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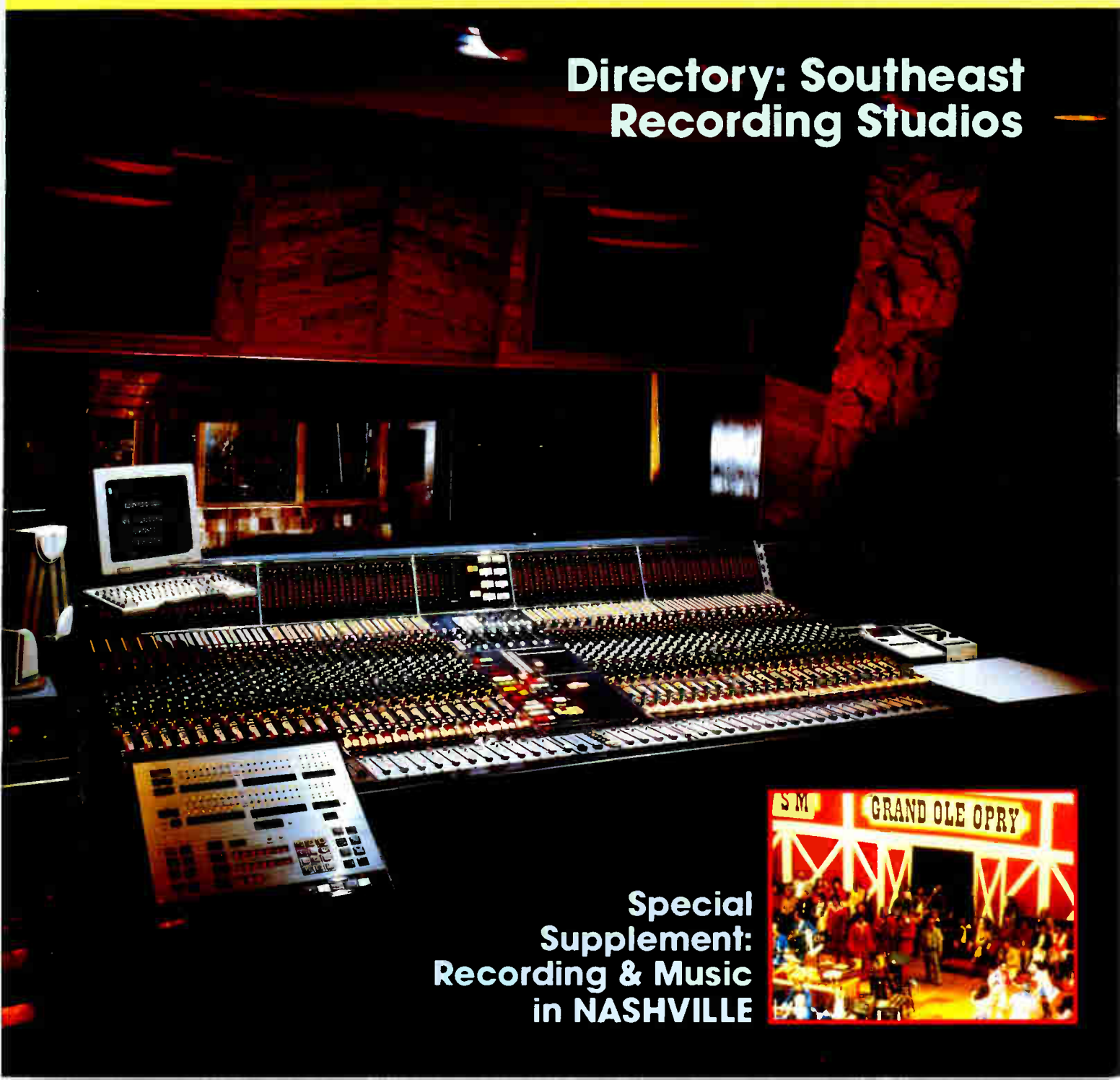
MIX

**The Rockin' Return
of Little Feat**

**What's New in
Studio Monitors?**

THE RECORDING INDUSTRY MAGAZINE

**Directory: Southeast
Recording Studios**

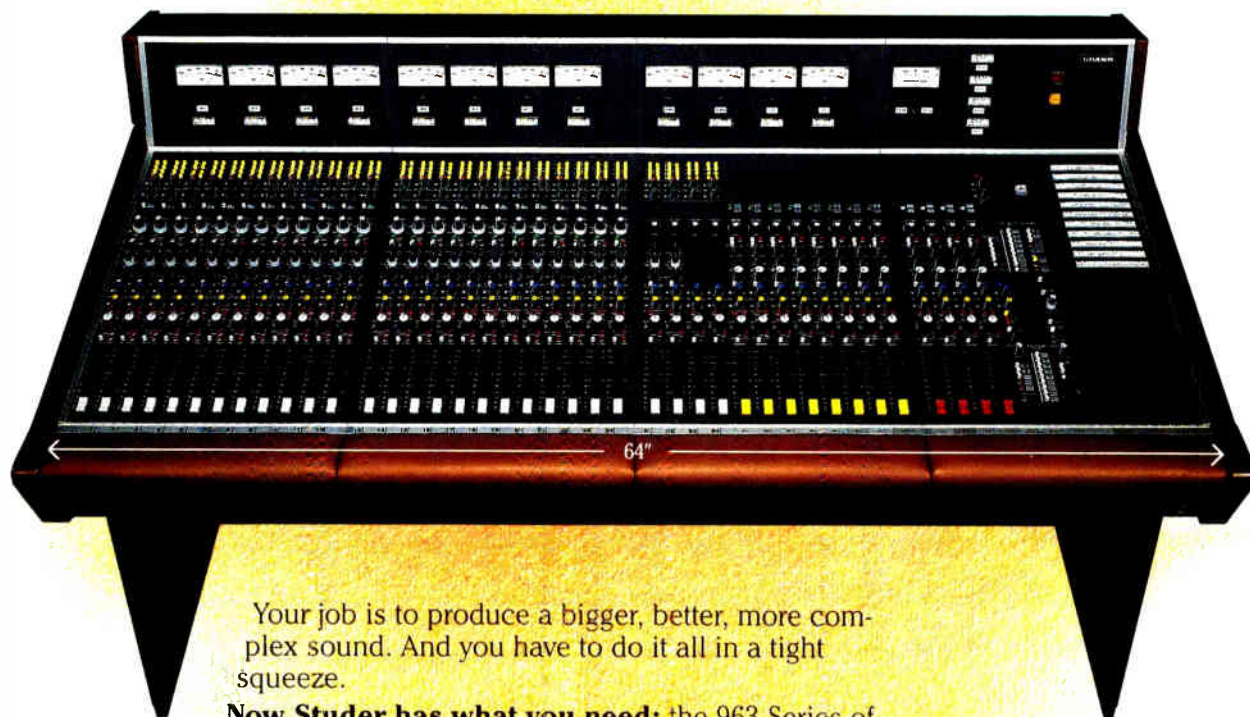


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Recording & Music
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MIX

MARCH 1988

THE RECORDING INDUSTRY MAGAZINE

VOL. 12, NO. 3



PATTI PAGE

PAGE 46



YAMAHA R&D

PAGE 105



STUDIO MONITORING

PAGE 30



BRANFORD MARSALIS

PAGE 148

FEATURES

30 STUDIO MONITORING SYSTEMS by Linda Jacobson

65 NASHVILLE RECORDING: A Special Supplement (see separate contents page)

- **The History of Nashville Recording**
by Robyn Flans
- **Audio Engineering:
Getting Started in Nashville**
by Greg Armbruster
- **The Class of '88**
by Robert K. Oermann
- **Producer's Desk: Harold Shedd**
by Robyn Flans

92 JIM STEWART & THE SAGA OF STAX RECORDS by Rose McAfee Clayton

96 CUE SYSTEMS FOR MUSICIANS by Paul Potyen

105 YAMAHA: R&D IN NY by Dan Daley

26 THE FAST LANE: Openers by Stephen St. Croix

40 LUNCHING WITH BONZAI: Bill Payne by Mr. Bonzai

46 THE HAL BLAINE STORY: Patti Page by Hal Blaine with David Goggin

52 ARTIST'S STUDIO: David Holman by Stephen Padgett and Paul Klingberg

61 FIELD TEST: Rane SP-15 by Andrew Scheps

101 INTERACTIVITY: The First CD-I Disc by Lou CasaBianca

112 SOUND ON STAGE: Sound Reinforcement News & Tour Update by Mark Herman

120 SOUND ON STAGE: On Tour with Jimmy Buffett by Greg McVeigh

126 MI UPDATE: Got Live If You Want It by Craig Anderton

132 MUSIC NOTES: Jethro Tull, Chicago House Music, Cypress Records, Producers Bunetta & Chudacoff

148 PLAYBACK: Branford Marsalis by Robin Tolleson

157 AFTER-MIX: GRP Takes DAT Plunge by Philip De Lancie

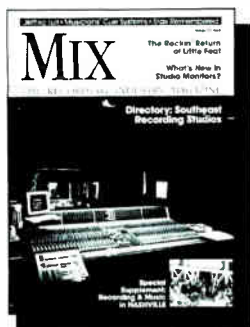
165 POST-SCRIPT: Breaking into Audio-for- Video Sweetening & Post-Production by Miles Christensen

COLUMNS

14 INSIDER AUDIO: Optical Storage Methods by Ken Pohlmann

24 JUXTAPOSITIONS: Monitoring Opinion by Mel Lambert

FROM THE EDITOR



Cover: Owned by Larry Butler, Eleven Eleven Sound (the name derives from the studio's Nashville street address) is equipped with the new Neve V Series III 48 x 48 console, GML Moving Fader Automation, Mitsubishi 850 32-track and X 80A 2 track digital recorders, Studer 24 track and 2 track analog recorders, assorted outboard gear and Sierra Audio monitors with oak dispersion horns.

Photo: Don Putnam

Insert photo courtesy of Nashville Chamber of Commerce

DEPARTMENTS

- 6** CURRENT
- 8** INDUSTRY NOTES
- 10** SESSIONS/STUDIO NEWS
- 56** PREVIEW
- 205** MIXWORDS
- 206** CLASSIFIEDS
- 210** AD INDEX

DIRECTORY

SOUTHEAST RECORDING STUDIOS

- 171** LOCATION INDEX
- 174** 24+ TRACK
- 189** 12 & 16 TRACK
- 196** 4 & 8 TRACK



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The first week of March poses conflicts for those who like to get their industry updates firsthand. The international meeting of the Audio Engineering Society runs headlong into the annual homecoming for advanced applications of the compact disc, Microsoft's CD-ROM Conference, in Seattle.

The latter, while only in its third year, has become a bombshell testing sight for concepts such as CD-I (1986), DV-I (1987) and has certainly been *the* networking party for CD-ROM types. And while CD-ROM has caused more of a stir in the computer world than in audio to date, its impact on recording and catalog material will be substantial. Baby businesses are being formed over cocktails and power lunches at this trendy be-in, and the new partners are jumping from film and video, software design, publishing and record making into the uncharted CDs.

Microsoft's conference is still relatively small by today's industry convention standards, and the price tag is steep: \$950 for the three-day event. But if CD-ROM hits its stride, as many feel is inevitable over the next couple of years, this show may very well become the cornerstone of an exciting new industry.

Both International AES and Microsoft CD-ROM are valuable contact zones, and their futures indicate an increasingly important place in the development of technology and understanding. It would be nice if they didn't occur at the same time next year.

• • •

Another new column joins us this month: "The Fast Lane," by Stephen St. Croix. Considered by some the Tom Swift of the recording industry, Stephen has built a remarkable career by developing high technology products, leaving his creative mark on many popular records, and getting to places very quickly. As owner of Marshall Electronics he created the Marshall Time Modulator and the Tape Eliminator, and invented the computer process known as Revectoring, which removes noise and distortion from old audio recordings. An active recordist on both sides of the glass, Stephen is a fan of high speed sports and spends his "leisure time" racing cars and motorcycles. "The Fast Lane" is where he will share his views of where things are going in this industry and how quickly we can get there.

Keep Reading,

David Schwartz
Editor/Publisher

CURRENT

Mix Publications Moves

Mix Publications, Inc., has moved to new corporate headquarters in Emeryville (6400 Hollis Street #12, Emeryville, CA 94608, 415-653-3307), doubling the space previously occupied and consolidating 55 employees and all operations—*Mix* magazine, Mix Bookshelf and *Electronic Musician*—under one roof.

Located in Jelly Bean Square (former Goelitz Jelly Bean Co. warehouse), *Mix* occupies a custom-designed, 11,000-square-foot site with room for expansion. Co-founder David Schwartz envisions another corporate division within the year, an arm of the company dealing with information services.

"Our growth is determined by the explosion in music and media technologies and things are really popping," says Schwartz. "There is a new generation of instruments, an incredible growth in home recording studios, and astonishing advances in high-end technology for the professional audio and video producers. Mix Publications is devoted to providing information on those technological advances."

ATSC Approves HDTV Standard

In early January the full committee of the United States Advanced Television Systems Committee (ATSC) announced the approval of the 1125/60 high definition production standard for the electronic production of HDTV programs.

The Society of Motion Picture and Television Engineers (SMPTE) documented the 1125/60 standard at the request of the ATSC and others. After SMPTE's approval, the ATSC Technology Group on High Definition Television gave it the go-ahead last September.

In 1985 and again in '87, the ATSC

recommended to the U.S. Department of State, that the U.S., in meetings of the Consultative Committee on International Radio (CCIR), support the 1125/60 standard as a single worldwide standard for HDTV.

Video Expo

More than 10,000 prospective buyers will be combing the aisles during the Video Expo, May 11-13 at the

Los Angeles Convention Center.

Co-sponsored by *Mix* magazine, Video Expo offers audio equipment displays along with seminars, including "Advanced Audio Techniques," "Audio-for-Video Post-Production" and "Audio: The Basics." Booth space is still available. For more information contact Barbara Stockwell at (800) 248-5474 outside New York, or (914) 328-9157.

Bob Liftin In Memoriam

Audio pioneer Bob Liftin passed away on January 8, after a long and distinguished career in professional audio. Suffering from cancer, he continued working until the end, engineering for the CBS New Year's show broadcast from New York's Waldorf Astoria.

Liftin began his career as a teenager with CBS, engineering audio for radio soap operas and then made the transition to audio for live television. He launched Regent Sound Studios in the late '50s, was a founding member of SPARS, and served as president and chairman of the board.

"Bob was always five years ahead of the industry," recalled Sandi Morrof, general manager of Regent and A2 (TV audio assistant) for the past seven years. "He was instrumental in developing SMPTE lock-up and synchronization of audio and video and also paved the way for much of the computerized, digital storage that is used today. He was a tremendous human being—the man was a champ."

As an audio consultant and engineer, Liftin was associated with some of the most prestigious broadcast events: the 1986 Liberty Weekend, the Tony Awards, Radio City Music Hall live broadcasts, *Live Aid*

from Philadelphia, *The Jerry Lewis Telethon*, and he served as audio consultant for *Saturday Night Live* since its inception.

"He was in love with audio," said Dave Teig, studio manager at Servisound, NE Coordinator of SPARS, and longtime friend. "He was an innovator and tireless in his pursuits."

"Bob believed in people," said Sandi Morrof. "If he saw potential, he gave people the chance to succeed in this industry—and they came through for him. A lot of us owe our position to his faith, guidance and understanding." ■



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INDUSTRY NOTES

E-mu Systems has formed a subsidiary company, **E-mu Systems Ltd.**, to serve as a sales and distribution hub for its European and international sales. The company, located in East Lothian, Scotland, will be headed by **Roy Goudie**, formerly E-mu's European sales manager. . . **Oberheim** has moved to a new 35,000-square-foot facility at 2015 Davie Ave., City of Commerce, CA 90040, (213) 725-7870. In addition, **Mike Papa** has been named Oberheim's vice president of sales. . . **Creative Audio Recording Services**, a NYC digital direct-to-disc facility, is offering seminars on tapeless audio post-production/recording. Hosted by studio owner **Shelton Leigh Palmer**, the seminars can be booked by calling (212) 714-0976. Palmer also named **Carl Rosenberg** executive producer of special projects. . . **Synoptics**, the special visual and graphics effects division of Editel/L.A., has purchased an Intelligent Light 3-D computer graphics animation system. It will be operated by **Debbie Krikun**, who joined Synoptics as designer of animation projects. In other Editel/L.A. news, **Larry Bracco** was promoted to director of commercial sales. . . **Chris Albano** has joined *Electronic Musician* magazine as advertising manager for the Eastern sales region. . . A competition for a new work for live performance on a digital performance instrument is being sponsored by **Dartmouth College's** department of music and **New England Digital Corporation**, with a \$5,000 first prize lure. Interested parties can receive entry regulations by writing: Competition, The Bregman Electronic Music Studio, Hopkins Center, Dartmouth College, Hanover, New Hampshire 03755. . . **Electro-Voice, Inc.** (E-V) has made the following appointments: **Terri South** as creative director, **Tammie Blackman** as public relations director, **Ivan Schwartz** as broadcast/production marketing specialist, **Doug MacCallum** as general manager of E-V Canada and **Garry Templin** as national sales manager of E-V Canada. . . **Amek Systems** and

Controls, Ltd., is expanding operations and has a new address: New Islington Mill, Regent Trading Estate, Oldfield Rd., Salford M5 4SK, England. The company has also appointed **Ray Dilfield** technical support engineer for the U.S. operation. . . **Drew Topel** has joined **American Interactive Media, Inc.** as software engineer. . . SF's **Pacific Video Resources** has hired **Charlene Jones** to its front office staff. . . **D & R** has appointed **Paul Westbrook** national sales director for their U.S. offices in Arlington, Texas. . . **Synergetic Audio Concepts** (Sync-Aud-Con) will hold a loudspeaker designers workshop in Atlanta March 17 to 19. For more information, call (812) 275-3853. . . Total Tape Co. Limited, of Ft. Lauderdale, FL, has changed its name to **Fort Digital Recording Studios**. . . **Toa Electronics, Inc.** has appointed the following representative firms for their professional music & entertainment division product line: **ASR Enterprises** (MD, VA, eastern PA, DE and NJ), **Bencsik Associates** (FL and PR), **Kodo Associates** (MN, ND, SD and northwest WI) and **Piper Associates** (MA, ME, NH, VT, CT and RI). . . The **Academy of Recording Sciences**, a new 12-week training program for working in professional recording studios, has opened in Phoenix, Arizona. Interested students can get more information by calling (602) 493-9898. . . **Mary Gruszka**, formerly senior project engineer with CBS, has formed **MCG Audio Consulting**, specializing in TEF® audio and acoustical measurements of control rooms, audio, video and communications systems designs, location sound recording and technical writing. The company's address is: 88 Myrtle Ave., Edgewater, NJ 07020, (201) 224-4937. . . **Applied Research and Technology** appointed **Jim Bonis** marketing manager. . . **Denon America**, a New Jersey manufacturer of consumer and professional audio components, has appointed **Laura Tyson** as product manager for its professional broadcast line. . .

