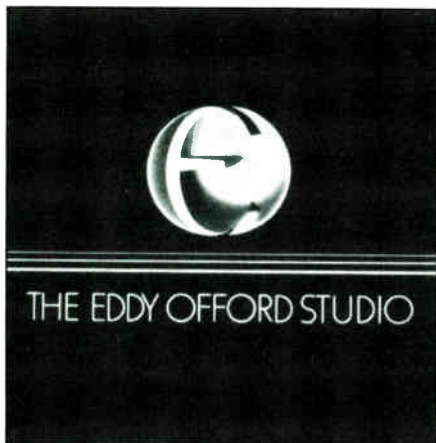
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Monitor Amplifiers: McIntosh 2105, GLW 250c, Crown D-60
Echo, Reverb, & Delay Systems: Lexicon 224 digital reverb natural acoustic chamber (stereo), Lexicon M93 Prime Time Eventide H910 Harmonizer Eventide F1201 flanger Yamaha F1010 analog delay
Other Outboard Equipment: dbx 160, UREI 1176LN limiters, Orban Parasound 622B parametric EQ Orban Parasound de-esser
Microphones: Neumann KM84, U47, U87, AKG C414EB C451E, D224E E-V RE20, RE15 RE10, CS15, Sony EC9P, Sennheiser 421, Shure SM57, SM58
Instruments Available: Yamaha grand piano, Rhodes piano, Wuritzer electric piano Hohner D6 clavinet, Hammond B2 organ w/Leslie, ARP Omni II synthesizer, ARP Pro Soloist, Tama drums w/Zildjian and Paiste cymbals, Music Man, Marshall instrument amplifier Sequential Circuits Prophet 5 and Synergy synthesizers (available on request)
Rates: Upon request

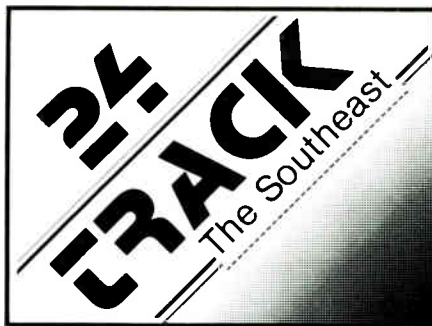


EDDY OFFORD STUDIOS
 Atlanta, GA

••••EDDY OFFORD STUDIOS
 also REMOTE RECORDING
 P.O. Box 90903 (1493 Jefferson St.),
 Atlanta, GA 30364
 (404) 766-5143
Owner: Eddy Offord
Studio Manager: Valma Valle
Engineers: Eddy Offord, Chuck Allen
Dimensions of Studios: 10,000 sq ft
Tape Recorders: MCI JH 100 24 track, MCI JH-110 2 track, Studer A-800
Mixing Consoles: Neotek Series III 28 in x 24 out
Monitor Amplifiers: Crown DC 300A D-75s (phones)
Monitor Speakers: JBL 4350s, JBL 4311s, MDM TA3s
Echo, Reverb, & Delay Systems: Lexicon 224 digital reverb, Klark-Teknik DN34 AKG BX20 reverb
Other Outboard Equipment: Dolby noise reduction, NTP limiters; Barth EQ, UREI limiters and compressors, Eventide Digital Delay Flanger Harmonizer and Phaser: survival projects
Microphones: Schoeps, Neumann, Shure, Beyer, E.V. Crown PZM, and transformerless active direct boxes. We also have a unique headphone system (patent pending) that allows each musician to mix his/her own phones
Instruments Available: Steinway B piano, Moeller pipe organ
Rates: Available upon request
Extras: Kitchen services available, game and video rooms planned, guest passes available for American Fitness Center. With 550 theater seats inside studios are video and radio broadcast capable. Accommodations can be arranged for out of town visitors
Direction: Eddy Offord produced 7 albums by Yes and engineered 4 albums by Emerson Lake & Palmer. Melody Maker Top Ten Producers list ten years in a row. We are unlike any other studio in the business in that there is no physical barrier separating the musicians and the board. Located in 40 year old East Point Theatre, Eddy Offord Studios has an ambience that must be seen to be appreciated. We are totally musician oriented and dedicated to technical excellence and comfort.

••••EMERALD SOUND STUDIO
 1033 16th Ave. South, Nashville, TN 37212
 (615) 321-0511
Owner: David Malloy & Ewen Stevens
Studio Manager: Jean Robertson

••••FAME RECORDING STUDIOS, INC.
 603 E. Avalon Ave., Muscle Shoals, AL 35662
 (205) 381-0801
Owner: Rick Hall
Studio Manager: Walt Aldridge



••••FANTA PROFESSIONAL SERVICES
 also REMOTE RECORDING
 1213 16th Ave. S., Nashville, TN 37212
 (615) 327-1731
Owner: Johnny Rosen
Studio Manager: Johnny Rosen, Mervin Louque
Direction: Fanta's mobile units are designed to accommodate any type of audio mobile recording. Credits include the New York Philharmonic, the Philadelphia Symphony, the Rolling Stones, Kenny Loggins, Journey, "Coal Miner's Daughter," "Blues Brothers," Robert Altman's "Nashville," and virtually 100% of the major country music acts. Our 40-foot tractor trailer rig provides a comfortable working environment. The depth of equipment is extensive, including everything necessary for complex television and film shoots as well as the needs of album recording. From mono Nagra recording through a complex 46 track lock-up system, we try to meet the needs of each job without interfering with the artistic feel of the project.

FANTA PROFESSIONAL SERVICES
 Nashville, TN



••••FIRESIDE STUDIO
 813-18th Ave. S., Nashville, TN 37203
 (615) 327-1150
Owner: Mike Smith, Craig Kendall
Engineers: Roger Holmes, Doyle Gresham
Dimensions of Studios: Big
Dimensions of Control Rooms: Not so big
Tape Recorders: MCI-24, Ampex ATH 100 2 track, Studer B 67 2 track, Ampex 440 2 track
Mixing Consoles: MCI 600 28/24
Monitor Amplifiers: McIntosh Crown
Monitor Speakers: Time Alan
Echo, Reverb, & Delay Systems: (2) EMT
Rates: Please call for rates

••••FULL SAIL RECORDERS
 also REMOTE RECORDING
 660 Douglas Ave., Altamonte Springs, FL 32714
 (305) 788-2450
Owner: Jon Phelps
Studio Manager: Gary Platt, School Mgr: Esther McCoy
Engineers: Gary Platt
Tape Recorders: Otari M90 24 track Otari M10 2 track
Mixing Consoles: Sphere Eclipse 32 in x 24 out
Monitor Amplifiers: Hafler DH500 Hafler DH266
Monitor Speakers: Foxtex A ratones
Echo, Reverb, & Delay Systems: Lexicon 224, Lexicon Prime Time, Lexicon PCM 41 delay MICMIX
Other Outboard Equipment: dbx 900 racks dbx Over Easy's dbx 902 de-essers, dbx 904 gates, dbx 905 parametrics, dbx 160X limiters, Omnitrack GT4 gates, Eventide flanger, UREI 964 digital metronome

Microphones: Neumann KM84 AKG 414, Sennheiser 421 E-V RE20 CS 15, P-180, Shure SM57
Rates: Upon request
Extras: Live concert recording, on location recording, audio support for video shoots, digital recording, Recording Engineering School
Credits: Lynn Anderson, Arif M. Barakat, Wang Bar King LP, JD Blackfoot, Carman, Clarence Clements, Marshall Crenshaw, Herbie Hancock, George Jones, Greg Kihn, Burt King, Crimson Kingdon, Tim Lenny Lieber, Larry London, Sunda Patti, Prudential, DR Broadcasting, Turley Richards, John Waite, CBS, The Benson Co., Heartland Records, Island Records, PHS Sound Stage, Savvy Records

FULL SAIL RECORDERS
 Altamonte Springs, FL



••••GLASER SOUND STUDIOS, INC.
 916 19th Ave. So., Nashville, TN 37212
 (615) 327-0005

••••GRANITE CITY SOUND STUDIOS
 137 Riverside Dr., Mt. Airy, NC 27030
 (919) 789-9311
Owner: Roger Easter
Studio Manager: Russell Easter, Jr.



GREAT CIRCLE SOUND
 Nashville, TN

••••GREAT CIRCLE SOUND
 365 Great Circle Rd., Nashville, TN 37228
 (615) 256-1763
Owner: The Benson Co.
Studio Manager: Warren Beitz
Engineers: Bob Clark, Chris McCollum
Dimensions of Studios: 40 x 60
Dimensions of Control Rooms: 16 x 21
Tape Recorders: Studer A 800 24 track, MCI JH 110, Studer A710 cassette, Studer A 80 VII 1/2" 2 track
Mixing Consoles: MCI JH 528 28 in x 28 out
Monitor Amplifiers: McIntosh 2400 Crown D 150
Monitor Speakers: UREI Time Aligned 814, Auratone SC1, Technics SB F2
Echo, Reverb, & Delay Systems: Lexicon orbital delay 102 Delta, EMT 240 Gold Foil, AKG BX 20 Spring echo
Other Outboard Equipment: Eventide flanger, 4) UREI 1176 limiters (2) UREI LA 5A limiter, (2) dbx 160 limiters, Orban parametric EQ, Orban de-esser, Harmonizer, Kefex, Dolby, (2) ADH vocal stressors
Microphones: Neumann U47, U47, KM84, Sennheiser 421

FLANNER'S PRO AUDIO, INC.

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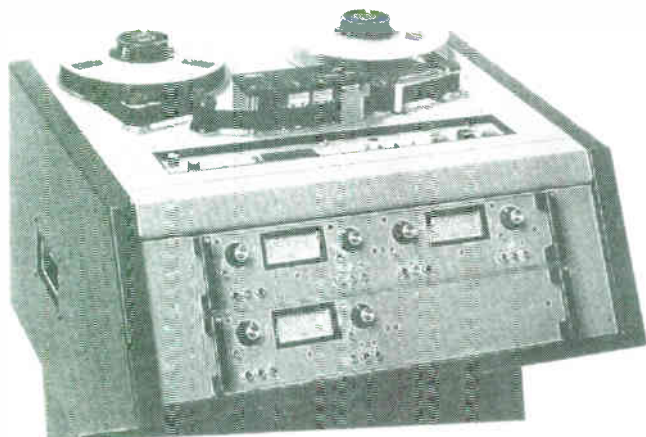
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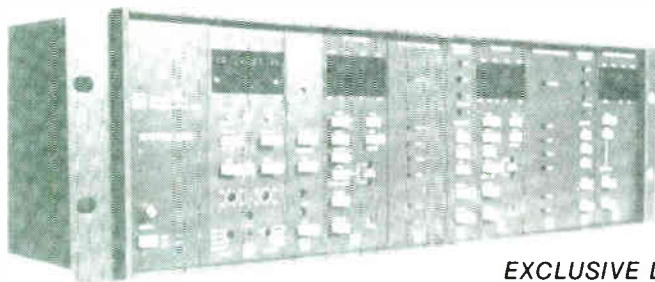
Today's broadcasters and audio/video production houses recognize that full range, dynamic, and quiet audio tracks can contribute a great deal to the impact of video production and customer satisfaction.

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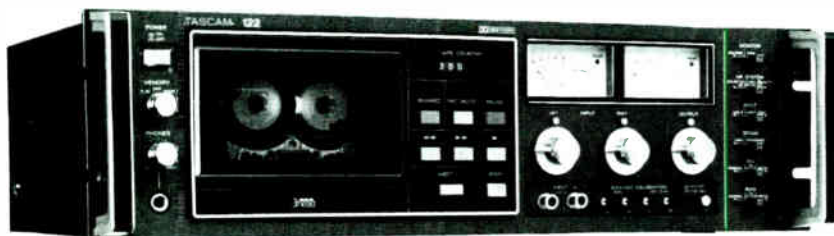
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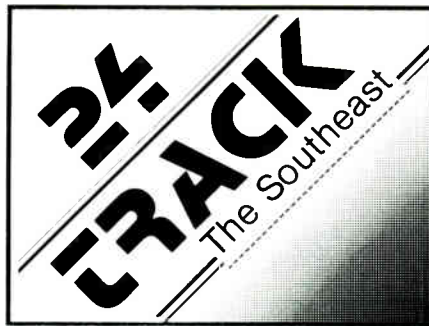
Instruments Available: Yamaha 7'4" grand piano, ARP Strato Ensemble, Hammond C3 organ & Leslie, Wurliizer electric piano, clavinet, Music Man bass & guitar amps, UREI bandpass filter
Rates: Available upon request

◆◆◆GROUNDSTAR LABORATORY
(Division of Ronnie Milsap Enterprises)
12 Music Circle So., Nashville, TN 37203
(615) 244-4861
Owner: Ronnie Milsap
Studio Manager: Don Reeves, Ben Harris



HAYES RECORDING STUDIO
Tampa FL

◆◆◆HAYES RECORDING STUDIO
2406 So. MacDill Ave., Tampa, FL 33609
(813) 837-6384
Owner: Paul Hayes
Studio Manager: Paul Hayes



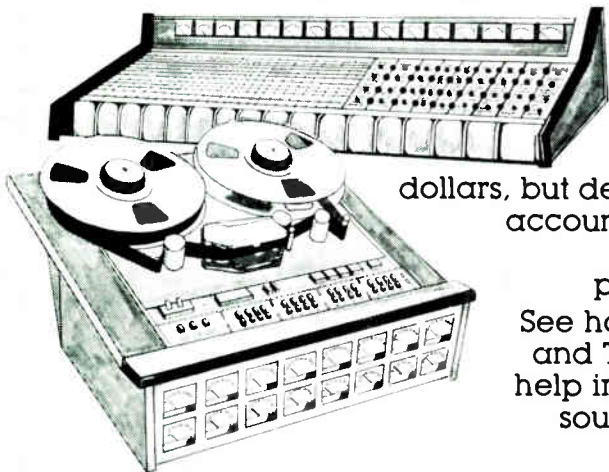
Engineers: Gary Rivera, Paul Hayes, Kevin Hayes
Dimensions of Studios: A 20 x 24 x 12, Isolation rooms 8 x 9 and 8 x 10
Dimensions of Control Rooms: A 20 x 15 x 9; B (production) 10 x 20
Tape Recorders: Ampex MM1200 24 track, (3) Ampex 440-F 2 track, Ampex 440 B 1 track, Ampex 440 B 8 track, Ampex ATR 700 2 track, TEAC 40 4 4 track, Studer A80IC 2 track 1/2" & 1/4", Tascam 122 cassette, Ampex 440B 4 track
Mixing Consoles: A Sphera A custom 24 in x 16 out, B OpAmp Labs 216 custom 12 in x 4 out
Monitor Amplifiers: Crest P3500, 2501S, Yamaha P2050, McIntosh 2105 (phones)
Monitor Speakers: E-V Sentry III, MDM4 Auratone 5C, E V Sentry 1A, JBL 4401
Echo, Reverb, & Delay Systems: BAE LP140 plate, MICMIX XL 305 Master Room III DeltaLab DL2 Eventide H910 MXR 175 Digital time delay, MXR 174 pitch doubler
Other Outboard Equipment: dbx 160 compressor limiters, MXR 136 dual limiter, Orban 516EC de-esser, Audioarts 4230 parametric, ADR Vocal Stressor, 32 channels dbx NR EXR3 Exciter, UREI 549 Room EQ, Countryman direct boxes SMPTE time code available, Symetrix SG200 noise gates, Technics SP-25 turntables
Microphones: Neumann U87 U47 (tube) AKG 414 P48 452EB 451E D202 Meyer M160N E.V RE20 RE16, 666 Shure SM54 SM57 SM58 Sennheiser MD421 RCA 77CX 44DX, Sony C17 (tube), Countryman 85, Wahrenbrock P2M 130

Instruments Available: Marshall & Wendall grand piano, Hammond organ w/ Leslie, Deagan electric chimes, Ludwig drums w/Zildjian cymbals, Fender Champ and Twin amplifiers Other instruments available on rental basis
Rates: Available on request Producer packages available
Extras: Studio musicians available, full sound effects library, production music library, custom audio visual production, custom and stock juggle tracks 10 minutes from Tampa International airport Accommodations arranged on the Gulf of Mexico
Direction: Established in 1959 we have become the fastest growing 24 track facility on the West Coast of Florida. We have a relaxed, hassle free atmosphere with the technical and creative support you want

◆◆◆HMC STUDIOS
5457 Old Monroe Rd., Charlotte, NC 28212
(704) 536-0424
Owner: Nick Hice
Studio Manager: Don Capozzoli
Engineers: Hank Poole, David Floyd, Jim Brock, Doug Hawthorne, Dave Henson
Dimensions of Studios: 50 x 50 x 23
Dimensions of Control Rooms: 13 x 28 x 10
Tape Recorders: MCI JH 114-24 w/Autolocator 24 track, Scully 450B 2 track, AIWA cassette
Mixing Consoles: MCI 4/4 24 24
Monitor Amplifiers: Crown
Monitor Speakers: JBL
Echo, Reverb, & Delay Systems: EMT stereo, EMT mono, Eventide
Other Outboard Equipment: UREI and dbx limiters, Eventide reverb and flanger, Orban de-esser, Pultec EQ and filters, White and octave EQ, Technics SMK10 turntable
Microphones: Neumann U87 U86 KM84 U47 Sennheiser 405 421, Shure SM57 SM58, Electro-Voice RE15, RE20, Sony FCM-50 P2M
Instruments Available: 7' Baldwin grand, Hammond B3 organ, Gretsch drums, ARP Odyssey, Axe, Höhner clavinet, Wurliizer, Farpischard, Fender Rhodes, Minimoog, Music Man, Fender amps
Rates: 24 track, \$125, 16 track, \$90, 2 track, \$55, mono, \$45 Flexi rates available. Please call

◆◆◆HILLTOP RECORDING STUDIO, INC.
902 New Due West Ave., Madison, TN 37115
(615) 865-5272
Owner: Billy Linneman, Jack & Betty Jo Linneman
Studio Manager: Betty Carpenter
Engineers: Kevin McManus, Chief, Jack Linneman, Billy Linneman, John Nicholson, Remix Engineer
Dimensions of Studios: A 18 x 35 x 9, B 22 x 25 x 9
Dimensions of Control Rooms: A 18 x 20 x 8, B 22 x 25 x 9
Tape Recorders: MCI JH 114 24 track
Mixing Consoles: Custom made, 28 in x 24 out
Monitor Amplifiers: Crown tri amp, DC300, D150, D60
Monitor Speakers: Klipsch K horn
Echo, Reverb, & Delay Systems: (2) EMT plates, Eventide Digital Delay & Harmonizer, Cooper Time Cube, Studio B Lexicon 224 digital reverb
Other Outboard Equipment: Dolby or dbx noise reduction, TFM rack, Eventide flanger, dbx limiters, UREI limiters, de-esser, Studio B Disk mastering and direct-to-disk
Microphones: Neumann, Shure, Sony, AKG
Instruments Available: Steinway CD-9 concert grand, various - everything
Rates: On request

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HUMMINGBIRD STUDIO
Nashville, TN

◆◆◆HUMMINGBIRD STUDIO
50 Music Sq. W., 8th Floor, Nashville, TN 37212
(615) 321-4789
Owner: Bob Farnsworth, Lynn Fuston, Gary Glover
Studio Manager: Lynn Fuston

••••INTERNATIONAL SOUND
80 NE 168 St., N. Miami, FL 33162
(305) 652-0777
Owner: Tom & Lou Pace
Studio Manager: Tom Pace

••••JOHN ST. JOHN AND HIS 27 TALENTED FRIENDS
1830 NE 153rd St., N. Miami Beach, FL 33162
(305) 945-6444
Owner: John St. John
Studio Manager: Lon Hope

••••KNIGHT RECORDING STUDIO, INC.
3116 Metairie Rd., Metairie, LA 70001
(504) 834-5711
Studio Manager: Traci Borges President, Bob Lawrence Vice President

••••LIVE OAK SOUND, INC.
949 Ferryman Quay, Chesapeake, VA 23323
(804) 487-6339
Owner: Live Oak Sound Inc
Studio Manager: Jim Mixles



LOFT PRODUCTIONS
McLean, VA

••••LOFT PRODUCTIONS
607 Chain Bridge Rd., McLean, VA 22101
(703) 524-5631
Owner: Charles Bogdanoff
Studio Manager: Pam Fox

••••LSI RECORDING
1006-17th Ave. So., Nashville, TN 37212
(615) 327-4565
Owner: Pat Carter
Studio Manager: Charli Hailey

••••MAJESTIC SOUND STUDIO
3800 Keith St. N.W., Cleveland, TN 37311
(615) 472-8200
Owner: Church of God of Prophecy (intl. headquarters)
Studio Manager: Thomas Duncan

mark five

MARK FIVE STUDIO
Greenville, SC

••••MARK FIVE STUDIO
10 Michael Dr., Greenville, SC 29610
(803) 269-3961
Owner: Bill Huffman, Jew Huttman, Harold Huttman,
Miri and Bernette
Studio Manager: Eric Howarth

••••MASTERCRAFT RECORDING CORP.
437 N. Cleveland, Memphis, TN 38104
(901) 274-2100
Owner: Howard Craft
Studio Manager: Howard Craft



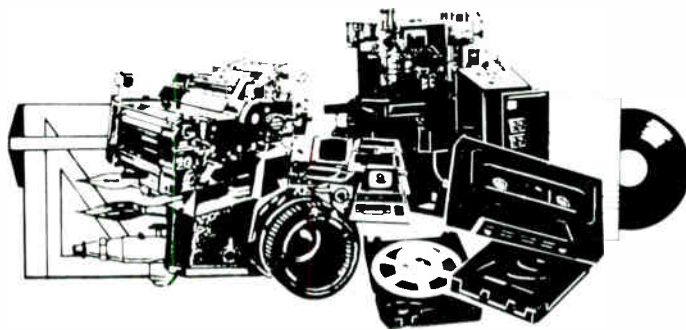
MASTER MIX
Nashville, TN

••••MASTER MIX
1808 Division St., Nashville, TN 37203
(615) 321-5970
Owner: Trio Entertainment Co
Studio Manager: Tom Semmes

••••MASTER SOUND STUDIOS, INC
also REMOTE RECORDING
1227 Spring St. N.W., Atlanta, GA 30309
(404) 873-6425
Owner: Bob Richardson
Studio Manager: Bob Richardson
Engineers: Bob Richardson, Ron Christopher, Buzz Richardson
and Bret Richardson
Dimensions of Studios: Music 43 x 25, Production 10 x 10
Dimensions of Control Rooms: Music 23 x 25, Production
10 x 10
Tape Recorders: (2) MCI JH 114 24 track, MCI JH-110 1/2" 2
track (4) MCI JH 110 1/4" 2 tracks, (2) Ampex AG 440B 2 track,
(2) Ampex AG 440B mono's, MCI JH 110B 1/2" 2 track mastering
Mixing Consoles: MCI 528B automation, 36 in x 24 out Audi-
tronics 110B 20 in x 4 out.
Monitor Amplifiers: BGW 250 500 Crown D150, 300
Monitor Speakers: Audicon custom, JBL 4313 Auratones
Echo, Reverb, & Delay Systems: EMT 140 mono and stereo,
Lexicon 224 Lexicon 102, Marshall Eventide, ADR
Other Outboard Equipment: dbx 165, 160, UREI LA2, LA3,
1176 ADR limiters: Pultec, Orban EQ ADR Vocal Stresser, Or-
ban de-esser
Microphones: Neumann U64 U68 1147, U47 FET KM86,
KM88 U86 U87 M49, AKG 414 C60 C61 202 Shure (all
types) E V (all types) Schoeps (all types) Sony C37, ECM50;
RCA 77DX Sennheiser (all types) Alter Telefunken others
Instruments Available: Baldwin G concert grand, Steinway 7
grand Rhodes 7 stage Hammond B3 organ Slingerland drums
Musser vibes, Ork bells, percussion kit, effects kit, Fender, Ampex
and Music Man amps
Video Equipment & Services: MCI JH45 audio/video sync lock,
Sony VP 1000 34" U-Matic, (2) Panasonic 19" color monitors
Rates: On request

••••MEGA SOUND STUDIO
also REMOTE RECORDING
P.O. Box 189, Main St., Bailey, NC 27807
(919) 235 3362
Owner: Jim Peterson Co. Inc.
Studio Manager: Richard H. Royall President
Engineers: Johnny Frazier, Robert H. H. Wall, Daniel H. Dixon
Dimensions of Studios: 18 x 40
Dimensions of Control Rooms: 12 x 18
Tape Recorders: MCI JH 114 24 Autolocator III 24 track, Scully
280B 2 track, Revox A 77 2 track, Revox A 77 1/4 track, Sony &
Nakamichi cassette
Mixing Consoles: MCI 400 Series 24 in x 24 out

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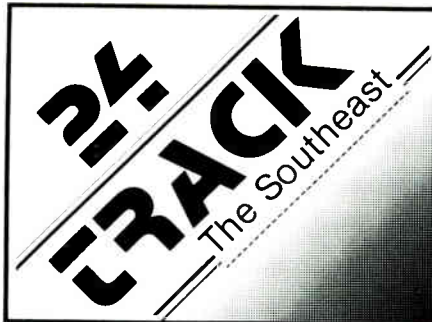
June 25-July 15
July 16-August 5
August 6-August 29

In the splendor of the Rocky Mountains, the Aspen Audio Recording Institute offers 3 intensive hands-on workshops in live recording techniques. Faculty is drawn from noted professionals of the recording industry. Using State-of-the-Art equipment, students record daily rehearsals and concerts of the Festival presenting a full range of recording experience from orchestra to opera, contemporary to jazz.

For further information write:
The Aspen Audio Recording Institute
The Aspen Music Festival
1860 Broadway Suite 401
New York, New York 10023

The Aspen Music School admits students of any race, color, national or ethnic origin

Circle #048 on Reader Service Card



Monitor Amplifiers: Crown, Midland, Fostex, Linear, Yamaha
Monitor Speakers: Bantam, JBL and Auratone reference monitors

Echo, Reverb, & Delay Systems: AKG BX 20, DeltaLab DL2, Lexicon Phase-Time, Eventide Harmonizer H910, Eventide D-1, Altamir

Other Outboard Equipment: 24 channel or 8x noise reduction, 8x noise reduction, mixers, 24 track UREI compressor limiters, Ashly parametric EQ, UREI 5201, 5202, EQs, DI Boxes and bases, transformer, Eventide A-10, Analyzer with Apple II 32K computer

Microphones: AEG, E.V. Neumann, RCA, Sennheiser, Shure, Sony

Instruments Available: Yamaha Conservatory grand piano, Hammond B3 organ, Fender Precision Bass guitar, Fender Rhodes electric piano, Pearl drum kit with symbol kit, Pacific 112 Zebra, Yamaha CS 60 B, Vox polyphonic synthesizer, Sequential Circuits Pro One monophonic synthesizer

Video Equipment & Services: Full range production services in association with Diversified Media Equipment, IVC, Sony, Panasonic, and DPM, computer, camera, computer

Rates: Write or call for rate card



MOBILE AUDIO
Rome, GA

MOBILE AUDIO ONLY REMOTE RECORDING

P.O. Box 6115, 3rd Floor NCB Bldg., Rome, GA 30161
(404) 232-7844

Owner: Rick Norvel

Studio Manager: Al Craig

Engineers: Al Craig, Kevin Burgar

Dimensions of Studios: 45' air ride trailer

Dimensions of Control Rooms: 20' x 8', Lounge: 15' x 8'
Tape Recorders: (2) Otari MTR 90 II 24 track, MTR 12 1/2" 2 track, MTR 12.4 OB 1/2" 4 track, Sony MCFX 1010 stereo cassette deck

Mixing Consoles: Sound workshop Series 44 36 in x 24 out audio console

Monitor Amplifiers: Haller DH500 power amp (3) Haller DH220 power amp

Monitor Speakers: (2) Fostex LS4R (2) Electro-Voice 100A (2) Auratone 5C

Echo, Reverb, & Delay Systems: Lexicon 200 digital reverb unit

Other Outboard Equipment: Valley People 430 stereo Dyna-Mite unit, 431 Dyna-Mite/Dyna-Mic combo (2) HH 2x2 units with rack mount (2) dbx 160 X limiters, Audio Arts 4200A (stereo parametric EQ)

Microphones: (6) Countryman FET direct boxes, (4) AKG C414/EB148 with combination shock mount/windscreen, (4) C460B combination with capsule swivel, (2) 125E, (2) Beyer M260, (2) M210, (4) Sennheiser MD421IU, (4) MD441IU, (6) MD441, (2) Shure SM811C, (2) SM57, (2) Sony ECM 50PB, (2) PZMs (Milab MP 40) (2) Neumann 1891 with shock mounts, (2) KM861 with shock mounts (2) KMS411 w/shock mounts

Video Equipment & Services: Panasonic 3400 Camera and power supply, (3) Panasonic 1900N color monitors, 300 video snake, (2) 150' cables; BTX Softouch System for two machines including Shadow synchronizer, Cypher SMPTE Generator/Reader plus front panel, Video Character inserter, Patch bay for video interface

Rates: Please call for more information

Extras: Luxurious audio and video monitoring lounge prewired for unlimited equipment possibilities, additional equipment available upon request

Direction: Mobile audio is primarily equipped to handle audio for video and 24 track remote recording of live performances. Mobile Audio can handle multiple audio feeds and radio interface

MONARCH SOUND, INC.

also REMOTE RECORDING

7 Roswell St., P.O.B. 228, Alpharetta, GA 30201
(404) 475-4533

Owner: Phil Benton, Paul Davis, Joel Katz

Studio Manager: Phil Benton

Engineers: Larry Turner, Dave Pensaco

Tape Recorders: Otari MTR90 24 track, Ampex MM110 16 track, 440 B 4/2 track

Mixing Consoles: Electrodyne 16/82, Trackside Ener 8/24/2

Monitor Amplifiers: AB Crown, BGW

Monitor Speakers: Les Duncan, JBL 4343A, MDM 4, Eastern Acoustic, HOR Auratone, Yamaha Phase Linear

Echo, Reverb, & Delay Systems: Lexicon 224, Ursa Major, Lexicon PCM 42, Live Room

Other Outboard Equipment: Harmonizers H949 & 910, dbx limiters 165-160, noise reduction for all machines, Chorus Echo 2, 8 gates, Larry Thompson CIX 2 lim/compress/decompress/duck/exp, Orban, Audioarts, Sphere, API, Orange County, UREI filters Time-Cube

Microphones: AKG, Neumann, Shure, E.V., Sennheiser

Instruments Available: Synclavier II, Prophet 5, Linn, Simmons Jupiter 8, Yamaha electric grand, 1 Rhodes, Wuritzer, Ovation, Tele, Martin, Les Paul, Marshalls, Fender Twin & Super, Pixey artist

Video Equipment & Services: 1/2" record or monitor

Rates: Call for rates

MORRISOUND RECORDING INC.

also REMOTE RECORDING

5120 N. Florida Ave., Tampa, FL 33663
(813) 238-0226

Owner: Morrisound Recording Inc

Studio Manager: Tom and Laurel Morris

Dimensions of Studios: A: 22 x 18, B: designed for voiceover and production

Dimensions of Control Rooms: A: 22 x 18, B: 13 x 6

Tape Recorders: Otari MTR 90 24 track, Otari 5050 1/2" 8 track, (2) Otari 5050B 2 tracks, Demon cassette decks (4)

Mixing Consoles: Sound Workshop Series 30 w/VCA 28 in x 24 out, Soundcraft 400B 16 x 8 x 4 x 2

Monitor Amplifiers: AB Systems

Monitor Speakers: UREI 811A, JBL 4312s, EAW MS50s, Auratone, E.V. Sentry 100s

Echo, Reverb, & Delay Systems: Lexicon 224 digital reverb, Master Room, Eventide Harmonizer, DeltaLab DL 4 digital delay and DL 5 Harmoniccomputer, Loti Analog delay/flanger

Other Outboard Equipment: dbx 165s, Valley People dyna mites, Omnicraft noise gates, EXB exciter, dbx noise reduction

Audioarts parametrics, 1AU compressor/limiter, individual musician controlled 8 channel headphone mixers

Microphones: Neumann U87s, AKG 414, 45s, E.V. RE20s, Sennheiser 441s, 421s, Shure SM57s, Audio Technica ATM 10 11, 31s 41s

Instruments Available: Yamaha grand piano, Fender Rhodes, Hammond C3 w/Leslie, Gretsch drum kit, Fender Lab and Holant guitar amps

Video Equipment & Services: BTX Shadow system for film and video shooting and sweetening

Rates: Please call for rates

MUSCLE SHOALS SOUND STUDIOS, INC.