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SESSIONS AND STUDIO NEWS

SOUTHEAST

Music Works in Hollywood, FL utilized its new Emax sampler to work on a corporate video for **General Electric**. . . At **International Sound** in North Miami Beach, **Clarence Clemmons** was in mixing tunes for a forthcoming solo album with **Eric Schilling** at the board, assisted by **Mike Strick**. . . **Fetchin' Bones** finished their second Capitol LP, *Galaxy 500*, at **Reflection Sound Studios** in Charlotte, NC. **Don Dixon** produced, **Steve Haigler** engineered. . . At **Low Overhead World Headquarters** in Jacksonville Beach, FL, Atlantic artist **John Philip** was in doing demos for an upcoming LP, and **Mike Angelo and the Idols** cut tracks for their second album. . . **Mavis Staples** (of the Staple Singers) was in at **Ardent Recording** in Memphis cutting tracks for a solo album coming out on Prince's Paisley Park/Warner Bros. label. **Al Bell** produced and **William Brown** engineered. . . The Atlanta-based rock group **Native** recently invaded that city's **Master Sound Studios** to complete four tracks for their upcoming debut on Arista. The LP was produced and engineered by **Bill Drescher**, assisted by **Jeff Tomei**. . . **Tennie Hodges** was among the artists working on demos recently at **Cotton Row** in Memphis. **Roland Robinson** produced, **Eric Patrick** engineered. . . Guitarist **Terry Mitchell** has been recording original instrumentals for a future album at **Memphis Sound**. The project is being engineered by **John Fleskes** and **Dan Pfeifer**. . . **Jimmy Buffett** was in at Miami's **Criteria Studios** doing overdubs for his latest. Producing was **Ralph McDonald**, with engineer **Jay Rifkin** behind the board. . . At **Soundshop Recording** in Nashville **The O'Kanes** mixed their new album for CBS. The LP was produced by group leaders **Jamie O'Hara** and **Kieran Kane**, and engineered by **Pat McMakin**. . . At **Musiplex** in Atlanta, **Dan**

Baird of the Georgia Satellites worked on the **Nasty Bucks'** reunion recording. **George Pappas** engineered. . . At **Cheshire Sound Studios** in Atlanta, **The Consolers** completed tracks for a new album with **Tom Wright** producing and **George Pappas** engineering. . .

NORTHEAST

John Cafferty & the Beaver Brown Band were in **Normandy Sound** in Warwick, RI, mixing material for their new Scotti Brothers/CBS album. **Tom Soares** and **Karl Rasmussen** were at the SSL, with **Mike Skeffington** assisting. . . **Doug E. Fresh** was in NYC's **Planet Audio/Video** working on tracks with engineer **Ollie Cotten** for an upcoming release on Reality Records. . . Japanese free jazz artist **Akira Sakata** was in Manhattan's **Quad Recording** with producer **Bill Laswell** and mixer **Bob Musso**. . . Folk musician **Doug Ecker** completed recording and mixing his third album at **Ear-Relevant Sounds** in Westford, MA. **Bob Wey** engineered. . . In at **Tiki Recording** in Glen Cove, NY, was Arista artist **Taylor Dayne** working on her LP with producer **Ric Wake** and engineer **Bob Cadway**. . . Producer/artist **Michael Goldfinger** has been in NYC's **D&D Recording** working on several tracks for an upcoming LP with engineers **John Leposa**, **Mark Plati** and **Dennis Thompson**. . . Rap king **Kurtis Blow** worked on his latest at **Quantum Sound** in Jersey City, NJ. Producing were **Jack Walker**, **The Jaz** and **James Batton**. Engineering was handled by **Greg Mann**, assisted by **Noah Baron**. . . **Meatloaf** was in at NYC's **Platinum Island** mixing his *Meatloaf Live* LP for Arista. **Tom Edmonds** produced and engineered, assisted by **Oz Fritz**. . . **Sountec Studios** in Norwalk, CT, recorded a soundtrack for a big orientation show by **Hitachi America**. **Jerry Liotta**

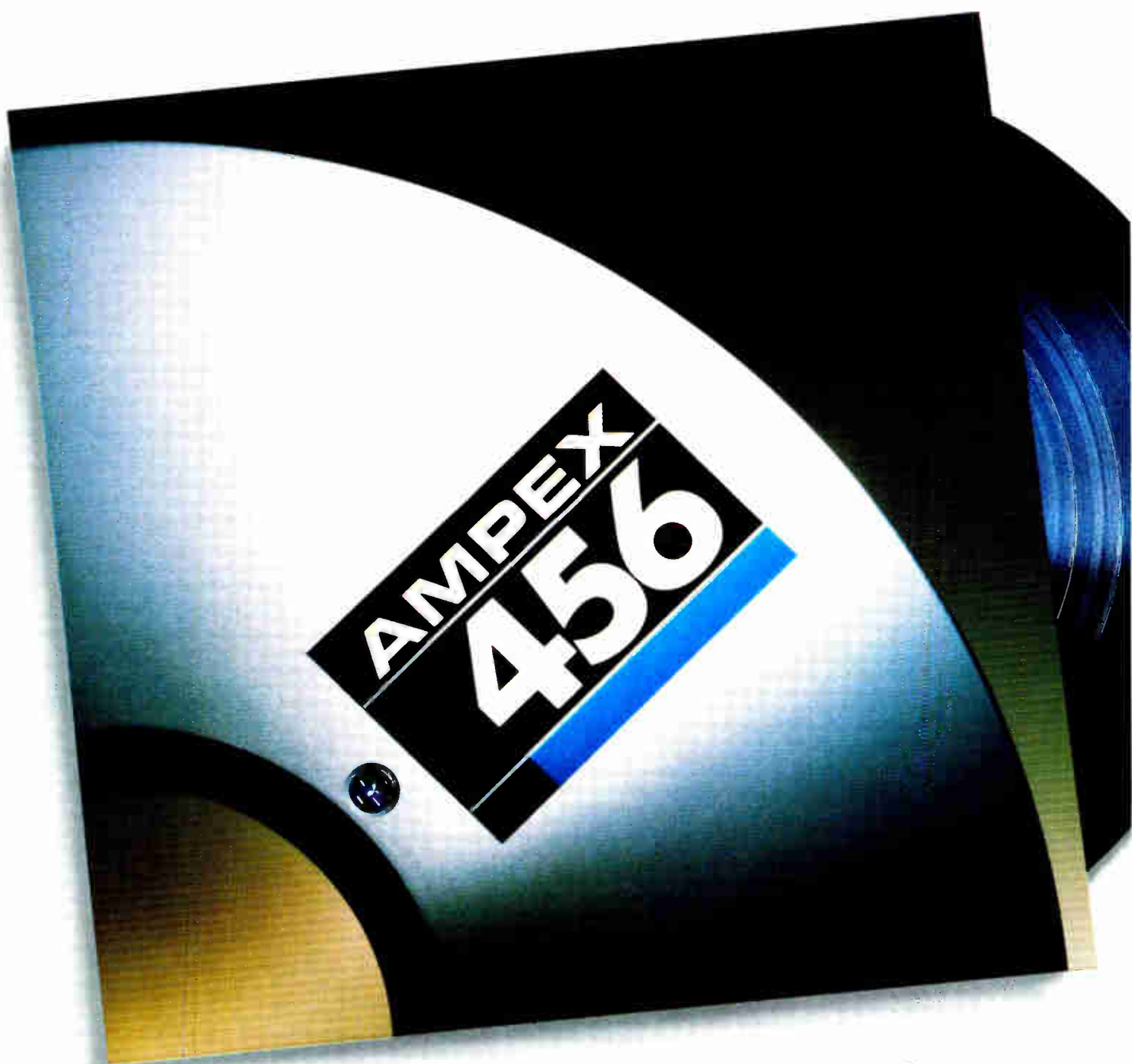
produced and **Myles Davis** engineered. . . At **Newbury Sound** in Boston, **Del-feayo Marsalis** was in producing a new jazz release by **David Greenway**. **David Van Slyke** engineered. . . **Run DMC** have been cutting their new album at NYC's **Chung King House of Metal**. **Steve Ett** is engineering that one. Def Jam artist **MC Breeze** has also been in Chung King recently, working with the **L.A. Posse** producing and **Greg Gordon** engineering. . . RCA artist **Vicki Sue Robinson** was in at **Audio West Recording** in West Haven, CT, working with producer **Brian Keane** and engineers **Joe Mendyk** and **Bill Burke**. . .

NORTH CENTRAL

At **Paragon Recording** in Chicago, **Marty Feldman** produced an album by ex-Kenny Rogers pianist **David Cole**. **John Peluso** engineered, assisted by **Scott Barnes**. That LP is due in the spring. . . **Candy J.** came into Chicago's **Seagrape Recording** with her producer **Kenny Jamin Johnson** to record vocal tracks for an upcoming Epic Records release. **Mike Konopka** engineered. . . At **Studio A** in Dearborn Heights, MI, singer-songwriter **Michael Bradford** worked on an album project with production assistance from **Earl Klugh**. **Eric Morgeson** was at the console, assisted by **Randy Poole**. . . At **Independent Recording** in Kokomo, IN, gospel artist **Rockland Lay** finished tracks for his first album with **David Bentzler** engineering. . .

NORTHWEST

The **Ohio Players** were in Seattle's **London Bridge Studios** finishing an LP with engineer **Rob Brown**, assisted by **Rick Parashar** and **Peter Barnes**. . . At **Iron-**



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Circle #029 on Reader Service Card

by Ken Pohlmann

OPTICAL STORAGE METHODS

Unquestionably, the future of audio storage lies in the digital domain—the technology's high fidelity, large capacity, robustness, decreasing cost, and inherent flexibility in production applications all assure its continued growth and eventual dominance in the professional audio recording industry. Estimates at how long complete conversion to digital recording will take are really beside the point; the trend is unmistakable and rapid.

However, the question of specifics of that storage is another question altogether. There are many ways to record digital audio data, both in terms of signal encoding and physical storage. For now, it appears that PCM is firmly in control, and that at most, derivatives of that method such as ADPCM will compete. Sideline encoding methods such as delta modulation remain unfulfilled in the audio industry. The other question is much more difficult to assess; it is entirely

unclear what kinds of physical storage media will be employed. For now, most professional digital recording is probably modulated to stationary head multi-track and 2-track machines, with rotary head 2-track machines running a close second. The latter will be boosted by the introduction of the rotary head specialty recorder, the R-DAT. Certainly its low cost will help it win acceptance in the pro and semi-pro markets.

But any tape medium, whether stationary or rotary head, is inherently limited in that, among other things, data is stored sequentially. It is impossible, or at least frustrating, to quickly recover data from selected locations on the tape. As a result, perhaps the best way to edit tape is with razor blade splicing. While workable, this is certainly a throwback to analog olden days. Contemporary production methods call for much more sophisticated editing techniques. However

**Whatever the format, optical storage
promises to surpass the performance
levels of both analog and digital magnetic
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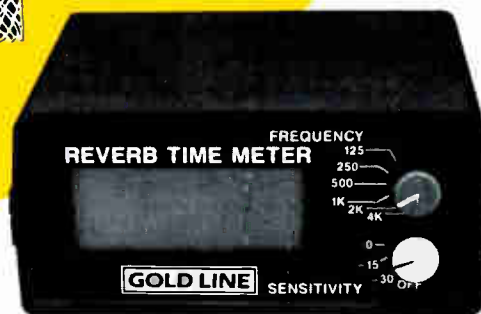
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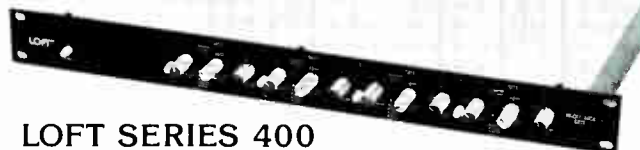
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even with electronic editing, any tape format presents severe problems, particularly with a large number of edits. In professional applications, tape recorders will surely go the way of analog tape. There is only the question: How much longer?

The answer to the problem of tape

storage has been the development of magnetic hard disk storage systems. These offer both efficient storage in themselves, as well as the all-important feature of random access. Using a large buffer memory, data may be located from any number of hard disks and assembled into the final form. The success of the technique has created a major move in the manufactur-

ing sector to develop hard disk-based recorders. By nature, these recorders are in reality much more than a traditional recorder; thus it makes perfect sense to bestow them with a new name: workstations.

Hard disk-based workstations offer an excellent consolidation of storage, editing, production, and interfacing features. A single workstation can take the place of several pieces of traditional studio hardware, offering cost savings. More importantly, using random access, and user friendliness, production time is decreased, while creative possibilities are enhanced. If there were no other technologies on the horizon, one could safely guess that the future belonged to the magnetic hard disk, embodied in a digital audio workstation. Its large capacity recordability, and random access make it a near-ideal storage and production tool.

The shadow on the horizon is optical storage. This technology threatens magnetic hard disk storage precisely because it promises to improve on what hard disk can do. In short, optical storage can offer increased capacity, lower cost per bit, as well as the considerable advantages of a non-wearing medium which does not require backup, and is removable. Whereas other technology currently available may be only transitional, optical storage may complete the evolution from analog magnetic tape to digital optical disk.

However, optical storage is still an emerging technology. Its greater promise is counterbalanced by greater sophistication, and hence greater obstacles to its commercialization. Whereas any magnetic medium may be recorded, read and erased with relative ease, optical media accomplishing the same tasks are a good deal more complex. Thus it is advantageous to design optical storage with its application in mind. Specifically, three separate systems, read-only, write-once, and erasable media have been developed for separate applications. A mass-produced consumer-oriented system may best be read-only, whereas any professional application will certainly require recordability, and perhaps erasability. All of these systems are under various stages of development.

Moreover, optical storage is a multi-faceted technology not only with many formats, but many technologies

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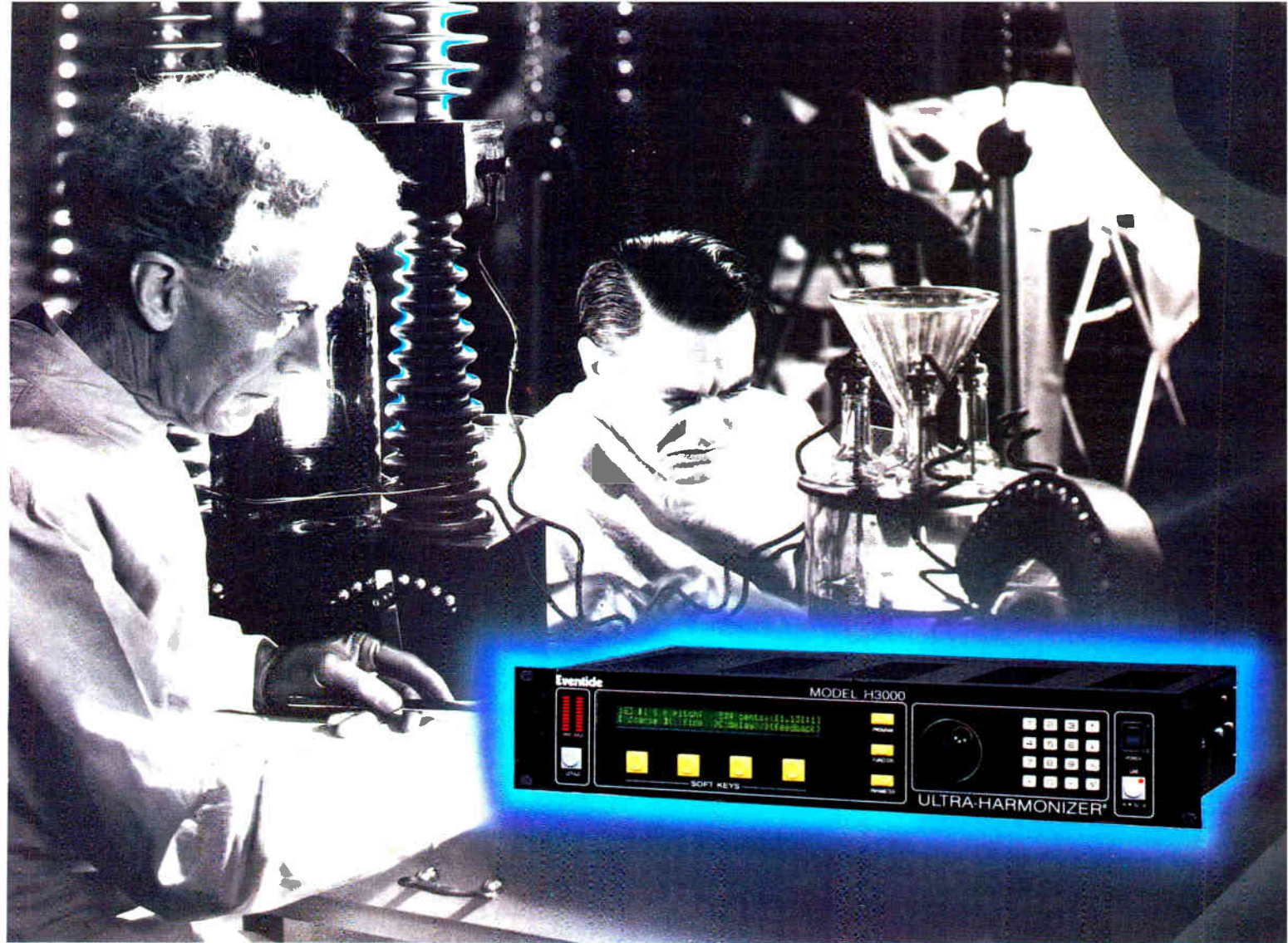
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The Fourth Generation Console Automation System is here. Compumix IV advances dynamic automation technology far beyond the capabilities of other systems, to a level of sophistication and accuracy demanded by tomorrow's digital recording techniques.

The FORTH realtime software running in a 32-bit 68000 computer provides 4 simultaneous mixes on-line as well as write command recall accuracy of 1/10 frame. SMPTE time code driven, Compumix IV stores *every frame* (not only changes) making it possible to perform editing functions on-line. This requires an 80 Mbyte hard disk storage system designed for fast access in both read and write modes.

Compumix IV is designed to control up to 256 IDF fader functions in realtime through easy to operate touch-sensitive plasma control panels. An optional Graphics Display System is available.

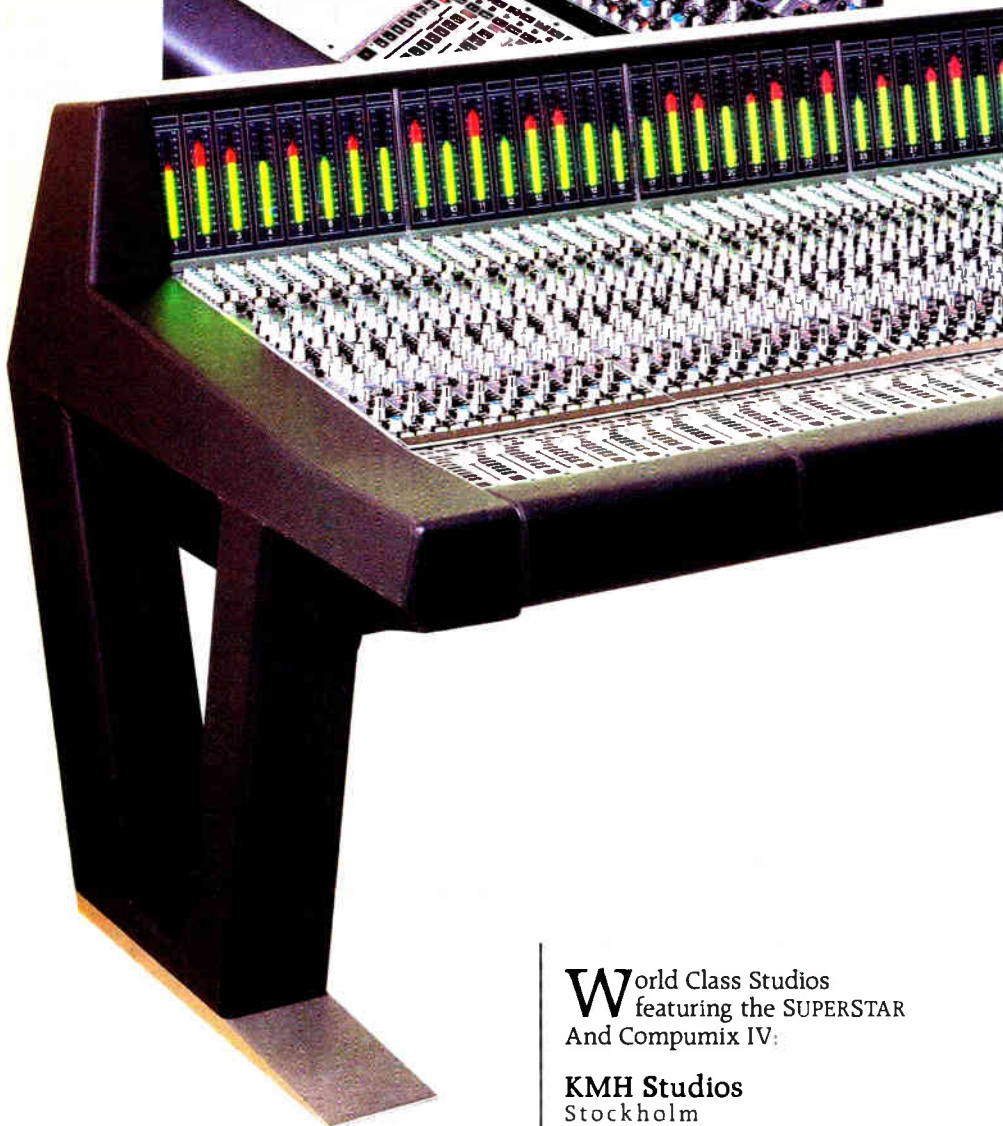
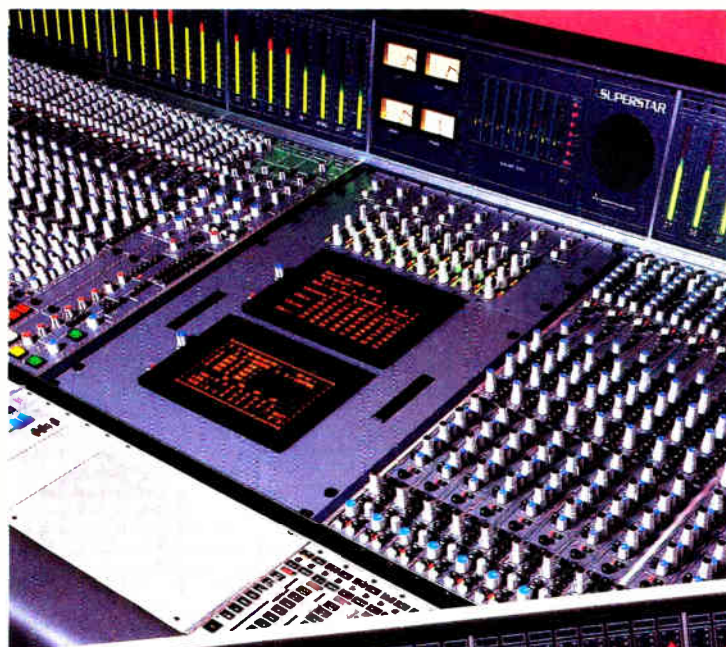
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The IDF is a microprocessor-based module that utilizes the most advanced technology available. The super smooth fader is a 10-bit digital encoder that supplies 0.25 dB resolution and 119 dB of dynamic range. The grouping functions are the most extensive ever supplied in a music recording console. 16 groups are assignable with 4 levels of operation: slave, group master, submaster, and grand master.

Up to 256 IDFs run independently through a revolutionary "back door control bus" without the need for external computer automation. Realtime display of dB level, groupings, status, fader position and mutes are available at all times. 9 membrane switches allow for selection of up to 160 software defined functions.

CENTRAL ASSIGNMENT

This electronic output assignment cross-point switching system assures fast and reliable connections from the console to your tape machines with full routing or mixing capability. 64 output busses are assigned from each input module by a central touch control plasma display panel controlling up to a 96 by 64 electronic switching matrix. Completely software driven, the panel allows instant selection and display of the bus assignment with 10 presets in local memory. Optional unlimited storage to disk is provided. Easy to use, the system prompts for bus assignments and provides help through informative menu displays.



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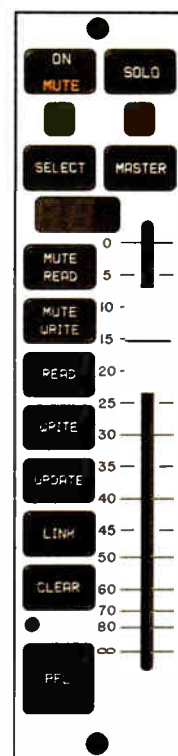
No other single console offers the combination of desirable sound, size, and flexibility with an

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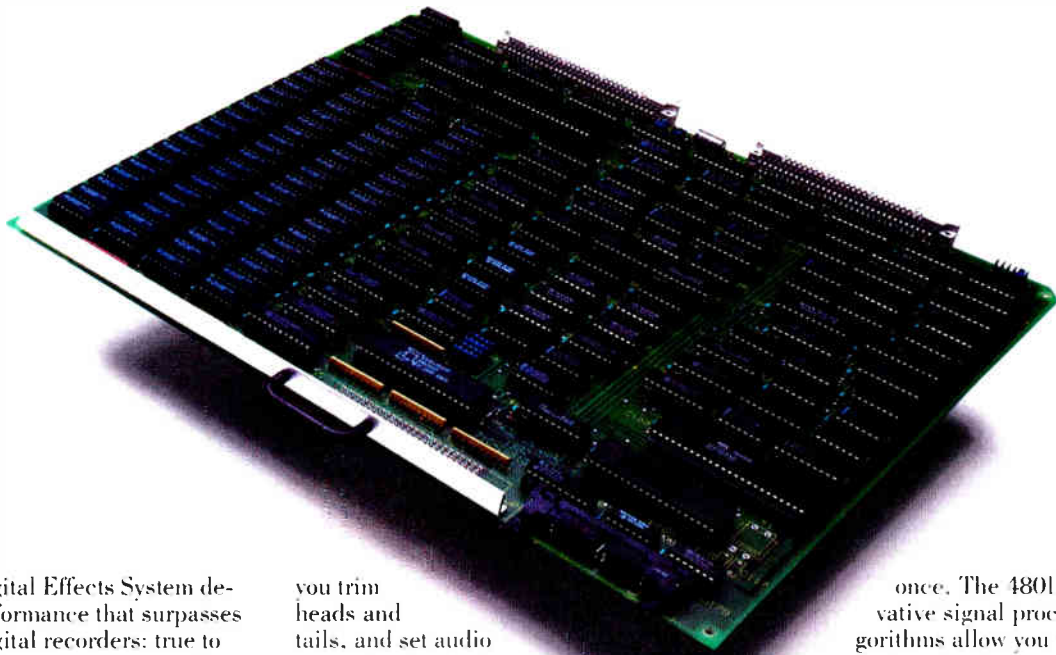
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*The 480L Sampling Memory Expander. Accurate sampling in phase-locked stereo:
a Lexicon applications brief.*



The 480L Digital Effects System delivers audio performance that surpasses conventional digital recorders: true to life sampling is a prime example of its advanced engineering. With the optional Sampling Memory Expander, the 480L becomes an astonishingly practical way to copy or move several seconds of audio from point A to points B and C.

Until now, "flying in" or "slipping" vocal and instrumental overdubs meant tradeoffs. Two-track tape is clumsy and degrades the signal: DDLs with long memories are better, but not by much. Now, with the 480L's optional Sampling Memory Expander, you can digitally record 10 seconds of true phase-locked stereo or 20 seconds of mono at a 48 kHz sampling rate. 18 bit equivalent A/D conversion produces a typical dynamic range of 98 dB, with a bandwidth of 20 — 20,000 Hz; output doesn't get any closer to input.

If you're using a digital recorder that's Sony 1610 compatible, the Sampling Memory Expander and the 480L's digital I/O interface can reproduce the original performance at any location on tape without leaving the digital domain. Slip syncing, copying and time shifting of audio segments is faster and cleaner than ever before.

You control sample recording, editing, processing and triggering from your work position using the 480L LARC. Varying up to six parameters at once,

you trim heads and tails, and set audio trigger levels. Audio trigger response time, incidentally, is under 300 microseconds — virtually instantaneous. Sampling Memory Expander enhancements include Record Trigger to trigger sampling automatically from audio input, Time Variant Record, and sound on sound digital recording in sync with the original sample. Lexicon Dynamic MIDI® lets you assign MIDI controllers to sampling parameters, for new dimensions of real-time or sequenced control.

Sometimes even the most accurate replica isn't exactly what you're looking for: if so, the 480L will take you beyond imitation into creative sampling. Play samples faster or slower (without changing the sampling rate), backwards or forwards, even both at

once. The 480L's innovative signal processing algorithms allow you to enhance sounds with advanced reverbs and effects without leaving the digital domain. Add signal processing as you sample, or process a "dry" sample on playback with digital wet-dry mixing.

The 480L digitally integrates sampling and signal processing because it's designed as a comprehensive audio production tool: a system. And sampling is only the first of many directions in which this Digital Effects System can grow. We're continually examining the possibilities, and as your needs develop we'll implement new tools to meet them. Now is the time to call your Lexicon Advanced Products dealer for a demo of the new production techniques the Sampling Memory Expander makes possible.



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within formats. Any optical system essentially operates with a mechanism in which a laser shines on the medium, and the reflected light is detected by a sensor and decoded to recover the carried data. To accomplish this, the medium itself must present two states so the change between them may vary the reflected light, and thus the data may be recognized. For example, a reflective disk may have holes burned in its surface to offer a nonreflective change from the reflective disk surface. However the specifics to implement the system vary considerably.

Many methods have been explored, and given competing systems, standardization is scarce and compatibility is unusual. Still, optical storage will outgrow such initial obstacles, common to any new technology, and will certainly offer an alternative to professional audio recordists, and may in fact become the dominant medium of the industry in a relatively short time. Let's consider several types of optical storage systems, and the technologies used to implement them.

The compact disc is a well known optical disk standard. A plastic disc is impressed with a spiral track of pits cut to a depth calculated to cancel and disperse the laser light of the reading pickup. To provide reflectivity, the data surface undergoes a metalization process. The reflective surface of the disc and the data pits are embedded between the transparent plastic substrate and a thin protective layer. The effect of scratches and dust particles on the reading surface are minimized since they are separated from the data surface and thus made out of focus with respect to the laser beam focused on the inner reflective data surface.

This type of medium is attractive because it can be economically mass produced (cost per disc of approximately 60 cents). Furthermore, a disc can store over 700 megabytes of formatted data on its 120-millimeter diameter. However this is strictly a read-only medium, and could never be directly adapted to recording or erasing. The medium is, however, open-ended with respect to the type of data to be encoded. The CD-DA standard has already been joined by CD-ROM, CD-V, CD-I, as well as alter-

native formats such as DVI. The success of the CD may portend the success of optical storage, and has certainly lowered cost of optical components and stimulated development in the field.

Recordability is essential for most professional applications; the simplest recordable optical systems are write-once. The user may record data only once, permanently, until the disk capacity is filled. (Alternatively, written data could be destroyed, but not recorded over.) While perhaps at first uncomfortable to magnetically inclined minds, a write-once system is very workable for many applications; for example, in some applications, a permanent data trail is precisely what is called for.

In the audio industry, a write-once concept is already widely employed.

Optical storage may become the dominant medium of the recording industry in a relatively short time.

Surely most magnetic 2-track tape is recorded on only once; it would be a highly suspect practice to re-use any master tape. The confidence provided by a non-erasable format may prove to be an asset in itself. In short, a write-once optical disk does not necessarily present fatal drawbacks. Erasability is not always important; indeed, other non-erasable formats have met with success before—for example, photography is write-once.

A write-once optical disk may be implemented in a variety of ways. In some systems, a mechanism called ablation uses a laser writer to burn holes in the thin film. Other mechanisms include lasers which cause bubbles or blisters to form in the medium. Tellurium and tellurium alloys have been chosen by many manufacturers for the thin film because of their low melting points and high sensitivity.

In other systems, an irreversible phase change is used to provide a change in the index of reflectivity of

the medium at the point where the laser strikes. In this way, the reading laser may differentiate between data. Some systems use a thin metallic recording layer which changes its physical property from amorphous to crystalline when it is thermally heated (to approximately 170 degrees centigrade) by the writing laser. The phase transition triples the reflectivity of the recording layer at written spots, thus allowing laser reading of the data. In some prototypes, a layer of antimony-selenium has been employed, evaporated onto a hard plastic disk substrate.