1000 Alabama Ave., Sheffield, AL 35660

(205) 381-2060

Owner: Johnson, Hawkins, Hood, Berkett

Studio Manager: David Hood for bookings

Engineers: Jimmy Johnson, Pete Greene, Steve Mellon, Recording Technical, Gerald Sockwell

Dimensions of Studios: Studio A: 32 x 36 x 18, Studio B: 22 x 36 x 18

Dimensions of Control Rooms: A: 25 x 19, B: 25 x 19

Tape Recorders: Studer A-80 VU 24 track, A-80 HD 2 track, (2) B67 2 track, (2) MCI JH-24 24 track, Sony PCM-10 digital audio processor, SL-2000

Mixing Consoles: A: NEVE 8068 32 in x 32 out, B: NEVE with Neam 8088 32 in x 44 out

Monitor Amplifiers: BGW 250-D and 500 BGW 250 BGW 100, McIntosh MC2500, Yamaha P2201

Monitor Speakers: Audicon-1, MDM 4, JBL 4311 Auratone Little Reds, Electro-Voice 100-A, Klipsch, B&W DM12, RB

Echo, Reverb, & Delay Systems: EMT 140, Audicon plate, Lexicon 224, Prime Time, Eventide 1745 M, H910, and live chambers, Korg SDD-3000, MXR flanger/doubler

Other Outboard Equipment: Shadow BTX, API 550A and 560 EQ, ADR sweep EQ, ADR Vocal Sressor, Orban Parametric EQ, Orban de-esser, dbx 160 & 165 limiters, Teletronix LA-2A

limiters: Kepex Gainbrain UREI 1176 limiters, Ursa major space station Dolby noise reduction
Microphones: Neumann U 47 U 87, Sennheiser 421 427 441, E.V RE 15 6 45 666 AKG PMI, Sony Studer RCA, Beyers, Shure and other popular brands
Instruments Available: 9 Baldwin concert grand, 7 Yamaha grand Fender Rhodes & Wurlitzer electric pianos clavinet Hammond B-3 Fender Music Man & Marshall guitar amps, Moog ARP Prophet Korg LinnDrum Machine Simmons Pearl Drums
Rates: Hourly daily weekly and monthly rates available. Call for details

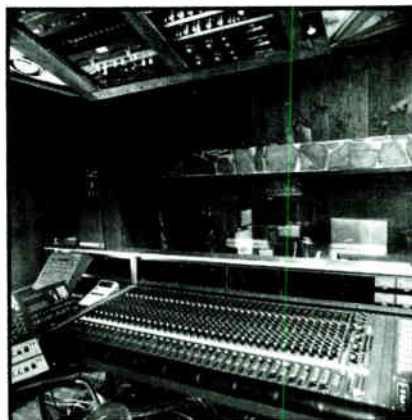
••••MUSIC CITY MUSIC HALL

30 Music Square West, Nashville, TN 37203
 (615) 255-9084 studio; 244-1060 office
 Owner: Owen Bradley
Studio Manager: Ceville Licht
Engineers: Bill Harris Assistant Doug Corder
Dimensions of Studios: 50 x 80 x 30 with walls up 50 x 40 x 30 with walls down
Dimensions of Control Rooms: 28 x 18 x 10
Tape Recorders: Studer A 80 24 track Studer A 80 Master Recorder 2 track Studer B67 2 track Ampex AG-440 4 track, Studer B710 cassette recorder
Mixing Consoles: Neve 803B 32 in x 24 out w Allison Research Fadex Automation
Monitor Amplifiers: McIntosh 2100s
Monitor Speakers: UREI B1s JRL 4413B Auratones
Echo, Reverb, & Delay Systems: (3) FMT plates Gotham Audio digital delay Eventide Harmonizer, Cooper Time Cube
Other Outboard Equipment: Two ADR Vocal Stressers Scamp rack Teletronics compressors LA-2A LA 3A limiters BTX syn chronizer & generator (42 tracks to 40 tracks possible), EXR Exciter, Dolby noise reduction, Eventide Phaser
Microphones: Neumann U87s U67s U47s U48s M49s KM84s KM56s E.V RE16s HE20, Sony ECM50s C500s C55s HCA 44s 77s, EIA 251s, AKG 414, 105 mikes total
Instruments Available: Steinway baby grand Baldwin 9 grand Steinway 5' G-1240 Hohner D 6 clavinet stereo Fender Rhodes Wurlitzer electric piano, Celeste, Zucker electric harpsichord Deagan vibes marimba, Hammond organ with B-3 Leslie
Rates: Available upon request

••••MUSIC MARKET PRODUCTIONS INC.

also **REMOTE RECORDING**
 4130 Aurora St., Coral Gables, FL 33146
 (305) 442-4116
 Owner: Tony Snetro Jr
Studio Manager: Paul Goure

“What’s a place like this doing in Charlotte?”



We’re doing great records.

O.K. guys, our complex contains two 24 track studios with brand new MCI equipment. What are you waiting for?



1018 Central Ave., Charlotte, N.C. 28204, Ph. 704/377-4596

Circle #049 on Reader Service Card



MUSIC MILL
 Nashville, TN

••••MUSIC MILL

1710 Roy Acuff Pl., Nashville, TN 37203
 (615) 254-5925
 Owner: Harold Shedd/Donny Canada
Studio Manager: Paul Goldbera
Engineers: Jim Cohen Chet Engineer Paul Goldbera Eric Preshdne Joe Scoble Lou Bradley
Dimensions of Studios: 27 x 30 (drum piano and vocal iso booths)
Dimensions of Control Rooms: 22 x 14 main 22 x 14 mix room (vocal O.D. booth)
Tape Recorders: Studer (2) A 800 24 track Studer 2' A 800HC 1 1/2" 2 track Studer (3) B 67 1 1/2 track Studer A-710 cassette
Mixing Consoles: Trident TSM Allison Fadex automation 32 in x 24 out, Trident TSM Allison Fadex automation 28 in x 24 out
Monitor Amplifiers: McIntosh 2300 BGW 750 C BGW 500B BGW 250
Monitor Speakers: Auratone Super Beds w master lab crossover, JBL 4440 Auratone SC White 4420 EQ Yamaha NS 10M
Echo, Reverb, & Delay Systems: (2) EMT 140 (2) BA5 L 140

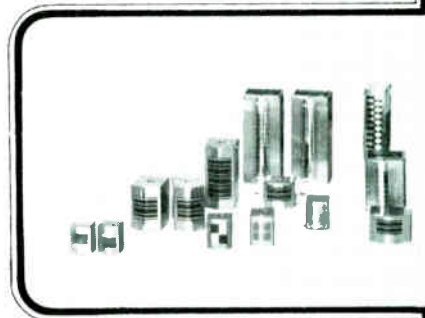
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- Recording Studios
- Tape Duplicating



New and reconditioned replacement heads from mono to 24-track . . . Many in stock.

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Circle #050 on Reader Service Card

Unique Calrec Soundfield Microphone MK IV

THE FEATURES

- Totally steerable both vertically and horizontally in POST PRODUCTION, off tape.**
- Variable stereo capsule angle and polar pattern in POST PRODUCTION, off tape.**
- Variable zoom, both forwards and backwards, in POST PRODUCTION, off tape.**
- The only truly coincident stereo microphone in the world.**
- Very low noise performance for the digital era.**
- Separate outputs for Ambisonic surround sound.**
- Level frequency response both on- and off-axis.**
- The most accurate polar patterns in the world.**
- Maximum input for less than 0.5% THD 140 dB SPL.**

THE FACTS

The spherical three-dimensional pick-up of the Soundfield Microphone is such that the phase errors introduced by the capsule spacing in normal microphones are effectively eliminated and the resulting stereo output of the control unit has virtually perfect image placement at all frequencies. The differing frequency responses of the pressure and gradient components of the signal are also corrected, thus giving an equally flat response to both on- and off-axis sounds. These two facts make it possible, for the first time ever, not only to generate exactly signals envisaged by A. D. Blumlein when he first proposed the M/S system, but to extend them into three dimensions.

This spherical representation of the original soundfield allows a stereo signal to be extracted pointing in any direction and of any first order polar diagram. The angle between the two microphones may be varied between 0° (mono) and 180° and the apparent proximity to the original sound sources may also be adjusted.

The control unit also provides a four-channel output signal, known as "B format", which exactly represents the first order characteristics of the soundfield. Recordings stored in "B format" allow the POST SESSION use of all the aforementioned controls. The advantage of being able to set such critical parameters as image width, direction of point and tilt, polar patterns and distance – all in the peace and quiet of the dubbing studio – cannot be over-emphasised. "B format" is also the professional signal format for Ambisonic surround sound and may be encoded directly to domestic transmission and consumption formats.

For further information, please contact your local dealer, national distributor or:-



Calrec Audio Ltd., Hangingroyd Lane,
Hebden Bridge, West Yorkshire, England.
Telephone: 0422 842159. Telex: 51311 Relays G.

U.S.A. & CANADA

Audio and Design, Inc. P.O. Box 786 Bremerton WA 98310
Telephone 206275 5009 Telex 152426 ADR USA



monizer & Flanger MXR DDI
Other Outboard Equipment: UREI Eventide and Asly comp limiters
Microphones: Neumann Shure E.V. RCA Condenser AKG
Instruments Available: Synclavier II w/16 voices dual mass printing, Sample-to-Disk DEC VT 100 monitor, Prism 89 printer, Yamaha G 2 piano, Hammond B-3 w/128 Leslie, Fender Rhodes, Prophet 5, Roland MC-8 AHP 2600 Odyssey Omni Poly 801 Micro Moog, Full Yamaha and Pearl drum sets, Vibes and a complete array of Latin percussion, assorted guitars and amps
Rates: \$50/hr and \$1,400/week
Extras: Polymusic has a highly qualified friendly staff of musicians, writers, lyricists, and arrangers to assist you. We also have an in-house audio production company
Direction: Our productions cover a broad range of musical styles and our wide range of services is a definite plus. Polymusic has a growing list of loyal clients and we invite you to become one of them

••••QUADRADIAL CINEMA CORP
 14203 N.E. 18th Ave., No. Miami, FL 33181
 (305) 940-7971, 940-7972, 940-7978, 940-7994
Owner: Robert M. Inaria, Mary A. Snavson
Studio Manager: Mary A. Snavson
Extras: Creative art director and advertising dept., photo printer, kitchen, dining and recreational areas. 19" Sony Trinitron color television and Betamax
Direction: Sex drugs rock n roll. Ex: In The Mix, Its A Crazy Business, 'Mon Bass'



REFLECTION SOUND STUDIOS
 Charlotte, NC

••••REFLECTION SOUND STUDIOS
 also REMOTE RECORDING
 1018 Central Ave., Charlotte, NC 28204
 (704) 377-4596
Owner: Wayne Johnson
Studio Manager: Mark Williams
Engineers: Steve Hudler, Mark Williams, Wayne Johnson, Chip Garrett
Dimensions of Studios: Studio A: 44 x 12 w/18 ceiling. Studio B: tape duplicating. Studio C: 29 x 14 w/18 ceiling. 18" remote recording truck
Dimensions of Control Rooms: Studio A: 18 x 10, Studio C: 18 x 14 plus above-top recorders
Tape Recorders: Studio A: MCI transformerless JH 24 w/JH 45 (SMPTE) 24 track. MCI transformerless JH 110B 24 track. MCI transformerless JH 110B 24 track. Ampex AG 440B Servo w/VSO 2 track. Studio C: MCI transformerless JH 24 track. Studio Revolver PH94 2 track. Ampex AG 440B full track. Otari MX 5050B 4 track
Mixing Consoles: Studio A: MCI transformerless automatic JH 636 46 w/Plasma Meters. Studio C: MCI transformerless JH 636 44 w/VCA Grouping. 24 x 24 (both boards purchased new late 83)
Monitor Amplifiers: AB Systems, BGW, White Room, F. J. in octave in "A" and 1/3 octave in "C"
Monitor Speakers: IAD, JBL, Big Heels, E.V. Sentry III, KEF-ROR, also two stereo sets systems in each room
Echo, Reverb, & Delay Systems: Lexicon 224X, IARC, EMI 140 (tube) stereo plate, AKG BX 70
Other Outboard Equipment: Studer A Delhali digital and Loft analog effects, UREI dbx and Orban level processors, White EQ and EXH Exciter, Dolby noise reduction, reverb, Studio C: dbx and Orban level processors, A nation's EQ, EXH Exciter
Microphones: Microphone collection includes a broad range of vacuum tube and solid state models from Neumann, AKG, Sennheiser, Sony, E.V. Shure and RCA
Instruments Available: Studio A: Yamaha 74 Conservatory grand piano, Hammond B-3 stereo Fender Rhodes (88), Fritschi organ, Tack piano and other one touch keyboards. Studio B: Gon-Bops percussion, Musser vibes, Fender bass, other guitars and amps. Studio C: Kawai 74 grand piano, Sonor drums
Video Equipment & Services: Inquire
Rates: Reasonable hourly rates and excellent block rates are available for both studios. Please ask for latest rates and

••••RIVER CITY RECORDERS
 1251 N. Acadian Throughway West,
 Baton Rouge, LA 70802
 (504) 383-8671
Owner: Hainer Stroeder
Studio Manager: Paul Adams

••••RKM SOUND STUDIOS
 1200 Spring St. N.W., Atlanta, GA 30309
 (404) 874-3667
Owner: Kuster Music Corp
Studio Manager: Jeff Kinder

••••ROXY RECORDING STUDIO
 827 Meridian St., Nashville, TN 37207
 (615) 227-0920
Owner: HBI Inc. Corp.
Studio Manager: Clark Smith

••••SAM'S TAPE TRUCK
 ONLY REMOTE RECORDING
 2785 Osborne Rd. N.E., Atlanta, GA 30319
 (404) 237-9075
Owner: Joe Neil
Studio Manager: Larry G. Gode

••••SCENE THREE, INC.
 ONLY REMOTE RECORDING
 1813 8th Ave. So., Nashville, TN 37203
 (615) 385-2820

••••SCRUGGS SOUND STUDIO, INC.
 2828 Azalea Place, Nashville, TN 37204
 (615) 383-7994
Owner: Hardy Scruggs and Steve Scruggs
Studio Manager: Dorothy Smith
Engineers: Tom Brown, Steve Scruggs, Randy Scruggs
Dimensions of Studios: 26 x 35 w/cathedral ceiling
Dimensions of Control Rooms: 12 x 10
Tape Recorders: MCI JH 4 transformerless 24 track, MCI JH 110 24 transformerless 2 track, MCI JH 110 4 transformerless 2 track, Sony cassette deck
Mixing Consoles: MCI JH 636 w/tail automation & VCA group, also 28 x 14 2 track
Monitor Amplifiers: McIntosh 2400, Crown DC 300, Crown DC 150, BGW
Monitor Speakers: Art 1604E big boxes w/Mastercard Lab cross wires, B4 415, MDM 4 track w/matrix, Altec 605 speakers
Echo, Reverb, & Delay Systems: EMT 250 digital reverb, Lexicon plate reverb, Lexicon Prime Time
Other Outboard Equipment: Vocal Stress 1, Audioarts stereo parametric 1/3 octave compressor, MXR Phase 90, Harmonizer, API 550 A EQ, 24 tracks dbx noise reduction, Orban Servance 4 controller
Microphones: Neumann U87, KM84, U47, AKG 414s, 451s, 452s, Sennheiser 431, Sony condenser, Caltech condensers, Shure SM57, SM58, E.V. RE-20s
Instruments Available: Yamaha 74 grand piano, stereo Rhodes 88 electric piano, AHP synthesizer, Ludwig wood, new drums, various assortment of amplifiers, musical instruments, Hammond A-100 organ, Leslie, other equipment available on rent-a-basis
Rates: Fair to rate

••••SHOCK HOUSE RECORDING STUDIO
 920-19th Ave. So., Nashville, TN 37212
 (615) 320-1733
Owner: Mike Snockley
Studio Manager: Jon Hayes

••••SHOE PRODUCTIONS, INC.
 485 N. Hollywood, Memphis, TN 38112
 (901) 458-4496
Owner: Warren Wagner, Wayne Crook, Alan Perini
Studio Manager: Wayne Crook

••••SONGBIRD STUDIO
 also REMOTE RECORDING
 1715 DeFoor Ave., Atlanta, GA 30318
 (404) 351-5955
Owner: Richard Heald
Studio Manager: Richard Heald
Engineers: Richard Heald, Barry Pleasant
Dimensions of Studios: 31 x 14
Dimensions of Control Rooms: 15 x 12
Tape Recorders: Ampex MM 1100 w/200 electronics, JH 24 track, Technics 1520 2 track, Ampex 440B 2 track, Technics 1508 2 track, Tascam 608 8 track, Tascam 25 2 track, Ampex ATH 100 2 track w/1/2 inch
Mixing Consoles: Sound Workshop 1600, 28 in x 24 out w/tail, Arins automation, noise gates on all channels, T-Pro C 12 for non-remote track
Monitor Amplifiers: Crown DC 300, Tascam CE 120
Monitor Speakers: JBL 4-11, Altec 605
Echo, Reverb, & Delay Systems: Ursa Major digital reverb, Lexicon, Time Trek, delay, reverb, AD 22, analog delay, Lexicon, 224X digital reverb

Other Outboard Equipment: UREI LA 4 compressor/limiters, UREI Spina Aver, compressor, limiter, expander, dbx 163 compressors/limiters, ICP preamp, SAF parametric 2b channels dbx 11 sound parametric
Microphones: Neumann U87 (2), KM84 (2), U64 (tubes), Sony C48, ECM 45s, E.V. RE-20s, Sennheiser 414s, 441s, Crown PZM, Shure SM57, AKG 414, Ebs, Boyer 10, 20, Countryman FM101s
Instruments Available: Kawai 74 grand piano, Gretsch drums, AHP Omni AHP Axxo, AHP Avator, Fender Rhodes with Satellite speakers, Hohner clavichord, Univox reverb tank, Hammond B-3 sound, Wuritzer acoustic piano, Synclavier II 24 voice digital synthesizer with music printing, seq 1 and sample-to-disk options
Rates: Call for rates
Extras: Studio has a great atmosphere with 20' flat ceiling, dry ceiling, main room, drum booth and vocal booth. It has a great acoustical balance between live and dead surfaces utilizing both hard wood surfaces and with the heavy wood paneling. Studio material



SOUND CHECK RECORDING
 Ft. Myers, FL

••••SOUND CHECK RECORDING
 also REMOTE RECORDING
 1635 Jackson St., Ft. Myers, FL 33901
 (813) 334-4994
Owner: Jim Becker
Studio Manager: Jim Becker

••••SOUND EMPORIUM STUDIOS, INC.
 3102 Belmont Blvd., Nashville, TN 37212
 (615) 383-1982
Owner: CAC Live Events, Roy Clark & Jim Williams
Studio Manager: Jim Williamson
Engineers: Stan Jim, Williams, Gary Loney (independent), Cathy Feltz, Cagle, Leland, Burt Spanel, Mike Post, Hank Horton
Dimensions of Studios: A: 35 x 19 x 22 w/16 x 20 string groove, B: 14 x 12 x 14 w/11 x 11 x 4' 10" ceiling and 11 x 7' drum booth
Dimensions of Control Rooms: A: 19 x 10, B: 15 x 12
Tape Recorders: Studer A 80 VU II 24 track 1/2 inch, Studer H 67 2 track 1/2 inch, Studer H 67 1/2 inch, Ampex AG 440B 4 track
Mixing Consoles: Studio A: Harrison 32 A B 32 x 3, Studio B: Harrison 24 24 x 24 x 24
Monitor Amplifiers: BGW, McIntosh, Crown, Sony
Monitor Speakers: Sennheiser (Gauss woofers, TAD drivers) JBL 4-10 etc.
Echo, Reverb, & Delay Systems: EMI 14 stereo plates 2 per studio, Analog Effects Chamber, 8 x 10 1/2 4' Lex, on Effects, Lexicon
Other Outboard Equipment: Lexicon 224, 24, 10DL, noise gate, Harmonizer, phase shifter, Vocal Stress, compressor/limiters, compressors, Prime Time
Microphones: AKG E.V., Neumann, PZM, RCA, Sennheiser, Sony, Sennheiser, JBL, White, Studer
Instruments Available: Fender Rhodes, Wuritzer, Hammond organs, Clavinet, Celeste, Chikering grand piano, Studio A: Steinway grand piano (Studio B: Rock piano, tympani, congas, various maracas, 4' 10" bells, Malmog organ, harp, horn)
Rates: Upon request
Extras: Other instruments and equipment available upon request - ask us
Direction: D. Williams, Wade Nesler, Mr. Davy, Roy Clark, Lee Greenwood, Charlie Pride, Johnny Hallyday, produced by Pierre Billaud, Brenda Love, Kenny Rogers, Dottie West, Johnny Cash, Terry Gibbs, Tim James, Paul Anka, Julie Andrews, Larry Griffin, Larry Darrin, George Jones, The Stattons, Katy Mitton, Jerry Heed, Don McLean, Little River Band, Mashed Potatoe, Bono, John Denver, Sammy Davis Jr., Derby Boone, Joe Biny, Chet Atkins, Johnny Hallyday, Wayne Jennings

◆◆◆SOUND STAGE

10 Music Circle South, Nashville, TN 37203
(615) 256-2676

Owner: 8 owners—Incorporated

Studio Manager: Pat Meyer

Engineers: Chief Engineer Brent King Maintenance Supervisor Mike Porter Engineers Ron Treat Steve Tullish Warren Peterson

Dimensions of Studios: Studio A (front stage) 48 x 30 Studio B (back stage) 30 x 20

Dimensions of Control Rooms: Front stage 15 x 30 Back stage 24 x 24

Tape Recorders: Studer A 800 24/16 track Studer A 80 12" and 2" 24/2 track Studer A 80 14" 2 track Studer B 67 14" 2 track upon request JVC Digital System 2 track

Mixing Consoles: Neve w/Neacm 8068 42 in x 16 out Trident w/65k automation TSM 32 in x 24 out

Monitor Amplifiers: AB Systems, McIntosh, BGW, Crown

Monitor Speakers: George Auspuzner custom monitors JBL 117bs Auratone Bolivar JBL 4311, Yamaha NS10

Echo, Reverb, & Delay Systems: EMT 251 digital reverb (4) EMTs EMT Gold Foil Lexicon Delta T Lexicon Prime Time Eventide digital delay Cooper Time Cube

Other Outboard Equipment: Eventide Harmonizer, UREI, Teletronix dbx Neve limiters, ADR Vocal Stressors ADR Scamp Rack Kopyex Gain Brain Pultec tube EQ Orban De esser UREI Soudkratt parametrics, etc

Microphones: Neumann U47 U87 KM86, KM84 KM54, AKG 4.4 451 452 D12 D24 Sennheiser 421 441 Sony 14P 22 Meyer M99, Studer SKM5U SK S501, Crown P2M plates, E V Ribbon, HE 20

Instruments Available: 9' C Bechstein 7' Steinway Hammond B 4 Rhodes stereo HH 73 Holmer clavinet, Wurlitzer Star Tack piano

Rates: \$130/hr w/engineer \$160/hr mixdown w/Neacm

◆◆◆SOUND SHINE PRODUCTIONS

723 W Sunrise Blvd., Ft. Lauderdale, FL 33311
(305) 463-9882

Owner: Thomas Gruefle

Studio Manager: Paul Avakian

◆◆◆SOUNDS OF MEMPHIS, INC.

904 Rayner St., Memphis, TN 38114
(901) 278-1100

Owner: Linda Lucchesi

Studio Manager: Linda Lucchesi

◆◆◆SOUNDS UNREEL STUDIOS

also REMOTE RECORDING
1902-04 Nelson, Memphis, TN 38114
(901) 276-8468

Owner: Jon Hornyak and Don Smith

Studio Manager: Jon Hornyak

Engineers: Don Smith, Jack Holder, Jon Hornyak, James Lott
Dimensions of Studios: A 44 x 19 x 12 B 26 8 x 15 4 x 10

Dimensions of Control Rooms: A 14 x 15 1/2 x 11 1/4 B 14 1/4 x 15 1/2 x 10 1/2

Tape Recorders: Otari MTR 90 11 24 track TEAC Tascam 800H w/4x 8 track Otari MTR 10 2 track MX 9050B 2 track TEAC 6100 2 track

Mixing Consoles: Sound Workshop Series 30 MB 46 24

Monitor Amplifiers: Yamaha Crown HGW

Monitor Speakers: Shwen Durr Custom Monitors JBL JAD JBL 44 0 MDM 1A 2 JBL 4 111 Yamaha NS10B Auratone

Echo, Reverb, & Delay Systems: Ursa Major RX 42 digital reverb, Koru programmable digital delay Lott analog delay tanker Sound Workshop stereo reverb K 11 1/2

Other Outboard Equipment: dbx 900 Manfranco w/limiters compressors, noise gates, Neve esser, Syntrix 500 analog EHX Exciter mix enhancer ADR Vocal Stressor Parametric Eventide Harmonizer

Microphones: AKG 414 451 D 11 E 224 Neumann U87, KM84, Smau SM7 SM57 SM58 Soudkresser 4.1 E V RE 1 Ribbon Crown P2M Boyer M500

Instruments Available: Hammond B 3 Yamaha C 70B Mini-Moon Oberheim 4 voice Brnoyer Equipment Fender Telecaster 1970 Fender Telecaster & Telecaster guitars W Eas Pearl drums Twin reverb Lib Marshall amps

Rates: Upon request

◆◆◆SOUNDTRACK

2830 Dogwood Place, Nashville, TN 37204
(615) 297-2239

Owner: Wayne Edmondson

Studio Manager: Starry Starr

◆◆◆SOUND TREK RECORDING STUDIO, INC.

P.O. Box 12422, Pensacola, FL 32582
(904) 434-0052

Owner: C.B. Fowler

Studio Manager: Glen S. Fowler

Engineers: Glen S. Fowler Ed Garcia

Dimensions of Studios 675 sq ft in Cabin drum booth & 2 vocal booths

Dimensions of Control Rooms 14 1/2 x 15 1/2

Tape Recorders Studer A 80 MKIII 24 track Studer B 67 2 track Sully 280 4 track Tascam 42 2B 2 track Tascam 22 (cassette) 2 track AKAI GX 77 2 track

Mixing Consoles Sound Workshop 30/28 MB 2B w parametric EQ automation & Super Group

Monitor Amplifiers: (2) Crown PS 200, Crown D 75

Monitor Speakers: JBLs 44 0, 4311 Auratone 5C cubes

Echo, Reverb, & Delay Systems Etoplate II Lexicon digital reverb Eventide Harmonizer 949, Lott delay line

Other Outboard Equipment: Orban 4/4 stereo compressor 2 dbx 16X compressors Orban C 101 noise gates 4 channels Valley People Dynamics Aphex Aural Exciter Countryman direct boxes

Microphones: AKG 414 P48s 451s D 12 F Neumann U87 Sennheiser MD 4211s Crown P2Ms Calrec CM1051C CC56 Countryman 250 Maxs

Instruments Available: Baldwin 6' grand piano 7 piece drum kit Fender and Yamaha amps various types of synthesizers

Rates: Please call for rates

◆◆◆SOUTH COAST RECORDING COMPANY

1975 NE 149th St. No Miami, FL 33181
(305) 945-7272

Owner: Paul Kaminsky George Blackwell

Studio Manager: Larry Blackwell

Engineers: Paul Kaminsky Jeffrey Dean George Blackwell

Dimensions of Studios 27 x 11

Dimensions of Control Rooms 14 x 11

Tape Recorders MCI H 116 24 24 track JH110 A 2 track JH 110 2 track Sony PCM 10 2 track

Mixing Consoles Sound Workshop Series 1600 2B 24

Monitor Amplifiers APT Model 1 Crown

Monitor Speakers JBL 44 0 4311 Rogers Studio One, Auratone Vascok 1 and 702

Echo, Reverb, & Delay Systems AKG RX 10 Echoplate III Lexicon Prime Time Eventide Harmonizer, Klark Lokaik Analog Processor

Other Outboard Equipment: UREI 1176N dbx 165 ADR stereo compressor (2) Allison Gain Brain II (2) Kopyex II ADR Scamp track and 4) E 100 tube parametric EQ Orban De esser

Microphones: AKG Neumann Sennheiser Sony Shure E V Beyr

Instruments Available: Fender twin reverb Paisley Parer, Yamaha grand Faxes drums percussion

Video Equipment & Services: BTX Shadow BTX Reader/Gen

2 Automated
24-track Rooms

MCI Consoles

Ampex MM-1200
Recorders



Complete Array of
Outboard Equipment
and Musical
Instruments

EEO Synchronizers

**More Charted Records in 1983
THAN ANY OTHER ATLANTA STUDIO!**
(Gospel/R&B/Country/Pop)

48-Track Audio Capability
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 also REMOTE RECORDING
 536 Huffman Rd., Birmingham, AL 35215
 (205) 833-6906
 Owner: Huffman Assembly of God Church
 Studio Manager: Noah L. White

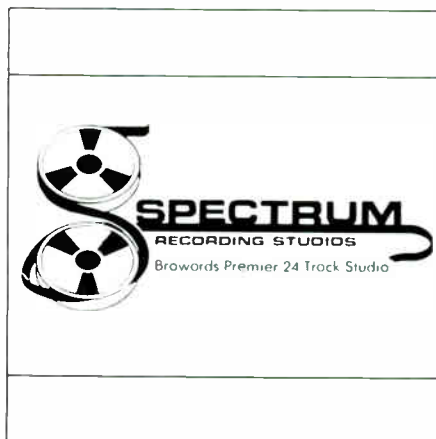
••••SPECTRUM RECORDING STUDIOS
 999 South Federal Highway, Deerfield Beach, FL 33441
 (305) 428-0119
 Owner: Jim Kalamasz
 Studio Manager: Jim Kalamasz
 Engineers: Michael Grosso, James Swartz
 Dimensions of Studios: 20 x 16 x 10 live area—dead area design with 1 x 10 piano isolation room and 4 x 3'6" irregular shape isolation room
 Dimensions of Control Rooms: 14 x 12 with custom session ceiling and bass trapping designed by Studio Supply Company of Nashville
 Tape Recorders: MCI JH 16/114 24 track HI-110 1/2 2 track



Tascam 15 2 track, Otari MX51 50 HQII 4 track, Technics SV P 000 Data 2 track Nakamichi 480 cassette TEAC A 103
Mixing Consoles: Sound Workshop 4024MB customized 32 in x 24 out
Monitor Amplifiers: UREI 6500 SAE P50 Yamaha P2050
Monitor Speakers: UREI B1A time aligned E V Sentry 100A Auratone 5C
Echo, Reverb, & Delay Systems: Lexicon 200 digital reverb,

Echoplata II reverb Lexicon Prime Time DDL, Lexicon PCM 42 DDL, Eventide H949 Harmonizer
Other Outboard Equipment: (2) UREI LA-4 compressors, UREI 1176 compressor, (2) dbx 150 noise reduction, Symetrix SG 200 signal gates Symetrix L-100 compressor, Roland SBP 325 stereo flanger chorus, Spectro Acoustics stereo graphic equalizer, LinnDrum computer.
Microphones: Neumann U 87, AKG 414 451, D-12, Sennheiser 421, E-V RE-20, RE-15, Shure SM57, SM81, Sony ECM-21
Instruments Available: Custom rebuilt Ivers and Pond 5'8" grand piano, Rhodes suitcase 73, Korg Poly 61 synthesizer, Freeman string ensemble Rogers drums LinnDrum computer, assorted percussion, steel drum
Video Equipment & Services: Service available upon request
Rates: \$55/hr for 24 track studio rental Block rates available 2 track live recordings \$35/hr
Extras: Full RV hook up on premises, reception lounge with refrigerator, television, coffee maker, and headphone jacks for private monitoring from lounge Spectrum Recording Studios is situated very close to one of Florida's most beautiful beaches as well as a multitude of fine restaurants, hotels, and night clubs.
Direction: Since taking over in August, new owner Jim Kalamasz has upgraded the Spectrum facilities to enable us to become Broward County's premier 24 track studio. Our relaxed atmosphere, professional engineers, and affordable rates make Spectrum Recording Studio the only choice in South Florida for your recording needs. Call or write for brochure, complete rate sheet, or to ask specific questions you may have.

SPECTRUM RECORDING STUDIOS
 Deerfield Beach, FL



••••STARGEM RECORDING STUDIO
 43 Music Square East, Nashville, TN 37203
 (615) 244-1026
 Owner: Wayne Hodge
 Studio Manager: Dan Hodge Chief Eng: Bil VornDick

••••STUDIO FOUR
 1918 Wise Dr., Dothan, AL 36303
 (205) 794-9067
 Owner: Jerry Wise
 Studio Manager: Steve Clayton

••••STUDIO IN THE COUNTRY
 Box 490, Bogalusa, LA 70427
 (504) 735-8224
 Owner: Gene Foster
 Studio Manager: Gene Foster
 Engineers: Eugene Foster Bruce Irvine
 Dimensions of Studios: 6,500 sq ft
 Tape Recorders: Studer A 80 24 track, Studer 2 track master, 3M M79 24 track
 Mixing Consoles: Harrison 3232
 Monitor Amplifiers: Crown DC 30 biamp'd
 Monitor Speakers: JBL 4333 JBL 4311 Weslake TM 1, Auratone
Echo, Reverb, & Delay Systems: Live quad echo chamber, two AKG electronic echo chambers
Other Outboard Equipment: Dolby and dbx noise reduction Vocoder Eventide Harmonizer Lexicon Prime Time, Orange County Vocal Stressor, Cooper Time Cubes, Allisor, Gain Brains and Kerpex, Moog parametrics Orban Sibilance controller, Orban parametric EQ Altec tube compressor electronic metro nome, Eventide Omnipressor
Microphones: Neumann U87, U69, Beyer M88, M500, M160, Sennheiser MD441 MD421 MD409 K2 U MD431 K3 U, AKG 451 414, D1000, E200, Shure SM81, SM57 SM59 565, 545, Sony C500, C37, Studer SKH 54-U, E-V RE-20, RE-16, RE 15, RE-10, 670 w/C-35 capsule 1751 condensers
Instruments Available: Baldwin 9' Philharmonic grand Kawai 74" studio grand, Hammond B-3 w/Leslies, Synergy digital keyboard, Crumar Trilog with sequencer
Extras: Located on 32 acres with two ponds Graphic company in-house, album promotion artwork Record press arrangements,

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

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◆◆◆STUDIO 19

821 - 19th Ave. So., Nashville, TN 37203

(615) 327-4927

Owner: Studio 19

Studio Manager: Sissie Erew-r

Engineers: Skio Shimmar, Chief Engineer. Independents available.