An alternative to metal film is the use of polymer dye binder bi-layer media. Colored dyes in a plastic medium over a reflective material are written with infrared light and read with red light. Unlike metal film disks, polymer dye technology can use a flexible substrate.

Write-once media are in relatively wide use outside the audio industry. Computer applications have been successful, leading to dramatic cost reductions. The recent joint announcement by Philips and Sony that a write-once optical disc format, based on the compact disc format, has been established, will certainly speed acceptance of write-once media in the audio industry. Sony and Studer (through its agreement with Philips) will soon unveil the first dedicated audio recording optical disc system with write-once technology.

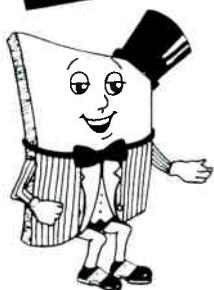
Of course, for some applications, the advantages of write-once permanence are negated by the need to erase and re-record. For example, any multi-track optical disk recorder would require full erasability. Again, several technologies present alternatives. Perhaps the most intriguing is magneto-optical recording (for political reasons sometimes called "optically assisted magnetic recording"). Magneto-optical recording combines the erasability of magnetic medium with the non-wearing, high-density advantages of optical recording.

A magnetic field is used to record data magnetically, but it is much weaker than conventional recording fields. By itself, it is too weak to reorient the magnetic particles. However a unique property of magnetic materials is utilized: as they are heated, their coercivity—the field strength required to bring a saturated tape to erasure—suddenly decreases. Specifically, at

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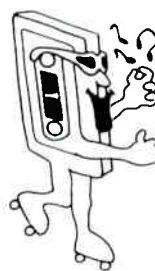
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their curie temperature (about 200 degrees centigrade), magnetic particles are easily oriented by a weak field.

A laser beam is used to heat a minute spot of magnetic material to its curie point. Only those few particles heated by the finely focused laser beam are affected by the magnetic field from the recording coil, and a very high density recording results. After the laser pulse, the temperature decreases, and the data is stored in the magnetic layer.

Data read-out utilizes the Kerr (sometimes called the Faraday) effect which describes the rotation of the plane of polarized light as it passes through a magnetized material. Using the effect, the reverse-oriented particles will reflect laser light differently than the unreversed regions. To read the disk, a laser is focused on the disk and the angle of rotation of its reflection is monitored. An analyzer distinguishes between rotated and unrotated light, and converts that information into a beam of varying light intensity. Data is then recovered from that modulated signal. The intensity of the reading laser is much lower than the recording laser so the recorded magnetic information is not affected.

To erase data, and rerecord, a reversed magnetic field (in the same direction as the original recording) is applied to the disk along with the laser heating spot, and new data is written. Both operations can be accomplished in one pass, as with conventional magnetic media. A magneto-optical recorder could be made to play back conventional CDs as well.

Other erasable optical disk systems have been developed. Some systems use phase change technology similar to that used in write-once systems; materials which exhibit reversible crystalline to amorphous phase change when recorded at one temperature and erased at another are used. Typically, a high reflectivity (crystalline) to low reflectivity (amorphous) phase change is used to record data, and the reverse to erase. A tellurium suboxide recording layer, alloyed with germanium, indium and lead, have been developed. Tests indicate that over one million erase-rewrite cycles may be obtained. By simply increasing laser power, permanent recording

may be accomplished.

Other types of erasable optical storage technologies include copper sulfate on glass, organic dye techniques, cryogenic frequency domain storage, surface texturing techniques, and spectral-hole burning in crystals.

Other optical systems offer alternatives to a disk format. For example, card systems using an optical card the size of a credit card have been developed. A laser beam is used to retrieve information, but there is no need for a mechanical pickup or disk transport. The beam simply shines on the card face, electrically deflected from one location to another. In short, it is a storage system with no moving parts. For greater storage density, it may be possible to encode information on various layers of the card; the laser is simply focused to different data depths to retrieve the appropriate information. With such a storage system, the reduction in size, weight, current draw and cost would be tremendous.

Digital optical tape is also being developed. Although lacking random access, it yields very fast retrieval time, and may be useful for archival storage of extremely large amounts of data.

Whatever the format, optical storage promises to surpass the performance levels of both analog and digital magnetic tape, or disk. Optical disk technology provides data reliability and longevity, large storage capacity, low cost per bit, removability, no back-up needed, recordability, no medium wear, and ability to mix digital audio data with video, control and time code. Certainly optical storage is an excellent complement to workstation technology, offering all the capacity and speed those systems require, particularly for large capacity multi-track recording. In comparison, magnetic recording is an old technology, showing its age. Optical recording is a new technology ready to compete. Over the coming decade, any and all users of magnetic media will have to evaluate their recording technology in light of optical recording. ■

Ken Pohlmann is an associate professor of music and heads the music engineering program at the University of Miami in Coral Gables. He is author of Principles of Digital Audio and The Compact Disc Handbook, and a consultant to the digital audio industry.

THE ADVANTAGES OF A STUDIO CONDENSER WITHOUT A SOUND OF ITS OWN



For all of its virtues, the typical studio condenser imparts a definite character to any recording. These impositions are often considered inevitable technical imperfections: accepted, ignored or tolerated by audio engineers.

Characteristic anomalies of condenser performance such as exaggerated high end response or distortion have even been rationalized as compensation for the high frequency losses inherent in typical analog formats. Nowadays, however, they are increasingly viewed as unnecessary intrusions in critical analog and digital recording situations.

A Condenser For The Digital Era: The Difference is Nothing. The increased dynamic range of digital recording is perfectly complemented by the self-effacing nature of the MC 740. The microphone is virtually inaudible. No coloration, no self-noise — no sonic footprint, not even a fingerprint. All

five of its pickup patterns are equally uniform, identically transparent. We feel your prior experience with large diaphragm condensers will confirm this as a unique achievement.

An Atypical Approach To Condenser Sound. Beyer has never relied on conventional technical solutions. A manifestation of this kind of thinking, the MC 740 eliminates the icy, strident quality typical of most condensers to reproduce voices and instruments with warmth and intimacy. It's no coincidence that these are characteristics often ascribed to our ribbon microphones.

The MC 740's freedom from exaggerated sibilance or graininess and its greatly reduced distortion are immediately apparent to critical listeners. European and American engineers have already commented on the startling accuracy of the 740, and the way it reveals the subtle differences between instru-

ments and ambient environments.

Accuracy And Versatility Without Compromise. Uniform (<2 dB; from actual machine specs, not just published specs) frequency response curves for all five polar patterns may seem a remarkable breakthrough. To Beyer, this is simply a design criterion for the microphone. Similarly, there is no contradiction in the fact that the 740 is exceptionally sensitive, yet also withstands extreme SPLs (up to 144 dB with the 10 dB attenuator in circuit).

Hear What You Could Be Missing. The MC 740's unconventional design offers a clear alternative. The best way to evaluate the difference the MC 740 can make is to work with it in your studio. To arrange a hands-on audition of this remarkable new audio instrument, contact your Beyer dealer or write us: Beyer Dynamic Inc., 5-05 Burns Avenue, Hicksville NY 11801.

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beyerdynamic

by Mel Lambert

MONITORING OPINION

It's surprising how our ideas about control room monitoring have undergone some drastic revisions during the past decade or so. Not all that long ago, recording and production engineers would have been satisfied with soffit-mounted enclosures which, more often than not, were supplied as part of the studio designer's acoustics package.

And, if we were concerned with checking how the same stereo or mono mix would replay over an "average" consumer's stereo system, we'd crank up the sound cubes mounted on the console.

All pretty familiar stuff, I would suggest, to those of us who have been around studios for more than a couple of years.

Earlier this decade, however, things began to change—possibly in reaction to improvements being made in the quality of domestic systems, not to mention the advent of the "Walkman" generation (members of which, if nothing else, were capable of hearing our mixes with a fidelity that often surpassed that of systems costing a great deal more than \$29.95 portable cassette decks and in-ear headphone systems).

At the heart of this change in "monitoring consciousness," I would hazard, was a fundamental reappraisal of the loudspeaker/control room interface. Or, to put it more prosaically, how the presence and location of these large cabinets was affecting the way we could critically analyze the material on our multi-track and stereo masters.

Also, as music tastes changed, and the multi-tracking process began to

offer additional creative possibilities (particularly following the introduction of later-generation digital transports), we needed to run at higher SPLs in the control room. The increasing popularity of synthesizers and electronic percussion—and their high-intensity, transient-laden waveforms—only added to the demands being placed upon the monitor loudspeakers and their companion amplifier racks.

The first attempts at enhancing the horsepower of monitoring systems involved splitting the program material into more frequency bands via a complex active crossover, and then optimizing the reassembly of the original signal being presented to the engineer and producer at the console from several discrete transducers.

The main problem with this approach, however, was that few system or loudspeaker designers knew enough about crossover technology, or the physics of multiway cabinetry. As a result, many of us began to wonder if this "big is beautiful" approach was the best approach.

I, for one, disliked intensely the harshness that these multiway systems produced, not to mention the mental gymnastics I had to go through to reassemble a reasonable stereo image from the time- and geometry-smeared waveforms emanating from these wall-mounted thunderboxes. Add to that the fact that a growing number of engineers and producers began to wonder about the shrillness of horn-loaded systems—particularly for the mid-range frequencies where, for ancient psychoacoustical reasons, our hearing is the most acute. It was time for a change.

Concomitant with the development of time-delay spectrometry and related techniques to measure the temporal as well as frequency-domain response of control rooms and studios (which led to the subsequent development of innovative LEDE® environments), we began to see two additional themes emerge.

First, alternatives to horn-loaded systems were developed which made use of cone and/or dome mid- and high-frequency drivers. Not only were such drivers capable of delivering a sweeter and less strident sound, they were more efficient at handling a wider range of frequencies. Consequently, we began to see the introduction of highly efficient two- and three-way systems for the control room which, in turn, simplified the task of the crossover designer.

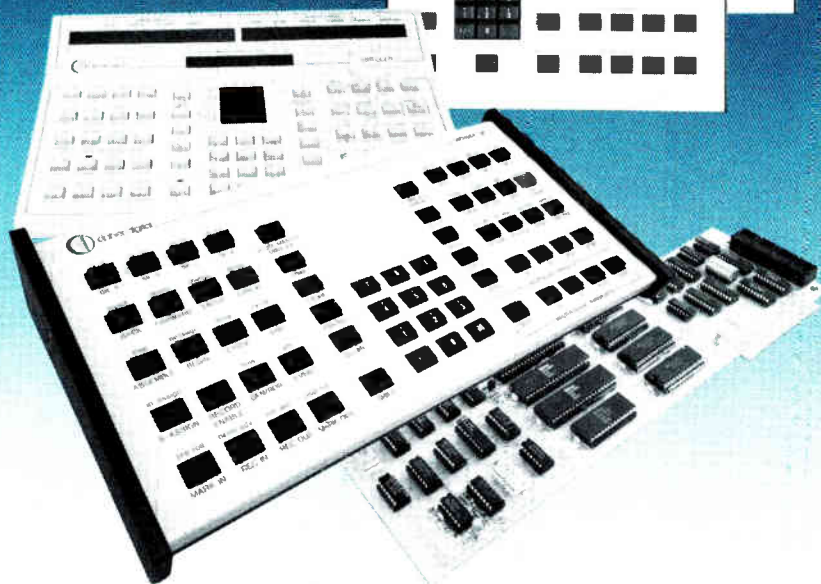
Around the same time these changes in design approach were percolating their way through the loudspeaker manufacturers' R&D labs, a few of us more adventurous types began to experiment with mounting high-quality, bookshelf-size speakers on the console meter bridge to see what we could achieve with near-field monitoring. Because though sense might be seen to prevail in the design of monitors, acousticians still considered the correct and appropriate place to locate them was either side of the control-room glass, aiming down like cannons at the center of the console. Not only is such an orientation unnatural—for my ears at least—it can easily result in multiple sound reflection paths into the monitoring position, to say nothing of non-linear buildup of frequencies (particularly the bass) as the room tries to sort out the excessive amounts of energy that have to be pumped into the room to achieve the desired sound-pressure levels.

And here we begin to see the Catch-22 of using multiway, soffit-mounted cabinetry. Because of the limited amount of real estate we have available for today's cost-effective production facilities, control room dimensions tend to be on the compact side. (There are obviously notable excep-

—CONTINUED ON PAGE 111

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by Stephen St. Croix

OPENERS

I have just returned from my traditional three-month pre-winter vacation (those of you who have been reading my ramblings for the last couple of years elsewhere may have noticed that I do not always return to the same magazine from which I depart). I make this move to *Mix* in search of a home with a bit higher gravitational reaction factor. I hope that my old readers will find me here, and that new readers will, well, find me.

Since this is my first column in this magazine, I will do something that I have not done in over 20 years (and that was in front of my school principal). I am about to voluntarily explain myself.

I am not really a writer. I am only a guy who writes, and I am the guy who writes this column. I try to write about the truth. This may be the truth as I see it, or as I think it will be. In this column, I talk occasionally about the past, sometimes about the present, but usually about the future.

My functions as consultant and manufacturer in this industry give me the unique opportunity to play with new toys even before they are new toys, or to try out the newest high-speed computers, or recording hardware and software. I get to find out what other companies are researching and planning way before you hear about it. I like this a lot.

Much of this information is very sensitive, so I can't talk about it, but the

rest of it may be hidden in some cryptic form or another in this column.

As a session player and engineer, I find myself exposed to some of the very top talent in the form of artists, producers and engineers. This is very important to me, as I am a firm believer in the concept that the only useful way to go through life is to spend as much time as possible with people who are better than you. How else can you learn why you mixed a single that hit Number Four in Europe for two weeks, while some other guy mixed a single that hit Number One on earth for six weeks?

In addition, these people are usually found in the top studios, so I have a chance to learn what trends are developing in music and actual studio techniques.

Sort of last but not least, I have a studio at Marshall that forces me into the perfect position to integrate all the stuff that I learn from the activities. I must actually run the place (or see to it that the people who do run it do so the way I think makes sense), and more than half of the yearly product that I produce comes from there.

We do everything from rock to movie scores and special effects, so we have essentially every computer and synthesizer there is, and all the processing and recording equipment that we want. This means I have to face all the same end-user problems that you do, but it also means I have the added

In this column, I talk occasionally about the past, sometimes about the present, but usually about the future.

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THE FAST LANE

opportunity to experiment with alternatives, and to talk about the results in my column.

If I see a problem that needs to be solved, I will talk about it. If I see an interesting trend or situation (good or bad) I will talk about that. If I see a new Harley that I like, I will tell you about that too.

From time to time it becomes clear to me that something interesting is going to happen. Perhaps this is a trend in hardware, a new recording format, or whatever. If it is significant, I will tell you about it.

One of the intriguing things about predicting the future, and what we will be playing with if we actually make it to that future, is that eventually the future shows up and everybody gets to see if I was right. Not that I am ever actually wrong; it's just that sometimes it is a little difficult to reach me on the phone. Any correlation between those particular months that it is difficult to reach me and the months

1) There is to me one real underlying Truth that pertains to the advancement of technology: advances in the state of Power and Performance (these can manifest themselves as added product features, size decrease, better displays, increased speed and so forth) double every year, and the price for any given state of technology halves each year.

2) There is yet another Truth that applies to the advancement of technology as we see it in any piece of gear with a computer inside (keep in mind this definition could include a cigarette lighter—really). Power is speed, speed is power. They are interchangeable commodities in a computer.

I will use a MIDI recorder as an example. Let's say that there is a real cool auto-correction function on your new MIDI recorder/editor that makes anyone who plays into it sound exactly like Stevie Wonder. You have just recorded a tune and requested the system to perform this auto-correct function. Now the computer has to totally restructure the song and display the

Today's digital technology is about the pursuit of Power and Speed and The American Way.

that I missed on the predictions is purely coincidental.

This is further aggravated by the fact that I have to write it months before you read it. So it is that the stuff that was coming then is here now. Not a very startling concept, but still, this is the system. My then is your now. What you are reading now, I wrote two months ago. It is not unlike my living two light months away from you.

I do not like explaining myself, and I have just done so much of it that I trust you have had enough too, so it is over.

So what about this month?

This month I will just hit you with a few general observations about technology as it applies to earth. Over the years I have developed two beliefs that I hold as truths, and I see them reconfirmed almost daily.

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Your computer may take 30 seconds to do this. The same basic system made much more powerful with the addition of a math co-processor may do this in only five seconds. But, the same old not-so-powerful (stupid) computer without the math co-processor, simply thinking faster (a higher clock rate), can also do it in five seconds.

Tighter, better written (faster running) software can also produce similar results. All three of these improvements used together can produce roughly the same feeling you got the first time you stepped off a high dive board into open air. It is that same rush of speed that helps keep it all moving along on those late nights in the control room.

This is what today's digital technology is all about: the pursuit of Power and Speed and The American Way. ■

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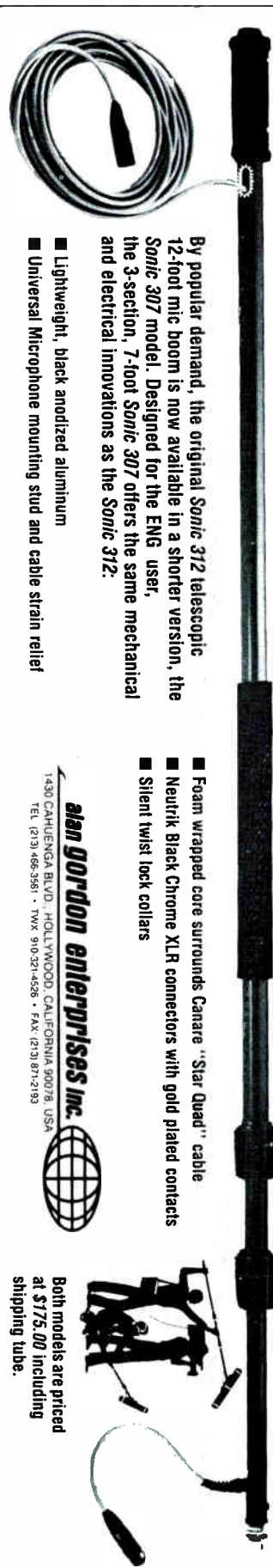
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WHO'S LISTENING TO WHAT:

MONITORING ENVIRONMENTS IN THE SOUTHEAST

by Linda Jacobson

Truth in monitoring is every studio's goal. A flat room sound without coloration is the golden ring on every recording carousel, and the basic strategy for grabbing it changes little from studio to studio. Almost everyone mounts their main monitors on each side of the control room window, above it, tipped down towards the listening position. Almost everyone sets a couple pair of small reference monitors on the console meter bridge. Despite these similarities (and the fact that physics laws don't change), there are as many "monitoring environments" as there are pairs of ears. Room size and personal preferences vary. Some studio operators track and mix entirely on the mains. Others mix with reference monitors only, turned down low and set close by. Some don't bother to run the mains at all, or if they do, it's just to hype the client.

Nashville

Nashville's Eleven-Eleven Sound uses a two-way Sierra system with Gauss

woofers and TAD drivers in their control room (a 48-input Neve V room with 32 track digital recording). John Abbott, studio manager, says, "We went in with a TEF analyzer to find weaknesses and reflections and as a result we acoustically treated the ceilings and walls. At the listening area, you don't have reflected sound, just the sound from the cabinets. The cabinets are flush-mounted; we used 3/4-inch hard rubber insulation surrounding the entire cavity, to isolate from the wall. It's a very true system." Evidently the labels agree. Eleven-Eleven has been recording R&B, rap and country records (George Jones, Barbara Mandrell, Lee Greenwood) for the majors.

The Sierras, Abbott continues, are "amplified with a MacIntosh 2500, and BGW 250 on the high end. We also added the time-delay Rane crossover. It really sounds smooth. We still have White EQs on them, but we don't have to EQ that much—it's mostly a cut situation.

"For reference we have the Yamaha NS10s and we'll also put up Tannoys, whatever clients want. The Neve has

three speaker selects, so you can set up two extra sets of monitors." People do bring in their preferred speaker—Abbott sees Tannoys, Fostex, B&Ws, and occasionally the larger Auratones. "But the Sierra has a very flat response, it's not a hyped sound. Basically what you hear in the room, you can take out with you."

The year-old 16th Avenue Sound offers an SSL main room with 32-track digital recording—and a monitoring environment in transition. Studio manager Barry Sanders explains, "The control room is large and we've had trouble getting an SPL level to make most engineers happy. We've had B&W 808 speakers which are good, but we've had problems with their application in the room. They're not mounted in the wall; they're suspended and can move, and that's a problem. We have a large glass area that clients love, but which makes it hard to pedestal-mount the speakers—that's why they were designed to fly. So the cavity below the speakers causes phase problems on the bottom end.

"These monitors sound good in other applications, but they're not getting a good rap on the street just because they're hanging there. So I've listened to many different monitors in there. I want to make some changes. That's where the Tannoys come in," says Sanders. "We're going to mount Tannoy FSM-U's in soffits. I'm hooking up with a designer for the soffit design and room changes."

For reference, Sanders says 16th Avenue Sound uses "the old stand-by NS10s, B&W DM100s, and Tannoy SRM 12Bs. The NS10s stay in the A room and no matter what room people use, they always check things on the NS10s."

Despite monitoring hassles, 16th Avenue Sound has had no trouble attracting name clients. This past year they cut tracks for Crystal Gayle, Reba MacIntyre, Hank Williams Jr. and Emmylou Harris. Sanders also notes they've done jingles for out-of-town clients and will do more.

Also in Nashville is the world's first 20-cycle mix room, at Masterfonics, offering "the big vertical Kinoshita monitors, which you can only get if you have a Tom Hidley room," according to chief engineer Milan Bog-

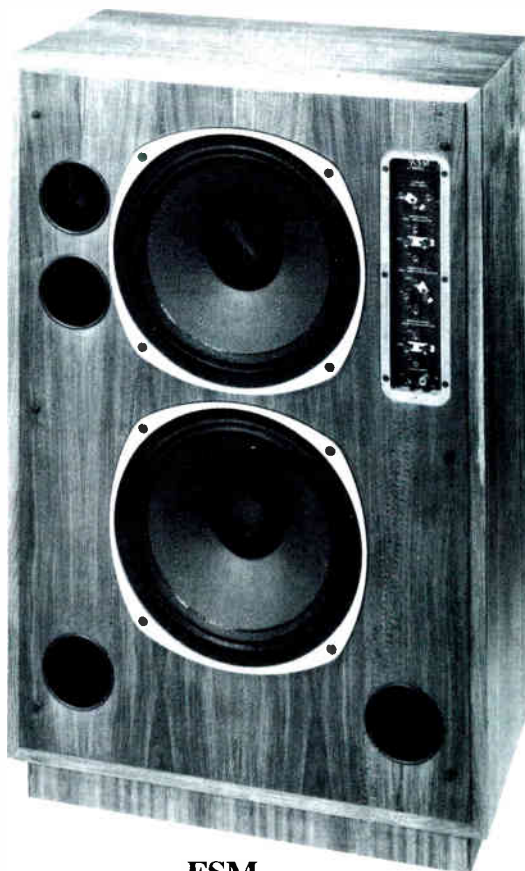


The control room at New River (Ft. Lauderdale) is equipped with Meyer 833s, Yamaha NS10s and Auratones.

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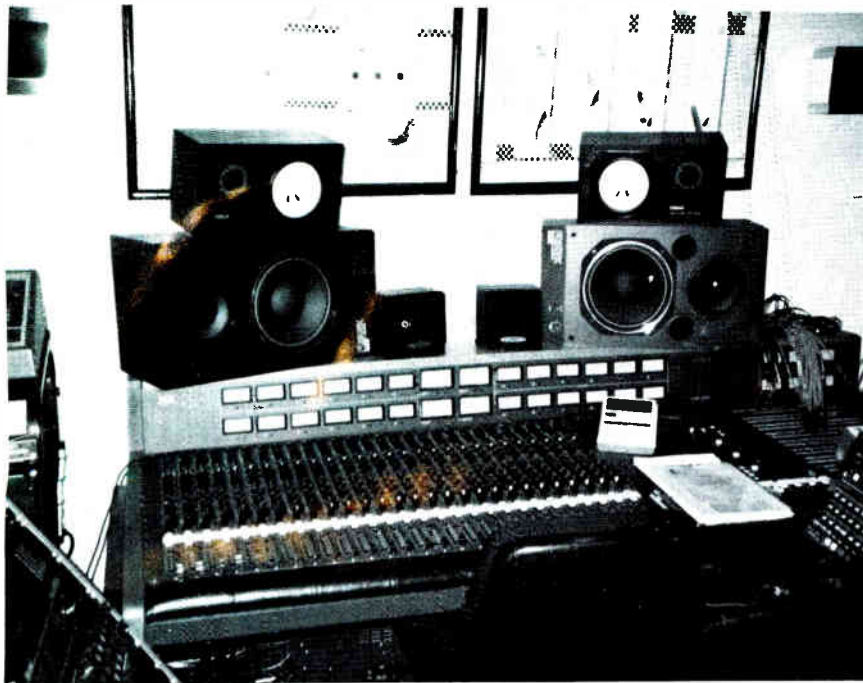
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At keyboard-laden Westpark (Nashville), Fostex, Yamaha and Auratone speakers enable easy A/B/C listening.

dan. "We have Kinoshitas in both disc mastering rooms and in our main mix room, which has an SSL. The first album we mixed in there, *Hank Junior Live*, just went gold."

The mix room, explains Bogdan, holds 20-cycle monitors, and both cutter rooms have 28-cycle monitors. "They're all powered by FM Acoustics mono amps. There's no EQ in any of the rooms—it's a mechanical high-level crossover that takes about 3,000 watts per crossover. The soffits are fiberglass-reinforced concrete, and the speakers are flush-mounted in concrete with a hard-wood finish. We don't have a window, but the speakers are mounted where it would be. They're about 14½ feet from the listening position. It's quite a large stereo spread because our control room is humongous. It has to be, to develop a full 20-cycle wave in there.

"Tom Hidley rebuilt the control rooms at Sound Stage and Emerald with the same Kinoshita monitors. Everyone's got used to those. It's the first time in Nashville in many years that we've used the main monitors for mixing. Some people still bring their NS10s and by the end of the first day, they're always on the big monitors. Several engineers have been bringing in Tannoy BSB 10s. They start projects where the monitors aren't accurate and use BSB 10s, then bring them here to have a reference point. So we're also installing them."

The Kinoshitas can be listened to, says Bogdan, "at unbelievable levels. The main comment we get is that

your ears aren't ringing after working 12, 14 hours. Another comment we get is that no matter where they take the mixes, they sound like they did in that control room. We get mixes into cutting rooms where the EQ done is a half at 16, or even no EQ, done right to disc. The combination of that monitor, the power amp and the room is very transparent and accurate."

The remix room at Master Mix was designed by Neil Muncy, who selected Claude Fortier State of the Art monitors. The all-digital room holds the only Calrec UA800 console in the country, according to studio manager Hank Williams. Regular clients are the Atlantic/America and MTM labels, Billy Joe Royal, Earl Thomas Conley and Holly Dunn. "Muncy doesn't like horns—this is an all-cone system," says Williams. "He built the room around the monitors, so there is no EQ on them.

"When we began construction," details Williams, "a hook was located at the listening position and a plumb line hung there during the entire construction. The monitors were located at exact positions off that plumb line. We built isolated concrete pillars through the floor, and the monitors are on them inside the wall, flush-mounted. Amplification is from six Hafler DH500s that Muncy modified when he did the final room tweaks. You can enjoy your music at a low level just as well as you can knocking yourself in the dirt. It doesn't feel like work.

"Our clients use the main monitors

80% of the time, and NS10s when they want a smaller speaker. But people don't do that very much," Williams notes. "Normally the NS10s are not on the console bridge, because they throw a reflection in the monitoring field from the mains. They sit on top of our outboard equipment rack and people turn 90 degrees to their left to listen."

The monitoring goal over at Westpark Sound, says studio manager Tom Reeves, "was to duplicate the mastering lab as close as possible. My pet peeve is when studio monitors literally lie to me. We use three sets of smaller monitors set up for A/B/C listening: NS10s, which most Nashville engineers use, Auratones, and the monitors our engineers use the most, Fostex RM865s. The monitors sit on isolation pegs so the low end doesn't rumble through the console. We have EAW and Klipsch speakers too, but they haven't been up for a while.

"We've had the Fostex about six months and have had *very* good luck," Reeves adds. "We can go right to mastering. They are amplified with Yamaha and Crown amps, and Audioarts 4200As for EQ. The sound is real tight. A lot of studios in Nashville have the big UREIs and you can hit the 'hype' button at the end of the mix, but we do a lot of jingle and post work—most of those clients don't want to be hyped at all. They want it as flat as it can be so they leave with an accurate representation."

Memphis

One of the six prototype pairs of Westlake TM1 monitors, handbuilt in the mid-'70s by Tom Hidley, resides at Crosstown Recorders in Memphis. Crosstown is the first Neve room in town, and has a newly rebuilt control room. Owners James Craft and Greg Morrow enjoy finding and developing artists ("We like to help let the Memphis in them come out") and one discovery, Fire Choir, recently showcased for Atlantic and Elektra.

Craft details the life of the TM1s: "My father Howard Craft was a disc mastering engineer for Mastercraft, a subsidiary of Auditronics which in '74 was a Westlake dealer. Hidley was building rooms then and trying to get JBL to build a dual-15 monitor. JBL



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said there was no market for it—everybody was using a single 15 and a high-dispersion horn. So Hidley built his own three-way system. Audiotronics decided to buy one of his first sets for Mastercraft. The speaker has two JBL 15-inch 215Bs, a walnut Smith horn, and a JBL 2440 driver on the midrange. No horn on the high-end driver, just a short throat. They were passed on to me, and I recently had them brought back up to snuff—reconed the bass drivers and added new diaphragms to the high-end drivers.”

Tannoy FSM-Us were installed last spring at Cotton Row Recording, who hired Nashville designer Stephen Durr to handle the job. He added insulation inside the cabinets to tighten the bass, and took an unorthodox mounting approach. Engineer Eric Patrick explains, “We drilled holes in the cabinets and secured aircraft cable to them. Then we went up into the rafters and hung the speakers with three cable strands. They float, but are fixed in place, pulled back against the corners of the front wall. Then the room was tuned with a computer, so the response is flat out to 8k, with a slight roll-off at the high end, using a pair of White EQs. And for amps we use Yamaha 2201.”

Patrick adds, “We use the Tannoys

for mixing now—they’re like a giant pair of NS10s without the emphasis on the high end. You can cut for six hours, then mix for three without a break. Al Green did vocal overdubs with them, and thought they were great.”

Memphis’ newest studio is Kiva Recording, whose first session—for Carl Perkins—ran in October. Focusing on music recording (now working with Joe Walsh and Albert King), Kiva has installed JBL 4435s in their SSL and Harrison MR3 rooms, with JBL EQs in the former and White EQs in the latter. A machine room lets digital or analog tape and outboard gear be patched to either room. Studio manager/engineer Keith Seppanen likes their soffit-mounted JBLs, “but for mixing, I use the reference monitors almost exclusively,” says Seppanen.

“There are NS10M monitors on the meter bridges in both rooms,” he adds. “We try to keep the monitoring similar in both rooms, so you don’t have to readjust your ears. Another reason is that if you have one spare, you have spares for both rooms. Anyway, I only use the big monitors to worry about bottom end, and to blow people out when they want to hear something. Many people have a hard time relating to things when they’re

played soft, even though that’s the way it’s done in the real world.”

New Orleans

New Orleans’ mobile 24-track Pace Recording naturally handles much broadcast work, tending towards close-field monitoring on the road. “That type of monitor is what everybody seems to be mixing on these days,” says owner/engineer Glen Himmaugh. “So we use JBL 4311s as the main monitors. Those are real realistic, but also close to what somebody has in their house nowadays. The mains are directly above the console, a modified 26-input NEOTEK.

“The truck was formerly an insulated, refrigerated seafood truck with two inches of foam all around it,” Himmaugh explains. “We built a wall halfway down the truck, separate from the floor. So we have a center rack of equipment directly above the console, and the monitors are to each side of the rack, cocked in at a 30-degree angle, directly at ear level. The ear level splits between the midrange and the low end. You sit about four feet from them. They’re near-field, but we also have Auratones and Radio Shack Minimus IIs, a small bass-enhanced speaker, sitting on the console. We do

The new master recording process



the Neville Brothers and they're into heavy bass drums so we do a lot of comparison using the JBLs and the Auratones. Also, if it's going out on the air, you want to switch back and forth to make sure you're not being deceived.

"We did NPR's New Year's Eve broadcast with the Dirty Dozen Brass Band and Rockin' Doopsie & The Cajun Twisters," says Himmaugh. "The NPR guys brought in their own monitors. Since they're a network of independent stations, they exchange tapes, so they use one kind of reference monitor to standardize themselves. Between Washington, New York, Los Angeles and New Orleans, they all listen to the same small MDMs. We just put them on top of the Auratones, and used them instead of the JBLs. Also, the NPR job went out radio-only on satellite. We listened to it on a car radio, at the satellite truck, and at the remote truck, going back and forth to make sure it was OK. I was impressed by how finicky NPR was."

Atlanta

A year-old, "massively" amplified system designed by acoustician Bill Morrison works at the main Neve/Studer

room of Crawford Post-Production in Atlanta. Senior audio engineer Steve Davis tells us, however, "We built a shelf adjacent to the meter bridge to hold a pair of MDM 4s, which are used more frequently than the large monitors. From producer to producer, they're more of a known commodity. People don't worry about room acoustics interacting as much. And it lets the engineers monitor at a lower level and save their ears."

Each of the main speakers is comprised of JBL components—two 15-inch woofers, an 8-inch midrange cone, and a 2-inch dome tweeter, in rigidly mounted plywood cabinets with soundboard liner. Two Crown Delta Omega amps drive each woofer, one Crest 5000 drives each tweeter, and an SAE 2500 drives each midrange. "The total is about 6,000 watts. We have Rane EQs but we're using them switched out," notes Davis.