Dimensions of Studio: 30 x 40 x 12.

Tape Recorders: MCI JH-16 24/1+r/8; Studer A-80 2 track, Ampex ATR 800 4/2, Denon DR-33C cassette.

Mixing Consoles: Audionics: 501 32/16/32

Monitor Amplifiers: UREI 6500, McIntosh MC 2200, Crown D-150, Crown D60

Monitor Speakers: UREI 813B, Auratone

Echo, Reverb, & Delay Systems: EMT 140S (2), Cooper Time Cube

Other Outboard Equipment: Eventide H910 Harmonizer, dbx 903 compressors (4), dbx 904 noise gates (4), dbx 905 parametric EQ (8), 1176 limiters (2), UREI LA-3A (2), Teletronix LA-2A, UREI digital metronome

Microphones: Neumann: U87 (2), U47 (2), U47; Norelco (AKG) C12A (2), E-V RE-20s, S.M.E.'s; Wright condensers (2), Countryman EM101, Countryman direct boxes

Instruments Available: Yamaha C-6 grand piano, Hammond C-3, Wurlitzer electric piano, vibes, orchestra bells.

Rates: On request

◆◆◆STUDIO ONE, INC.

3864 Oakcliff Industrial Court

Doraville, GA 30340

(404) 449-5147

Owner: Buddy Buie

Studio Manager: Gloria Buz

◆◆◆STUDIO "7" RECORDING COMPANY

also REMOTE RECORDING

P.O. Box 57, Smith Station, AL 36877

Owner: Frank B. Gowen

Studio Manager: Arnold Massey

◆◆◆TELECENTRO INC.

Barbosa 555 Ave., Rio Piedras, Puerto Rico 00923

(809) 764-0111

Owner: Mr. Ortiz

Studio Manager: Mr. Ortiz

◆◆◆TRI STATE RECORDING

2006 East Center, P.O. Box 3860, Kingsport, TN 37664

(615) 246-9701

Owner: Tri State Recording, Inc

Studio Manager: Rick Salinger, President

◆◆◆TWELVE OAKS RECORDING STUDIO

3830 South Cobb Dr., Ste. 100-A, Atlanta, GA 30080

(404) 435-2220, 435-2221

Owner: Sony Lallerstedt, Randy Bugg

Studio Manager: R. Bugg



THE WAREHOUSE RECORDING STUDIO
Jacksonville, FL

◆◆◆THE WAREHOUSE RECORDING STUDIO

also REMOTE RECORDING

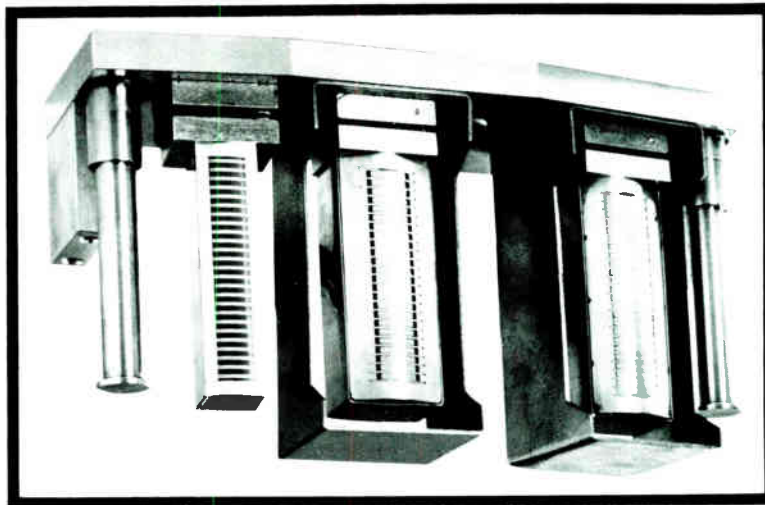
2071 Emerson St #21, Jacksonville, FL 32207

(904) 399-0424

Owner: Tom Markham, Skip Osmundsen

Studio Manager: Tom Markham

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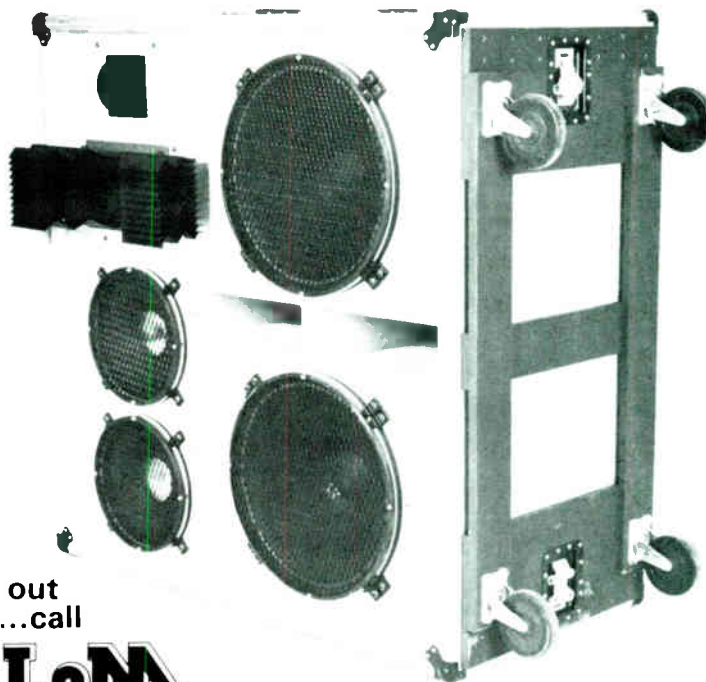


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••••WEB IV STUDIO2107 Faulkner Road N.E., Atlanta, GA 30324
(404) 321-5993

Owner: Ilene Berns

Studio Manager: Nancy Mitchell

Engineers: Ed Seay, Tommy Cooper

Dimensions of Studios: 70 x 35 (2,450 sq ft.) (1,100 sq ft. hardwood floors); 3 isolation booths.

Dimensions of Control Rooms: 21 x 20

Tape Recorders: Studer A-80 24 track; Studer A-80 VU 2 track; Studer A-80 RC 2 track, Ampex 440B 2 track

Mixing Consoles: Sphere Eclipse Type C 32 in x 24 out

Monitor Amplifiers: Crest P-3500/AB 410, Yamaha P-2200, AB 105

Monitor Speakers: JBL 4350, JBL 4313; ROR; Auratones Echo, Reverb, & Delay Systems: EMT 250 digital reverb, EMT 140 plate, Eventide Harmonizer (model H949); Lexicon PCM 41, Prime Time, Delta T, Marshall Time Modulator, MXR flanger/doubler, Roland RE-301 chorus/echo, two live echo chamber.

Other Outboard Equipment: UREI 1176 LA-3A 527 graphic EQ, 550 filters, dbx 165, 162, 160; ADR Vocal Stressor, Orban Country Vocal Stressor; Audio Arts 4200 EQ; Orban De-esser, Parasound EQ, Pultec EQP-1A3 EQ, Allison Gain Brain, Kepex, 24 track Dolby and dbx noise reduction, 2 track Dolby noise reduction

Microphones: Neumann U87, U89, KM84, KM86, KM88, U47, FET, AKG 414, C24 (stereo tube), 451, 452, 224, Schoeps (Studer) SKH54U, Sennheiser 421, 441; Shure SM56, SM57, SM58; E-V RE-10, RE-15, RE-20, 635

Instruments Available: Baldwin 9 grand piano (SD-10), Fender Rhodes, Wurflitzer electric piano, Hammond B-3, Hohner D-6 clavinet, Oberheim OB-X polyphonic synthesizer, Yamaha electronic organ, xylophone, vibes, drums, assorted percussion, Fender, Marshall, acoustic, Ampeg amplifiers, MiniMoog, ARP Odyssey, ARP Pro-Soloist, Univox Stringman, Prophet 5, Roland JP-8

Rates: Please call for rates.

••••WISHBONE RECORDING STUDIOP.O. Box 2631, Muscle Shoals, AL 35660
(205) 381-1455

Owner: Terry Woodford

Studio Manager: Lee Daley

Engineers: Lee Daley (Chief), Terry Woodford, Freeland engineer on call, Alan Schulman

Dimensions of Studios: 1,360 sq. ft.

Dimensions of Control Rooms: 576 sq. ft.

Tape Recorders: MCI JH 24 w/Autolocator III 24 track, Ampex ATR-100 w/remote 2 track, MCI JH-110 w/remote 2 track, Schully 280 2 track, Hitachi D-E95 w/remote cassette. Digital available upon request for 2 and 24 track

Mixing Consoles: MCI IH-636 w/automation and parametric EQ modules, 28 in x 24 out

Monitor Amplifiers: BGW, Bi-Amp, Crown, SAE

Monitor Speakers: Westlake, JBL, Auratones, Altec

Echo, Reverb, & Delay Systems: EMT stereo plate, stereo acoustic chamber

Other Outboard Equipment: UREI 1176 (2), UREI LA-3A (2), ADR Vocal Stressor, Allison Gain Brain (4), Valley Audio Dynamite, UREI 565 filter set, Orban 622 parametric, Eventide Harmonizer, Eventide Instant Flanger, Lexicon Prime Time, devices by Roland, MXR and more

Microphones: Neumann U47, U87, KM86, KM84, KM88; Shure SM57, SM81, SM7, 545, AKG C414, C412, C452; E-V RE-20, RE-15, RE-10, CS-15P; Sennheiser MD421; Studer SKM-5-U

Instruments Available: Hammond A-105 organ w/Leslie, Yamaha conservatory grand piano, Rhodes piano, Wurflitzer electric piano, Hohner D-6 clavinet, Oberheim OB-1 synthesizer, ARP 2600 synthesizer, Musser vibes, Rogers drums w/Pearl roto-toms, amps by Fender, MESA/Boogie, Music Man, Gon Bops congas, misc. percussion equipment, quad syndrums, LinnDrum computer.

Video Equipment & Services: Full video taping services in house, artist promo tapes, visual music, television commercials

Rates: Block rates are available. Please call studio manager

Extras: Affiliates: Song Tailors Music Company (BMI), I've Got The Music Company (ASCAP), Wishbone Production Company, Flying Colors Video Production Company, Flight Log Cabins resort motel adjacent to studio with tennis court, horseshoe pit, playground. Wishbone branch offices in Nashville and Los Angeles

Direction: Artists who have recorded at Wishbone include: Mac McAnally, Hank Williams, Jr., Wayne Newton, Muscle Shoals Horns, Thelma Houston, Millie Jackson, Hot, Brenda Lee, Ruth Buzzi, John Prine, Cherry Sisters, Robert Byrne, Charlie Daniels, Gary Stewart, Dickie Lee, various other R&B, country, bluegrass, rock and gospel acts.

••••WJS RECORDING1320 National Rd., Wheeling, WV 26003
(304) 242-8601

Owner: Bill Shvlin

Studio Manager: Bill Shvlin

Engineers: Bill Shvlin, Kevin Hedrick

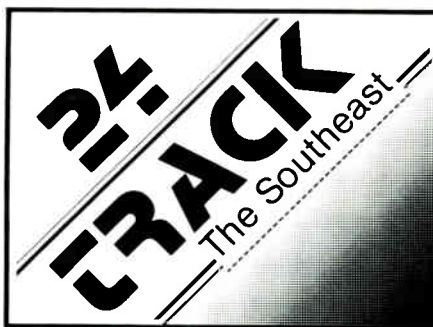
Tape Recorders: Olan MTR 90 24 & 16 track, Ampex 102 2 track, 1/2" & 1/4", Olan MX 5050B 2 track

Mixing Consoles: Audio Processing Systems, Inc. 3000 28/24

Monitor Amplifiers: UREI 6500, Hafler

Monitor Speakers: UREI 811A, Yamaha

Echo, Reverb, & Delay Systems: Quad Eight digital reverb.



Super Prime Time delay, H949 Harmonizer, UREI and dbx limiters, Aphex II, plate reverb.

Microphones: Neumann, AKG, PZM, Shure, Sony, Countryman
Instruments Available: Kawai 74" concert grand piano, Yamaha E-70 organ & Leslie, Synthesizers: Oberheim OBA, Synergy, Chroma, Sequential Circuits Pro-One, LinnDrum
Rates: Available on requestWJS RECORDING
Wheeling, WV**••••WOODLAND SOUND STUDIOS
also REMOTE RECORDING**1011 Woodland Street, Nashville, TN 37206
(615) 227-5027

Owner: Ernie's Record Mart, Nashville, TN

Studio Manager: Glenn Snoddy

Engineers: David McKinley, studio supervisor Terry Dunavan, technical supervisor Tim Farmer, Ken Chiblez, recording engineers Denny Purcell, mastering engineer Mary Jane Chiblez, mastering traffic, Jean LeBeau, traffic manager, Lisa Nixon, receptionist and public relations

Dimensions of Studios: A: 45 x 35 x 22, B: 36 x 24 x 16

Dimensions of Control Rooms: Both A & B 22 1/2 x 17 1/2 x 7 1/2

Tape Recorders: Studer A80 16 and 24 track; Studer A800, (2) Studer A80-R 2 track, (2) Studer A80-RC 2 track, Studer A-57 1/4 track, Studer B-57 2 track, Studer A-80 pre-listen, (2) Ampex 440 4 track, 1/2" Studer A80 2 track; Ampex 440 8 track, Ampex mono, Studer mastering 1/2" 2 track; Studer mixing 1/2" 2 track
Mixing Consoles: Neve 8038, 24 in x 24 out, Neve 8078, 36 in x 24 out

Monitor Amplifiers: AB systems 410, McIntosh MC2200, M175, Crown DC300, Times One

Monitor Speakers: THE-1, MDM-4, Westlake TM1, Auratones, Altec 9845

Echo, Reverb, & Delay Systems: Echo: EMT, AKG, Delay: Prime Time, DDL

Other Outboard Equipment: UREI digital metronome, Eventide Harmonizers, Pandora digital time line; UREI 1176s (5-A, 4-B), Eventide Clockworks Instant Phaser; Orban De-esser 1-50 or 60; crystal syn pulse generator; 14KC signal generator sync (for film use), Nakamichi 700 III cassette deck; Nakamichi 1000 II cassette decks, 66 channels Dolby, 56 channels dbx; (4) UREI LA-4As; ADR Vocal Stressor; (2) Lexicon Prime Times.

Microphones: AKG C414 EB, C452 EB, D224 E, Altec M49, E-V RE-11, RE-15, RE-16, RE-20, RE-50, 635A, 668, 1751 & 649; Neumann U87, U47, U67, KM86, M 249B, RM84; Sennheiser MD 421U, Shure SM56, SM53, SM54, SM7, Sony ECM50, ECM22P, CS5; Studer SKM5-U

Instruments Available: Steinway grand pianos, Hammond organs (B-3, C-3); Wurflitzer electric pianos, Fender Rhodes pianos, Hohner clavinet, Allen electronic harpsichord, Celeste, electronic chimes 15, vibes, tack piano, Latin percussion, congas, ARP String Ensemble, set of orchestra bells, studio drums, Fender guitar amps

Rates: On request

Extras: Editing room, editing, tape copies, album assembly.

speed change, cassette copies, disk to tape transfer, etc. Two disk mastering studios with Neumann lathes SM74 cutting head, tuned Westlake monitor systems, Studer playback & copy machines
Direction: Current records: Brenda Lee, Charlie Daniels, Barbara Mandrell, The Oak Ridge Boys, John Conlee, Conway Twitty, Paul Williams, Slim Whitman, Tanya Tucker, Carl Perkins, Barry Goudreau, Robert Gordon, Donna Fargo, Gail Davies, Terry Bradshaw, Roseanne Cash, Carroll Baker, Tammy Synette, LaCosta, Mel Tillis, Helen Cornelius, Christy Land. Gold records on Slim Whitman, Kansas, Ronnie Milsap, Neil Young, Nitty Gritty Dirt Band, Charlie Daniels, Barbara Mandrell, Murray McLachlan, Carroll Baker, Eddie Rabbitt, Oak Ridge Boys (single & album) Platinum records on Charlie Daniels Band, Kansas, Oak Ridge Boys, Eddie Rabbitt (2) Triple platinum on Kansas Woodland stresses quality of equipment, mixers and maintenance Full time maintenance engineers available to complement the highest quality consoles and tape recorders Fair dealings with our clients over 14 years has established Woodland as a professional facility with a home-like atmosphere**••••YOUNG'UN SOUND, INC.**114-17th Ave. So., Nashville, TN 37203
(615) 244-5656

Owner: Chip Young

Studio Manager: Chip Young, Jan Naylor

OUT OF SEQUENCE**•••• TREASURE ISLE RECORDING STUDIO**2808 Azalea Place, Nashville, TN 37204
(615) 327-2580

Owner: Mariner Trust

Studio Manager: Fred Vail

Engineers: Dave Shipley, Chief Engineer, Richard Stevens, Tom Harding

Dimensions of Studios: 42 x 30 plus vocal booth, 24' ceiling, 12 x 14 drum booth with 14' ceiling

Dimensions of Control Rooms: 22 x 24

Tape Recorders: 3M 32-track digital, Studer A80 24 track, Studer A80 1/2" 2 track, Studer B-7 2 track, Schully 280 (3) IVC 2 track digital Ampex ATR 800 2 trk

Mixing Consoles: Trident Model 80 32 in x 56 out

Monitor Amplifiers: Crown, BGW, Quad, McIntosh, UREI

Monitor Speakers: Westlake Design JBL 4320 4x11 "little Red", Altec 604E, Tannoy, SRN 108

Echo, Reverb, & Delay Systems: Live echo chamber, Echoplex AKG BX20, (2) Prime Times, Sony digital reverb DHE 2000

Other Outboard Equipment: ADR Scamp rack with 13 modules, ADR Vocal Stressor (4) dbx limiters (3) UREI limiters, Eventide Harmonizer, Eventide Flanger, de-essers, noise gates, 24 track Dolby and dbx

Microphones: Neumann U87, U67, U47, KM84, AKG 414, 452, D 1000F, Shure SM77, E-V RE-15, RE-20, Crown P2M, Sony ECM 50, RCA 77, D 12, AKG C12A, The Tube

Instruments Available: Baldwin grand, Fender Rhodes, Fender amps, Pearl drums w/extra toms, Hammond D 3 organ, Multimoon, Korn Poly Six

Video Equipment & Services: Available for video use it has spacious rooms and high ceilings, and very impressive interior decor

Rates: \$85 to \$125/hr, day and week block rates available on request

Extras: Whirlpool, sundeck, sauna, 20 x 20 musicians' lounge with wet bar, fireplace, kitchen, conference room, writer's room, 14 ft beamed ceiling, glass atrium, 5,000 sq ft complex structure is 12 inch block sand filled. Acoustical design by Richard Lee

Direction: Treasure Isle is the largest new studio in Nashville to be built in the past five years. It brings to its new facility a great tradition in recording. Treasure Isle, in its original location at 49 Music Square West was formerly Island Recorders and before that Birney House. Clients have included George Jones, Tammy Wynette, Mickey Gilley, Dixie Severnson, Christy Lane, G.G. Shepard, Allman Brothers, producer Jim Ed Norman, Johnny Cash, Louise Mandrell, Grea Gaudry, producer Rodney Crowell, producer Chet Atkins, producer Wes Farrell & The Beach Boys

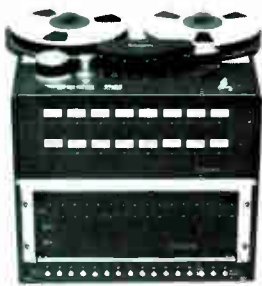
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½"-8 track,
+ 4 in/out



*Allen & Heath #168, 8 track recording console with full 8 track monitoring, + 4 in/out.

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"FRED AND THE BOYS"



Fred Vail

PHOTO MR. BONZAI



Dennis, Brian, and Cari; their cousin, Mike Love; and Dave Marks, who joined the group when Al Jardine left for dentistry school. [That evening Jardine was substituting for Brian, who had remained in Los Angeles.] I met the band and the father, Murray Wilson, who was also the manager at the time, at the airport with my parents' station wagon. We loaded all the instruments, amplifiers, and drums into the back of the wagon and had plenty of room left over for passengers. There weren't any roadies or groupies at that time.

While we were waiting for their luggage, Cari asked me who was headlining the show and I told them, "You guys are." Then he asked me who was on the show with them and I told them they were the whole show. It was the first time they had really played a concert where they were the draw. They weren't riding on anybody's coattails. Up to this point they had been playing at teen clubs to audiences of two to four hundred peo-

ple. Carl told me I was going to lose my shirt and I said the advance ticket sales were pretty good. It was \$1.75 for a ticket—that's what the admissions were back then. And you didn't have to give the groups a PC—there were no percentages of the gate. I paid The Boys \$750 flat, with no allowances for transportation, meals, hotels—no backstage banquet.

Bonzai: Did they have any hits at the time?

Vail: They had released "Surfin' ", "Ten Little Indians", "Surfin' Safari", and a few others. "Surfin' USA" was about to be their first major national hit. During the intermission they were trying to figure out what to do for the second set because they weren't used to doing a complete evening. We just decided to do the stuff that went over well during the first set and try a few instrumentals and ad lib it.

Bonzai: Was the show a success?

Vail: We got about 3,000 people. After the show we walked back to the hotel, which was only a few blocks away. It took us an hour because kids were following us and asking for autographs. We finally got to the hotel and all sat down at a long table in the restaurant. Murray was jotting down numbers as we were waiting for the food and he said, "Hey, fellas, guess what? We had a great night tonight

T by Mr. Bonzai

he Big Kahuna dealt Fred Vail a heavy hand one night back in 1963. As a Sacramento college student and moonlighting concert promoter, he hired a little known southern California surfing band to play a one-nighter. The Beach Boys were just about to take off on the crest of a wave that would alter the shorelines of popular music. Fred's association with "The Boys", as he calls them, has continued uninterrupted through all these years.

Chance had it that we would meet on the eve of Dennis Wilson's drowning. Our conversation afforded an unsentimental insider's view of a home-grown musical phenomenon.

Bonzai: What was your early involvement with the Beach Boys?

Vail: The earliest stage only lasted for one great night. I hired them to play the Sacramento Memorial Auditorium for one of the first rock shows in town. There were the three Wilson brothers,



PHOTO: JEFF BROWN

Dennis Wilson, Summer 1978.



(l-r) Bruce Johnston, Mike Love, Carl Wilson, Brian Wilson (seated), Al Jardine

After the agency's commission, and all our expenses and air fares we made \$52 apiece!" They felt great and then they asked me how much I made and I told them about \$4,000. You could have heard a pin drop. They were astounded that some 19 year old kid could be making that kind of money. I told them that they were being short-sold and that they deserved more money. I said they should be playing more feature performances and suggested that they promote their own shows. Nobody had thought of it, but to me it was like the guy who told Coca-Cola to bottle it. You promote your own show. You rent a hall and some security, print some tickets, put some posters up, buy some ads and go into a town and do a show.

Murray said that he couldn't handle it because he had a machinery company and that was his real occupation. I said, "Well, I'll do it," and they said, "Gee, would you?" That night I went to work with them on a handshake. Initially, I had the job of going out and setting up concerts mostly on the West Coast.

Bonzai: Did you have an intuition that the group would go on to become one of the biggest rock machines?

Vail: I had an idea that they were going to be a big group, that they weren't a flash in the pan, but I didn't really think they would end up being legends. No one could have guessed that, but I liked their music and even

at that point I thought Brian was a sharp writer and producer. He really had his finger on the pulse of American youth. People needed something to get behind.

Bonzai: Did Brian show any tendencies as an artist that would later get him into trouble?

Vail: No. Brian has had a lot of misfortune. He's been written up extensively and they've all tried to

Another Career Springs from The Boys

by Jeff Janning

Gary Usher's uncle lived across the street from that musical family, the Wilsons.

"Brian Wilson and I both went to El Camino Jr. College and we hit it off right away," he remembers. "At the time they had a regional hit called 'Surfin' out on Candix records." The very first meeting between Gary and Brian spawned "The Lonely Sea," which later turned up on a Beach Boys album.

"We became friends immediately and were inseparable for months," says Usher. "There was a karmic linkage. I felt we had known each other in past lifetimes. We shared an admiration for Phil Spector's work and Goffin and King's songs." Gary was also impressed with Brian's knowledge of the Four Freshmen. "He could play all their

analyze the Brian Wilson saga. I think one of Brian's real problems was that he was always an introverted person. He was never really a great grandstander like Mike Love and some of the other lead singers of that period. He wasn't personality-oriented. He was an introvert in a very extroverted industry, where if you're not flamboyant, you're a little bit weird. It's expected of you to be a little bit off the end—and Brian wasn't. I don't think he really enjoyed being in the limelight. He didn't need that like some artists do.

Brian also hated to fly so he didn't really mind not going on the road. He pulled out of the group in the mid-'60s to concentrate on writing and production. Another thing that has done a lot of damage is being branded a genius. I would have hated to carry the weight on my shoulders that he had to carry on his—going into the studio, and every time it was expected of him to top the previous effort. He did so many innovative things with orchestras, and arrangements, and harmonies. *Pet Sounds* was probably the first true concept album—it even predated *Sgt. Pepper*. He was one of the first producers to use a synthesizer—actually a Theremin, a predecessor of the Moog. He was a trendsetter and he was always trying to better himself. I think this was ultimately his downfall; because he had to drive himself constantly, particularly after "Good Vibrations." I think that the follow-up, "Heroes and Villains," is an equally fine piece of music. It has the intricacies, the arrangements, great har-

songs on the piano and pick out the harmony parts."

A short time later Brian, his father Murray, Chuck Britz and Gary went to Western Recorders' Studio 3 and cut "Surfin' Safari," "409," "Surfer Moon" and "Judy" (after Brian's girl friend at the time). Through a friend, Murray managed to get an appointment with Nick Venet, who was one of Capitol Records' top A&R men. These masters led to the group's first album.

Though Usher walked away from the Beach Boys' situation soon after the first session, due to his conflicts with their father, his contacts with Venet resulted in a blossoming career writing songs for the voguish beach party movies. "I was very successful," he recalls. "Over a period of a year and a half I had 23 different albums out on six different labels under my name and

—page 91

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monies—but people weren't ready to accept it.

Bonzai: Did you go to work exclusively for them?

Vail: I was with them from 1963 until middle 1966, but I was also doing some other shows. I worked with the Four Seasons, the Righteous Brothers, Johnny Rivers . . . but my main involvement was with the Beach Boys—setting up shows, going on the road with them, setting up radio interviews and doing all the advance work.

Bonzai: Do you stay in touch with them?

Vail: Oh, all the time. This is our 21st year. I left in '66 to work in a marketing capacity with Teenage Fair, Inc., and Filmways, and then rejoined them in '69 as personal manager. During that period I helped set up Brother Records and then left again in 1971. I haven't worked with them on a regular basis since, but I've consulted, and I'm still in constant communication. I talk to Dennis quite a bit—he and I have been very close through the years. I see Brian on occasion when I'm in L.A., and I see Carl when I can.

To be in the business as long as they have, and to have the personalities that they have—well, they've burned a lot of bridges with people. People have ripped them off, and others would say that the Beach Boys have ripped them off. I may be the only associate/confidant that goes all the way back. I didn't burn my bridges and I never really got rich off the Beach Boys, but it was the most important single thing that happened in my life and I've certainly been rewarded in other areas.

Bonzai: Were you involved in their recordings?

Vail: Not as a producer or in the studio, but I coordinated a lot of the musicians, the singers and the studio dates. I certainly went to a lot of the sessions.

Bonzai: What was the "Good Vibrations" session like?

Vail: It was done over a long period of time. The first version was scrapped and the second version was put together between tours. Sometimes Brian was the only one in the studio.

Bonzai: Were they still working with a four-track machine?

Vail: I believe it was one of the first 8-track sessions at the Columbia studio on Sunset. It was definitely one of the first sessions where they allowed a non-CBS act to record there. Brian was always involved in the production process from the very beginning—putting together parts and telling

—page 92

—from 89, Usher

pseudonyms. They were all about surfing, motorcycles, hot rods and slot cars."

Usher eventually joined forces with Columbia, serving two and a half years as staff producer. "I was the only staff producer there at the time," he says. During his stay Gary signed and produced the Firesign Theater, produced Chad and Jeremy, worked with Simon & Garfunkel on several of the tracks on their *Bookends* album, and produced LPs by The Byrds, which yielded seven straight chart singles including, "My Back Pages" and "So You Want To Be a Rock 'n' Roll Star."

"There were a lot of firsts with The Byrds," he recalls. "We brought in Paul Beaver to play Moog; they were the first West Coast rock group to use the instrument. We also went to Nashville to cut the *Sweethearts of the Rodeo* album. This was the first time a rock group had used country players. I had a choice, to go with Roger McGuinn's influence and do a space album, or go with Gram Parsons' influence and do country." He chose the latter.

Usher was fascinated by early synthesizers because they were able to express colors and moods he had been unable to express musically before. However, getting those sounds was a time consuming process, as synthesizers of that era were a maze of patch chords and that meant nearly prohibitive costs due to the amount of studio time they required. In order to affordably approximate those sounds, Gary turned to experimenting with speeded up and slowed down accordions, oboes recorded backwards, etc. One such project was a song Chad & Jeremy had passed on titled "My World Fell Down." According to Usher, "Glen Campbell sang lead and whoever dropped by the session sang backgrounds, including his old pal Brian Wilson, future Beach Boy Bruce Johnston and Terry Melcher." The single sold 75,000 units and became the catalyst for Gary's own *Sagittarius* album.

After a period working with Mike Curb, Gary joined RCA as Vice President in charge of contemporary music, but he tired of corporate politics and eventually went back to producing, this time for Elektra.

Searching for something more in life than chart positions and gold records, Gary left the business, feeling that this phase of his life had terminated. "I wanted to spend time with my family, study philosophy and write a metaphysical documentary," he says.

By 1981, though, Gary's sights had changed and he felt inspired to express his musical side once again. The

outgrowth of this desire is his current Epic Records album *Sanctuary* by Celestium.

The entire album, cut at Preferred Sound, in Los Angeles, was recorded on drums, guitar and layers of synthesizers. "Synthesizers are very good for bringing things from the inner to the outer. I see my music in colors and patterns which I work to match musically. When it strikes a chord in my heart I know I've found it.

"I try to get my productions to the point where every note is exciting. I do this through the use of extensive overdubbing, often using 130 or 140 tracks on a single song, for depth. I work in a world of sub-masters. It's a musical needlepoint. On *Sanctuary* I

used 22 tracks of drums, 12 tracks of bass and 25 to 30 tracks of synthesizer. Each group of instruments was then mixed down to stereo. I produce in terms of depth as opposed to just thinking in terms of left and right. This layering technique of stacking tracks creates an energy where the sum is greater than the individual parts. That is the basis for my sound.

"I believe as the Aquarian Age progresses, music will become a political, theological and medicinal tool. Up to now it has only been used to dance to and tell someone you love them. The musical ladder has a lot of rungs, the physical and sexual planes are only two of them. We've gone outward, now we must turn inward." ■

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—from 90, Vail

people what to sing and play. He was not just a figurehead. He was never really the type of guy that liked to hang out with the record executives and kiss ass. I admire Brian more than any other producer because of his ability to write, arrange, sing, play, and, of course, produce.

Bonzai: Where did he get his background as a composer/producer?

Vail: Murray used to say that his son had a God-given talent. I do know that Brian used to listen to Four Freshmen records and was inspired by their vocal blend. Brian and his brothers, and their mom, Audrey, and Murray were always into music. They had a family room with an organ and they would all gather around it and sing songs. It just kind of happened.

Bonzai: Was there a time when Brian realized he was representing the car and surf culture with his songs?

Vail: The idea to do a song on surfing was not Brian's. It was Dennis' idea, because Dennis was probably the only "surfer" in the group. He was always going to the beach and hanging out with that crowd and he would come home and tell Brian about this great sport and how fun it was, and what great looking girls he was meeting. Brian and Mike got together and wrote a song about it, "Surfin' ". After writing a series of songs on that theme, Brian was put in a niche. It just so happened that surfing became a big sport, thanks in part to his music, and thanks in part to the film *Gidget*. Brian never consciously said, "Hey, I'll go out and be the spokesman for

American Youth and take all their fads and popularize them."

Bonzai: Do you think he'll ever make a comeback?