Crawford audio mixer Tom Race adds, "I tend to use the near-fields more than the mains, for fatigue reasons. But the big speakers are cool. They're like big cheerleaders. They have a lot of punch and definition, and the response is real reasonable. But we do a lot of work to picture and the monitors aren't very close to the

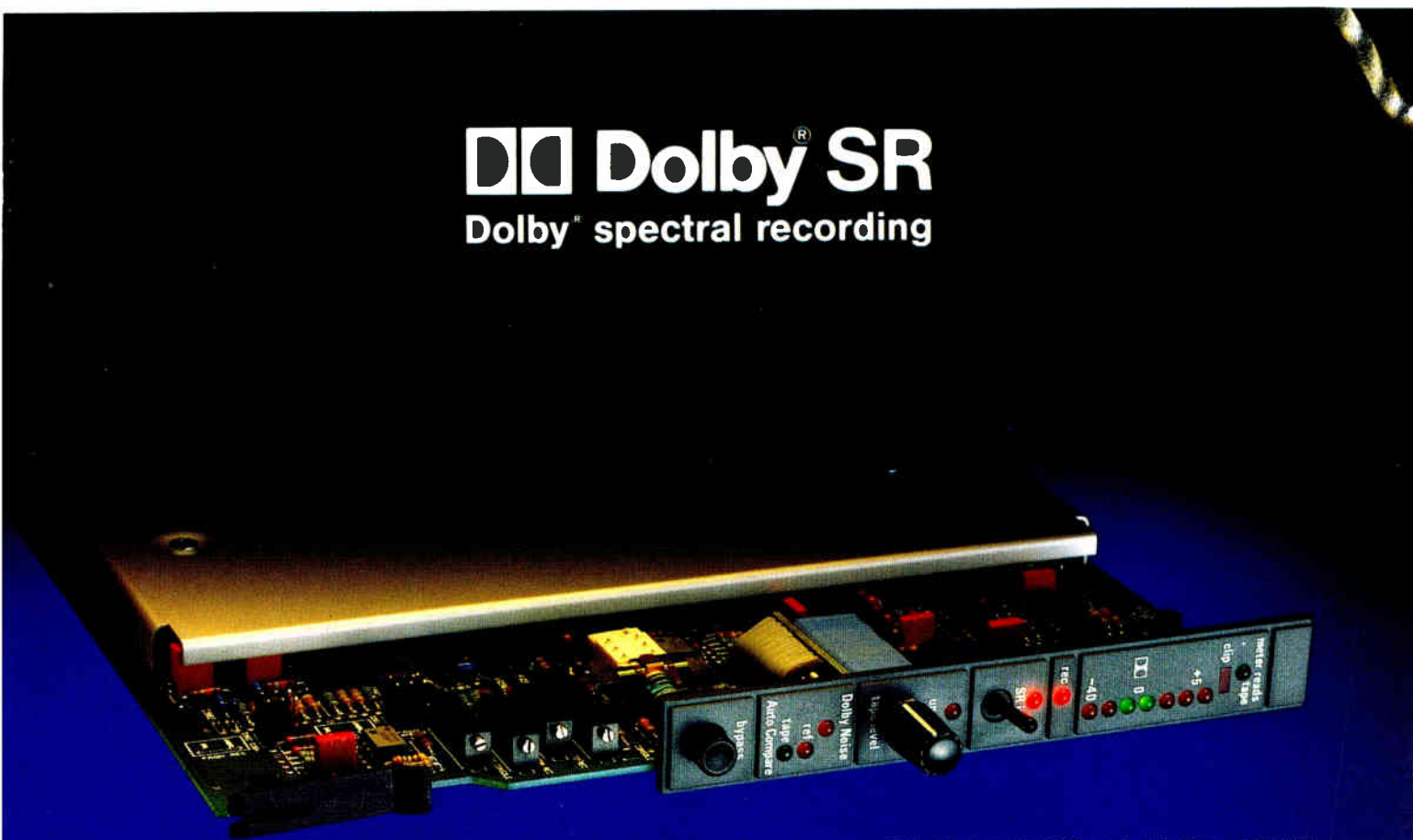
picture. The MDMs are adjacent to a TV monitor. We do use the big monitors when we use our Synclavier in tracking. But for mixing, I think most of us still rely on near-fields."

Mic and studio designer Tom Wright built his own facility, Cheshire Sound, a digital 32-track/analog 24-track complex in Atlanta frequented by Journey, Robert Plant, Sheila E, Georgia Satellites and REM. Its three rooms each hold a modified console: SSL 6000, automated MCI 428 and MCI 636C. All monitors there were designed by Wright (except the references—a set of NS10s in every room).

"The mains are cone monitor systems, no horns. I suspect they were the first large-cone monitors used in the country when we built them eight or nine years ago," Wright says. "We used JBL woofers, a JBL 10-inch midrange, a Philips 5-inch upper midrange, and a Yamaha tweeter. They're in ported cabinets made of plywood and particle board, about two inches thick." Flush-mounted in four inches of foam rubber, each speaker is driven by four amps, "those big new Yamaha 2002 amps. There's no equalization in any room. It's all in the crossovers, four-way systems I also designed.

"The monitors are very three-di-

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OR
CONSEQUENCES.

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TRUTH: A lot of monitors "color" their sound. They don't deliver truly flat response. Their technology is full of compromises. Their components are from a variety of sources, and not designed to precisely integrate with each other.

CONSEQUENCES: Bad mixes. Re-mixes. Having to "trash" an entire session. Or worst of all, no mixes because clients simply don't come back.

TRUTH: JBL eliminates these consequences by achieving a new "truth" in sound: JBL's remarkable new 4400 Series. The design, size, and materials have been specifically tailored to each monitor's function. For example, the 2-way 4406 6" Monitor is ideally designed for console or close-in listening. While the 2-way 8" 4408 is ideal for broadcast applications. The 3-way 10" 4410 Monitor captures maximum spatial detail at greater listening distances. And the 3-way 12" 4412 Monitor is mounted with a tight-cluster arrangement for close-in monitoring.

CONSEQUENCES: "Universal" monitors, those not specifically designed for a precise application or environment, invariably compromise technology, with inferior sound the result.

TRUTH: JBL's 4400 Series Studio Monitors achieve a new "truth" in sound with

an extended high frequency response that remains effortlessly smooth through the critical 3,000 to 20,000 Hz range. And even extends beyond audibility to 27 kHz, reducing phase shift within the audible band for a more open and natural sound. The 4400 Series' incomparable high end clarity is the result of JBL's use of pure titanium for its unique ribbed-dome tweeter and diamond surround, capable of withstanding forces surpassing a phenomenal 1000 G's.

CONSEQUENCES: When pushed hard, most tweeters simply fail. Transient detail blurs, and the material itself deforms and breaks down. Other materials can't take the stress, and crack under pressure.

TRUTH: The Frequency Dividing Network in each 4400 Series monitor allows optimum transitions between drivers in both amplitude and phase. The precisely calibrated reference controls let you adjust for personal preferences, room variations, and specific equalization.

CONSEQUENCES: When the interaction between drivers is not carefully orchestrated, the results can be edgy, indistinctive, or simply "false" sound.

TRUTH: All 4400 Studio Monitors feature JBL's exclusive Symmetrical Field Geometry magnetic structure, which dramatically reduces second harmonic

distortion, and is key in producing the 4400's deep, powerful, clean bass.

CONSEQUENCES: Conventional magnetic structures utilize non-symmetrical magnetic fields, which add significantly to distortion due to a nonlinear pull on the voice coil.

TRUTH: 4400 Series monitors also feature special low diffraction grill frame designs, which reduce time delay distortion. Extra-large voice coils and ultra-rigid cast frames result in both mechanical and thermal stability under heavy professional use.

CONSEQUENCES: For reasons of economics, monitors will often use stamped rather than cast frames, resulting in both mechanical distortion and power compression.

TRUTH: The JBL 4400 Studio Monitor Series captures the full dynamic range, extended high frequency, and precise character of your sound as no other monitors in the business. Experience the 4400 Series Studio Monitors at your JBL dealer's today.

CONSEQUENCES: You'll never know the "truth" until you do.



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—FROM PAGE 35, WHO'S LISTENING

mensional," adds Wright. "They not only have an excellent left/right, but a depth I've never heard in any other set of monitors. There's a front-to-back sound that you don't get in others."

Florida

The 24-track Morrisound in Tampa offers two identical LEDE® control rooms, both containing soffit-mounted, UREI 813 Time-Aligned monitors. They're used for independent-label heavy metal music, audio post for video and industrial film soundtracks. Co-owner Jim Morris says, "Our rooms are large, and designed so we didn't need to EQ the monitors. I do roll down the top a bit on the speakers' high-frequency trim control. They're powered by Hafler amps strapped in mono, one per speaker. The speakers are shock-absorbed in the wall to even out the low end response. Also, it cuts the amount of transmission through the wall. The speaker's surrounded by foam and sitting in its own airtight cavity, on a spring-loaded cantilevered stand that sticks it out through a hole in the wall, which is a frame wall. We did a room analysis with RTA, and made sure we rolled it down above 8 kHz, about 3 dB per octave, so it's like 3 dB down at 16 k.

"We also have Yamaha NS10Ms with the tissue paper modification," adds Morris, "and Auratones. We can haul out E-V Sentry 100s, EAW MS-50s, or JBL 4311s. For the most part we use the Yamahas, but if I've been doing a mix with them for a few days, I'll switch out references. I put up Sentries. We also have two MIDI studios, one with a Synclavier and UREI 809 monitors and one Macintosh-based room with Sentry monitors. I go in there to listen to cassettes, too."

New River of Fort Lauderdale handles mostly music recording (Jimmy Buffett, regional artists), as well as post-production for commercials and movies. Chief engineer Dale Peterson says their engineer clients chose the mains, going for Meyer Sound 833s. "Meyer is known for live sound stuff, but we tried these speakers and our engineers were really happy with them." The Meyers, with the help of advice from John Meyer, were installed in a 48-track Studer/Neve room (New River is now adding a small MIDI room).

"We do run a bit of EQ on the Meyers, roll off the high frequencies," says Peterson. "We find them to be a bit

too bright for our room. There's a little bass EQ too, because of room problems, not because of the speaker—minor stuff, 1 and 2 dB. We use White passive EQs, cut only, but not much. The monitors are mounted away from the wall, out about half their width. Meyer Sound recommended we not flush-mount them, because the bass couples and gets colored too much. We also have another set of mains, but no one's requested them in three years, since we got the Meyers.

"For reference we use NS10s and Auratones like everyone else, and switch between them. We drive the NS10s with a stereo Acoustat TNT 200, about 200 watts into each speaker—but we don't turn them up *that* loud. The mains amplification is a bit different," notes Peterson. "All our amps are Acoustats. John Meyer recommends you use a large amp on these speakers. Our Acoustat TNT200s were rewired for mono by the designer, Jim Strickland, so they put out about 700 watts each into each speaker.

"We found the Meyers to be fairly accurate for mixing," Peterson adds. "If anything, you would describe the

speakers as bright in the room. That's why we EQ them, to take out some brightness so people don't complain or make dull records."

Miami's Criteria Recording Studios has five studios—one of their monitoring goals, says chief engineer Andy Pechenik, "is for our two SSL rooms to sound the same, kind of an audiophile sound." This past year Criteria worked on music and video projects ranging from Barry Manilow to Judas Priest, and handled *Miami Vice* and *21 Jump Street* voice-overs. The studio also served as a set for a *Miami Vice* episode starring Sheena Easton.

Pechenik reports that both SSL rooms and one MCI room use Time-Aligned mains—speakers, crossovers and cabinets custom-designed by Ed Long. "It's a three-way system with a passive crossover in the top end, and TAD and custom midrange components. John Storyk designed the rooms with soffits mounted in cement, back against the wall, in an enclosed cavity. We have UREI 6500 amps on the bottom end, and APT-1s bridged in mono on the top end. We don't use

—CONTINUED ON PAGE 204

What's New in Studio Monitors

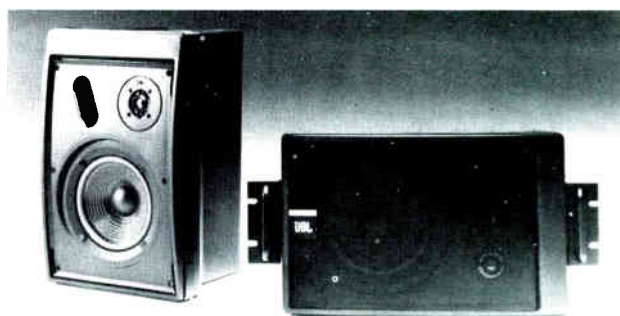
The art of studio monitor design and manufacture is a continually evolving science, combining the latest in transducer technology with recent advancements in acoustics, filter and even amplifier designs. With a large number of new monitoring products being unveiled in the past few months, it is obvious that interest in this area remains at a very high level, from both users and manufacturers. We decided to take a closer look at a few recent product introductions and found a vari-

ety of different approaches to the subject of studio monitor design.

One trend which has emerged is the need for compact, accurate speakers for post-production and remote recording applications, and JBL's new Control 5 models seem well suited to the task. The Control 5 is a 2-way system containing a 6.5-inch woofer and the same one-inch HF driver used in many of JBL's larger studio systems. The speakers are magnetically shielded for use in close proximity to video monitors without causing picture interference and have a rated power handling capacity of 175 watts.

—CONTINUED ON PAGE 58

Control 5 studio monitor system by JBL, designed for post-production and remote recording.



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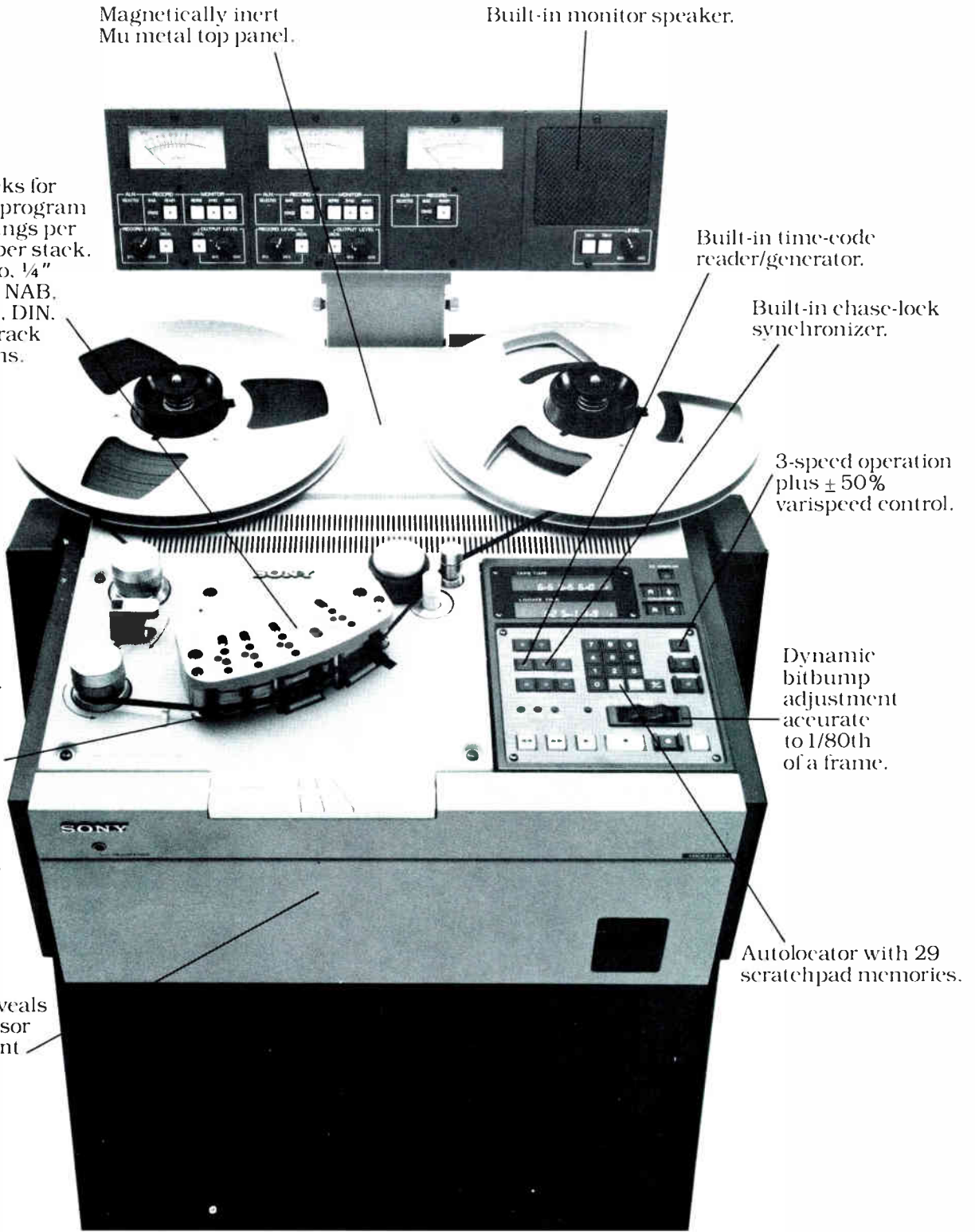
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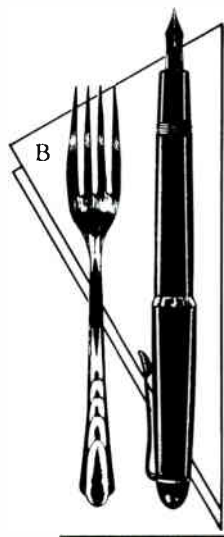
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by Mr. Bonzai

BILL PAYNE

LITTLE FEAT ON THE ROAD AGAIN



Although Bill Payne grew up in California, he was born in Texas. He could pass for a Southern gentleman, with a white suit, a loose black bow tie, Panama hat and a skinny cheroot. His words come out like a thin stream of smoky consciousness, with a steady shuffling beat.

Like the music of Little Feat, he has an easy-going confidence and encyclopedic taste.

Good news—we're about to hear the pitter-patter of Little Feat around the house again. The band that kicked ass so well, that plundered the treasure troves of musical booty, the group that stoked the furnace of American music, is on the road again.

Bill Payne hasn't been sitting on his hands since the band broke up long ago. On the road, and in the studio, he's lent his keyboard touch and writer/producer skills to the likes of James Taylor, Linda Ronstadt, Bob Seger, the Doobie Brothers...but read all about it.

We met at George Massenburg's

studio, The Complex, and found an empty overdub room for our chat. I don't know what the hourly rate is, but it was a true luxury finding a quiet spot in the life of Gentleman Bill Payne.

Bonzai: So Little Feat is having a reincarnation—what's the story?

Payne: Well, first of all, it shouldn't come as a big surprise—it's an honest move. We've been getting together from time to time, just to jam. We tried it about four years ago but there were too many people on the set and it didn't quite mesh out. It was a little confused. I thought at that time, when and if we ever do it again, let's just do it with the five of us.

Bonzai: You actually split from the group before Lowell George died.

Payne: Yes, I think my disillusionment with the group was the same as with any member of a band. There are times when you want to leave, when you want to work on your own. But the hold that a band has on you, psycho-



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logically and in other ways, makes it tough to make the break. I found peace within myself to say, "I've taken this about as far as I can and I want to do something else." I had no intention of reforming the band ever. We're not the Buffalo Springfield. We're not reforming this band without any thought of the weight that reforming carries with it. In other words, Lowell is quite a hurdle to overcome—let's face it. I thought long and hard about it.

If I can backtrack for a second, we got together a few years ago to jam and it didn't work out. Then we tried it a few years later with just the five of us and something happened. In recent years I've worked with some talented people—Bob Seger, Linda Ronstadt, Jackson Browne, James Taylor, Stevie Nicks—but when I sat down to play with the guys from Little Feat, I realized how much I could stretch out, and how good these guys are. Also, everyone has cleaned up their act, which is a good thing in this day and age.

Bonzai: Was the band still active after Lowell died, or did it suddenly stop?

Payne: As I said earlier, my involvement with the group was coming to an end. I felt an obligation to Little Feat and to Warner Bros. to participate in one more album. That record was *Down on the Farm*. We were about midway through the project when Lowell went out to promote his solo album, *Thanks, I'll Eat it Here*, when he died following a performance in Little Feat's stronghold, Washington, DC.

Little Feat was faced with whether or not to finish an album that had been chaotic and filled with frustration from the word go. We made the decision to continue. I felt like I might have made a mistake in letting the album out at the time. I wasn't sure it was one of the stronger albums we ever made and was forever questioning whether or not Lowell would have liked it. I really felt that *Down on the Farm* was not the type of musical statement Little Feat should end it on.

I proposed we do a parting shot with a conceptual album for our fans, complete with a booklet with photos and memorabilia. That album was *Hoy, Hoy*. I went out to Warners and told Mo Ostin I had an idea for a double record that would be part live; part bootleg (we used a track or two that

appeared on some bootlegs); some other tracks ("Rock and Roll Doctor" and "Lonesome Whistle") that had been lost for years and were found in a garage in a brown paper bag; one cut from the Lowell George tribute we did at the Forum (which had Linda Ronstadt singing "All That You Dream") and I finished by telling Mo we would like to record a couple of new tracks. Try and do that today!

That was in 1980 and I'm happy to say that we are back on Warner Bros. after all these years. Little Feat is comprised of the regulars: Richie Hayward, Paul Barrere, Kenny Gradney, Sam Clayton and myself. We've also added two new guys who aren't strangers. Craig Fuller from Pure Prairie League had toured with Eric Kaz on the same bill as Little Feat. Craig will be doing a good deal of the singing, along with Paul, and has contributed as a songwriter on almost everything we have going into the new album. He'll be playing guitar alongside another new member, who is an old friend of the group, Fred Tackett. Fred has written songs for Little Feat in the past: "Fool Yourself" on *Dixie Chicken*, and "Be One Now" on *Down on the Farm*, and is one of the finest guitar players you'll ever want to hear. Fred and I have done tours with Simon & Garfunkel and recently, Bob Seger.

Bonzai: How did you get started in this business?

Payne: I've been playing in bands since I was 15. I did my first recording session around '67—some psychedelic record. I joined Little Feat in 1969, and my first paying session was with a group called The Fraternity of Man, for their second album. From there, Lowell aided me in getting a couple of other recording gigs with groups like the GTOs (Girls Together Outrageously), which Frank Zappa produced.

It just kept blossoming. There were several other artists: Nolan Porter, Judy Mahan, and some bands that Little Feat and I were collectively involved with. I guess the first major group I recorded with was the Doobie Brothers, who were not at the time a major act. I played piano on "China Grove."

Bonzai: Could you name some albums that you look back on fondly?

Payne: The Little Feat records, the Doobie Brothers albums, and certainly Bonnie Raitt—all of her records.



There's Emmylou Harris, Nicolette Larson, Bob Seger, Jackson Browne, Linda Ronstadt. I enjoyed playing on an Art Garfunkel album called *Breakaway*, and working with Steve Cropper on *The Blues Brothers*.

Bonzai: Has there been anybody in your development as a musician that has affected you powerfully?

Payne: Certainly my first teacher, Ruth Newman, up in Ventura when I was a kid. She passed away a few months after I stopped taking lessons.

Lowell George was a second person that influenced me quite a bit. The similarity of circumstances and death bothers me a little, in that I had just left Little Feat a month or so before Lowell died. Even at the time of the split we had a good understanding, and Lowell wanted to keep the option open to have the band continue. We had several long talks before the departure. I mean, we split up so many times—it was absurd. But I knew what I wanted to do and talked it over with the band for several months. I didn't just walk out and leave everybody unprepared.

I'd say that Lowell and Ruth were the two that inspired me the most.

Bonzai: Little Feat has a legendary status, but you were never a commercial success.

Payne: Right.

Bonzai: What was the key to the group's hold on their audience?

Payne: Well, I think with any group that has enigmatic qualities within the aspects of "cult" status, there is a feeling in the audience—"Hey, I know something that the rest of the world is

not hip to." There's a pleasure in turning people onto that type of thing. The fact was, from the live standpoint, when you measured our group alongside our records, you were in for a surprise every time you saw us. On a smaller level, it's like these Grateful Dead concerts where you go, "What's the ticket with these guys? What's the pull?" For the fans, it's an event. For people who came to see Little Feat, they didn't know when we'd be back in their town. I think as we got into mid-career and we started to overtake the cult aspect a bit in sales and other areas, there was still an infrequency in our touring that kept people in a "let's wait and see what they do next" attitude.

Bonzai: What can we look forward to in the future?

Payne: We've written about 15 songs and are rehearsing them for a mid-February start of what will be our tenth album. We'll be recording at The Complex with George Massenburg. A few of the songs were more or less begun on Bob Seger's tour. I documented some grooves on a Yamaha QX1 sequencer using a DX7 synthesizer and an RX11 drum machine.

From a writing standpoint, you go off on your own, but you're conscious of who's out there—whether it's Randy Newman, Donald Fagen, Paul Simon, or in our case, the best of Little Feat. I felt in trying to put our group back together we had to measure up, in particular, to our past—more than anything. Little Feat was never a band to adhere to any rules when it came to writing. It's all just music, and our tastes are eclectic, to say the least. I think the thread through our music—or certainly one of them—is our rhythm section. There isn't another band in the world that can play like these guys.

Bonzai: Are you the main writer in the group?

Payne: I'm the main instigator. To say that I am the main writer would be a fallacy. We did an experiment. Paul Barrere, Craig Fuller, Fred Tackett and I sat down in a room and gave it a shot. We came up with a song that is autobiographical for the group, called "Hangin'" on to the Good Times." I think our fans will really enjoy the tune, because there's a lot of inside information. There's a line about be-



Little Feat, circa 1975 (top to bottom): Richie Hayward, Paul Barrere, Lowell George, Bill Payne, Kenny Gradney and Sam Clayton.

ing "rained out of an indoor show," which actually happened in New Orleans some years ago at a place called The Warehouse. We were supposed to play, but there was about three inches of water on the floor. The promoter still wanted to hold the gig but we said, "Uh, no thank you." We had to bail out on that one.

We also make a statement about why we got back together. We couldn't get away from where we came from—not that we wanted to. Whenever I went out to play with Seger, or James, or whomever, I carried the baggage of having been with Little Feat, as did Richie Hayward with Robert Plant, Sam Clayton with Jimmy Buffett, Kenny Gradney with Mick Fleetwood's band The Zoo, and Paul Barrere with The Bluesbusters.

When we finally got together, the

spark was still there—well, we'll see what people think—but I felt like we had what was needed to say something. That's the only reason why you should do anything in this arena. I felt the platform was there and we're doing the same things we did before. We don't have any rules about what we play, or subject matter. It's all music, and that in itself is unusual. There will be a couple of familiar signatures for people that enjoyed the group before.

Bonzai: When do you expect to get the album out?

Payne: I hope for sometime this summer. Our first date is in New Orleans at the Jazz & Heritage Festival on April 30.

Bonzai: So it's happening quickly.

Payne: Yes, but it's been in the plan-

ning stages for a year and a half. I can assure you that I've thought carefully about what we're doing in terms of the legacy. There's no way I want to step on that—I want to add to it.

Bonzai: You just left a meeting with Peter Asher?

Payne: Yes, Peter Asher manages the group, and also the production partnership I have with George Massenburg, in conjunction with Russ Kunkel, called Filmrocks.

We were involved in the Mike Nichols film *Heartburn* as the production team for Carly Simon's songs, and we arranged her music to fit into the score of the movie behind the action of Jack Nicholson and Meryl Streep. We also did a film which I had a chance to score, *Smoothtalk*, with Treat Williams and Laura Dern. James Taylor, who contributed some of the songs to the film, and was originally asked to score it, convinced the director, Joyce Chopra, and the producer, Martin Rosen, to let me contribute my own music. Filmrocks' first film was *Certain Fury*. While not the best film ever made, I can tell you we treated it as if it were *Gone With the Wind*.

Bonzai: What type of a person is Peter to work with?

Payne: He's extremely intelligent, for one thing. There's an aura about him. He's a pretty shy person and keeps to himself. One of the reasons I wanted to have him work with us was from a business standpoint. And as a producer he can hear tunes and make the right suggestions.

Bonzai: Will he be producing?

Payne: Actually, he won't. I would like to have him in an executive production role. I felt it would be better if instead of being with us on a daily basis, he could pop in every now and then and give us an overall view.

In fact, his command of the overall view is another reason I wanted him. He represents George and me as a production team, which includes film work and production of different artists. We've produced Bonnie Raitt, Jane Weidlin, and just finished with Toto. I wanted someone to have an overall view of what Little Feat's schedule was, what George and I were doing. Basically, we're workaholics and love to be doing anything and everything. Peter is masterful at that over-

view, having handled artists like Linda Ronstadt and James Taylor. His catalog of artists is starting to grow, which is a good sign, because he could retire if he wanted to. He's genuinely involved with music from just about every aspect. He's the kind of person you want around you—he's vital, musically knowledgeable.

Bonzai: Let's talk about James Taylor. You've toured and also worked with him in the studio a lot.

Payne: First of all, it was a dream come true to work with James. Long, long ago, when the music business would get on my nerves, I'd take a long drive out to Arizona or Colorado and listen to James. There's pureness to his music I love, as with Steely Dan. We're all trying to entertain, but there's a realness to his music that I appreciate. James is a perfect counterpoint to what I am about to say.

There is something very bothersome about today's music/video consciousness. I hate the fact that we're up there as musicians and we're posing. It's like we're actors.

Bonzai: James strikes me as a quiet sort of soul, but also a playful person.

Payne: Oh, God yes—his live performances are certainly an indication of that. His band introductions are infamous. You know he's developed a whole new outlook on life over the past few years. Whatever he had going in the past, in terms of drugs, is totally gone. He's bounded past that. He's just a wonderful, alive human being. He's actually the first guy I ever saw that did a 180-degree turn. I've worked with guys like Lowell and John Belushi, and others—you see the patterns, but you just throw up your hands and say, "What can I do?" You can say things, but you can't save anyone.

Now there is a trend for people to change their lives around. James is the first guy I saw who did it. His inner strength is almost overwhelming. We wrote a song together for his new album. It's called "What the Heart Remembers." James is also a genuine performer and for my money, if he wanted to be the Bing Crosby of rock and roll, he could probably pull it off. There will always be an audience for him—for good music and good song-writing.

Bonzai: Do you enjoy touring?

Payne: Yes, I do. I don't need a steady diet of it. I don't need a steady diet of anything. After spending seven months in the studio with Toto, I'm ready to try something else.

Bonzai: Are you happy with the Toto album?

Payne: Yes, I expect that it's probably one of their best albums. It was hard work, especially for George Massenburg, and it was hard on them. I think my role was to keep fresh ears available.

Working with guys like Steve Lukather and David Paich and Jeff Porcaro, I came into this knowing that everyone keeps their own little checklist going. No difference from Little Feat. We were pretty much a closed society unto ourselves. I initially applauded Toto for their decision to bring in some outside ears. It was a gutsy call for them to make, 'cause bands that are capable of producing themselves loathe doing that sort of thing. They feel that if they've got an engineer, that's all they need. In certain cases, it's true. But often, a band can become a dog chasing its own tail. A band needs to be broken out of patterns, and reminded of who they are.

Bonzai: I'm sure a lot of people are curious about Linda Ronstadt.

Payne: Lowell had worked with her originally and it was because of that that she knew me. I actually started working with her in 1980. First of all, she's truly a song stylist. Her intelligence as an interpreter of songs is amazing. She's not only a brilliant singer, but also a brilliant businesswoman. As a stylist, she can sing country & western music, light opera, and now has released an album in Spanish, *Canciones de Mi Padre*.

Bonzai: Did you play on that?

Payne: No, but I played on the *Trio* record she did with Dolly Parton and Emmylou Harris. Her intelligence is in choosing a man like Nelson Riddle, in choosing the right players to do each record. There's an illusion to her—she's hard to categorize. I don't know of any other artist that is as chameleonlike.

Bonzai: Have you been to Japan many times?

Payne: I've been to Japan three times—with James Taylor and with Jackson Browne. I like working there a lot. I've

also done some recording there and worked here with the Japanese artist Akiko Yano.

Although we are linked electronically with the world, I enjoy traveling and finding out for myself the immediate cultural atmosphere. Just walking around Tokyo at night, you can go just about anywhere with a feeling of safeness. There's a cleanliness to the streets. I think it's doubtful that we will ever have that type of a life in America. The Japanese, as a group of people, have chosen to move in harmony with each other.

Bonzai: Any feelings about the meeting of American music and that of other countries?

Payne: What Little Feat is known for is an amalgamated sense of roots. For instance, we listen to jazz, which includes many styles, such as bebop. I'm not afraid to lift that type of thing and just throw it into a song, even though the rest of the tune may have nothing to do with it. It's a combination of styles.

Maybe you're playing a boogie and the next song is pure country & western—but the lyrics aren't pure country; they're something else. This is indicative of what America is. And maybe I've got some chords that are straight out of Aaron Copeland's "Billy the Kid Suite." We're taking from what we find in front of us.

The power of American music and its culture overwhelms those in other countries. I'd like to hear bands from other countries come up with material not unlike what Bartok and other people have created, drawing from their own culture and synthesizing it into their music.

Bonzai: Technologically, what tools are you using these days in your arsenal?

Payne: I have an Oberheim Xpander. I use a Yamaha DX7II and a TX816. I've been using a Roland acoustic electronic piano, the MKS-10. I use the Yamaha QX1 sequencer and an RX5 drum machine—strictly for notepad types of stuff, documenting tunes. And I use a Roland D-50 synthesizer. I've got a relatively simple setup, compared with a lot of people.

Bonzai: What music would you like played at your funeral?

Payne: "The Sounds of Silence," with

—CONTINUED ON PAGE 50

Patti Page, The Movies

AND MORE

When Tommy Sands left for Hawaii (see last issue) I wasn't sure what band I'd play with next. I jobbed around with the wonderful Vido Musso Band, backing Vido on various casuals (we referred to them as "casualties"). We worked places like the Slate Brothers in Hollywood and backed Don Rickles. (I used to laugh so hard that Don would look at me and quip, "Get a table, will ya Hal.") I also traveled with Vido to San Francisco to back Frances Faye, a very hip entertainer in those days.