Vail: It's possible. I think he would love to have another hit—one more for the gipper. And I don't think it's out of the realm of possibility. He has one song, "Stevie," that he and Dennis worked on. It's kind of an ode to Stevie Nicks and it is one of the best things that he's done in years. I think it could be a hit.

• • •

Fred moved to Nashville in 1974 where he has worked very successfully as a promotion and marketing consultant for various record companies. In 1980, he started Island Recorders with his brother Morgan and Dave Shipley, a Nashville studio musician. In 1982, they built a new facility, Treasure Isle Recorders. The studio is the biggest state-of-the-art Nashville facility built in recent years. Fred is also the VP of the Nashville NARAS chapter and there is a good possibility that he will be running for the U.S. Congress in the next election. He's probably got a few friends that can help out with the fund-raising concerts.

As Fred mentioned in the article, he and Dennis Wilson were very close friends for more than two decades. A couple of weeks after this interview, we asked Fred for his thoughts on Dennis' death.

"Reflecting on my 21 years as a friend and associate of Dennis', I've had the opportunity to look back with fond memories on a very special and unique personality. News programs and articles have made reference to Dennis as 'a loner,' 'the James Dean of the group,' an 'alcoholic,' a 'user of drugs,' and 'a rowdy, unpredictable performer.' And maybe he was all those things. However, for the very, very privileged few of us who knew and loved Denny, he could best be termed 'a loving and dedicated friend.'

"Onstage, as well as off, he was an original; unpredictable, but always full of excitement. He was, from the beginning, the very spirit and essence of the Beach Boys. And although his vocals—coarse, even crude—were not the centerpoint of the group sound, his musical contribution as drummer and a creative talent were a mainstay of the group for 23 years. Onstage he was the spark, the color, the excitement. He could bring the crowd to their feet with his infectious beat, and bring them to tears with his signature solo effort, 'You Are So Beautiful.'

"He'll be remembered for his music, but more than that, for his love of life and his caring ways."

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CARTRIDGES PART · TWO



THE CANTILEVER

BY DAVID WILSON

 Last month we began looking at the sometimes temperamental, oft-maligned (and even more often, misaligned) and always fascinating little electromechanical marvel, the analog stereo phono cartridge.

We've seen that the stereo cartridge's evolutionary development has been long, and not always marked by consistent *sonic* improvement. We will see that real improvements are often very costly. But, genuine performance gains have been achieved in a number of vital areas, some obvious, some seemingly subtle.

To get a logical, operational handle on cartridge performance, let's follow the "signal-path" taken by the music as it passes from the record groove, through the elements of the cartridge on out to the cartridge's output terminals.

Last month we looked at the stylus tip, and saw that its development has been characterized by a refining of the contact interface with the record groove wall. Clearly, the function of the stylus is to cleanly trace as much information as possible, while causing as little wear as possible to the record groove and stylus itself. These seemingly irreconcilable requirements are best satisfied by a stylus with a very narrow but long contact radius. In our discussion last month, the van den Hul configuration was offered as an ideal example.

To investigate the next step in the "signal-path", let's assume we have the hypothetically perfect stylus tip, tracing perfectly all of the groove wall

information. Where does the wealth of mechanical vibration energy go from the stylus? The information must be mechanically conducted through a cantilever up to the actual transduction element (coil, magnet, iron tube, etc.), and the design of this cantilever—this mechanical transmission line if you will—is absolutely vital to the waveform integrity of the music signal. Only within the last five or six years has the real significance of cantilever materials and geometry been fully appreciated.

To illustrate the design challenge, let's say that our perfect stylus is mounted on a typical aluminum tubular cantilever, which has been

drawn nice and long to provide plenty of clearance for warped records, with real thin walls to reduce effective moving mass. This is a common cantilever which can measure well in conventional static frequency response tests, and is trouble-free in normal (careless) use. But such a cantilever will not provide truly state-of-the-art performance. Let's look at a specific example.

Let's say we are playing a recording of a closely miked drum set, such as M&K Realtime's outstanding *Hot Stix* disc, featuring drummer Eddie Graham. Whack! A Zildjian sets up an astronomically steep, high amplitude mid-range and high frequency wave

TABLE I

Physical Characteristics of Cantilever Materials

Material/ Configuration	Low Mass	Rigidity	Young's Modulus	Resonance Q	Propa- gation Velocity
Diamond rod	2	5	5	2½	5
Ruby rod	3	4½	4½	2½	4
Sapphire tube	3	4	4	2	4
Boron tube	5	4	3½	3½	3
Beryllium rod	5	3½	2½	3	3
Aluminum tube	4	1	1	4	1

5 = Best performance
1 = Worst performance

front. Now let's just see what takes place during the first 500 millionths of a second. The stylus and cantilever are accelerated from lateral rest to a velocity of over 300 mm/sec at a load factor of about 800 g. The actual spectrum of the information envelope actually extends to above 100kHz. It is the job of our humble cantilever to transmit this jolt, intact, to the transduction element. No sweat, right?

Well, in fact, most aluminum cantilevers turn to "rubber" at about 22 to 28 kHz, and actually begin to "whip" above that frequency. Hey! 22kHz is above audibility, so who cares what goes on up there! Right? Wrong! These undamped, spurious resonances, then reverberate, in eigenmode fashion, back and forth along the length of the cantilever where they mess up and blur subsequent musical information. Only fairly recently has this phenomenon been measured, although sensitive listeners have heard it for years.

The most eloquent, objective presentation of this phenomenon I have seen was published in the *International Audio Review*, Number 5, 1980. In that study, Moncrieff tested a wide variety of cartridges by, among other things, subjecting them to a unique high speed impulse test signal,

which simulates musical transients. Computerized fast fourier analysis was then implemented which revealed the cartridge *cantilever's* response out to 100 kHz. The data thus generated correlate very closely with controlled listening tests conducted by not only Moncrieff but this author and others as well. The phenomenon is not demonstrated in steady state frequency response curves supplied by manufacturers, although square wave testing, properly executed, gives you a general idea of what is happening.

So what constitutes a perfect cantilever? It has to have as low a mass as possible to reduce inertia. It must be rigid, so as to behave as a coherent mechanical transmission line up to at least 50 kHz to 100 kHz. It should resist dimensional distortion even when very high levels of mechanical stress are applied—in other words, the cantilever material must possess a high Young's Modulus. Its resonances should be of low Q. The propagation velocity of sound through the material should be as fast as possible.

Table I compares some relevant physical characteristics of six cantilever materials. All of them have certain theoretical advantages which will be promoted by their users. None are

perfect. They are only one element of a complex system, the total cartridge. Overall, I find boron to exhibit probably the best set of trade-offs sonically, especially when the boron cantilever is terminated at the coil end by an aluminum tube to damp resonances. I love the purity of a good diamond cantilever in the high frequencies. However, because of the diamond's mass (and cost!) these cantilevers tend to be very short, which causes other problems due to increased angular displacement of the moving coil former. I find little to recommend beryllium over boron from a performance standpoint. Further, beryllium is more costly, and it is physiologically toxic. The cartridges I've tested with sapphire tube cantilevers are all at least somewhat bright and textured in the high frequencies, but very expansive in sound staging.

So we've managed to extract the musical signal up out of the groove wall with a theoretically ideal stylus tip, and we've transmitted that signal up through a tiny, yet incredibly difficult mechanical transmission line called a cantilever. Next month we will finish up on cartridges, hopefully appreciative of the exquisite industrial art that they really are. ■

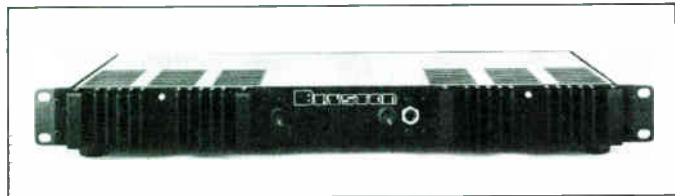
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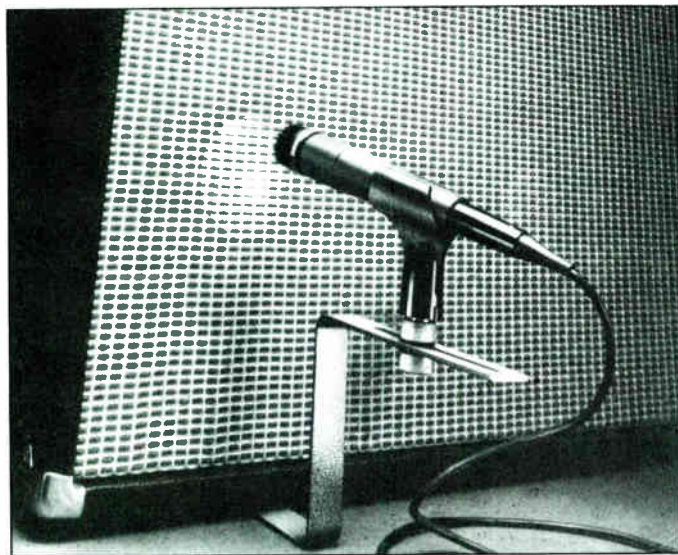
PREVIEW



Bryston 2B-LP Power Amp

Bryston has released its latest amplifier, the model 2B-LP. This low profile (1.75" rack-mount) 50-watt per channel amplifier is designed to save space in recording studio and broadcast monitor applications, and is especially applicable where difficult loads, high average levels, and extreme musical accuracy are required. Among the standard features of the 2B-LP are balanced inputs with XLR-female connectors, dual-color pilot-clipping LEDs, extreme current delivery capability (24 amperes peak per channel), and front-removable channel-cards for near-zero downtime in field-servicing. The 2B-LP can be considered the functional equivalent of the original Bryston 2B in half the space.

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Shure's New Z-Bracket Provides Breakthrough in Amp Miking

Shure's new A45Z Speaker Miking Bracket is a microphone mounting device priced at \$12.95 specially designed for use with instrument amps and speakers.

One end of the "Z"-shaped bracket easily slips underneath any conventional amp or speaker cabinet to hold the microphone firmly in place by the carrying handle. The bracket's other end features a sliding mounting screw which will accommodate any standard microphone swivel adapter. The slotted bracket permits the user to move the microphone and experiment with different speaker-to-microphone and angular placements for tonal variety.

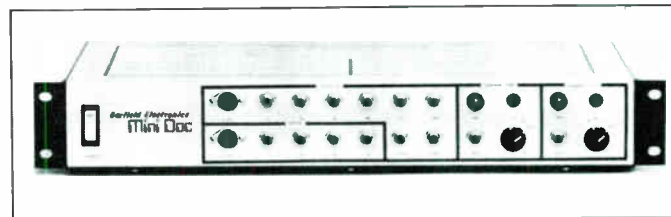
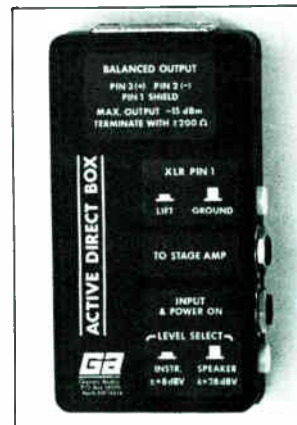
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Gaines Active Direct Box

Gaines Audio has introduced the AD-1 Active Direct Box, a high quality, low cost unit available either in kit form at \$39.95, or fully assembled and tested, at \$54.95.

The AD-1 may be used with any electric guitar, bass, synthesizer or other electronic instrument, and provides an ideal way to get that instrument's output into the mixing console for recording or sound reinforcement. It features a very high impedance input which will not load down or otherwise affect the sound of any instrument. The output is an active balanced (transformerless) type at mic level and will drive long cable or snake lines without signal loss. The circuit features low noise and distortion, flat frequency response, long battery life, and immunity to RF noise and magnetic fields. It is protected against input overloads and output short circuits, and is compatible with any audio system, including 48 Volt (Phantom) powered mic lines.

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Garfield Mini Doc

Garfield Electronics has introduced its \$595.00 mini Doc Synchronizer, a low cost companion to the Doctor Click. The Mini Doc simultaneously coordinates timing for sequencers, drum machines, and arpeggiators from Roland, Oberheim, Sequential Circuits, Linn, Korg, Moog, Emu, Synclavier, Fairlight, Simmons, Wave PPG, and MXR. Mini Doc's two independent clock circuits control arpeggiators in 22 synchronized rhythms. With the Mini Doc, all instruments sync to tape. The Mini Doc also generates individual triggers from audio. Inputs, outputs, and controls are "front panel" and the Mini Doc mounts in the standard 19" EIA rack.

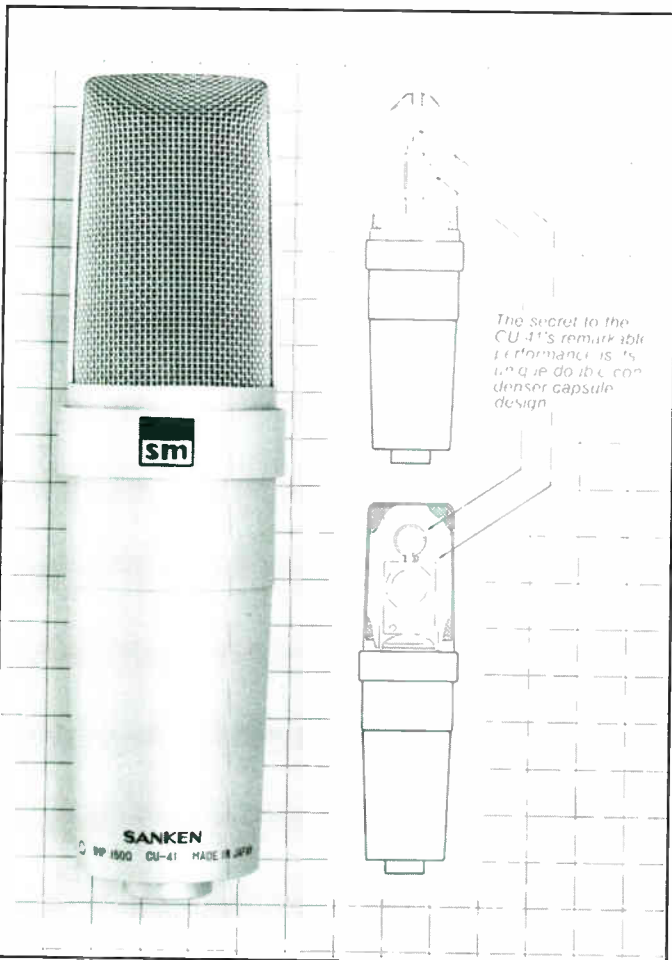
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ADA 2.56i Digital Delay

ADA has announced its new 2.56i Digital Delay, a full functioned delay processor for both live performance and recording uses.

The 2.56i, priced at \$799.95, produces delay times from 0.3 millisecond for high flanging to over 2½ seconds of delay for digital tape loop effects—all at a 16kHz bandwidth.



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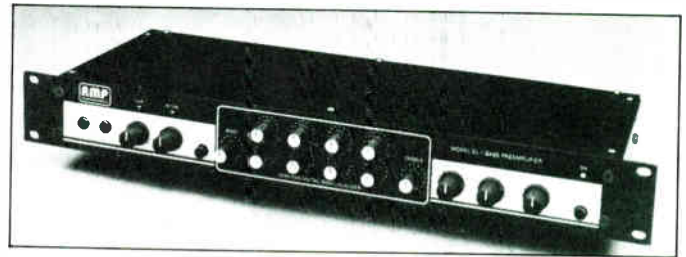
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Circle #067 on Reader Service Card



AMP Bass Preamplifier

Amplified Music Products Corp. (AMP) has just announced the Model SL-1 Bass Preamplifier, designed to give the bass player a high degree of signal control in the studio, as well as on stage. The front panel includes normal and low gain input jacks, gain and master volume controls, limiter/compressor with threshold control, flat/enhance switch, bass and treble controls, four band semi-parametric equalizer, tone balance, crossover frequency control, clipping, limiter active and power on LED indicators and power on/off switch. The back panel includes effects loop with to and from jacks, balanced XLR connector, switchable for direct or line levels, ground lift barrier strip, two full range out and one each low and high frequency out jacks, fuse-holder and power cord receptacle. AMP states the preamp is compatible with all power amps and powered speaker enclosures, has electronically delayed turn-on and rapid turn-off to prevent power up transients and has an impressive 3 microvolts of equivalent input noise and distortion of less than 0.05% THD.

Circle #068 on Reader Service Card



Hafler P225 Power Amplifier

The P225 power amplifier from Hafler is rated at 175 watts per channel (into 4 ohms) with less than .03% THD over a 20-20k Hz range. An internal switch converts the amp to mono operation with 350 watts into an eight ohm

load. The unit uses a push-pull complementary symmetry circuit employing MOSFET output devices which are inherently self protecting, so no current limiting circuitry is needed. The P225 is priced at \$499.95 fully assembled, and a partially assembled version lists at \$424.95.

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Sprague Two Track Replacement Heads

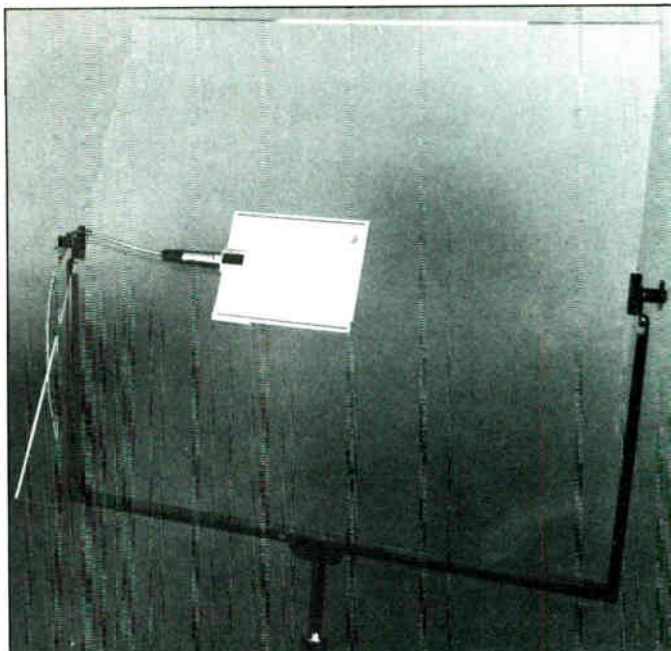
Sprague Magnetics, Inc., of Van Nuys, CA, have introduced their new line of 1/4" and 1/2" replacement tape heads for MCI JH-110A or B recorders. Manufactured by Woelke, in Munich, Germany, Sprague also has a complete line of erase heads for Studer, Otari, MCI and many other recorders. Retail prices for 1/4" is \$180 each, 1/2" is \$380 each. Dealer inquires are invited and product is in stock and ready for immediate shipment.

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Crown Boundary for PZMs

The Crown A240 Boundary is a transparent plexiglass panel, two feet square by 1/4" thick, to which a stand-mounted pressure zone microphone can be attached. The boundary extends the low frequency response, increases gain-before-feedback, and reduces pickup of leakage, audience noise, and room acoustics.

The boundary also makes the microphone sensitive to sounds approaching from the front of the panel, while rejecting sounds from the rear. Thus, it makes the PZM directional and, thanks to the boundary, the PZM can be turned



up louder in sound-reinforcement systems before feedback occurs.

The A240 includes an adjustable stand adapter to mount the panel to any standard microphone stand. Holes in the panel let you suspend or "fly" the microphone/panel on nylon lines. Two microphone mounting clips are attached to opposite sides of the panel for stereo recording.

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(Left) Top-selling Christian artist Amy Grant

Have you heard the **WORD?** *Gospel music is growing.*

Statistics measure the phenomenon. In 1977, the tri-annual Warner Communications report on the record industry in the United States dumped gospel into the "All Others" category, a catch-all group which includes such miscellaneous sub-genres as comedy and

by Bruce Nixon

spoken word recordings. The entire category accounted for only 3% of the American record market. In 1980, gospel had established its own category, and accounted for 5% of the total market, or about \$180 million of the big \$3.6 billion industry. In the 1983 report, gospel had grown again, even as the industry as a whole remained stable, climbing to 7% of total unit sales and 6% of total dollar sales, or about \$210 million.

This kind of growth is remarkable, and even more spectacular because, to the secular music audience, the gospel music industry must seem virtually invisible. The records on most gospel labels of any size are sold almost exclusively through stores that are members of the Christian Booksellers'

Association (CBA), and they rarely appear in more than a token quantity in large retail record outlets. Meanwhile, the major secular labels have had relatively little success in the gospel field. Still, the reasons behind gospel music's growth seem fairly simple and straightforward: the size of the gospel youth market has itself grown; the quality of the recording and the music has increased significantly, and there is a greater effort to actually appeal to broader audiences; the network of Christian radio stations has grown; and, as young, new labels have appeared, record marketing and promotion techniques have become more sophisticated. In other words, gospel is coming of age in the modern music industry.

South of Nashville and east of Los Angeles, Texas and Louisiana together are a dominant region in the gospel industry. Before the 1960s, Texas and the Southeast gave unusually strong support to traditional gospel music on record. During the past two decades—since Jesus rock bloomed in Southern California and eventually transformed the musical character of the gospel industry—Texas and the Southeast have taken an important but not overwhelmingly dominant role in the nationwide gospel music industry. Today, the region fits nicely into the total scene. Waco, a sizable city located between Dallas and Austin in East Texas, is the homebase for Word, the world's largest gospel music label, and all of the states have well-known gospel music recording studios, record companies, management and production companies, and music ministries.

• • •

Word was founded in 1951 by Jarrell McCracken. At the time, McCracken was a student at Baylor University and had a religious radio program there. He hit upon the idea of combining religious language and football play-by-play to describe the combat between God and the Devil, complete with crowd noise. The idea caught on and became a regular part of McCracken's show. Eventually he cut a record of the show and Word was born. Today, it accounts for about 40% of the entire American gospel market. The company also has moved into video, cassette recordings, publishing and educational material, and some years back was sold to ABC Records, the secular company which still owns it. McCracken retired to his ranch outside Waco, and has assembled one of the world's largest collections of Egyptian

and Arabian horses. He's a bit of a legend, and no wonder.

It's a busy record label: About 90 albums are released annually, in a wide range of musical styles. Of course, what separates gospel from other forms of music is simply lyrical content. The Word family is a big one, though. It includes:

Word, primarily a white gospel label dominated by traditional acts like George Beverly Shea and such MOR artists as Tennessee Ernie Ford, the Bill Gaither Trio, Joni Eareckson Tada, Chris Parkening and others.

Canaan is a Southern gospel label with lots of roots music, traditional instrumentation and old-fashioned, four-part harmonies. The Lewis Family is popular among bluegrass fans, while The Inspirations have mountain roots that go back to the Carter Family sound and beyond. The Goodman Family and Rex Nelon, as well as another half-dozen or so acts, are also on the label.

"This kind of sound is a definite art form," says Word's Walter Quinn, "and one that parallels black gospel. It was created in the way that bluegrass was created, out of old Scottish and Irish mountain music, and it developed into country music."

Dayspring is Word's MOR label. The Imperials, a very popular act, is on Dayspring, along with ex-Belmont leader Dion DiMucci, the Gaither Vocal Band and a variety of exercise records.

Myrrh is perhaps the best known member of the Word group among secular fans, because it's the home of flamboyant, charismatic ex-soul shouter Al Green. It's considered Word's contemporary gospel outlet, and also its largest subsidiary; it's the label of the enormously popular Amy Grant, the Mighty Clouds of Joy, Chris Christian, ex-Poco leader Richie Furay, Maria Muldaur, ex-Santana vocalist Leon Patillo, ex-Atlanta Rhythm Section player Mylon LeFevre, the New York Community Choir, the Williams Brothers, Shirley Caesar, and more than a dozen others.

Exit, a relative newcomer to the flock, aspires to move into the secular market, and has been promoted on college radio. It's new wave with Christian lyrics, as practiced by the 77s, Steve Scott and Vector.

Word's corporate headquarters are in Waco, but most of the recording is done in Nashville, Memphis and Los Angeles, or occasionally in smaller Texas or Louisiana studios. Ironically, Waco itself doesn't have a state-of-the-art recording facility. Artists who record in L.A., for instance, use musicians from the city's vast pool of secular session players, and bassist Lee Sklar and members of Toto have appeared

America Multimedia: Gospel's Quiet Giant

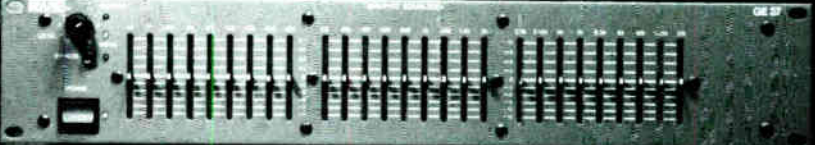
As the contemporary Christian music market grows, companies affiliated with the actual making of music—studios, sound reinforcement companies, booking agencies, etc.—will grow with it. One example of a company that has shown solid and impressive gains over the past few years because of its close identification with

—page 117, GOSPEL

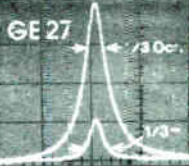
on Word albums. Word has offices in Los Angeles, Nashville, Winona Lake and London, and company A&R staff generally select both the players and producers for each album.

Word also distributes a number of smaller, independent gospel labels, including: Birthright, a black label with two artists, Gabriel Hardeman and Emmett Powell; Maranatha! Music, a Southern California-based indie that is a successful label of praise music, which is the direct descendant of '60s Jesus rock; Good News, a Los Angeles-based outfit headed by producer Freddie Piro, with artists Chuck Girard and Steven Soles, an ex-Alpha Band, ex-Rolling Thunder Revue player who also produces for Exit; Reunion Records, which is owned by Amy Grant's management agency and which put together three #1 recordings on the gospel charts with newcomer Michael W. Smith; and StarSong, the Houston-

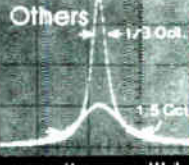
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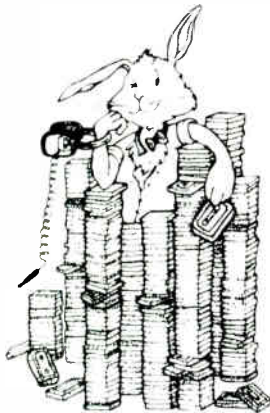
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based label that has the hugely-popular gospel rock band Petra. There are a few other smaller labels, as well, with Latino artists or one-act rosters.

"The industry really began to grow after B.J. Thomas made MOR gospel acceptable," Quinn says. "Then people in gospel began imitating the sounds that were popular in secular music. Today, finally, groups are getting their own sounds. Amy Grant is a good example. She's really forging her own sound, and getting bigger and bigger at the same time.

"It's an up market," he adds. "It's doing real well. The year before last, we followed the trend in secular music and dove for a while, but we came out of it real quick. I don't know what to attribute that to, but the product is getting better and it's a fairly stable market. There are fairly young demographics, surprisingly. There is a younger record buyer out there. If there were as many older buyers, we'd be in much better shape. The same age that's buying Journey is buying Petra."

Black gospel sales, he says, declined last year, but the trend seemed to reflect general economic conditions in the United States pretty closely. Most people who listen to gospel, he said, listen to gospel exclusively.

"We're not adverse to putting product in secular stores," Quinn says, "but it's very hard to put them there unless you have the dollars in your hands to prove that you're actually selling the records there. It's sort of a Catch-22 situation. In secular stores, the records are hidden. The gospel racks are way off in a corner someplace. The reason? Why give them front floor space if they're not selling?"

• • •

One observer of the gospel music scene in Texas suggested that if Waco is the corporate center of the music in the state, then the Tyler-Lindale area is the spiritual center. A small complex has grown up in this rural area, about an hour's drive east of Dallas, that's centered around the Last Word Ministry, singer Dallas Holm, the popular Second Chapter of Acts group, producer-manager Buck Herring's Buck's Place Studio, and others.

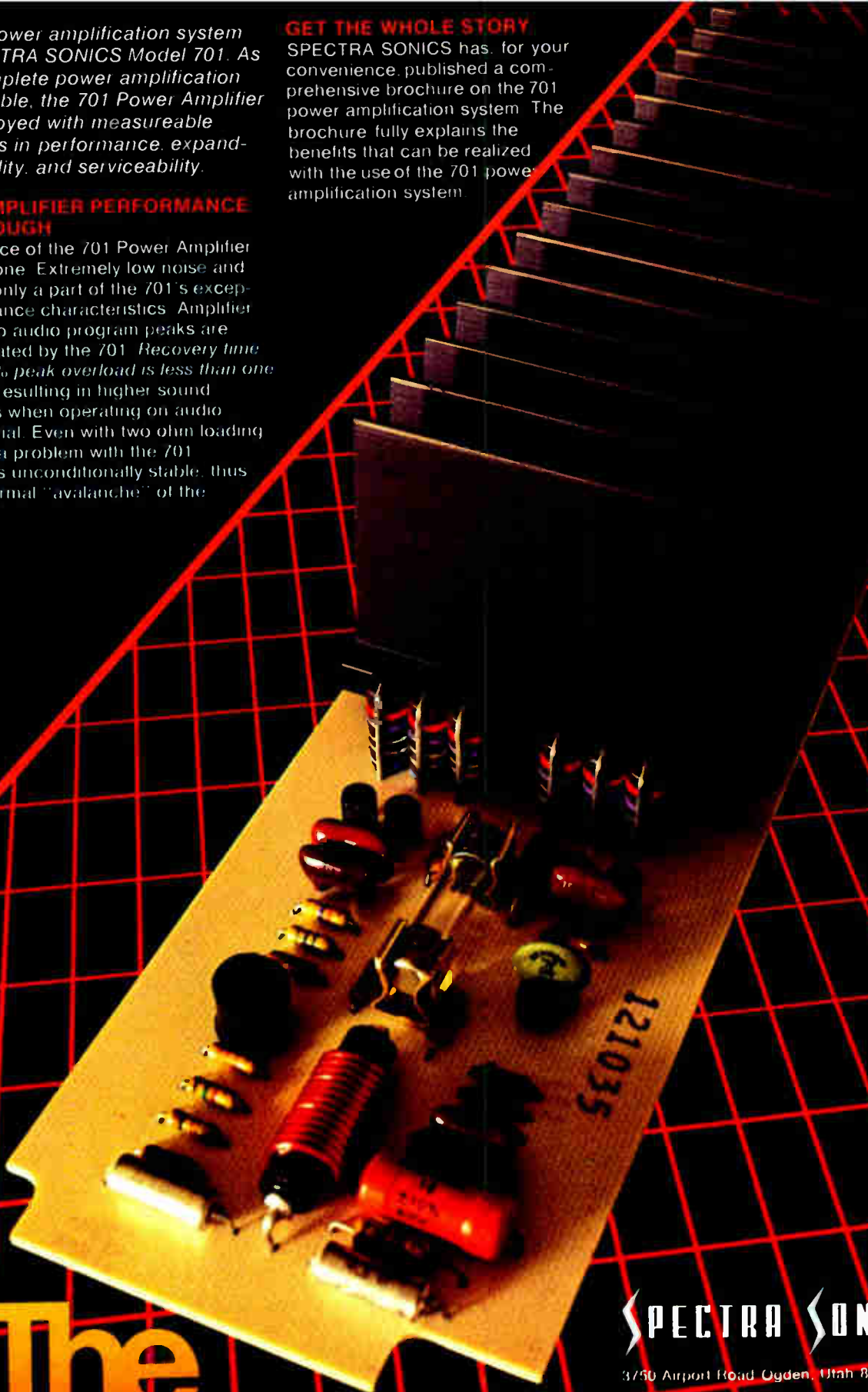
One particularly important part of the Tyler-Lindale scene is Last Word, built around the work of the late Keith Green. Green turned down a contract with CBS and later left a contract with Light to sell his records through the mail and at shows for whatever his fans would pay for them. He was said to have sold a half-million records at an average price higher than typical retail cost before his death in an airplane crash last year. Last Word is now led by Green's wife, and has mov-

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World Radio History

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ed into concert promotion, video and graphics along with its record activities. Meanwhile, some of Green's music on Pretty Good Records is distributed by MCA.

Dallas Holm is a clean-cut soft rocker whose lyrics are filled with metaphors of Christian ideals. He records with his band, Praise, for Greentree Records, distributed by the big Nashville-based Benson group; a good deal of his recent *Signals* album was cut at Herring's rather new state-of-the-art studio.

Other Southeastern record companies have done well with gospel music. The Georgia-based Atlanta International is one of the fastest-growing black labels in the country; with two dozen artists, the label's sound is largely traditional; *Rough Side of the Mountain*, by Rev. F.C. Barnes & Sister Brown, moved into the Top 5 on Billboard's spiritual LP's chart last year. Malaco has secular artist Z.Z. Hill, but the Jackson, Mississippi, label also has eight gospel acts and is another strong black label; the Jackson Southernaires, the Violinaires and the Angelic Gospel Singers all are good sellers, and distri-

bution is through independents. Little one- and two-act labels abound in the major Texas and Southeast cities, periodically issuing releases to regional fans.

The entire area also is very strong for touring bands, and there are many regionally active groups. Tex-Mex gospel is popular in Texas and Southern California, while several Dallas CBA-member stores are among the largest in the country.

• • •

Petra has been called the Journey of the Jesus set. The Houston group has been around for more than a decade, and has grown immensely. It's cut six albums and last year played 170 nights on the road. Like all gospel acts, it has to work the road extensively.

Darryll Harris and Wayne Donowho, who co-manage the group, also own StarSong Records and are part owners of the Rivendell Studio in Pasadena, TX. The studio's a top-notch complex with a 24-track Trident Series 80 board and a full range of outboard equipment that has been used by such



Control room at Rivendell Recorders, Pasadena, TX.

secular acts as Ray Charles, B.B. King and Air Supply, although a lot of gospel acts do use the facility and record on Word, and other major gospel labels have been cut there—indeed, Rivendell is *the* gospel studio in Texas.

"There's definitely a strong growth curve," Harris says. "Once upon a time, Petra, to just consider breaking even on an album would have been amazing. A successful concert would have been a few hundred people in a high school auditorium or a church basement. Now, it's one of the biggest gospel groups in the country."

In early January, for instance, Petra played to 6,000 fans in Houston and 9,000 in Dallas. The band spent \$16,000, according to Harris, on promotion for the Dallas show, which was in the classy Fair Park Music Hall.

"It's a quirk in the media that in the pop field, radio stations are all broken down into musical categories," Harris remarks. "In Christian music, each station is responsible for the gamut of Christian music. It's a much more complex thing to break a new artist to an audience in every city."

StarSong was formed in 1976. Petra is the label's major act, although its roster includes Steve & Annie Chapman, Farrell & Farrell, Morgan Cryar, and the rock band Quickflight. Petra's 1982 album is currently approaching 200,000 unit sales, while the band's most recent work, released in late '83, has sold about 140,000 units. Almost all of the sales are through CBA outlets, although some product is in secular record chains.

Donowho adds, "I think what's happening in the market, particularly with Petra, is happening because a new type of product exists. There is finally Christian rock that is well-written and well-recorded. When Christian MOR appeared, it was well-recorded, but it didn't rock. What we're hearing from the CBA is that the people buying Petra are people they've never seen in their

Plenty of Work for This Christian Session Player

Rhett Lawrence's experience may not be typical—after all, he is acknowledged as one of the better keyboardists and synthesists working in Christian music. But he is proof that there is a comfortable living to be made working primarily as a session musician on Christian records. Lawrence is perhaps best known as synthesist for Andrae Crouch, who records for both Warner Bros. and Light Records, and is among the most successful Christian artists. Lawrence also worked on a live album by Crouch's sister Sandra which is nominated for three Grammy awards.

Lawrence, who is white, has an extensive background in both white and black gospel music, and he says that his work in the latter "has given me a real understanding of the importance of rhythm that I carry over into all my work."

Lawrence uses just two keyboards, for the most part, a Rhodes Chroma and, his favorite, a Fairlight CMI. "Between these two," he comments, "I can get all the patches I need. The Fairlight, particularly, has allowed me to open up a lot musically. I can do almost anything with it, it seems."

We asked Lawrence if, in the course of doing Christian studio work, he isn't tempted to take advantage of the Fairlight's capability to make bizarre noises that might not fit into a Christian music context. "Well, you couldn't have flying saucers on a black choir album," he jokes, "but increasingly I've been able to get away from the standard, cliché sounds into some more interesting things." For instance, on one recent Christian project, he used the Fairlight to combine a Simmons drum sound, breaking glass, a pair of two-by-fours slapping together and a cracking whip into a distinctive snare sound.

It's that kind of innovative thinking (and programming) that has kept the Santa Barbara-based Lawrence in heavy demand. Aside from his work with Crouch, Lawrence recently worked on a children's LP, a "progressive Christian" album by Scott Smith, and with such top secular artists as Smokey Robinson and The Crusaders' Joe Sample. And it is players like Lawrence who are making "Contemporary Christian" music live up to its label.

—BJ

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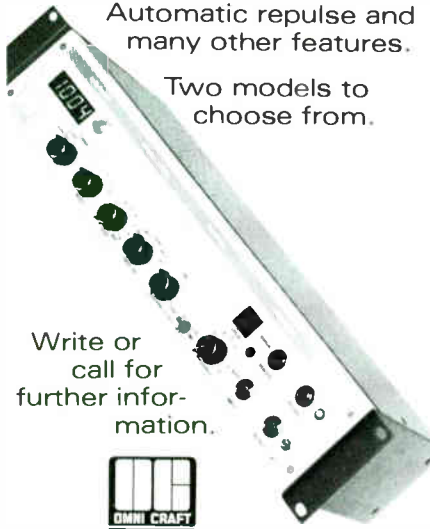
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stores before. About nine years ago, the first contemporary Christian records started to sell. These artists are even older now, but they kept making music for people who were getting older, too. Older people don't buy records like younger ones do. Their money goes into other things, like washers and dryers. The style and quality are aimed at kids today, not at the aging Jesus audience. What Petra is doing almost exclusively is hitting the kids—kids who haven't bought Christian records before."

The band, meanwhile, remains a strong live act in the West and Midwest, and particularly in such cities as Denver, Dallas, Houston, Seattle, Los Angeles, and Chicago. The Northeast is still a tough market.

"There's a greater necessity to tour than there is in pop," Harris explains, "because in pop, the media is so much more developed. You can have a hit record before you actually go on the road. The Christian radio network is newer and not as cohesive. You *can* create interest before touring, but it's real hard. Concerts are the key, more so than in the pop field."

• • •

Studio-In-The-Country, a small, comfortable building nestled in the pine and oak forests just north of Bogalusa, near the Mississippi state line, is one of the most active studios in Louisiana. About 30% of the studio's work is gospel; 38 gospel albums were cut there in 1983, most of them black gospel. In mid-January, a Williams Brothers album cut for Myrrh at Studio-In-The-Country hit #1 on the Billboard Spiritual LP's chart. A lot of Word material has been recorded there.

"Most of what we do is for private release, however," says studio owner Eugene Foster. "A lot of it's in the hopes of negotiating a record deal, since most who come in are traveling groups, not strictly church groups. They're traveling with the Mighty Clouds, Mr. Clean, the Williams Brothers, and so on, and they sell their records on the road. Normally, we handle everything. We send the tapes to a company in Cincinnati that specializes in gospel work for the mastering and pressing."

Foster notes an upswing in the gospel market, and he recently started his own Magnum label as part of the Studio-In-The-Country operation. The popular Hatfield Brothers already are on it and have released an album called *Looking Back*, along with a group called the Songs of the Stars. "The gospel market just hasn't been explored," Foster says, "at least in this part of the country. As far as I know, the Williams Brothers album is the first Number One

gospel record cut south of Nashville."

The Hatfields, he says, once turned down a big label contract because they believed they could make more money selling their product on the road, and they probably were right. The Hatfields, a popular black act in Louisiana and Mississippi, are an exception to the rule, Foster adds: they've been touring the South for years and have a well-known Sunday morning radio show out of Hattiesburg, MS.

Studio-In-The-Country, a one-room facility with a Harrison 40/32 board and two 24-track machines (a Studer and a 3M M-39), has cut 28 gold and seven platinum albums, and has been used by secular acts as diverse as the Neville Brothers, Gate-mouth Brown, Jimmy Buffet, Kansas, Maze, Doc & Merle Watson, Perry Como, Leslie Uggams and Stevie Wonder.

"Gospel groups are a lot easier to work with," says Foster, who frequently acts as producer and/or engineer for the groups that record at his studio. "There's no difference in studio technique, but the gospel groups will listen to your suggestions. They don't always know what sound they want until they hear it. They're used to traditional singing and piano. They come in here, and we double the voices, add synthesizers, bass and drum.

"They're generally quite professional, too," he continues, "but usually the biggest thing they have going is their voices. Usually, the musicians who work with them on the road can't play in the studio. They're used to playing loud and filling up all the spaces with noise and they can't adapt to playing the bare bones sound."

A few groups are funded by their congregations and play regional circuits where they sell their albums at shows. A lot of black gospel sessions turn into rowdy church meetings, with lots of shouting and testifying and rolling on the floor. White gospel acts tend to be stiffer, less emotional. "With a lot of the black acts, you just roll the machine and turn 'em loose," Foster says. "You don't have to coax it out of them."

In any case, Foster's pleased with the gospel market. "We're getting our share of it," he comments. "Making the studio available to gospel groups was a big plus for us. They can come here and get professional quality without spending a fortune. I'd like to see the whole area down here take a bigger role in the gospel industry, and it very possibly could. See, gospel started down here and was taken to other places and expanded, and it got big. But if you look at every major gospel group, I bet you'd find that one or two members are from down this way." ■

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World Radio History

by Carol Kaye

Questions arise frequently about what it's like to work with so and so—what their personalities were like, how the recording date went, etc. I've worked with some of the most popular female singers of our times and this month I'd like to share some of my recollections about them.

I first met Cher around the time she started dating Sonny Bono. Sonny was a tambourine player on some Phil Spector dates I worked, and the next thing I knew, I was constantly working for Sonny & Cher at the same Gold Star Studio [in Hollywood]. Stan Ross would be at the helm

Ten Great Ladies

of the mixing with Larry Levine assisting. We used 4-track equipment and laid down tracks first. But Cher would be there to sing us the lead as we would run down the music to make sure Harold Batiste's arrangements fit the vocals well. Batiste's work was usually so good that we'd find only a few licks to make them better.

Cher was easy to work with (as was Sonny) and let us do our thing. She was young, new to the business then, and learning just like the rest of us. She'd often play a percussion part on her own tracks and that impressed me. Sonny, who knew Phil Spector's style of production, was really the force behind their hits. Cher was quiet in those days, but would crack a good witticism every now and then with the "boys".

Pet Clark was mostly recorded at Western Studio "A" and United "A". A bubbly, energetic woman who would constantly keep us going with her beautiful English-accented patter, Pet would do as many takes as possible live with the band. We had 16-track equipment and the dates would go fast with live bands (strings too!). She was friendly, interested in you and was a super professional. Her husband was her co-producer in the booth. Her bubbly screen personality reflected the way she was in real life—her sense of timing and humor kept the recording dates bouncing with energy. She and I hit it off immediately and we'd wink at each other after a particularly good take. She was a joy to work with.

Eartha Kitt made a couple of LP's at United "A" and was definitely a fireball full of opinions and information about world conditions. She was never one to engage in idle chit-chat; instead we had many deep discussions about

our roles as women in a male-dominated industry, and our responsibility to express our viewpoints and be active in trying to help change conditions for the betterment of women—and all people. She constantly did perfect takes while we musicians got our music together. My one regret is that I couldn't spend even more time with this brilliant, multi-talented artist.

Ella Fitzgerald has been singing and scatting for about 50 years now. We recorded an LP together at TTG upstairs. She was quiet and all-business as she laid down the vocal tracks with a small rhythm section. She was nice and friendly when I remarked to her—truthfully—that she had been my idol for many years. I'm sure she'd heard that many times before, but she still accepted the compliment graciously. She was easy to work with and we needed very few takes to work up an album of hot tracks.

Nancy Wilson decided to go pop in the late '60s and there I was at Capitol Records "A" recording "Peace of Mind"—her first Number One hit. Like most of the studios back then, Capitol had bare floors which the engineers had to adjust to. Our session was done live with a full orchestra. Shelly Manne was the drummer and instantly found a rock beat which fit the gospel style tune. Nancy was friendly and utterly professional—no complaints as she went from take to take. David Cavanaugh—of Lettermen, Mel Torme, Cannonball Adderly fame—was the producer.

Sara Vaughn was another great jazz singer who was exacting, down-to-business but still cheerful, even ebullient.

Barbra Streisand



PHOTO: GREG GORMAN

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She cut her takes with a live band at RCA's "B". As she let loose to sing, whatever came out was usually note-perfect. The sessions I worked with her were late in the '60s so recording equipment had advanced to 24-track by then.

We recorded a terrific special with Lena Horne at NBC TV studios. Lena would crack us up with her humor and her boundless energy was positively infectious. Her late husband, Lennie Hayton (himself a fine musician-arranger) would be there with his yachting cap and his effervescent smile and the music always went smoothly when we backed up this svelte sophisticated lady. A TV studio can be a little dirty—with cables everywhere, and the long camera takes frequently wear down musicians. But Lena handled it all beautifully. She wasn't a complainer and was always a great diplomat. That made changes easy to deal with from everyone's perspective. She was a pro all the way, and that always makes your job easier.

I played on two or three Nancy Sinatra sessions (with Hal Blaine on drums, Howard Roberts, Tommy Tedesco and Al Casey on guitars, Larry Mahoberac on piano, plus a big studio clique horn section, percussion

and sometimes strings) for records that bombed before "These Boots Were Made For Walkin'" (made at United "B") started her string of hits. Nancy was cute and very pleasant. Sure, she's Frank Sinatra's daughter, but she received the same treatment as anyone else. These were not jazz-influenced records, so live takes were not paramount; Nancy would sometimes lay the final vocal tracks much later. The smash hit "Something Stupid", which she made with Frank, was only a third or fourth take. It was recorded at Western "1" with a huge live band. Frank was not one for a lot of takes so it was short and sweet. That was Al Casey you hear on acoustic guitar. He would always come up with excellent rhythm licks.

This may sound corny, but I miss Nancy Sinatra. She was one of those people who are pretty on the inside.

I played guitar on Ann-Margret's very first recording date at the old RCA studio (since torn down) at Sunset and Vine in about 1961. She had just come to the United States from Europe and was very exuberant about her career. You knew as soon as you played with her that she was going to "make it"—she had a no-nonsense but exciting air of con-

fidence about her, and she was anything but shy as she recorded her live vocal takes with the big band. The studio was just 2-track; large, well-lit and bare. We did quite a few LPs with this charming woman.

I had the pleasure of playing bass on Barbra Streisand's record of "Memories" ("The Way We Were"). Rumors about her personality had floated around town for a while. I had missed the call to work on the film of *Hello Dolly* so I was anxious to work with her. She was a super-professional who would never settle for anything but the best from herself and the musicians. The tune was recorded around 1973 at TTG—upstairs with a full orchestra (Marvin Hamlisch directing) working on 24 tracks. We ran down the music quite a bit. She sang 33 straight takes before she liked her own performance. Working with Barbra Streisand was a joy, and though we never spoke, we looked at each other at hearing back the hit take a couple of times. That was precious communication—we both liked the same parts of the take. The hair always stands up on my arms on the hit takes, and that one was great.

One of my favorite sessions was with the great Aretha Franklin in the mid-'60s at Western Studio 1. At that point, Aretha hadn't really taken off, and I was aware of her primarily as a jazz singer. Her earlier work had been gospel-tinged jazz, so when I arrived at the date, I was surprised to learn that she was singing songs that had a more rock and soul feel to them. Like so many singers, she was very sweet and quiet offstage, but once a take would begin she would become a confident belter—was there ever a better soul voice? Ahmet Ertegun produced the sessions for Atlantic.

Talking about these great singers makes me see several common threads they all shared—having a pleasant personality, a sense of humor, and the purposeful professionalism to do the hard work that needed to be done quickly but efficiently. Personally, I found that working with men drew out all of my original shyness. I never thought of myself as a "woman" but rather as a fellow musician. This attitude helped create a better work environment, and other musicians also treated me with more respect when I played.

If I heard any unkind jabs, I might retort with a witty remark to let the other party know that what he said was unprofessional. That usually did the trick, and I always managed to do it without hurting the other party's ego. I feel there are always diplomatic ways of working things out. ■

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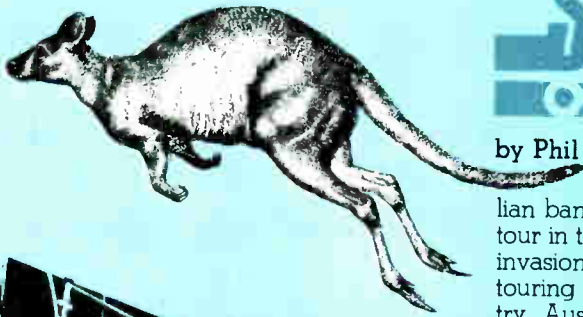
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TOURING AUSTRALIA

The Sound Wizards of Oz



SOUND ON STAGE

by Phil Tripp

One reason so many Australian bands welcome the opportunity to tour in the US and perhaps why the Oz invasion is so noticeable is the state of touring conditions in their native country. Australia suffers from a tyranny of

distance with only seven major cities containing large arenas, and roads between them primarily one lane and of poor quality. The secondary venues—pubs and private clubs with concert facilities—are often plagued with poor access, insufficient power, and inadequate staging.

But one benefit realized from the rigorous touring conditions is the quality of technical production values coupled with innovative and hard-working personnel. American promoters and concert producers have been



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—from *110, Touring Australia*
 respectful if not amazed by the efficiency and attitudes of Australian bands and their crews. And considering what they face at home, it's not surprising.

Of the facilities for international acts, only three seat more than 7500 and the newest one—The Sydney Entertainment Centre—has a capacity of 12,000 in a city of nearly 4 million people. Other major venues are the Melbourne Sports and Entertainment Centre (7500), The Perth Entertainment Centre (8000), Adelaide's Apollo Hall (3200), Brisbane's Festival Hall (3500) and The Canberra Sports Centre (5000). Most major artists elect to go outdoors into cricket grounds, football stadiums, or parks, but these venues

are limited by local government rules on noise levels. Recent tours by David Bowie and Simon & Garfunkel were initially banned by local councils until legal cases overturned the edicts. However, some outdoor facilities still have bans on rock shows following concerts by AC/DC (because of noise), and due to violence and disorderly crowds.

That leaves the majority of concert and special events to be staged indoors, much to the chagrin of promoters who can't afford to bring in overseas artists with the diminished gross potential indoor dates offer. Several promoters have gone broke in the past two years because of tours that flopped or due to their inability to make a profit because of variations in the ex-

change rate of currency, with artists being paid in US dollar equivalents.

But it's the grueling road conditions that stymie British and American acts. Often, concerts are booked with little regard to the distances between cities, and most groups try to play all cities in under two weeks. Plus, there is no stagehand union in the country requiring crews to be carried along for the entire tour. The only qualification required is for riggers but many halls have no rigging facilities.

Overseas artists find that transporting elaborate staging and props is useless if not costly and most carry a minimal amount of stage gear. But this is the reason that Australian bands have had to rely on their playing alone and it gives their music the forcefulness that it possesses without the use of gimmicks.

The national touring scene for Oz bands has always revolved around an established pub circuit and larger private clubs. These venues contain more elaborate facilities and are geared to cabaret presentations or variety as opposed to rock and roll. They are leagues clubs (named after football or rugby teams that they sponsor), retired servicemen's clubs, or social groups' complexes that revolve around slot machine revenue rather than live entertainment.

But both pubs and clubs are basically the same in that they offer few amenities and are lacking in staging, electrical, and equipment facilities. Most bands play for the door or earn minimal guarantees, but the heart and soul of Oz rock is centered in that circuit. It's bred Men At Work, Little River Band, INXS, and countless other bands who have honed their chops on pleasing the often rowdy clientele.

Because of the enormous cost of transporting and crewing, most Australian bands carry their own PAs and lights and have a crew of 5-6 who handle all aspects of production, making no discrimination between loading and engineering. While lighting is generally maintained at under 60 lamps per set-up, sound gear has tended to become smaller and more compact. The W cabinets of last year are now replaced by Meyer speakers with high output and directivity in a smaller configuration.

There is a healthy market and a great deal of competition in touring sound for smaller venues. One of the more representative companies who handle major national artists is The Touring Plant headed by Peter Carter and Jeff Baker. formed through the amalgamation of three companies that specialized in the pub circuit, it has upgraded its equipment to also handle larger venues. The company disposed

—Page 117



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MX1688 Recording Console

16 x 8 x 2 with control room mixing

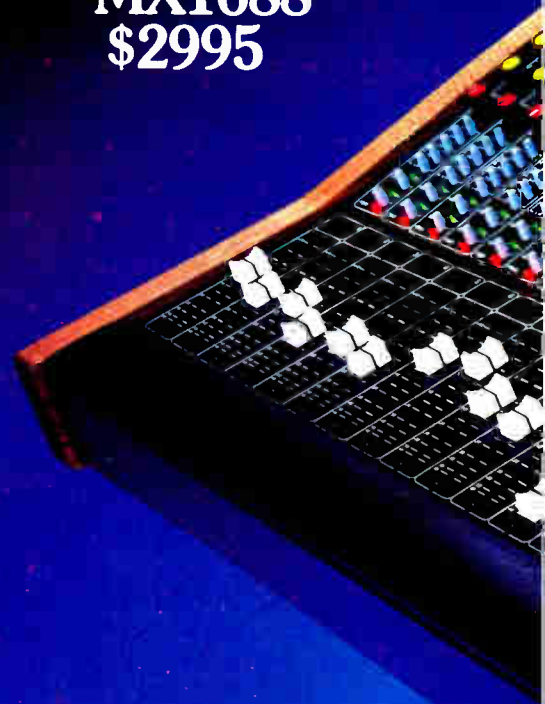
The CARVIN MX1688 is a full function recording mixer designed to serve as the control center for eight-track recording studios. Recording basic tracks, overdubbing sessions, and final mixdown are all handled with ease by the MX1688; signals are automatically routed to the appropriate sections of the console for each recording operation. You will rarely (if ever!) need to reconnect any signal cables with the MX1688. One of the key features provided by the MX1688 but rarely found on PA "recording" mixers is an independent control room monitor mixer with buss/tape source selection. Working groups will find this mixer perfect for the double duty requirements of recording and live sound mixing.

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—from 112, *Touring Australia*

of its conventional 4-way speakers, opting for a combination of Meyer Sound Laboratories MSL-3 cabinets and the English Court Acoustics' JBL-based black boxes. The Touring Plant also updated their consoles, deciding on AMEK M100 32/8 studio desks modified for the rigors of the road.

Baker feels that the biggest problem, aside from distance, in touring is the road conditions. "We have always had to perform continuous maintenance on the rigs due to the bounce they receive from our infamous roads. And packaging has always been a first priority to protect the electronics," he said. "As far as trucking, we usually use 8-ton trucks for the systems. We tried air-ride semis in the past but the sway and slew we got from roads with improper camber on curves and dips and bumps got too hairy."

The acts that Baker works with include Mental As Anything, Men At Work (with Troy Sound), Sharon O'Neill and Matt Finish. His company handles the larger national acts but has smaller systems for the up and comers using the Meyer speakers and Total Audio Concept 32/8 or 16/8 boards.

Another problem he comes up against regularly is improper and outdated worksheets for venues in regards to power, access, and personnel. To that end he maintains a file of venues, updated regularly, from the smaller out-back pubs through to major clubs in large cities.

Load-ins can be an unpleasant surprise as he describes a typical leagues club move. "First we go up two single flights of stairs from a small alley, then across a gym, up another flight of stairs and across a carpeted hall and past squash courts through four sets of doors before reaching the side of the stage."

On the pub side, access is the predominant problem, but power matches it. Though most venues have three phase outlets, 30-45 amps per leg are the norm. Additional power usually comes out of the kitchens but there is a problem with spikes from air conditioning and appliances which has caused the Touring Plant folk to carry elaborate power distribution set-ups.

Most of the smaller sound and lighting services rely on crewing companies for their luggers and road crew. And half the crews never use their real names to avoid taxes and other problems from their past, preferring monikers like Bear, Yogi, Zoom—but they become personalities in their own right in the annals of roadiedom.

The major concert touring company employs its own crews and carries them on all tours with international and major national artists. Jands Concert touring joined with the

only other major force in sound and lighting, ACT based in Melbourne, last year. As a combined group, ACT/Jands is the only major sound and lighting company used for overseas acts. Jands was formed in 1971 and has handled

using their own Jands J-1000 amps. The J-1000 puts out 450 watts per side into 4 ohms and is also used to power Jands built Concord boxes, another composite 4-way system. They have also just acquired Turbosystems gear from

The past few years have seen a greater number of bands opting for an Australian tour with several—like Duran Duran, Devo and Stevie Wonder—also recording here and combining a bit of vacation time during the northern winter.

almost all superstar tours and outdoor festivals in the past ten years. Wayne King, equipment manager for the sound side, attributes this to the quality of their crews and experience coupled with continually upgraded equipment. Jands grew out of a manufacturing arm that supplies most of the spares used on the road and also manufactures consoles, amplifiers, and lighting gear.

They use Clair S-4 cabinets for the main halls, powered by Phase Linear 700s with an array of R-4 boxes

England and are trying it out in selected gigs.

On the monitoring side, Jands uses Clair SLP wedges for most applications but has built custom monitors for some overseas artists. James Taylor remarked that his special monitor was the best he had ever heard and wanted to take one back with him. Monitors are bi-amped with Yamaha P2200s. Jands manufactures their own boards called the JM-7, a parametric 32/8 and also

—page 146

—from page 99, *GOSPEL*

and connection to Christian music is American Multimedia, based in Burlington, North Carolina, in the heart of that state's textile region.

The company was started by Richard Clark, a sound reinforcement specialist who decided to diversify into different areas of production. In the past five years, he has built American Multimedia into one of the most powerful and respected Christian-connected businesses in the east, using his extensive knowledge of sound reinforcement as a base for building the company. For example, Clark's company will be handling virtually every technical aspect of Jesus '84, the huge Christian get-together in Orlando, FL. American Multimedia will provide the sound and lighting equipment, the live video during the event, as well as working up video clips for TV and a TV package of the concert's highlights.

It has been American Multimedia's total involvement in the entire spectrum of show-related activities that has put them in such demand. "We do different things for different people," Clark says, "from scheduling events to lining

up entertainment, renting halls, to doing sound, lights and video." The company also runs a state-of-the-art studio and a tape duplication facility. Their sound reinforcement gear is all top-notch, too—Clark says that most of their speakers are JBLs, they use mainly Crown amps, and depending on the situation, they mix on Hill, Yamaha or Neve consoles.

Clark, like many people in his field, is particularly excited these days about video's seemingly limitless potential. "It really hasn't even gotten started in Christian music yet," he comments. "There have been a few feeble attempts, but that whole area is really just starting to open up. You know, rock and roll just took the ball and ran with it on video. Country is just getting started on it, too, and then I think we'll see Christian music following. We're happy to be in on the ground floor.

"I think in a couple of years you'll be seeing some great video work in Christian music." And Clark is betting a lot of it will come from the ever-growing American Multimedia.

—Blair Jackson

JULUKA



Dancing in the face of apartheid

by Laurice Niemtus

"Say 'ha la la,'" the man in the spotlight wearing the African costume asked. The audience at Bogart's in Cincinnati, including several relocated Zulus, chanted softly.

"Again," the man on the stage pleaded, his pale skin glistening in the lights. "Say 'ha la la.'"

And they did. Throughout a performance that lasted nearly two hours, "Ha la las" mingled with applause in an almost natural way. This Zulu phrase means "astonishment" or "wonder" or "I like it." It can also be a greeting, or a response to a greeting.

Remember it, because various experts agree that this year may be the year that African music becomes The Next Big Thing. Last year, you no

doubt heard or read about King Sunny Adé, the rhythm king out of Lagos, Nigeria. Some people—at least in the larger cities on both coasts—even saw King Sunny and his African Beats on tour. And by all reports, he was a hit.

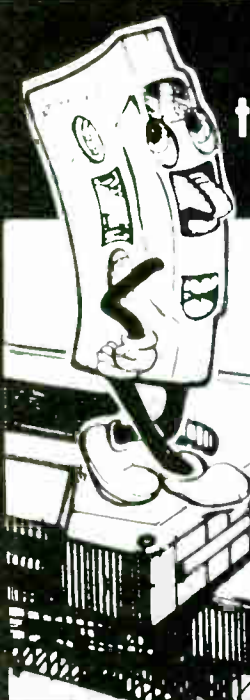
In 1984, however, Juluka may take center stage. Warner Bros. Records is strongly committed to the band, especially considering the dent made by *Scatterlings*, the group's first world-wide (and U.S.) release. Two singles from that offering got onto the British charts, and the album was played by a number of influential radio stations here, including KROQ, Los Angeles' pioneer new music station, and WNEW in New York City, a staid AOR outlet.

Warners also sponsored a press tour for band leaders Sipho Mchunu and Johnny Clegg last fall. The two criss-crossed the continent during a hectic two weeks in September and October, doing personal appearances, TV,

radio and phone interviews. They returned in November for a 15-date concert tour that won nearly unanimous critical praise. NBC cameramen tagged along for the final dates, preparing to compete with an *Entertainment Tonight* crew which also filmed an interview and several performances.

It's easy to understand, really. Juluka's sound, while African in its percussion and some of its rhythm structures, is brightly colored with European folk guitar, flute and sax. Almost all of the pieces are underpinned with thick, tribal work chants, the product of several cultures trying to include one another.

Johnny Clegg was born in England, and while he grew up in Zimbabwe, he did so in a white, European-based environment with a love of English, Irish and Scottish folk music. That, coupled with his curiosity about and love for Africa, makes him amply equipped to connect with both white



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and black music fans in this country. His background as a lecturer in anthropology—the study of various cultures—doesn't hurt either.

Mainly, though, Clegg is interested in music, and at 30, the combination of white and black, Zulu and Western influences is second nature to him. After all, he's been performing this marriage of styles for 15 years.

His connection with Mchunu goes back to 1969, when Siphon, a rural Zulu without any formal education and no command of English, set out for Johannesburg in search of work as a gardener. The 23rd son of a Zulu chief-tan and herbalist, he was already adept at dancing and guitar playing. It wasn't long before he heard on the migrant workers' grapevine about the white teen-ager who played guitar and dined in the streets. He quickly set out to find him.

"Someone told me about this white guy who could play guitar real well, but I couldn't believe anyone could beat me," Mchunu told *International Newsweek* last April. "So I went to his apartment and we played, and after a while I put down my guitar and said, 'You know, boy, I'm beat.'"

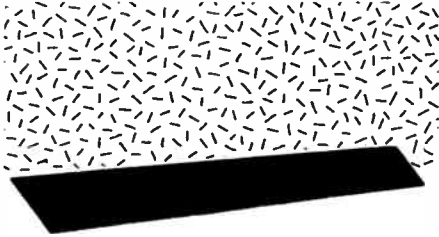
Clegg remembers it differently. He thought Mchunu was far more accomplished than he—as a guitarist and especially as a Zulu dancer. "He became my teacher," Clegg says. The two quickly became close friends and soon formed Juluka (Zulu for "sweat") as a duo.

It might have been a fairytale perfect union from that point on, except for the fact that Clegg was white and Mchunu black and both were residents of South Africa, where segregation is the law. While still in his teens, Clegg was arrested twice for visiting Mchunu without the appropriate permits.

"The police would take me home to Ma, telling her it wasn't safe for me to be with all those black men. And Siphon was treated much worse than I. He was terrorized—brutalized—by the police, who scarcely recognized him as human. He was taken into court again and again, but in the end, it only enlarged our determination and brought us closer together," says Clegg.

The duo first recorded in 1979, producing *Universal Man* for the South African market. Two years later, they formed a group so that they could tour and recreate the sounds on their records. By then, they were contenders for "favorite" group in South Africa.

This was not how it was supposed to turn out, of course—at least from the government's point of view. After the release of *Scatterlings*, the group's fourth LP, London Daily Mail correspondent Peter Youngusband



"We really have no goal in the world—only in South Africa . . . I think our role is to create new symbols, new syntheses and new hope."

—Johnny Clegg



wrote from South Africa that "officially, the government is ignoring them because it can't do anything about them. But it is clear their success is an embarrassment." Indeed. Especially since the band had not intended to be a worldwide success quite so quickly.

Ironically, the very fact that the group is South African—interracial or not—could cause them problems in England this year, because all things (and performers) South African are banned in the U.K. Juluka did perform in London last year to a crowd of 2,000 that demanded two encores, but the British Musicians' Union informed Clegg afterwards that the group will be banned in the future if they returned home to South Africa to perform again.

"I don't know why special arrangements should be made for them," said union general secretary John Norton, who added that he doubted the band is "such a strong force against apartheid."

Fortunately, for Juluka and for fans here, there is no such ban in the United States. Juluka's new album is set for release this month, with a new single, "December African Rain," already selected and a tour beginning in April almost set.

Of course, there will be problems here, too, but Johnny Clegg expects them to be problems of logistics and timing and how to stay healthy at

the frantic pace at which America seems to him to run.

"We were pretty exhausted from the 35 dates in Europe [in '83]," says Clegg. "Our biggest problem here is now to space out our shows. We only did 20 U.S. shows [last fall] and it killed me. I was tired and sore," he says, explaining that the Zulu dancing which is an integral part of Juluka's shows had caused a painful knee injury and a torn muscle near his sternum.

But he was quite proud of the shows themselves. "In Canada, they wouldn't let us off the stage. And it was incredibly good in San Diego, Chicago and Dallas," he says.

Still, in 1984, there are likely to be more questions about politics and what Mchunu and Clegg are trying to say to the world about South Africa and about music in general.

"I think people want to be educated," Clegg says. "The show is very colorful and it looks like fun, but there's a serious note underneath. And this isn't simply an American thing; people at home are just as ignorant. So I talk about the music and the dancing and the politics.

"Siphon is really in control of how the sets move. He'll say 'Speak to the people now,' because he watches the audience all the time." And he does. Mchunu is a dark specter on the left side of the stage, rarely moving and appearing to float from here to there when he does. Clegg, on the other hand, is usually a blur. He plays second, counterpoint guitar to Mchunu's "pentatonic melody structures," sings all the lyrics and dances with Dudu Zulu, a tall, muscular black man. Both Clegg and Zulu wear traditional Zulu costumes, which include a sort of brief, loincloth bottom, straw or grass fringes at the knee and leather or fur bracelets on the upper arms.

The dancing itself is energetic and exaggerated, with the movements suggesting nature—the rain, the birds, the land, as well as human relationships. Last year's tour included three complete dances—two traditional ones and a third symbolizing "the conflict. It's the black/white problem being danced out," Clegg says. "It took me two years to learn." And he doesn't even do the chanting that is the rhythmic structure of the dances, at least as basic to Juluka's sound as are the trap drums—"for crossover."

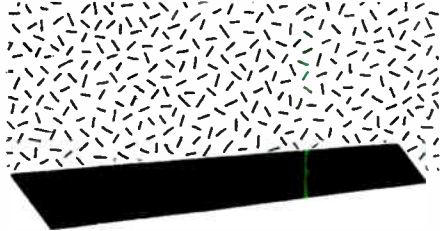
"In Zulu culture, there is no developed drum tradition," Clegg explains. "The words are the rhythm. But in most Zulu dancing, you have a place name that is shouted symbolically. Then, we've all got private, individual dancing names. Your name is your history and it's what separates you from the others. Also, it's totally ad-libbed.

You don't do the same thing over and over. You try to dance something new and unique each time.

"I think the people enjoy it, and they walk away with a new understanding. I've had people come backstage with questions about what it all means—and with a new light in their eyes." Clegg says, his clipped English becoming softer by the second. "It matters to me that that background is spoken about—for me and for what I stand for."

But he is also sure that "overseas, music is just music. We do say onstage that this song is about that social problem, but the audiences are far more interested in good music. And we really have no goal in the world—only in South Africa. We are trying to create an alternative music, with lots of cultural elements blended in. I think our role is to create new symbols, new syntheses and new hope," Clegg says.

The band will be adding elements like reggae and disco and blues, where they fit, Clegg adds, but always with the African chants and the light, folky sound of acoustic guitars, flute and sax. The sound is reminiscent of Men At Work's "Down Under" on the one hand and South Bronx poly-rhythmic funk on the other.



"Well, you can't contrive a direction," Clegg says when the diversity is pointed out. "But what we do is experimentation, so there's a lot of attention to using the space well—fitting everyone in. On the [new] album, there's stuff that's even more African, with even more urgent lyrics. It goes back to our first album, actually. *Scatterling* was very soft by comparison, and maybe more complex, too. 'Scatterlings of Africa,' the song, has got an intro, verse, repeating chorus, the flute interlude, the humming interlude, verse, chorus and then a tangent at the end. It's really a very complicated song.

"Sometimes I go overboard, and Sippo will say 'the way this is spiraling out is too complex. You've got to make it more clear, more accessible.' He gives me discipline, and I do the same for him," Clegg says.

The new album shows that restraint and discipline are working well, especially on songs like "Mama Lapilo," which has a simplified and near hypnotic chant, and on "Work for All,"

which is a slightly syncopated but bright piece, sung in plain, blunt English. No one will say it is too complex, though it is easily catchy enough to bear repeated listening.

"It's difficult to get music to embrace everyone," said Clegg last fall just after playing for some 20,000 in Soweto, including several thousand whites who drove across the border—some with the required shots and permits and some without.

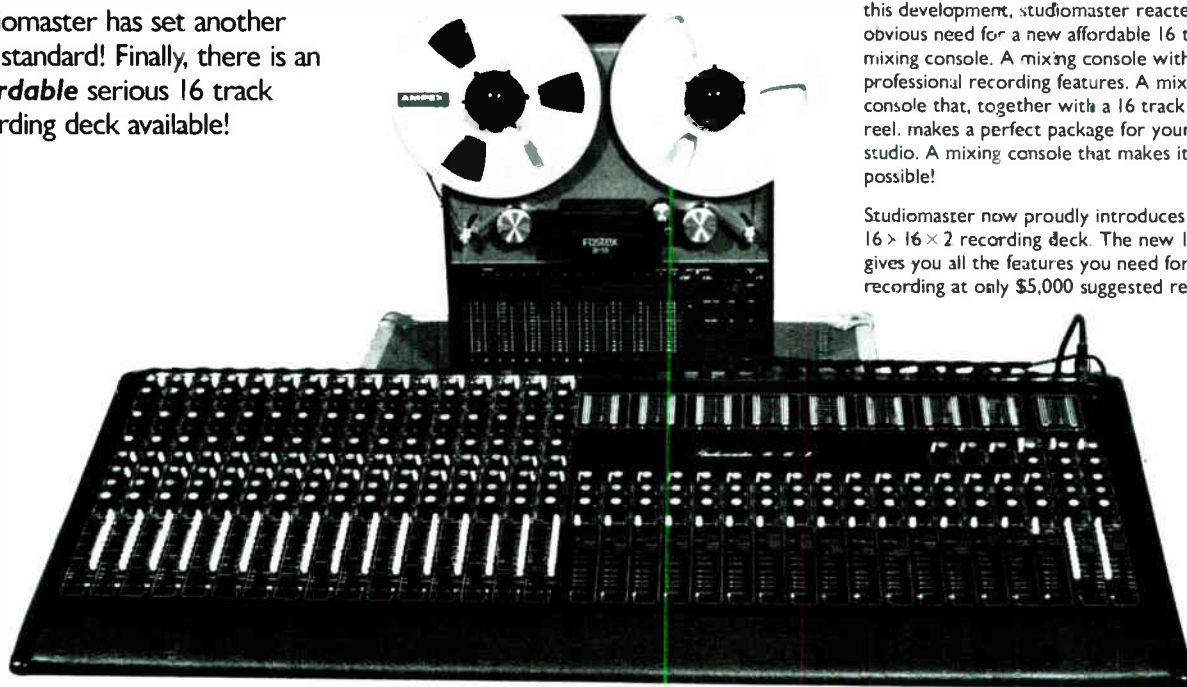
"There's really nothing the authorities could easily do, faced with those numbers," Clegg observes. "We've had shows closed down, but we manage to do 90% of them without any problem. Some areas we choose not to play; we have to turn them down because we want the shows to be open to all people. But if you'd told me ten months ago that we'd have come to the states, recorded another album and have a building situation in Europe, I'd have laughed.

"There are so many things going on now. Europe's piling up. This new album. The new tour to your country. So we've had to take it all very seriously very suddenly. All this began happening only last June. There just seem to be forces operating out there."

And in 1984, he may be right. ■

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Spinal Tap, the Movie: How Do You Parody a Caricature?

Comedy is not pretty, as the nouveau cliché goes. And neither is heavy metal, as everybody knows. But often—most often unintentionally—heavy metal *is* comedy. Just take a look at Motley Crue, or read some Quotations from Chairman Ozz.

Spinal Tap, a new film directed by Rob Reiner and starring Michael McKean, Christopher Guest and Harry Shearer (and written by the four of them), is a largely successful attempt to parody that venerable institution, the British heavy metal band—along with ancillary nonsense like record companies, American rock and roll touring, and the rock documentary (or “rockumentary,” as this is called) itself.

The film, shot in the hand-held-camera style of the great cinema verité works, begins with some reminiscences from the founders, guitarists David St.



Hubbins (McKean) and Nigel Tufnel (Guest), and bassist Derek Smalls (Shearer), intercut with “clips” from the band’s early days. While they were still known as The Thamesmen, they sang their first hit, “Gimme Some Money,” on a London TV show. Later, as Spinal Tap, they are seen performing “Listen



Heavy Metal Archetypes (above)—Spinal Tap’s manager, Ian Faith (played by Tony Hendra, far left) shakes hands with Polymer Records chief Sir Denis Eton-Hogg (Patrick Macnee) as the band members look on. Seated between Faith and Eton-Hogg is bassist Derek Smalls (Harry Shearer); standing are (L to R) keyboardist Viv Savage (David Kaff), drummer Mick Shrimpton (R.J. Parnell), and guitarists David St. Hubbins (Michael McKean) and Nigel Tufnel (Christopher Guest).

Foiled Again (left)—An airport security officer (Gloria Gifford) locates a metallic object concealed on the person of Spinal Tap bassist Derek Smalls. It’s an accessory no metal musician wants to be seen without: a cucumber—which for some reason he has wrapped in aluminum foil.

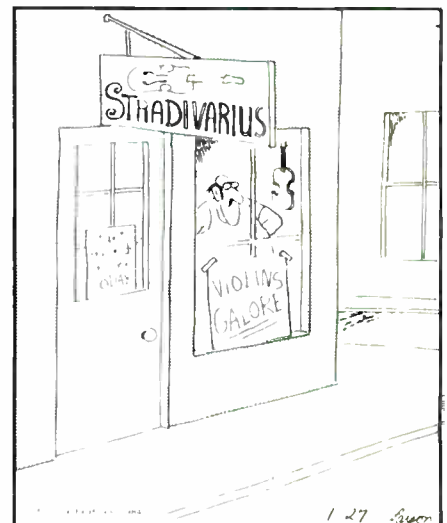
to the Flower People” on the American pop show *Jamboreebop*, in 1967.

The bulk of the “plot” follows the band through a decreasingly triumphant American tour, beginning with a Polymer Records party (hosted by an unctuous Artist Relations yenta named Bobbi Flekman) during which the band learned that the cover art for their new album, *Smell the Glove*, is unacceptably sexist. The tour proceeds downhill through cancelled gigs (Boston “isn’t a big college town,” the manager sniffs), the arrival of St. Hub-

bins’ astrologer/girlfriend/advisor manque and the consequent departure of manager Ian Faith (Tony Hendra), and an abrupt split between Tufnel and St. Hubbins, also precipitated by the meddling female. Along the way, concert-hall gigs become military base engagements, elaborate stage devices fail to operate, Tufnel’s hasty drawing of a Stonehenge set is built exactly to specs, the band gets lost between the dressing room and the stage... you get the picture. In short, virtually everything that’s ever happened to a band on the road happens to Spinal Tap—with the classy exception of excessive sex and drugs, which the

THE FAR SIDE

By GARY LARSON



perpetrators wisely left to the likes of Cheech, Chong and the *Porky's* types.

The idea for *Spinal Tap* has been cooking for a long time in the minds of these friends and colleagues, who between them have a wealth of experience as musicians, writers, actors and humorists—and the talent to present an authentic picture of the rock life. The plan was to create a sort of Every-band—"The legend you never heard of," as McKean puts it. They created a complete history of Spinal Tap, from their childhood skiffing in their native Squatney, through the days as The Originals (later the New Originals), and so on. Several drummers have died under mysterious circumstances—"Stumpy" Pepys in "a bizarre gardening accident," etc. Spinal Tap's recording history precedes them—LP titles include *The Sun Never Sweats*, *Nerve Damage*, the overambitious live set *Jap Habit* ("three discs and two pounds of gimmick packaging"), etc. So when they begin shooting, each member of the company had some "history" to bring to his character.

With all due respect to the co-conspirators' skills as writers, much of *Spinal Tap's* dialogue and characterization are simply too good to have been tightly scripted. Guest plays Tufnel to brain-damaged perfection, taking "rockumentarian" Martin DiBergi (Reiner) on a tour of his guitar collection and nearly becoming incapacitated by the problem of dealing with bread slices that are smaller than the meat on a backstage food table. The tumultuous motel-room band meetings, with cameras rushing back and forth and focusing on the fly as people exchange heated words...it's all quite spontaneous in appearance.

"The scenes were worked out in advance, as far as what's going to happen—what this person wants out of that person in a sequence, or what news someone comes in and drops in our laps," McKean explains. "But the dialogue was completely improvised." More than 50 hours of film were shot before a rough cut was assembled—and that version ran 4½ hours. The inevitable result of bringing it down to a manageable length was that lots of great material and characters had to go. "We wound up with too many framework devices, and there was so much story to tell," says McKean.

In preparation for the filming, Spinal Tap—consisting of Guest, McKean, Shearer, keyboardist Viv Savage (David Kaff) and drummer Mick Shrimpton (R.J. Parnell), all of whom played their own instruments on stage and in the film—actually performed in

—page 124



PHOTO JOSEF WOODARD

Charlie Haden: A Musician for Life

Charlie Haden has no connection with, nor interest in, the Silent Majority. It was in response to the ominous press of world events that he formed the first Liberation Music Orchestra in

1969. The continued escalation of the Vietnam war, the violent circus surrounding the 1968 Democratic convention in Chicago, and the implication of the CIA in the murder of Che Guevara were among the urgent concerns that stirred Haden to action. He unearthed material from the Spanish Civil War and other times and places where strife was the order of the day, and he involved a top-flight group of players in

—page 124

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—from 123, *Charlie Haden*

the project. "I was trying to find a way to present all this music so I could let my feelings be known without sounding like I wanted to run for office or something," he recalled recently. "I'm interested in politics in that I'm concerned about human rights and history, different times and wars, conflicts and revolutions."

Assembling the repertoire and the band were relatively easy; luring a record company of any stature was not. After being shot down by the majors, Haden caught the ear of producer Bob Thiele, who was steering Impulse Records but was preparing to start his own Flying Dutchman label—thereby risking the future of the album. "As soon as we finished the album, [Thiele] sent the test pressing to Impulse in Los Angeles and then left the company," Haden recalled sourly. "I got a phone call from LA saying 'What is this? We can't release this—are you crazy?'"

"I said, 'What about Bob Thiele?' They said, 'Who's Bob Thiele? He's not here any more.' I flew to LA and finally persuaded them to release the record, but they didn't promote it." After *Liberation Music Orchestra* won several awards, the label jumped on the bandwagon—among other reasons, Haden claimed, to "capitalize on Gato Barbieri's name" since the saxist was one of the featured players along with Don Cherry and pianist/arranger Carla Bley. (The 1969 album, out-of-print for several years, is currently available as a Japanese import.)

Fourteen years later, global turbulence—particularly in Central and South America—has again set the stage for a Liberation Music Orchestra recording, produced around Haden's busy schedule of teaching and providing rich low-end support for a variety of ECM artists (at this writing Haden is off to New York to cut a record with Pat Metheny and drummer Billy Higgins). Yet Haden stresses that *The Ballad of the Fallen*, a new album on ECM that features many of the same players as the 1969 edition, is more than a serving of battle anthems. "I like to find music that's beautiful," he said. "It's all based on inspiration, and the more a musician is inspired the more beautifully he's going to play." In addition to songs of resistance from the Spanish Civil War, El Salvador and Chile (arranged by Bley, who collaborated on the disc along with a host of New York-based players), the disc includes some similarly bold and melancholy originals by Bley and Haden.

The Liberation Music Or-
—page 127

—from 123, *Spinal Tap*

public a few times, including one memorable gig at Gazzari's in LA opening for a reconstituted Iron Butterfly. "The lead guy said, 'Would you mind if we went on first and did a short set? Our bass player had some teeth removed today and he's not feeling well,'" McKean recalls. "They went on and played for an hour and a half—this was their 'short' set—including at least 30 minutes of 'In-A-Gadda-You-Know-What,' complete with back-to-back-to-back ten-minute solos."

"So we went on after them with our twenty minutes of material," Shearer sighs. "It was like we were their encore—like a *coda* to their set."

The songs—written by Guest, McKean, Shearer and Reiner—cover a lot of stylistic ground. "Listen to the Flower People" is an effective cop of the light pop of, say, Gerry & the Pacemakers; "Big Bottom," a celebration of the charms of more-than-zaftig women, features all three guitarists on bass. Other titles, including "Tonight I'm Gonna Rock You Tonight," "Sex Farm," and "Hell Hole," lampoon the clichés that pervade the rock genre.

The songs, situation and performances add up to a rock sendup that's much better than most attempts. The lamest thing about music movies has always been their inattention to musical details, most glaringly including failure to sync fretting fingers to the music. Movie people may not think it's important, but it drives rock fans up the wall. "It drove *us* nuts when we were watching rock and roll movies," Shearer comments. "That's why we wanted to make a movie that wouldn't drive you nuts that way."

What the troupe learned in making *Spinal Tap* is that "In the motion picture business, picture and sound are treated like separate parts of the universe," Shearer notes. "The picture people would make decisions—they'd take shots out of context because they looked better—and we'd have to go back into the studio and make up parts that were within three frets or so of what's going on in the pictures."

Despite the inclusion of ten songs, the pace of the 86-minute film is brisk. "The satirical esthetic is to distill things," Shearer explains. "A parody shouldn't last as long as the thing it's making fun of, because it rarely has the values that the original had. Our songs are very short—but they give the *impression* of unbearable duration."

"Like the guitar solo I play in the film," Guest adds. "I played about six minutes when we shot it, and to get the full effect you've got to see that jerk-

off thing *forever*, like 'Now what's he going to do?' But you have to compress the thing. In 20 seconds the guitar player's run out of things to say—but he keeps on going."

As carefully as the concept was nurtured and as well-made as the final product is, *Spinal Tap* is going to be tough to pull off as a commercial venture. "It's very rough to figure out the best way to get the right people to see this picture," says Shearer. "It's a problem every movie has, but this one has it in spades. There are people who are into music who'll like it, and people who aren't into music may like it. Some people who don't like music, but might laugh at it, might be scared away by the noise." And there are vast numbers of heavy metal fans who will see this movie and wonder what's so goddamn funny. The audience response cards from public screenings in various cities have given the creators cause to shake their heads and wonder. Asked what they didn't like about the film, says Guest, some respondents wrote things like "Didn't have E.T. in it," and one guy even wrote, "Not enough pussy." To the question "What did you like?" one viewer wrote, "D.N.A.—Does Not Apply."

The cinema-verite parody was lost on most of the metalloids, too. "There are people who've never seen a documentary," says Guest. "Some people wrote on the cards, 'Camera too shaky—get a new cameraman.'"

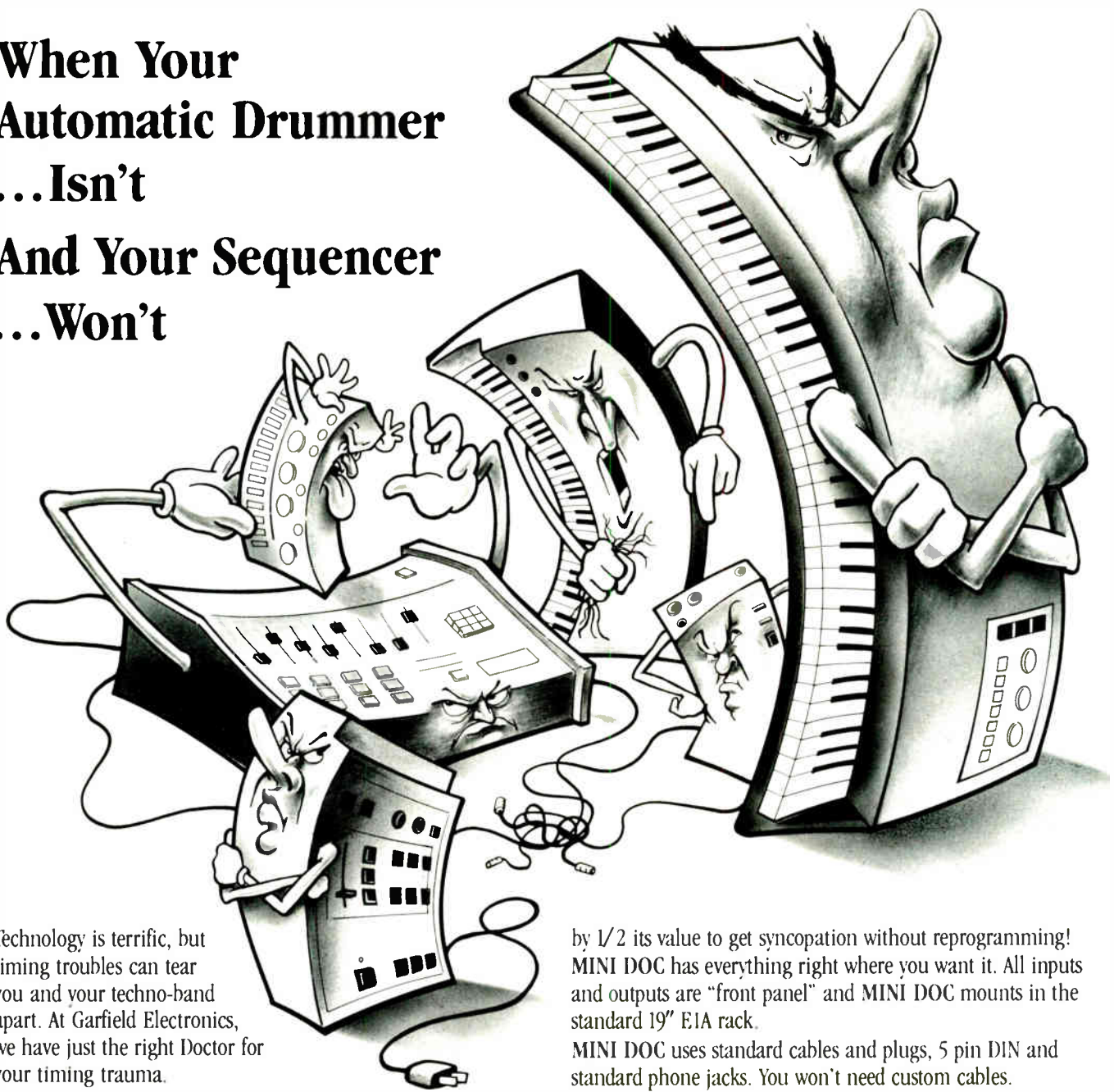
"One in five wrote things like, 'Why is the camera jiggling like that? Don't you know how to take pictures?'" adds McKean. "Why was everybody talking at once?"

In Seattle, Guest stood incognito at the back of the theater. "An hour into the movie, this teenaged girl turns to me and says, 'Isn't this stupid? Is this about bands or something?'"

It remains to be seen whether American teendom possesses the mental acumen to leap across the logical chasm from genuine sludge-rock to *Spinal Tap's* clever satire of this genre that's steeped in unconscious comedy. One pop critic who attended a screening in San Francisco says he doesn't think the public at large will appreciate all the "inside" jokes about the record business, musical instruments, intra-group politics, and the like. Mention of this comment brings rueful, knowing nods from McKean, Guest, Shearer and producer Karen Murphy. "If we got five dollars from every person who has said that to us," says Shearer, "this movie would gross a satisfactory amount of money."

—David Gans

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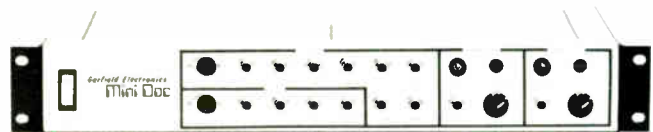
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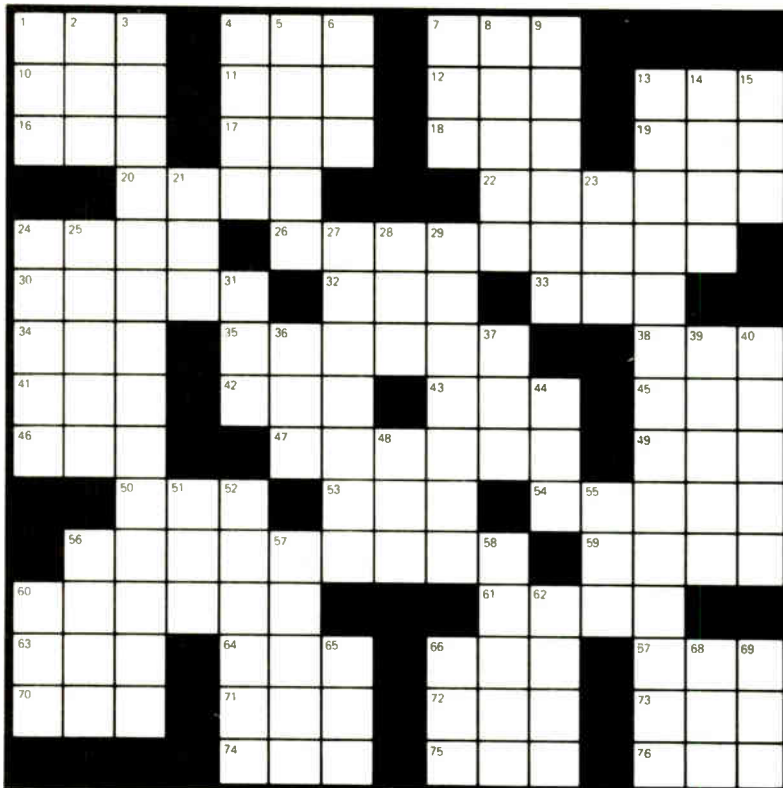
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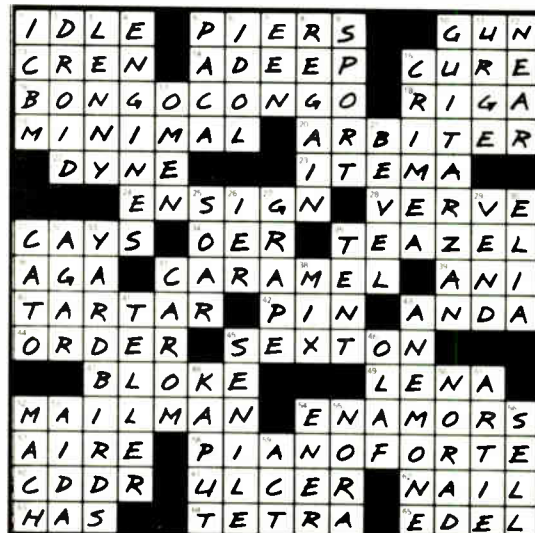
1. Old salt
4. Donkey
7. State of Confucian?
10. Residue
11. Half of a dance
12. Mound dweller
13. Tam
16. Doris
17. Mingle
18. Credit sheet
19. "_____ House" ('83 hit)
20. Biblical pronoun
22. Something to shoot into space
24. Yearn
26. Jas
30. Breath mark on a vocal score
32. Channel of visible songs
33. NYC time
34. Refrain syllable
35. Capone at The Rock? (2 wds)
38. Ham & cheese on _____
41. Hostelry
42. Latin lesson word
43. Rubbish!
45. Word of agreement
46. Fall out
47. "_____ Goes By"
49. Existed
50. Fen
53. First mother
54. Mediterranean isle
56. Kentucky sight
59. Org.
60. Fix the dog
61. "_____ Buy Me Love"
63. Ending with Carmel
64. "My _____ Sal"
66. Cry
67. Get by, with "out"
70. _____ de deux
71. Madison or Lexington
72. Mimic
73. The Gipper, familiarly
74. Unite
75. Set
76. Holiday quaff

■ DOWN

1. Smidgen
2. _____ rule
3. Tempo with sorrow?

4. Peak
5. Backed off
6. Baritone, e.g.
7. Bar _____
8. Lively musical direction
9. Actor Peter
13. Cotton-eyed Joe music
14. _____ Lang Syne
15. Prefix with amp
21. Skirt edge
23. Father
24. Certain type of cinematic scene opening
25. French horn, in Italy
27. Party crasher
28. Contemporary soul group
29. Ticklish items
31. Eroded
36. Halo of many mouths?
37. _____ de plume
39. UK poet
40. German city
44. Dick Tracy et. al., for short
48. FDR power project
51. Baseball stat.
52. Bauble
55. Operated
56. VCR format
57. Place to inter
58. O _____
60. Occasional small drink
62. Brother of Biblical note
65. Brought along
66. Org. for Jimmy Stewart
68. Pinxé Andrew's friend
69. The local language (abbr.)

Solution to February Mix Words



—from 124, **Charlie Haden**

chestra—a 12-piece ensemble consisting of some of LA's most seismic jazz talent—played a resoundingly successful show at Hop Singh's in Marina Del Rey, oddly punctuating the material with fibrous and unchained soloing in the Free Jazz vein. This meld of earnest ethnic transcriptions and fierce improvisation may seem disconnected at first, but the final result was a rapt, bewitched crowd at Hop Singh's.

Our interview took place a few days after the concert, and—quite propitiously—the day after *The Day After*, the TV science-fact flick whose intent of shocking people into political/nuclear awareness is not so far afield from Haden's own. Haden's conscience reared its head on the subject of the televised round-table discussion that followed *The Day After* on ABC. "The people on that panel were talking in terms of technology and defense and military values rather than humanity," he observed. "They weren't talking about human beings or protecting life; they weren't talking about achieving brilliance in the world—they were talking about destruction and wealth and territory. That really disturbed me."

Turning to the subject of the music at hand, Haden said, "Words or music that are written in a time of struggle, out of oppression, can be very moving—like the piece I found from El Salvador ["The Ballad of the Fallen"]. There's other music that I have which I'm eventually going to record, from Mozambique, Zimbabwe, South Africa—songs of resistance from the Black Liberation movements there. There's music from every part of the planet where people have been oppressed."

A few years ago in Paris, while Haden was touring with Egberto Gismonti and Jan Garbarek, "a guy came up to me and said, 'How can you play this romantic stuff after you've played Liberation music?' He was from a communist paper," Haden noted. "I said, 'Whatever I play I play with my whole life's energy and heart.' I want to play music that communicates something, that makes people aware of what's inside themselves—the power that they can connect with to change the world."

"When people are sensitive to life, and appreciate and are in awe of life, they are in awe of humanity. They're concerned about humanity, and they want to make sure humanity is being saved and remains sacred in people's minds and hearts."

In talking about his musical principles, Haden continually circles around two abstract virtues: honesty

and beauty. In spite of his intermittent status as a musical and political rebel, he is ardent in his desire to keep things simple and to the point. As a primarily self-taught bassist who came out west after high school from his hometown of Shenandoah, Iowa, Haden's destiny was set when he met up with the self-made maverick saxist, Ornette Coleman, in the late '50s. Haden's roots in folk music and his ear for uncharted jazz aided Ornette in his systematic overthrow of old-school jazz concepts. In LA, the Coleman quartet was laughed at as so much musical pell-mell, but the New York crowds flocked to their historic dates at the Five Spot—and Free Jazz found itself with a spearhead.

Haden downplays the hoopla that swelled up around that quartet. "We didn't really sit down and *plan* to revolutionize music or create a new language," he said. "We all were hearing a certain thing inside of us that we wanted to play and work out. We're still working it out. Musicians who say they can play everything they hear are in trouble. Music is too vast a phenomenon for anyone to know everything about it."

Since the searing Ornette days

more than two decades ago, Haden has worked his way into the ranks of the great jazz bassists, as one whose powerful musicality is based more on lean melodicism than dizzying technique and who is quite content to avoid the electric bass. You might say he's the strong, silent type. Applying his sturdy fluidity to a myriad of different jazz configurations—most conspicuously with the Keith Jarrett Quartet in the '70's—Haden has steadily reaffirmed his musical mark.

In the Liberation Music Orchestra, Haden has hit upon an outlet well suited both to his restless idealism and to his musical urgings. His is music of persuasive power, yet subtle enough in approach to avoid the trenches of propaganda. Whether it manages to generate any commercial steam this time around is beside the point, really. What *is* the point? Honesty, of course. "I have my own prerequisites as far as honesty is concerned," Haden ventured. "I immediately feel close to something I hear—or I don't. I can't imagine hearing music out of somebody else's ears. Think about hearing music out of Reagan's ears, for instance. Boy, is that frightening!"

—Josef Woodard

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THE COLLECTOR

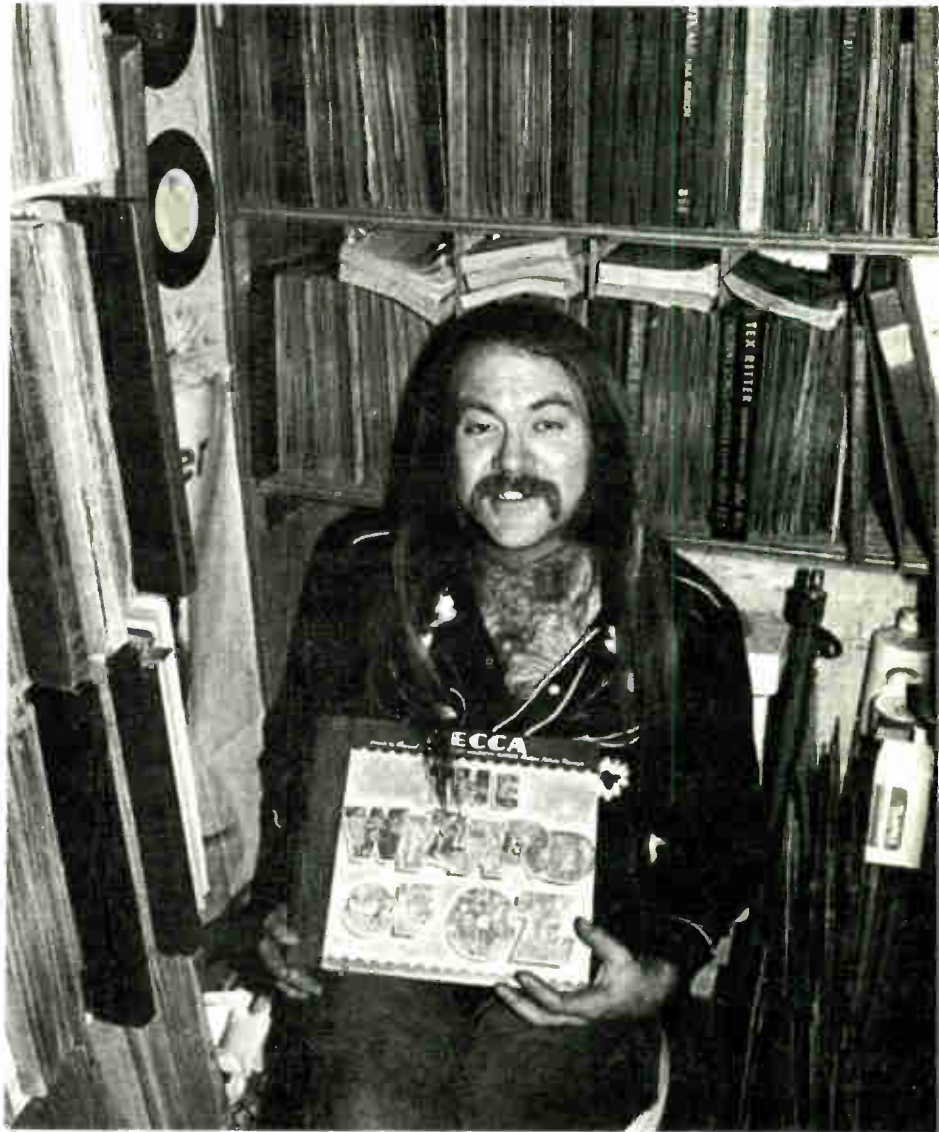
by Blair Jackson

From the outside, there's nothing that would indicate that Glenn Howard's secluded home tucked in the redwoods near Santa Cruz, California is anything other than a humble residence. Debris is piled on the front porch, junk of various kinds litters the dirt driveway Howard shares with several of his fellow forest dwellers, and the house itself looks like it could use a little work, to put it kindly. Ah, but as I walk through his front door on a stormy autumn morning and hear the gritty voodoo of a Muddy Waters 78 blasting through the house, I know I'm in the right place.

Glenn Howard is a record collector and librarian who has amassed an impressive archives of nearly 120,000 records, one of the largest collections on the West Coast. Howard's goods are spread over five different houses in Palo Alto and Santa Cruz. If you've ever carted half a dozen boxes of records to a new house or apartment, you know what a back-breaking chore it can be. Let's hope for Howard's sake that he doesn't have to move any time soon, because just the disks in his Santa Cruz abode would practically fill a moving van.

Collectors of any variety tend to be a fairly strange breed, with obsessive-compulsive personalities and, frequently, anti-social tendencies. "Most record collectors have their records as their friends," says Howard, trying to distance himself from the hundreds of fanatics who scour *Goldmine* and similar publications for rare records. "Most record collectors aren't into people. Most are not musicians, but I got into it because I am a musician. The pursuit of a record is everything to most of these people, and most don't care about a song's musical value.

"Take a look at these three records," he tells me as he hands me some 45s. "These are Willie Nelson's first three singles, recorded for a couple of local Texas labels [Bel Air and



Glenn Howard in his bathroom filled with 78s.

Betty Records]. These are rare records and they're also very good. But there are rare records—say the Teddy Bears' LP [with Phil Spector]—that are really bad and just not worth paying what you'd have to pay right now to get them. But a lot of collectors aren't interested in the songs—they'd rather

have you 'look' at this rare record. A lot of them never even play records."

Although Howard admits he's probably only heard about a quarter of the records in his collection, he is clearly a music junkie, and he has always befriended musicians, many of whom have used his library to dig up

obscure records that interested them. His collection has even influenced players: it was he who initially turned Dan Hicks & His Hot Licks violinist Sid Page on to early greats like Stuff Smith and Eddie South, who both influenced Page; and Hot Licks John Girton and Maryann Price regularly poured through the collection looking for gems from the '30s. David Lindley recorded "Something's Got a Hold on Me" after Howard played it for him. And he might have even had some impact on Dylan: Howard made a tape of old gospel songs from his Swan Silvertone 78s for Dylan shortly before he made his first Christian LP. Howard regularly deals with musicians of all stripes, from David Crosby, who was dismayed that Howard had copies of the first record he ever made (*Jack Linkletter's Hootenany*, a 1963 record featuring Crosby and his brother Chip), to pedal steel wizard Bobby Black, who once drove a hundred miles to see an incredible short film Howard had unearthed of a little known steel player named Noel Boggs (he showed me the film and the guy has *chops*), and Steve Martin, who was interested in progressive banjo pioneer George Stavis.

Howard has been collecting records for more than two decades now. In 1961, while still a mere youngster, he got a hold of a stack of 78s from his aunt and fell in love with a cut from the '20s, "It Ain't No Sin to Get Out of Your Skin, and Dance Around in Your Bones," by Ben Selvin. He remembers, "It sounded like cartoon music to me and so I listened to the rest of them. Most of them weren't very good, but they still interested me. Some of our neighbors [in Palo Alto] thought it was 'cute' that I liked this old music and started giving me their old 78s, too."

He had already amassed a fair number of folk and early rock and roll records, but with the addition of the 78s, he discovered there was a lot more to music than he'd realized. And so, little Glenn, armed with just a few bucks, would search out rummage sales, where people were often trying to unload collections of 400 to 500 records at a time. "I found that basically these were records nobody wanted," he says, "because they were priced at 25 cents each for albums, and 78s and 45s were three for a dime. You have to remember that in the early '60s, 78s became virtually obsolete, and since most people had no idea that an old record might be valuable, they wanted to get rid of them at any price. I'd go in early and offer them like \$3 for the entire stack, and they'd be happy to unload them, because records didn't usually sell

well at garage sales. That's how I amassed a lot of records real cheaply."

Another bargain source Howard caught on to early was the cheapo bin at local stores. "Thrifty Drugs would sell records for 33 cents apiece and I'd go to every store in the Bay Area as soon as a new shipment would come in and buy hundreds. There was a lot of stuff in there that ended up being quite valuable, although—stupid me—I didn't buy many duplicates because I didn't have any concept of value at that point.

Around the same time he began seriously collecting, he started playing music himself. "All the people I knew who played music were getting their songs off the radio from The Beatles or Stones or whoever, and I realized that *those* groups weren't doing that. They were listening to older records. I found that the Lovin' Spoonful was doing material from old 78s that I had. Same with the Jim Kweskin Jug Band. Same thing, eventually, with the Grateful Dead—they were doing tunes that I had ancient 78s of. I began to realize that this made the contemporary music more important and relevant to me.

"Then I got systematic. I used to write down in a little book any time I heard a name mentioned by an artist I liked, and I'd investigate it. We could understand where musicians were coming from by what they listened to. When musicians tell you something is good, it's good. If you listen to something another player likes and you don't like it, it's probably just because you don't get it. The first time I heard Woody Guthrie, I didn't like him—it was just too raw. "This is the guy who influenced Dylan?" But eventually as I learned more, I came to love Guthrie and the links to Dylan became clear and obvious.

"The other thing I did early in my collecting that turned out to be smart was I never threw away things I didn't like or understand. As my knowledge increased, more things that I'd accumulated took on importance. There were all sorts of wonderful things I'd saved that I suddenly appreciated."

The record boom of the late '60s was also a boom for Howard's collection. "I collected it all while it was happening, so I have mint copies of most of that old stuff. I was fortunate during that time, too, because so many people were buying records and so I'd take my duplicates to the used record stores and trade them for all these great old Howlin' Wolf and Eric Dolphy records that people had traded in so *they* could buy the latest

Quicksilver album."

It was during that era, too, that Howard began assisting musicians far and wide in finding rare records. "It was much different then because in the '60s there weren't nearly as many re-issue albums as there are now, so people had to rely on collectors' 78s if they wanted to find the *original* 'Midnight Special,' or some other song that all the folk groups played.

An acknowledged "social outcast and former science creep," Howard did pursue things outside of his growing library. While attending the University of California at Santa Cruz, he went to work as an exo-pleoorganicgeochemist for NASA at their Ames research facility, studying moonrocks and other strange substances. "I got tired of working with dangerous chemicals after a while," he says. "You know, if astronauts ever brought something life-threatening back from space, I would have been one of the first to know—and maybe the first to die." He was amused, however, that NASA built a special gate for Howard and two other employees "so we could get through with our long hair."

These days, Howard doesn't hold a "straight" job at all, and he finances his ever-expanding collection by selling his thousands of duplicates and charging nominal fees for searching out various recordings for clients. "I'm lucky in that I had my house, which was cheap to begin with, paid for years ago. Also, I got so many rare records before there was so much interest in them. Most of the heavy duty records that people are killing themselves for now I got in the '60s."

Surprisingly enough, he doesn't buy many current records. "I try to stay about ten years behind the times," he says. "I don't buy current records [although he owns many more than the average collector] because with the seven or eight bucks one costs, I can buy something older to fill out my collection. A strategy I figured out years ago was to buy old stuff first because the records that are new now will be available cheaper later."

The breadth of Howard's collection is truly staggering. Aside from having rare disks from the '20s and '30s, virtually every folk, jazz and rock record ever made, and foreign records galore, he also has a huge number of '70s disco albums, records by actors (yes, Vincent Edwards made albums when he starred in *Ben Casey*), flexi-discs included in old magazines (stars provide you with "music to shave by"), you name it.

"I think the difference between

this and a lot of collections is the scope of it," he comments. "I don't know any record collectors who don't have a prejudice against some kind of music. Now, I don't really like easy listening and some other non-vocal music—Mantovani and such. But if a record charted, I think it belongs in a serious collection. Mantovani had a

you've got enough fidelity to really hear what's going on. It was the era of the move into hillbilly, blues and ethnic recording, and most of all you get all the regional styles frozen in time because it predated musicians learning from records—it's before everyone had heard Louis Armstrong, for example.

way they put so many songs on a side is they cut the grooves shallower, which means there's less physical response in the record, so the bass sounds removed." To prove his point he plays me the original Okeh 78 recording of "Lovesick Blues" by Emmet Miller, the first hillbilly jazz singer and yodeler, and then the same track as it appears on a reissue. The difference is, indeed, startling.

It is Howard's dream to someday have a single building to house his gargantuan collection, but so far no benefactor has been forthcoming and he doesn't have the personal resources to finance it. Another mammoth task that he'll have to face one day is putting the information from all his records in a computer for easy reference. "Phil Alvin of The Blasters is a collector of '20s and '30s records and has a degree in artificial intelligence. He has this idea that you could lay down an album and a computer could 'read' all the vital information. Anything short of that will make cataloguing all this really difficult."

For now, the information is stored only in Glenn Howard's mind. But he's not going anywhere. There's this stack of 10,000 45s he bought a few months ago that he has to sort soon. There are short music films—his new love—to be sought out, original sheet music to be collected, *ad infinitum*. No doubt about it, he is a man with a mission.

"I've always felt there was a certain religious thing involved with collecting these old records," he says, as he pulls out a 78 from the huge collection in his *bathroom*. "Records capture souls. People who have been dead 60 or 70 years can talk to you. Still photography could only capture an instant. Here's a daguerreotype of a guitarist in the 1800s," he says picking up a little framed picture from the top of his TV. "You have no way of knowing how he played, whether he was good, or anything else about him. Even silent movies were very limited. But a record lets you *hear* someone's soul, which is pretty incredible when you think about it." He looks around his simple, record-cluttered home and says quietly, "This is a church as much as anything else."

• • • •

(If you'd like to get in touch with Glenn Howard to uncover a rare record, find interesting cover material if you're a musician, or if you have records you'd like to sell or trade, contact him at (408) 335-4356, or write him at Glenn Howard's Musicians' Reference Library, Box 66550, Santa Cruz County, CA 95066.)

Glenn Howard with a few of his nearly 120,000 records.



PHOTO: BLAIR JACKSON

huge hit with 'Around the World in 80 Days.' That means something; it shows it was accepted by the public and is therefore significant on some level. Yet most collectors I know wouldn't touch that record. I have a large collection of schlocky easy listening music in mint condition. I don't listen to it and I have no place to sell it, but I'm not going to throw it away, either."

Still, like most hardcore collectors, Howard is most interested in finding rare records from the '20s and '30s—"You always need more from that era," he says, "and they're getting harder and harder to find. You know, I'm always reading in *Goldmine* that people have 'rare' records to sell—'Only 5,000 copies exist!' That's not rare. There are thousands of records that either no one has found a copy of, or just a handful of copies exist. *That's* rare. Half of the records that ever came out on Champion have never been found! Not one copy. There's a Skip James record somebody found in fair-to-minus condition that went for \$7,800 because it's the only one. A rare recent record is something like the Grateful Dead's first single, ["Don't Ease Me In"] on Scorpio. Only a hundred, 150 tops, were pressed, and who knows how many survived?" (Howard has three copies, including one signed by Jerry Garcia.)

Howard is so fond of '20s and '30s recording for several interesting reasons: "The early electrical period is unique because it's the first time

"I feel Armstrong is probably the most important musician of all time because no one has been, or will be, as influential. He invented the concept of the jazz solo, the cohesive solo as opposed to a break. You find he influenced Hawaiian records, Finnish records, Irish records. Somebody like John Coltrane or Charlie Parker influenced jazz and even classical music, but they didn't influence Okies and musicians all over the world. The art of using a vocal to play with the beat and drive the music is a *major* contribution."

And so, Howard continues to seek out the old and the obscure, always looking to upgrade his collection, particularly 78s, which he finds infinitely superior to the many re-issue LPs that have been released in the past 15 years. While those packages are invaluable resources for average record buyers—how else would we have heard Blind Blake and Ma Rainey if some small label hadn't released LPs of their 78 sides?—Howard greatly prefers listening to the original records. "Without fail, the 78s sound better than the reissues," he says. "You notice it less on vocal recordings, but it's really noticeable in a Duke Ellington record or a Little Richard record. You'd be amazed at the difference between a Little Richard 78 and one of those reissues that has ten cuts on a side. The 78s have presence, and the reissues lack punch in comparison. This is music that should have drive, and they castrate it. The

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DON FELDER

Airborne

Asylum 9 60295-1

Produced by Don Felder; Engineered by Jim Nipar, Joel Moss, Karl Richardson, Don Felder, Steve Gursky, Greg Edwards, Doug Breidenback; Recorded at Radical Records, Malibu, CA; Rumbo Recording, Canoga Park, CA; and Devonshire Recording, North Hollywood, CA; Mixed 48 track at Rumbo; Mastered at The Mastering Lab, Hollywood.

an MCI JH-24 recorder and an MCI 500-D36 console), has taken off on the first of what he figures to be a series of solo flights.

Airborne was produced by Felder himself and engineered by a total of seven men, including Jim Nipar, Joel Moss, Karl Richardson and, again, Felder. It was recorded at both Felder's home studio (dubbed Radical Records) and at Rumbo Recording, over the Santa Monica Mountains in Canoga Park (with some additional work at Devonshire Recording, in North Hollywood)—but not in the typical style of tracking at one studio, overdubbing at another and mixing somewhere else. Felder did most of the actual recording on slave tapes in his studio, and Rumbo—with its twin Studer A-800s, Necam-equipped Neve 8088 console and Q-Lock synchronizer—was where he transferred keeper tracks onto the master reels.

"I didn't want to have to buy 48 tracks' worth of gear," Felder explains. "I was working with slaves anyway, so I kept running back and forth to Rumbo to do my bouncing and updating. There was a little bit of driving back and forth, but not nearly as much as if I'd had to drive into town every day during the course of making the record."

Felder has been working with tape recorders since his teenage years in his hometown of Gainesville, Florida, when his father bought a stereo deck with sound-on-sound capabilities. After several band experiences (which included an album for CTI in a band called Flow), Felder ran a 16-track studio in Boston for a year just before he moved to Los Angeles to join the Eagles during the making of *On the Border*—"so I knew a little about the recording process," he says.

"When we went in to make Eagles records, I was always leaning over [producer/engineer Bill] Szymczyk's shoulder or sitting at the console, trying to get him to mess with equalizers, experiment with chambers, and stuff. Bill used to call me 'J.E.,' which stood for Junior Engineer."

He did some guitar work with the Bee Gees in Miami, and there he saw multiple-reel recording taken to extremes. "They use a computer to keep track of what's what now, but their track sheets used to look like the Yellow Pages—big, thick notebooks," he says. "I did 46 guitars on one song for them, sitting there for three days—'Let's play the unison seven times, then put the harmony on six times,' and 'Let's play four tracks of power chords.' It was crazy."

Airborne was made in a similar, but more reasonable, fashion. Each song started with Felder, alone in his studio with a drum machine and other electronic devices, laying down the skeleton of the song with rough instrumental parts. He'd get a groove, a chord progression and a rough vocal, then go to Rumbo and mix them onto two or three tracks on another 2" reel, from which several identical slaves were made.

"Then I'd bring out various drummers—Carlos Vega one day, Russ Kunkel another, and so on—and have them play on five

AN EAGLE GETS AIRBORNE ON HIS OWN



Don Felder makes no bones about the fact he'd love to be making Eagles albums. It's just that the guitarist can't make it happen all by himself, and one of the key members of that aggregation would just as soon leave the band in suspended animation. So Felder, who converted the guest house of his Malibu estate into a 24-track studio (replacing his Otari 8-track with

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different songs, each guy on a different reel of tape," Felder explains. He listened carefully to each drummer's work and decided which was most appropriate, then he "booted those tracks over to the master and disposed of the Linn drum track." He repeated the process with bass players, having each prospect play along with the winning drummer and the other reference tracks. Again, "The guy who played the best got booted over to the master." Then Felder brought in keyboard players, repeating the process until all the winning tracks were in hand.

Once all the instrumentals were assembled on the 48-track masters, Felder added his guitar parts and sang rough lead vocals, then brought in singers for the songs he felt needed additional vocal support. "I'd let [Kenneth] Loggins do a vocal arrangement and sing all the harmonies, then I'd bring out Timmy [Schmit] and have him do the same song," he notes. "Whichever one I thought worked best got booted over to the master." Schmit, the ex-Poco bassist who replaced Randy Meisner in the Eagles between *Hotel California* and *The Long Run*, ended up on four tracks ("Winners," "Haywire," "Who Tonight," and "Night Owl"); Loggins and Dave Mason handled the backgrounds on "Never Surrender," a Felder-Loggins composition first heard on the *Fast Times at Ridgemont High* soundtrack LP; and Felder did all the singing on the three remaining songs, "Bad Girls," "Asphalt Jungle," and "Still Alive."

Once he'd filled up his master reel, Felder began to transfer tracks to what he figured was going to be the final slave. "When I started doing lead vocals and lead guitars, there weren't any bounces," he says, adding that working at 30 ips, +5 dB on Scotch 250 tape, the bouncing of some tracks didn't add appreciable noise or signal degradation even without noise reduction.

Engineering chores were divided among several people, Felder says, "so it wouldn't sound like the same guy did everything from top to bottom. One engineer called me the other day to ask me if he made it onto the record. I'd kept a log of everything, so I found which tracks he'd done on which songs on which days. He wound up with one drum track on the album," Felder says with a laugh.

For his own parts, Felder had a footswitch setup that allowed him to control his own punching in and out. "It has three switches: one punches in to record; one hits Play, which punches you out; and there's a Locate switch [for restarting the process]," he explains. "There was an engineer behind the board getting sounds and levels, but I was able to punch myself in and out rather than having to say things like, 'Punch me in right after the third 16th note in the fourth measure—and make sure you get out after the fifth lick.' I did it with the lead vocals, too, once I had a level and sound from the engineer."

Felder's studio has an EMT plate and a Lexicon 224 digital reverberation system, but he usually only uses them for reference during recording. "When I mix I always go someplace that has two or three Lexicons, a couple of plates

and a live chamber." [Rumbo has an Ecoplate, an EMT 140, three Lexicon Prime Times and a 224, an AKG BX-20, an AMS phaser and a live chamber]. But the home studio is where Felder tests his most off-the-wall notions, and maybe that's why he christened the room "Radical Records." "I do my demos and try the weirdest things, like backwards delays—anything you want to try, you know? If I wind up with something that sounds good, I put it out; if I don't, the erase head on my 24-track works great."

Solo Freedom

Felder was hardly a prodigious contributor to the Eagles' songwriting efforts—though he did co-write their signature hit, "Hotel California." But as *Airborne* shows, his guitar style had a significant role in the creation of that unique sound: This album has more of an Eagles flavor than Don Henley's *I Can't Stand Still*, though not quite as much as Glenn Frey's *No Fun Aloud*. While Felder's lead vocals lack the clean, sweet feel of Frey's and the smoky power of Henley's, the harmonic sensibility exhibited in his vocals and compositions on *Airborne* show how he influenced the band's sound.

Frey and Henley bore the brunt of what Felder notes was a tremendous amount of pressure to produce smash hits, and though he contributed what he could, Felder found his role subsumed under the greater needs of the Eagles as defined by its two founding auteurs. It was hard at times to play a guitar solo he thought was fine and then hear Henley say, "Do it again just like that, but . . . not quite like that." But despite his occasional irritation within his role in the Eagles, Felder says, "the reins on the attitudes had to be held pretty tight, or else tempers would flare and train wrecks would occur."

All things considered Eagle-wise, "I really thought it was a great band, and I loved playing in it. I really regretted it stopping." But recording a solo album allowed Felder to satisfy his own standards and impulses rather than those of the bandleaders. "I tried to keep [*Airborne*] somewhat commercial—enough so it'd sell some records—but I tried to leave room for free play here and there. All the solos are one take each; there was very little chopping and editing. If I played it and it felt great and sounded 'good, great—ink it in!'"

Felder admits to missing his tandem work with guitarist Joe Walsh, and points out that "Bad Girls," on the new album, began as a song he proposed for the Eagles' last studio album, *The Long Run*. "The Eagles did cut a basic track on it, but it never really had the pocket that it should have had," he notes. "It was called 'Wild Turkey,' but I never finished writing lyrics to it. Walsh and I loved playing the song, because it was a good rock 'n' roller and we had a couple of double guitar parts. If you play that song and think of looking at Walsh and me playing it, you can imagine who'd play what part."

"Haywire," too, was written and tracked for *The Long Run*, but Felder says the Eagles "just kinda slugged through it, making it sound more Rolling Stones/Bob Seger, kind of trashy,

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than I thought really fit the song. I don't think they could ever play that song the way it came out on this record."

As for the Eagles' legendary "monster" sessions (made famous in a *Rolling Stone* article)—in which the musicians would ingest various combinations of psychoactive chemicals to set their mental processes just exactly off-kilter enough to draw out that "special" performance—Felder says that's not his style any more. "One thing I learned about doing that is that whatever you wind up doing under those influences usually doesn't sound as good the next day as you thought it would. I did my album *clean*."

Felder's only serious jones these days is recording, he says. He might put a band together and tour for six or eight weeks if *Airborne* does well—and with "Bad Girls" climbing the charts and receiving lots of MTV exposure, it looks like the album will sell quite nicely. But that's about the extent of his live-performance ambition, barring an Eagles reunion, which he says is unlikely despite several lucrative offers. "My scenario for the next couple of years," he says, "is to continue experimenting and making records."

—David Gans

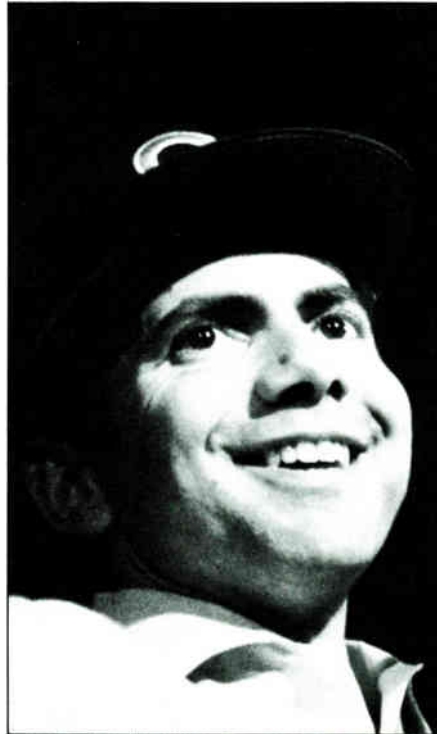
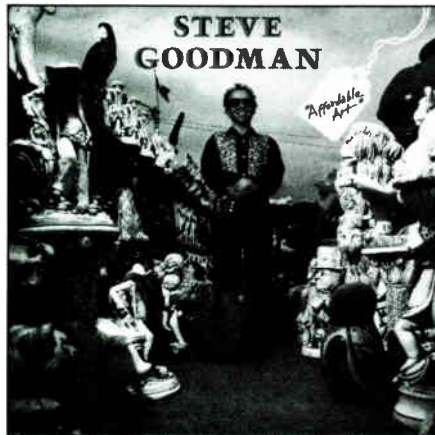


PHOTO DAVID GANS



STEVE GOODMAN *Affordable Art* Red Pajamas RPJ 002

Produced by Steve Goodman and Dan Einstein for Red Pajamas Productions (except "Talk Backwards," produced by Peter Bunetta and Rick Chudacoff for Red Pajamas Productions); recorded by Gary Gand and Gregg Kincaid at the Park West, Hank Neuberger and Rich Warren at WFMT Radio in Chicago, Dave Cline at Lee Hazen's Studio by the Pond in Hendersonville, TN, and by Gary Brandt at Alpha Studios in North Hollywood, CA, remixed by Brandt at Alpha; assembled by Rudy Hill at Amigo Studios; mastered by Bobby Hata at Amigo.

By his own admission, Steve Goodman has made better records since being dropped by Elektra/Asylum after 1980's *Hot Spot*. "My approach has always been eclectic," he says. "When

you vote for that first, you get into trouble ...; this business." But Goodman does have an audience, although "the demographics of it aren't as large as John Cougar's or Michael Jackson's"—so he formed his own Red Pajamas label and sells his albums by mail and at his concerts. *Affordable Art* is Goodman's second Red Pajamas release, following last year's *Artistic Hair*.

Most record business operatives "need to have music categorized so they know where to put it on the radio," Goodman notes, without begrudging them the rules of the game they play. But his albums, he says, are like grocery bags: "Inside there's a roll of paper towels, a can of chili, three oranges, some chicken legs. Taken as a whole, it's a bag full of groceries—but if you take things out one at a time, is any one item going to tell you the rest of what's in the bag? *Affordable Art* works because it looks like I went shopping for one meal: different things, course by course."

La cuisine Goodman is a robust mix of styles. He is, you may recall, the man who wrote "City of New Orleans," Arlo Guthrie's all-American hit of 1972, and he shares responsibility for "You Never Even Call Me By My Name," which parodied the traditions of country songwriting accurately and mercilessly and was a big hit for David Allan Coe (and which Goodman performs on *Artistic Hair*.) *Affordable Art*'s courses include a rousing, swinging rendition of "Take Me Out to the Ballgame" with Jethro Burns on mandolin; "Old Smoothies," a sentimental bit of Americana; the atmospheric, subtly pro-planet "Grand Canyon Song"; "Watchin' Joey Glow," a chillingly comic portrait of a "post-nuclear family"; and "Vegetatic," a modern fable about a guy who falls asleep in front of the tube and dreams he's bought everything advertised on the

all-night movies. It adds up to a very well-balanced and pleasant meal.

Affordable Art consists of live and studio material, solo and ensemble performances, recorded in a number of different situations. Gary Brandt assembled the tapes at his Alpha Studios in North Hollywood—which he also did for *Artistic Hair*, whose sources were more diverse and problematic than the new one. "*Artistic Hair* was a direct-to-discount album," Goodman jokes. "There's stuff on there that went from cassette to the master tape. Gary did a wonderful job."

"The tapes were of varying quality," says Brandt of *Affordable Art*. There were three songs from Chicago's Park West and two from WFMT radio in Chicago, all recorded on ¼" half-track. These were mostly solo performances, with Goodman joined by Jim Rothermel on recorder for "If Jethro Were Here." "Talk Backwards" was reclaimed from *Hot Spot*, because Goodman thought it fit nicely with the rest of the material chosen for the disc. Elektra/Asylum loaned him the two-track master, and Brandt copied it onto a half-inch two-track with some equalization.

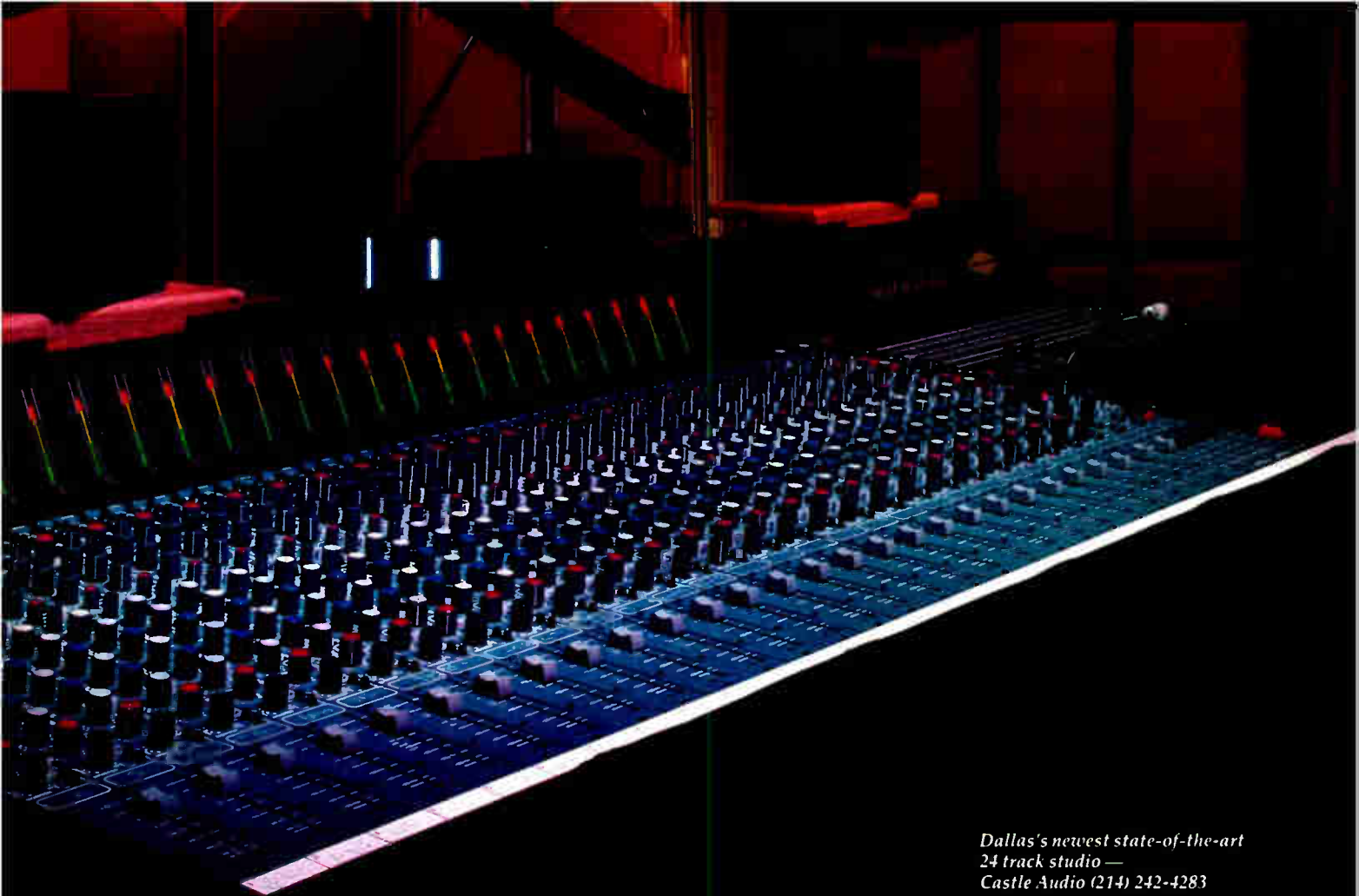
"When My Rowboat Comes In" and "Souvenirs" were recorded in Nashville, the former with bass, mandolin, dobro and background vocals, the latter as a guitar-and-vocal duet between Goodman and John Prine, who wrote it. Brandt recorded four songs at his own studio, two of these with a rhythm section. "California Promises" began as a 7½ ips stereo tape of Goodman solo. Brandt transferred it to a four-track, then recorded additional instrumental accompaniment in stereo on the other two tracks and mixed the four back to ½" two-track.

"The band tracks that we cut here were so bassy in relation to the acoustic numbers that I had to roll off some low frequencies to make the record coherent from cut to cut," says Brandt. "I didn't want to try and push bass into the acoustic guitar songs." Brandt used API 550A three-band peak/shelf and B&B F-2 parametric equalizers, and very little else—"just a little echo here and there." The master tape was made with an Ampex ATR-104 on ½" Ampex 456, +3 at 30 ips with no noise reduction.

Goodman has a solid and devoted following, even though it is outside the major labels' sphere of interest. He'd like to be able to tour with a band, or at least with wind wizard Rothermel and/or mandolin ace Burns, but necessity is the mother of this solo career and Goodman is the father of three daughters. "At one point it was, 'Are we gonna sell one of the cars or a kid or something, or am I going to go play solo for awhile?'" he says philosophically. "But I've got no complaints—we live like kings. We've got a little papier-mache house—but it's not really so little—and two cars, one of which is almost paid for."

"Imagine playing acoustic guitar and writing songs for a living—whew! My dad sold cars—to me, *that* was working. This is a more pleasurable pursuit. And it sure beats walkin' behind the elephant."

—David Gans



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*On location during the shooting of "Running with the Night";
l to r: Lionel Richie and Bob Giraldi*

BOB GIRALDI

DIRECTOR

by Lou CasaBianca



Every film or music video demonstrates a "style." And every one of the thousands of creative and technical decisions made during a production contribute to the overall look and feel of that style. The sum total of all these decisions, the creative bottomline, is the responsibility of the director.

Bob Giraldi, in his work from Michael Jackson's "Beat It" through

Lionel Richie's "Running With The Night" has successfully used feature film production values and techniques in creating a unique style. Like directors Kevin Godley and Lol Creme, (The Police), Brian Grant (Peter Gabriel) and Russell Mulcahy (Duran Duran) among others, Giraldi has evolved a personal cinematic style that is very distinct and identifiable, even though he has worked with diverse music artists. And like those mentioned, Giraldi's work is

consistently innovative and stands out like a beacon in what is becoming a veritable sea of music video "wallpaper."

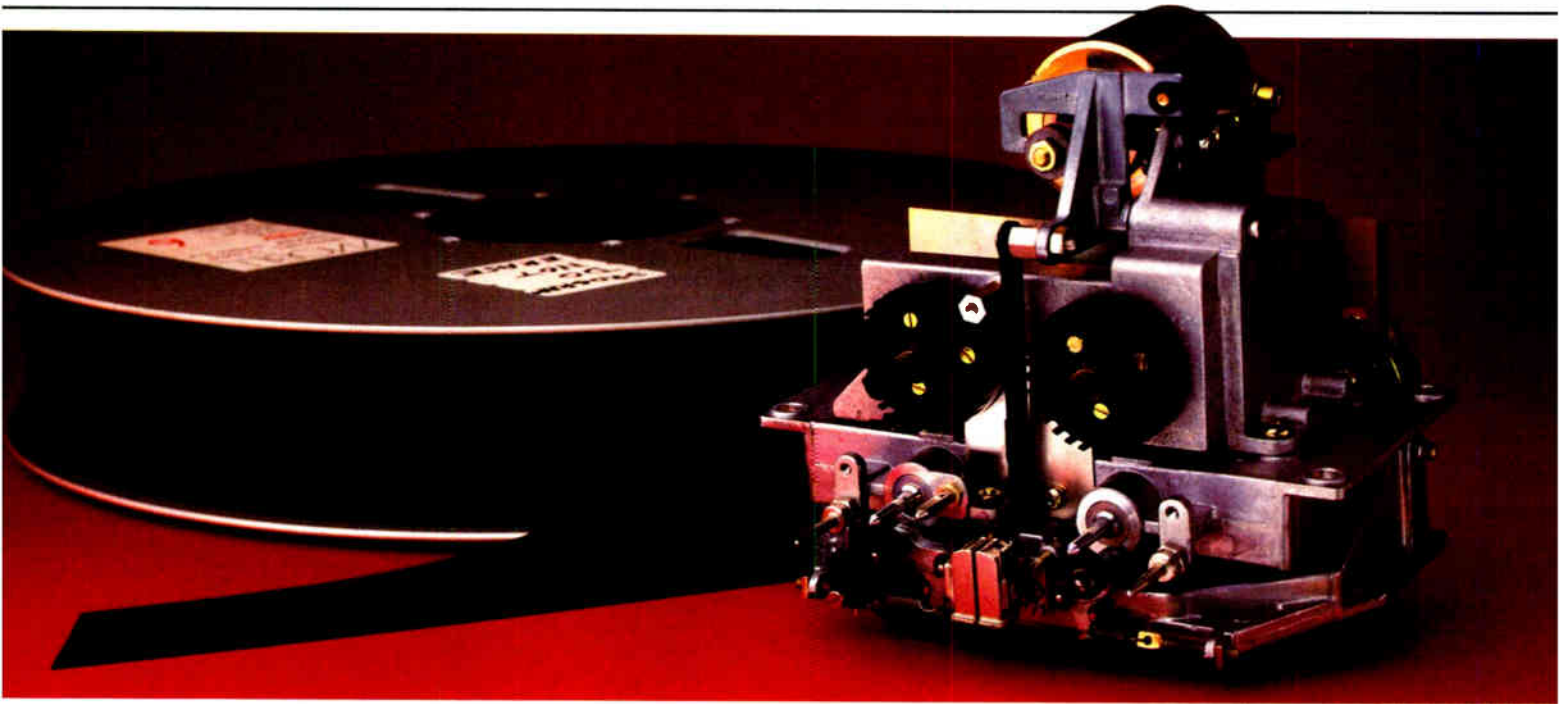
SOME HISTORY

Regarded as one of America's leading commercial directors, Giraldi, at 44, has been directing for nearly 11 years. Born in Paterson, New Jersey, he attended Pratt Institute, one of the country's finest design schools, on a scholarship, and graduated in 1960 with a B.F.A. Subsequently, he spent 9 years with Young & Rubicam as Art Director and Creative Supervisor. In 1970 he moved to Della Femina, Trivisano & Partners, where he produced a number of award winning campaigns.

He then went into independent production, and in 1973 with partner Phil Suarez, formed Bob Giraldi Productions. He has produced and directed over 300 major advertising award winning commercials. Among the best known and most recognized are commercials for Miller Lite Beer featuring ex-athletes and show biz personalities such as Rodney Dangerfield. He produced a series of Broadway show commercials for *Dreamgirls*, *Evita*, *A Chorus Line*, and *Sophisticated Ladies*. The company has produced and directed campaigns for General Electric, Dr. Pepper (intricately choreographed Hollywood styled musical spectaculars), Shasta Beverages (quick-cut, extreme close-up, hard-edged and "sexy", cut to a strong rock jingle track), the "Never Tell a Lie" campaign for the Mormon Church (moving dramatic slice of life vignettes) and a CLIO Award winning campaign for MCI Telecommunications (satirical takeoffs on Ma Bell "Reach Out and Touch Someone" campaign).

He wrote and directed his first music video in January, 1983—Michael Jackson in "Beat It," which won five awards at the Billboard Video Music Awards, including "Best Overall Video of the Year," and won the "Best Video" award on the nationally televised American Music Awards. Other music videos written and directed by Giraldi include Pat Benatar's "Love is a Battlefield," Paul McCartney and Michael Jackson's "Say, Say, Say," Diana Ross' "Pieces of Ice," Barry Manilow's "Read 'em and Weep," and Lionel Richie's "Running with the Night." He now serves or has served on the Board of Directors of The

—Page 140



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from 138, GIRALDI School of Visual Arts, the Catholic Big Brothers and The Greely Street Theatre, for whom he directed his first play *Laughing on the Outside*. He lives with his wife and three children in New York City and Chappaqua, New York. In last month's *Mix* we reviewed the producer's priorities in an interview with Bob Giraldi Production's executive producer Antony Payne. This month we discuss...

THE DIRECTOR'S PRIORITIES

All of Giraldi's work, commercial and music video, is shot single camera *film style*, with scenes blocked and shot from several different angles requiring multiple set-ups for camera placement, focus and lighting. Additional cameras are used to capture special effects and choreographed dance sequences.

What appears to be most consistent in Giraldi's work is his sense of *structure*. He never succumbs to the dual plotline scenario, i.e. studio or on location concept shots for the verses intercut with performance footage of the band during the choruses. To date, every music video Giraldi has directed has been structured as a concept piece

without the once obligatory band performance scenes. The action unfolds more like a short movie, and the use of 35mm production techniques reinforce the feature film look and feel of the work. His use of lighting is more dramatic, with greater definition and more contrast than usual. Compare the hand colored pastel gloss of the lighting in "Beat It" with the soft edge, smoky burnt umbers of "Say, Say, Say." The glistening clean high resolution texture of 35mm film, the use of dialogue and audio sweetening, and the ability to paint colors scene by scene with good lighting and in the film-to-tape transfer are key elements contributing to the overall design, execution and technical quality of his work.

THE WRITER

He is writer, producer and director on all of his music videos. The script is the map of the production; it contains and reflects every element of the project. If the writer is also the producer and director, there can be a synergism that makes for a more fully realized, more efficient production. The cast and crew will respond to good direction, a clearly communicated definite vision and firm project management, just as they will respond adversely

when these things are absent. All of Giraldi's scripts to date make extensive use of location venues. He feels the need for elaborate storyboards is not critical when there is one unified creative viewpoint that is able to be communicated in a series of preproduction planning meetings. From a scenario in his mind, he creates a synopsis or treatment which is approved and modified as necessary based on feedback from the artist. The cast and crew work with a film-style script with visual instructions on the left and dialog on the right.

Giraldi says that most of his inspirations are autobiographical. In Pat Benatar's "Love is a Battlefield" he reflected the father-daughter-boyfriend confrontation he was experiencing in his own life. He projected that situation and created a scenario around the song based on an urban runaway theme. In "Beat It," he says he wanted to reflect Michael Jackson's anti-violence message, and that he's always wanted to express the same feelings in film, based on his own experiences with macho gang energy as a teenager in New Jersey, "where being tough was in vogue." He used real gang members, not actors, to capture "the smell and the flavor" of the street.

He says he is exhilarated by the challenge, as a creative writer and director, in having the opportunity to collaborate with artists like Diana Ross, Barry Manilow, Pat Benatar and Lionel Richie. Recently, on the independently syndicated late night show *Thicke of the Night* he commented, "working with Paul McCartney and Michael Jackson was a phenomenon. It was three weeks before I woke up and realized that I had just finished working with the musical history of yesterday, today, and tomorrow."

THE BUDGET: "Time = Money"

Giraldi, like many of the best directors, has an ongoing working relationship with a core creative staff and technical team who contribute to the previsualization and realization of the production process. Equipment decisions, production planning, editing requirements, the talent, the staff and the crew are the director's responsibility. Giraldi is in the rather unique position of having the production define the budget, rather than the other way around. As an interactive translator of the arts and technology, the director is on the leading edge in the development of music video. There is, however, no one who is more acutely aware of the fact that a successful video music production is built upon a solid back-to-basics filmmaking knowledge, than the director. "Stretching the budget to get it in the can" is an ancient filmmaking

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tradition. Only recently has audio-video technology been enhanced through microprocessor-based computer editing and multi-machine synchronizers to produce what is standard operating procedure in film, i.e. the musical score, the dialogue and sound effects. Things must move like clockwork, requiring split-second critical decisions, and every decision impacts the budget. The key to staying on budget is extremely tight preproduction/financial planning which is assembled from data generated by the script breakdown.

THE SCRIPT BREAKDOWN

The script is marked with scene and shot designations prior to shooting. A *shot list* is created to accompany the script; assembled in shooting order, it serves as the schedule for each day's shooting. Precision choreography requires the use of *plot diagrams* for each location showing camera position, angles and talent blocking. The script, the shot list, and the plot diagram help the crew do the basic setup for each scene within a minimum amount of time and with a minimal amount of supervision.

THE DIRECTOR

In today's world of film and video, we often find that the best-known people are the "hyphenated filmmakers": director-camera person or writer-producer-director. The supervisory control of the finished product is the responsibility of one person. The director sets the scene and tone of the production. He or she must acquire a mastery of screenwriting, photography, optics, lighting, sound recording and re-mixing, music composition and production, acting, and an in-depth knowledge of post-production, not to mention human psychology. There is a wide range of areas that a director might specialize in, and different types of directing. Giraldi has mastered an impressive number of directorial disciplines—from Broadway show commercials and feature film to sit-com beverage spectaculars and blockbuster music videos. When all the preparation is done, it gets down to shooting the scene. Step one is framing—checking the talent's other picture elements, lighting, and cutting continuity with the preceding and subsequent shot. This includes rehearsing lines, and blocking talent and camera movements. Step two is a final check of the secondary and background picture elements, making sure that there are no technical (shadows) or content (wrong wardrobe) problems. The third step, the final composition, is fundamentally a natural process done by feel. It is his ability to

assemble and draw upon the talents of a creative team of professionals, and his sensitive scripting, sense of composition, and editorial instincts which make Giraldi's work so attractive and pleasing to the eye.

DIRECTORIAL TECHNIQUES

Giraldi punctuates his video story lines with more short scenes and cut-aways requiring more set-ups and camera angles than would typically be used. The cost of production for additional scenes is somewhat offset by very low shooting ratios (the ratio of film or tape shot to the amount actually used).

The producer, the director of photography and the editor are the most important players in getting the director's vision down on tape. Danny Quinn has photographed and directed lighting for all of Giraldi's music videos. In his choice of cinematographers, with the use of crane and tracking shots, and by the use of dolly moves vs. camera cuts, he creates more movement within the frame to enhance the theatrical feature film feel of his work. In another successful collaboration, "Beat It," he worked with choreographer extraordinaire Michael Peters. The dance sequences are the most memorable part of the film. Like *West Side Story* in its time, the "Beat It" warehouse "rumble" comes alive with an intense animal energy that radiates from the dancers and gang members. Giraldi says that as a dancer and performer "Michael Jackson can do things human beings can't do."

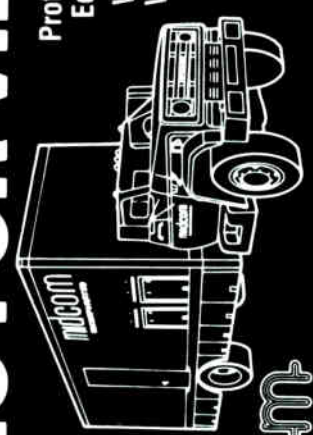
It is in the editing process that it all comes together. Giraldi keeps it moving. Working with Larry Bridges of Red Car Editing, on "Beat It" for example, he created a series of rapidly flowing, quick cut, non-stop fluid images that come to a climax in the galvanizing dance scene that closes the piece.

In motion pictures, the acknowledgement of the behind-the-scenes players, in the form of credits, is part of the system. In his most recent music videos, Giraldi includes production credits as an integral part of the piece, reflecting his concern about elevating the viewer and programmer awareness of video music from "videos" to "movies."

In a year that is destined to see music video reach a new creative and financial maturity, some of the upcoming projects for Bob Giraldi Productions include a new music video for Michael Jackson and Paul McCartney, "The Man," (in a switch with a U.S. director producing projects out of London), Pat Benatar, "Lipstick Lies," and Lionel Richie. In next month's *Mix* we will continue this review of America's most successful music video director. ■


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—from page 10, *STUDIO NEWS*

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VIDEO NEWS

by Mia Amato

Twisting the TV dial on a Friday night, the Northern California staff discovered four different "music video channels" all on at the same time. Now we can tune out the commercials and bypass the visual tunes that bore us! It's just like those days of carefree channel cruising on the AM radios of our youth, oblivious of our demographics and market share.

MTV never pretended to be all things to all viewers, but the rapid fragmentation of its audience can only be blamed on a too-rigid format. Dial-twisters are defecting daily to alternative broadcasts—some in mono—whose programmers have been eagerly supplied with clips which didn't fit WASEC's narrow definition of popular music. Advertising clients are following, too.

There are lots of new places to send your clips—even if the talent you work with is a non-rock genre. *Country Music Television* is a 24-hour stereo satellite-delivered channel running only clips of country acts. Programmer **Ken-ny Kiper** says he'll welcome any clip that's "country-flavored." Kiper adds he's currently stretching the genre to in-

clude acts like *Ricky Scaggs* ("no pure bluegrass, though") and some softer rock—but draws the line at *ZZ Top* ("too much metal for us").

CMT is the enterprise of three businessmen, one in New Mexico, one in Colorado, and one in Tennessee. Their programming is telecast to cable operators and low-power television (LPTV) broadcasters. CMT has over 30 LPTV affiliates in Midwest and Southwest markets, small towns in Oklahoma or Montana where it's immensely popular despite monaural transmission. Local programmers can run from one to 24 hours and the ability to "cherrypick" local air times has given the service an edge over the *Nashville Network*, a Westinghouse subsidiary which also has a clip show but runs mostly concerts, specials, and interview programs.

Mail dubs to Kiper for viewing at Video World International, 600 West Main Street, Hendersonville, TN 37075.

Video clips for soul, reggae, R&B, funk and rock can be sent to *Jamie Brown* and *Bill Speed*, the producers of *Video Soul*, which runs on *Black Entertainment Television*. BET

is a cable channel with an evening feed to four million homes. Cassettes for review should be sent to them at BET, 1050 31st Street NW, Second Floor, Washington, D.C. 20007.

Night Tracks is Ted Turner's answer to WASEC's operations, running Friday and Saturday nights on cable system channels which carry his "superstation" WTBS. The show is produced in Hollywood by *Tom Lynch* under the watchful eye of its executive producer in Atlanta, *Scott Sassa*. *Lee Abrams'* radio consulting firm is used "as a backup" but the format is a fresher, more eclectic blend than AOR radio or MTV. *Night Tracks* isn't afraid to carry ballads and softer sounds, such as *Anne Murray*, and is absolutely fearless in its coverage of black artists. Dubs should be sent to Thomas Lynch, 6430 Sunset Boulevard, Suite 901, Hollywood, CA 90028.

One of the smaller satellite services is *The MusicChannel*, available on SPN's feed to cable and low-power television operations. Programming runs 5 a.m. to 1 p.m. EST on weekdays—not exactly peak hours. The format is mainstream with crossover country, jazz and soul videos. Send tapes to Hope Smith, The MusicChannel, 7509 North 35th Avenue, Phoenix, AZ 85021.

Video Concert Hall is another smaller satellite service (profiled in February's "Video News") running in the afternoon. The rock format is open to what's often called "New Music," but its producers say any clip with "violent or sadistic" imagery is rejected automatically. Send clips to Jerry Crowe, Henderson-Crowe, 125 Simpson Street, Atlanta, GA 30313.

Other Outlets

If the act you are promoting is very new, or the clip is very weird, or if your national distribution is limited, consider bypassing TV and working up a relationship with a club video pool. Like nightclub record pools, these organizations make available to nightclub VJs monthly compilations of

Alternatives to EMPTYVEE

promo clips. The clubs pay for the service; the record label neither shells out nor receives any fees. (Don't confuse video pools with other companies which charge labels for the creation and distribution of video "packages" for nightclubs—we'll get to them another time.) Most video pools pay close attention to stereo mastering and distribute their compilations on stereo Beta or VHS cassettes. New companies are popping up like mushrooms after a spring rain, but we'll only list two.

Rockamerica is the oldest and best known video service to clubs, and for good reason. Newer acts, smaller labels, and performers whose music stretches the accessibility of the current pop idiom tends to berth on a Rockamerica spool three or four months ahead of MTV. **Ed Steinberg's** personal selections seem to lean towards danceable, art-school rock. He will occasionally reach for funk, soul, jazz or country for a special generic compilation. Mail dubs to: Ed Steinberg, Rockamerica, 41 East 20th St., New York, NY 10003.

Telegenics boasts some 300 club and retail outlets, and is run by **Thomas De Iseo**, **Christopher Russo** and **Stephanie Shepard**. Emphasis is also on dance music from arty bands and black talent, which runs the gamut from **Echo and the Bunnymen** to **Diana Ross**. Small labels like **Acme**, **Streetwise**, and **Sugar Hill** are well covered; any clip with break-dancing, rapping, or scratching should stop here first. Send clips to Telegenics, 150 Nassau Street, No. 1938, New York, NY 10038.

Another option is movie theaters. The Hollywood firm **R&R Entertainment** has released a trio of music shorts by **Olivia Newton-John**, **David Bowie**, and **Bob Dylan** remixed in Dolby stereo under the name "Concert Cinema." Exec **Bob Kardashian** says the firm has a contract to supply some 700 screens owned by American Multi-Cinema.

"We're moving slowly on this," he cautions. "We're not running in every house yet . . . programming will change once each quarter of the year." He's looking for an advertising "sponsor" and is investigating record sales in theater lobbies.

"Right now we're only interested in superstars, people who are easily recognized by movie audiences," he adds. "We don't want to break new acts." Since the majority of "videos" are shot on film, the theater venue concept might be copied by other entrepreneurs working with smaller theater chains, or by individual record companies working with individual theaters—perhaps those that cater to the Midnight movie crowd.

One last thing—if you don't

have the resources to distribute nationally, look first at area clubs and local cable programmers as initial outlets for your video. Local outlets typically accept videos mastered on 3/4-inch or even 1/2-inch videocassette; cable programs featuring local artists tend to be well-watched by record buyers too young to get into clubs.

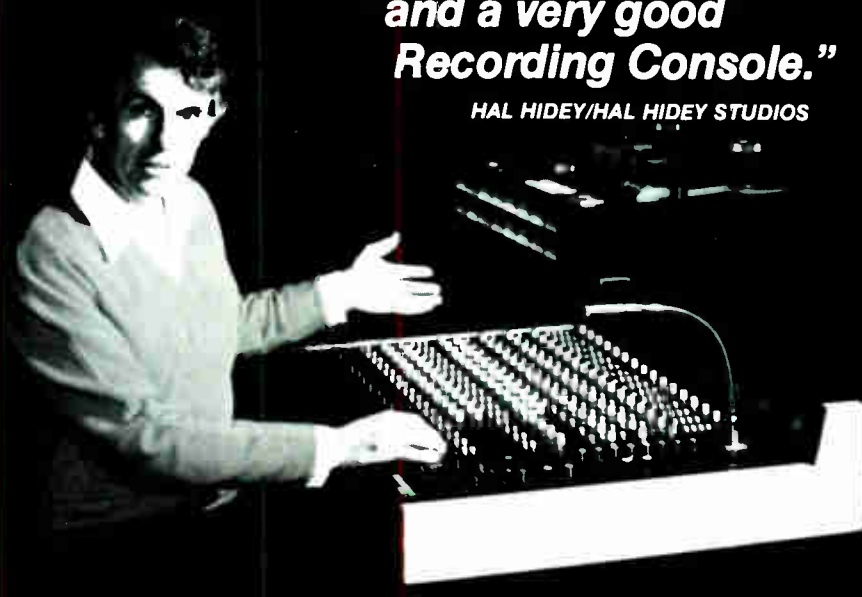

Random Notes:

Eye & Ear Teleproductions has a TV special documenting Chicago's blues scene, taped at a benefit for **Theresa's Lounge**, a

Southside blues mecca for over 40 years. "Blues For Theresa," according to producer **Tom Hilbe**, pays tribute to **Theresa Needham** "who single-handedly supported every major blues player to emerge from this city" and features **Junior Wells**, **Sunnyside Slim**, and **Lefty Dizz**. "Making and Breaking Rock Video" is a fun seminar March 18th planned as a benefit for San Francisco's Film Arts Foundation. Local clip producers will speak surrounded by projected videos, a live VJ and ambient visuals in a city nightspot. ■

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A BUYER'S GUIDE to the Right Video Camera



by Neil Weinstock

How expensive is the video camera you need? Cameras that can shoot a broadcastable image run from \$2,000 to 20 or 30 times that. And even with the best, even in the hands of the best of cameramen and lighting directors, the resultant image is often immediately (if subliminally) apparent to be inferior to film. The difference between an \$8,000 ENG/EFP (electronic news gathering/electronic field production) and that top model Ikegami or RCA studio rig is small by comparison—and small again by way of comparison between the just-barely-acceptable industrial camera and the good ENG number. You probably have some idea which you can afford; the question is, which do you need?

Let's say you're doing music videos, probably a fair enough assumption. Assuming again that you've already done a few, you've worked with a video camera or two—either borrowed from a friend or, and here we get down to the nitty gritty, rented from a supply house, with that line cost represented in your initial job bid. Renting a few different cameras is the surest way to know what you'll want to buy. The question for the beginning videomaker now gets refined to, which do you trust enough to experiment with in on-the-job rental?

Questions beget questions:

Where is your video going? To the top? (That is, MTV, Friday night broadcast network shows, etc.) If the top includes the kind of theatrical release that is common in other countries, your decision has been narrowed to either Super 16 mm or 35mm film. And that means you use either Eclair or Aaton cameras, in the former case, or Arriflex, Mitchell, or especially—if you can afford it—Panavision cameras in the latter. (Film stocks are another issue we'll look at in a future column.) If the top is broadcast, you may prefer film but you can get by with the debatably easier medium, video. You will need a video camera of better than industrial quality, matched with a one inch Type C recorder (or one of the new analog component formats, Betacam, Quarterdam, or "M" Hawkeye).

Better than industrial quality means that the heart of the camera, the imaging tube, must be either a high density Saticon or Plumbicon or other lead-oxide tube. The camera must have R-G-B control, gain, white balance, etc., such that an experienced cameraperson can tweak the results as viewed in a wave-form monitor. The key specs to look for are horizontal resolution and S/N and lag. Although most TVs receive no better than 350, and broadcasters send out at 430 horizontal lines, the camera as signal originator noticeably improves visual matters if it resolves at 600 lines or

more. S/N should be at least 55 dB. Lag is integrally related to necessary light level and to the type of imaging tube employed.

Okay. If you can afford the best, and your business demands it, then you'll ask no questions and go with the latest in RCA's HL-79 series or the opposing Ikegami studio job. A first step down, and hardly a compromise at that, would be one of the relatively new film-style video cameras. There are two that have garnered most attention: the Ikegami EC-35, and the Panavision CEI 310SP & hovering at around \$45,000).

Ikegami's "film look" is mainly exterior camera cosmetics; the device has been shaped a lot like a 35 mm Arriflex. On the inside, while there's certainly nothing *wrong* with the way things are, the images achieved will be those same good Ikegami images.

Panavision has taken a different tack. Their "film look" is hardly evident at all on the exterior of the camera, (though this is one of the more comfortable video cameras to hand-hold). It has all the basic controls where they're easy to reach, and the many less-used controls on a separate CCU (camera control unit). Among those less touched bells and whistles are a soft clip that simulates film's exposure and dynamic range, detail enhancement, and detail blanker to defeat enhancement of peak whites—thus eliminating those commonly seen black outlines.

You say this is great but still above budget? Well, if a good ENG camera is paired with Type C tape, a creditable video shoot can still result. This gets us into about the \$10,000 range, with several models available from the likes of Sony, Harris, Hitachi, Ampex, RCA . . . the list goes on. One of the more interesting recent models is the Sony BVP-100. It makes use of a high sensitivity Saticon and, taking a leaf from the EC-35's book, is cosmetically a lot like a 16 mm film camera.

Another interesting design in this price range is the Sharp XC-800. This ENG camera has the usual, bulky video camera look, an apparently necessary trade-off for continuing one of the best features of the previous Sharp XC-700: an instant repair option. For an additional \$3000 (the camera's base price, without repair kit or lens, is \$10,000) the user can tote along a complete modular replacement kit for almost all electronic camera parts. The basic "part," by the way, is that high definition saticon that's been getting around lately.

Here we get down to brass tacks for some beginning video people. You weren't quite figuring on spending even ten grand on an opening gambit into self-made video images. You've

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THE RECORDING INDUSTRY MAGAZINE

Mix

been reading about and talking to folks who are using industrial grade cameras for all sorts of stuff, including music videos, if this writer is not mistaken. And you are under the impression that video is a whole lot cheaper than the stuff this column has been concerned with till this point.

Video *can* be cheap, but it doesn't look all that good when it tries to be. A \$5000 industrial grade camera and U-matic or VHS recorder combo is sufficient for in-house industrial productions ("How To Be A Better Insurance Salesman" and the like) and music videos that will never go farther than the club circuit and local cable access. To be sure, there is a lot of local TV programming, as well as commercials, shot this way too. All of these uses certainly lend themselves to artistry and profitability, and far be it for this writer to engage in putting down industrial equipment. On the other hand, be sure that your production equipment is not going to limit you to "windows" (that is, showings through different channels of distribution) that can't support the pay-back your product needs.

In other words, how much good will a music video do you or the recording artists involved if it can never go further than the local club circuit?

How much good will be the equivalent of an audio cassette demo tape on video? With these questions answered affirmatively enough to justify purchasing hardware, we'll proceed to a confession of our own lack of foresight.

To wit: last summer this column found itself swallowing a little more than its usual quota of hardware industry hype. The subject was video cameras, specifically the then-new digital imaging devices (metal oxide semiconductor chips employed in lieu of tubes). This observer had seen some amazing demonstrations by RCA and Hitachi, and was sold on the superior resolution, zero lag, and improved lighting latitude of the chip cameras. Suddenly, last summer, just as my words were reaching you all in print, JVC did an A-B comparison of a Saticon tube camera of their own with the Hitachi MOS camera at the Consumer Electronics Show in Chicago. Lo, the MOS image looked horrible! In ensuing months, conversations with engineers at RCA, NEC, and Hitachi (all working on the developing technology) brought a little light on the tubeless image. An amazingly low percentage of the chips that can now be produced are defect-free, it seems. RCA and NEC have shown three-chip demo cameras at the

last NAB and SMPTE shows, using virtually the only perfect chips they've got. Hitachi has put chips with varying numbers of defects into their currently selling single-chip consumer/industrial \$2,000 to \$3,000 cameras. Hitachi showed their best to the press; JVC apparently had, shall we say, other interests.

Anyway, the point of this digression is that MOS, a.k.a. CCD (charge-coupled device) cameras are coming. But they are not a current option for even industrial users, if you are not into bench-testing several cameras till you find a good one. That's painful, because we thought we had a wonderful \$3,000 camera option coming on stream. Instead, in a camera of that price range, one ought to look for a new high density Saticon tube, such as is employed by JVC and Panasonic (among others), for adjustable R-G-B, white balance, gain, and a fast lens for good low-light shooting (since you're going so cheap on the camera you'll probably be even cheaper with lights and the necessary crew to place them.) Pair that camera with one of the new industrial half-inch decks instead of U-matic, if you are not tied into the three-quarter format: the newer half-inch is at least as good, and cheaper. ■

—from 117, *Touring Australia*

uses Yamaha PM200 32 input consoles. For smaller bands, 1532 and 916 Yamaha models are the preference.

Wayne King agrees with Jeff Baker on the problems of the roads. "Up until a year ago, only 50% of the main drag between Sydney and Melbourne was four-lane and with it completed now, what was once a 20 hour trip has been cut down to 12. But the rest of the East Coast is still back roads by American standards with 4 kilometer long freeway sections. They're being upgraded . . . slowly . . . but are still very narrow and full of tourists during certain periods of the year—usually our busiest."

Other than that, Jands has few problems coping with the demands of overseas artists. With their own crews, power distribution and a wealth of experience gained over ten years of road life Down Under, there are few problems that crop up as a surprise anymore.

Jands has its own lighting division with consoles made in its own factory consisting of 72-channel 36-scene boards with outboard matrix and effects rack. For local artists, they usually use a 36-channel 12-scene board with built-in matrix. Most local touring bands use between 60-100 cans, primarily PAR 64s and Ultra Arcs while overseas bands routinely use in excess of 300

cans. David Bowie brought over his own monitors and stage gear in addition to nearly 20 lights. Jands supplied 300 fixtures for that tour and a set up of 380 for Duran Duran's recent tour. Other recent tours contracted to Jands included Simon & Garfunkel, Cold Chisel and others for the new year will likely be Kenny Rogers, Moody Blues, Billy Joel, and Elton John—all in a two month period.

The past few years have seen a greater number of bands opting for an Australian tour with several—like Duran Duran, Devo, and Stevie Wonder—also recording here and combining a bit of vacation time during the northern winter. Since the prime time for tours corresponds to the northern cold spell, several tours seem to get stacked up in a short space of time.

But an improvement in venues and touring facilities is making the rigorous prospect of an Antipodean jaunt more attractive to those who would finish up their commitments in Japan or even Hawaii. Plus, resident video music gurus such as Russell Mulcahy and Peter Clifton are luring bands over for video projects on top of touring and recording. As the music scene here matures and becomes more prominent in the world's eyes, Australia will be more of an attraction than an exporter of music. ■

Most of the smaller sound and lighting services rely on crewing companies for their luggers and road crew. And half the crews never use their real names to avoid taxes and other problems from their past...

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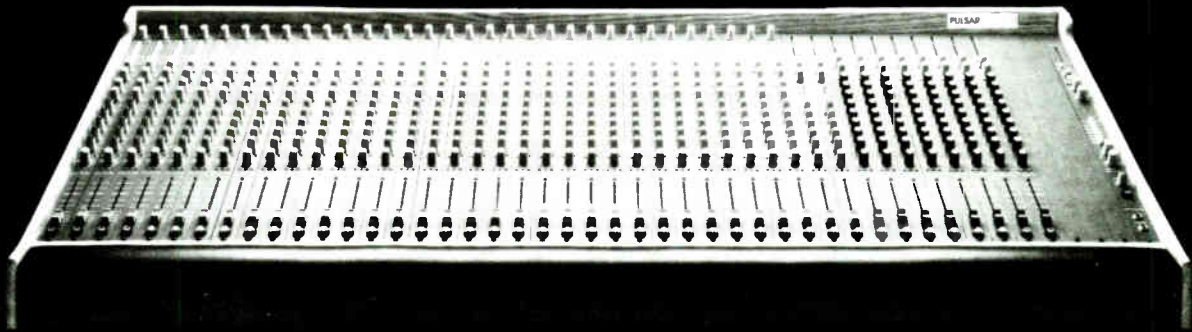
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