Another great piece of basic training transpired with Vido and Frances at



by Hal Blaine with David Goggin

the infamous Facks Number 2 Nitery. Unbeknownst to me at the time, Frances had a way of throwing curves at drummers as part of her act. She would have the drummer set up very close to her and in the middle of whatever tempo we'd be playing she'd go off into some other tempo leaving the

drummer with egg on his face.

We rehearsed all sorts of tunes at her palatial mansion in the Hollywood Hills, but when it came to opening night I had to forget all of her arrangements. She immediately did her thing, going off into these other tempos. But I was on my toes and immediately noticed that every time she went into another tempo her right foot went to the sustain pedal on the piano. I was now ready for anything!

After we finished the first show, Frances called me into the dressing room. "OK pal, how do you do it? No drummer has ever done it before!" I started



Patti Page fronts her band (with Hal on drums) circa 1960.

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to laugh and asked her what she was talking about. "You know what I'm talking about!" she said, and started a rap about my ESP. She did a radio talk show the next day and talked practically the whole time about her drummer, the clairvoyant!

During the dance sets I was the singer in the band. One night a very nice gentleman and lady asked me to sit down and have a drink. I explained that I wasn't drinking because I was on medication for a sore throat. (That always works and no one is ever offended.) I ordered a tall orange juice. This guy told me how much he liked my singing. Something about his voice had a familiar ring. I introduced myself and

ble for Vegas to do a month at the Desert Inn. And how! I was to take Bobby Rosengarden's place with the Patti Page show, and I was thrilled. Bobby had gone back to New York and was making quite a name for himself in the Big Apple. Patti's manager Jack Rael was a sweetheart with a great broad smile; I think he liked my Jewish humor as well as my drumming. We became one happy family, traveling around the country for the next three years.

Patti was a little gal out of Oklahoma, one of 11 siblings. She was a real country girl, but Hollywood and her singing success forced her to grow up in a hurry. We rehearsed at her beautiful

my first wife, Lydia. Lydia was a beautiful 18-year-old blonde from New Orleans. I was now about 32 but the age difference didn't seem to mean a thing to either of us. I had been dating another blonde dancer at the Inn and she had gone to Reno with a dance troupe. During her stay at the Golden Hotel, there was a fire and she perished. I was devastated.

Lydia was a very dear friend of this dancer-ice skater and we had been casually introduced in Vegas. After the dancer's death, Lydia contacted me to find out what happened and we fell in love and married soon after. We adopted two wonderful kids, purchased a Hollywood Hills home and life was sweet.

After eight years, Lydia decided that there was more to life than living with a workaholic musician and she decided on a divorce. One year later while she was living in Long Beach, California, she took her own life. I immediately picked up our children, Michelle and David, and brought them back to their home.

During the years that I worked with Patti I usually came back to Hollywood between engagements and it was during these times that I became friendly with H.B. Barnum. H.B. was an arranger-composer who always had something on the fire. If it wasn't a night club, it was a private party at a ballroom, or a gig at an air base, or maybe just a backyard barbecue. He started using me in the studios doing demos and the like, and then moved me up to full-fledged studio drummer. I got to work with Sam Cooke and various artists of the day, and he gave me great opportunities to develop my studio techniques. It was wonderful hearing myself on playbacks and trying new things on different takes. Before long I began to discover what sounded best. By trial and error I got the studio experience I needed to make it into the front ranks of session players.

I was working with the Diamonds when I first met Earl Palmer. Earl was the King of the Mountain and I learned more from him than I could have learned from a music library. Earl had been Fats Domino's drummer and he had that New Orleans style down pat. He was doing most of the major rock dates in town and after a while he started tossing my name around and recommending me for gigs that he couldn't make. Before long, I was working with the best and meeting most of

As important as knowing the musicians was getting to know the popular contractors of the day, the guys that did all the hiring. They were the real bosses—they could make you or break you, and often did both.

he said, "This is Kathy and I'm Bing." Well the shakes took over and I was beside myself. This was my introduction to the famous Crosbys.

A few years later I recorded with Bing, doing his only rock record, The Beatles' "Hey Jude," with a great Jimmie Haskell arrangement. Bing even saw to it that we went overtime, a trick he used to do all the time. He would finish a take that would be great, look at the clock and see that there were only a couple of minutes left on the session. Then he'd rap a minute to the producer and say, "Let's do one more just in case it might be better." We'd start the take and that would run the clock a few minutes into overtime. Then Bing would stop and say, "Well let's forget it, I think the last one was the one." We all applauded.

When I finished the San Francisco gig and came back to L.A., I got a call from the great composer-arranger, Jack Elliot. I had never met the man but evidently he had heard of me or seen me, and he asked if I was availa-

Canon Drive home in Beverly Hills for a few days and this was my introduction to some of the nicest people in the business. Patti and her husband at the time, Charles O'Curran, were completely down-to-earth people; no Hollywood bullshit. Charlie was a choreographer at Paramount for years, and had the respect of the entire industry. He also had a great sense of humor.

His sense of staging was impeccable. Charlie hid an autoharp inside the piano so that at one point in the show the lights came down dramatically and Patti walked to the open piano and ran her fingers over the concealed autoharp as if she were strumming the regular piano strings as she sang "Danny Boy." Of course, the chords were all perfect coming from the autoharp, but the audience thought that she was doing it with the piano strings. You could almost see the teardrops falling as everyone imagined they were hearing an angel. What a show stopper!

During that Desert Inn job in Vegas I met the woman who I consider to be

the famous musicians in L.A. It was on Earl's recommendation that I started with the Tijuana Brass. That led to my first Record of the Year, "A Taste of Honey." As important as knowing the musicians was getting to know the popular contractors of the day, the guys that did all of the hiring. They were the *real* bosses—they could make you or break you, and often did both.

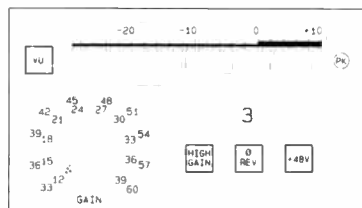
I had now begun to learn many of the lessons that relate to success in the music business. And I saw it many times—there are no losers in any business, just winners that give up too soon. This business is like any other. You must know your trade. You must study all aspects and be ready when your time comes. One of the worst things that can happen to people in any business is taking a major job when you're not ready for it, especially in the record business where time is money. Anyone can make a mistake, but when you make the same mistake repeatedly the contractors remember your name and there go your calls. Learn your instrument, study your reading and listen to everything you can. Learn every conceivable style of music because you never know what they're going to throw at you. And then make up some of your own—the stuff you really *feel*.

It was during one of my layoffs with Patti that Charles O'Curran called me and asked me to come to a meeting at Paramount. I entered the music stage and was ushered into a small room off the main studio. Sitting in the room were several Paramount executives. The only faces I recognized were Charles and Phil Kahgan, the musical contractor at Paramount Pictures for 50 years. He was the giant of giants among contractors.

A few years before on Tommy Sands' *Love in a Goldfish Bowl* film it had taken a lot of begging by Jimmie Haskell to convince Kahgan that I was in fact a drummer, as opposed to being an actor. After Jimmie convinced Kahgan, he reluctantly hired me and then, fortunately, continued to hire me for my entire career.

Charlie waved to me and pointed to a seat. I sat down and the speech began. "We're going to be doing a new film with Hal Wallis directing [pointing to Mr. Wallis seated front and center] and I want the best of the best on this picture. It's a very important picture and it might mean a lot of extra hours and a lot of extra work on your parts, but we want this picture to be

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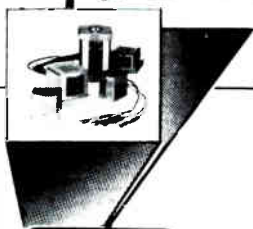
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mount. It's a young people's musical
set in Hawaii and I want you to meet
the star." And with that the star entered.
It was Elvis Presley in the flesh.

Working on an Elvis movie like *Blue
Hawaii* was a great learning experi-
ence for many of us in Hollywood.
Rock and roll had been infiltrating the
movie scene slowly, but surely. Pro-
ducers started using small rock seg-
ments as source music in order to keep
their films up to date. After all, rock
and roll was already a dominant part of
the American radio scene.

When I arrived at the Music Stage at
20th Century Fox, my drums were set
up near the back with one large micro-
phone in front of the bass drum. Obvi-
ously these recording engineers hadn't
been keeping up with the multi-micro-
phone techniques becoming popular in
the rock-oriented Hollywood re-
cording studios. While this barn-like
studio had hosted countless sessions
with the masters of music, things were
changing quickly in recording, and the
film studios were not keeping up.

We started playing the chart and be-
fore long the producer of the film came
out, complaining to the arranger that
the music didn't sound like what he
had been hearing on the radio. My
drums sounded like they were a mile
away. The producer then asked me
why they sounded so distant and I

explained what we had been doing in
Hollywood with multi-miking and baf-
fling off the drums for isolation, and so
on. He called a break and asked the
engineers to come down from the third
floor sound booth and to do what I
thought was best.

Well, I told them how in Hollywood
we put a mic in front of the bass drum,
and one on the snare, one on the high
hat, and one or two overhead. The
engineers threw up their hands in dis-
gust and told me I was nuts. "I'm only
telling you what's going on at the rock
studios in Hollywood," I said as the
contractor gave me a dirty look. I was
starting to think that I would probably
never get another call from 20th. All of
the band was sitting around watching
me dig my own grave. I was the new
kid on this block, and here I was telling
the biggies what I thought they should
do. The engineers screamed that they
didn't have enough lines or inputs to
mike a set of drums that way. Drums
were always in the background, back
in these days of 4-track and less.

Nonetheless, before long some elec-
trical people were called in, a few jerry-
rigged connections were made, and
some baffles were put in place. We cut
the tracks again and everyone agreed
they were perfect. After all was said
and done, I became something of a
hero there and got called back for many
soundtracks. ■

LUNCHING · WITH · BONZAI

—FROM PAGE 45, BONZAI

a KABC radio talk show in the background.

Bonzai: What was your most exciting
musical experience?

Payne: Performing in Amsterdam in
1974. The Rolling Stones, for the first
time in a long time, came to see a
group play. I couldn't believe that
those guys would do that for us and
that I was in the middle of it.

Bonzai: Did it boost your perform-
ance level?

Payne: Yeah, it did. There was a feel-
ing of having arrived. Hopefully there
will be a few more similar experiences
in the coming years.

Bonzai: What's the biggest mistake of
your life?

Payne: I've made so many of them,
it's hard to single out one that would
have made any difference. There are a

lot of major mistakes, but I believe that
they're supposed to happen. You grow
from mistakes.

Bonzai: Any advice for those aspiring
to a career in music?

Payne: Judging from MTV, I would
definitely suggest an acting course im-
mediately. Forget the music—that's
secondary. Deal strictly with percep-
tion—how you are perceived. If you're
perceived as a musician, then indeed
you are. That may not hold true for the
'90s, so as a hedge you might take a
few music lessons.

Bonzai: What would you do if you
lost your hands?

Payne: Use my feet. ■

*Mr. Bonzai, a 15-year veteran of the
music industry, is former manager of
a major Southern Cal recording stu-
dio, and author of Studio Life: The
Other Side of the Tracks (Mix Pub-
lications).*

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DAVID HOLMAN

L.A. PRODUCER BUILDS HIS DREAM STUDIO

David J. Holman started his career as an audio engineer. Through the mid-'70s and early '80s he recorded a consistent string of hits for Olivia Newton-John, including her platinum albums *Physical* and *Totally Hot*, and the platinum soundtracks to *Xanadu* and *Grease*.

Like other successful engineers before him, Holman gradually made the transition from engineer to producer/engineer. His credits as producer include albums with King Bees, Real Life, John Farnham, Bourgeois Tagg and Gregg Rolie. On the schedule are records for the Nelson Brothers (Ricky's sons), Real Life and a winter 1988 release for songwriters Beckett & Kipner.

Holman lives in a secluded hideaway in the legendary Laurel Canyon area in Los Angeles. In 1986, he moved his converted-garage studio from another Hollywood hills location to this spot. His studio now occupies its own freestanding building away from the house, tucked snugly against the hillside. Pity the poor guitarist who can't afford cartage—it is one precipitous climb to Holman's as-yet-unnamed studio.

The studio was built utilizing the extra-deep foundation. The ten-inch concrete floor supports ten-inch concrete walls, all reinforced with steel rods. The ceiling is made of 14-inch thick lumber, sloped and double-joisted, packed with fiberglass and topped with another thick layer of concrete to provide a high-mass, low-frequency absorber.

There are no parallel walls, though from the outside the building looks

like a white cube, 33 feet along its longest side. The landscaping is stylish Southwestern/Santa Fe, replete with cacti and a barren, Zen garden feel.

It was during the hectic days recording Olivia Newton-John that Holman concluded he had to have his own recording facility. "I was running around like a lunatic to every studio in town. I was so busy and so tired," he says.

But even more importantly, maintenance at these studios was, according to Holman, "very sloppy." At the time, there were only a handful of studios

David Holman

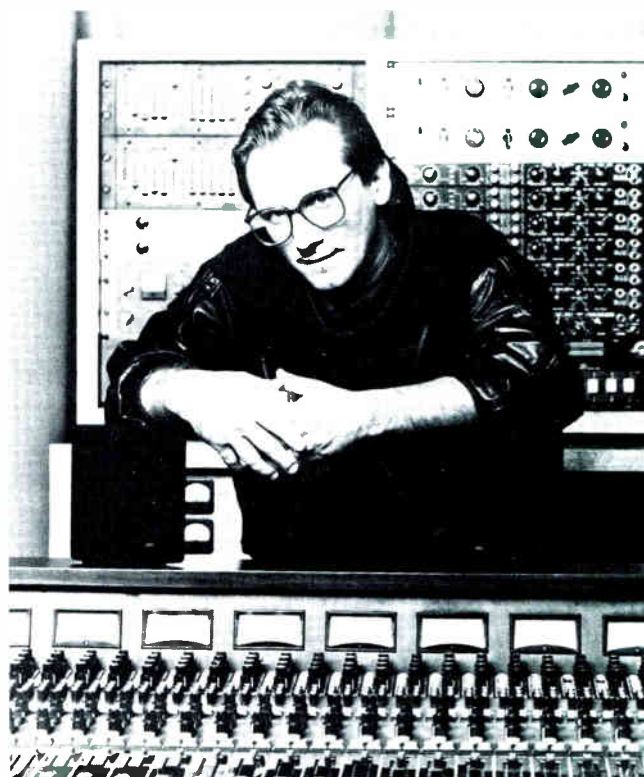


PHOTO BOSCO

in the front rank and competition was not so great. "Now," says Holman, "things have changed. The competition is such that if something goes wrong and somebody loses half a day, you're history. Now there are plenty of options in this town."

Another strong motivating factor in building his own place was his continuing drift away from strictly engineering and toward producing. "As a producer, having a facility became a real advantage. When I need a harmonizer, I've got four here. If I need any old outboard gear, I've got it all here. It's a great production tool."

Holman used the revenue from his work on *Grease* and *Totally Hot* to finance his first studio. He went on to record all of Olivia Newton-John's other big sellers like *Heart Attack* and *Physical* in his converted-garage studio.

He is a level-headed mix of audio fanatic and practical businessman. Holman has been an avid collector of vintage gear since 1968, and his new dream studio is a cross between a mu-

seum and a high-tech arcade. Beyond the convenience and consistency that having his own room provides, Holman has been able to sculpt a signature soundscape based on his growing intimacy with the room and the equipment.

"If you've got an idea in this room, you can just do it," he marvels. "There are seven chamber effects. There are sampling systems all over the place. Digital, analog, you name it. As a producer, the time you spend from the moment you get an idea to the time when you accomplish it, is sometimes very important."

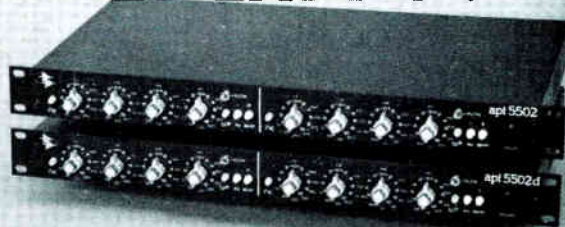
"Most studios today put their money into their walls and their console and their tape recorders. They really don't have the budget to outfit incredibly well. In actual fact, that's not probably a real wise thing for them to do, because everybody wants something else. This week, the Publison Infernal Machine is in, next week it could be the ADAP computer for digital recording. Next week somebody will use a Synclavier. It just changes and changes."

"For the studio owner, it's very difficult the way the competition is. The rates that could be charged ten years ago just can't be charged today," says Holman. After spending over \$400,000 for a good console, up to \$90,000 for an analog tape recorder (\$180,000 to go digital), Holman says a studio owner is hard-pressed to meet the bottom line. "And then people want your studio for 50 bucks an hour. That's really astounding."

Holman has equipped his studio with almost entirely customized gear. "I still use Stephens analog machines," he says, although he'll bring in a Mitsubishi digital "once in awhile." The electronics of both his Stephens 24-track and 4-track have been rebuilt.

"The console," says Holman, "has been custom-rebuilt. It goes through modifications on a yearly, even monthly, basis. Amplifiers in this board are eight months old. It's designed by Dave Bascombe and Harvey Rubens. Dean Jensen was involved with this console, as was George Massenburg. It's always being looked at and up-

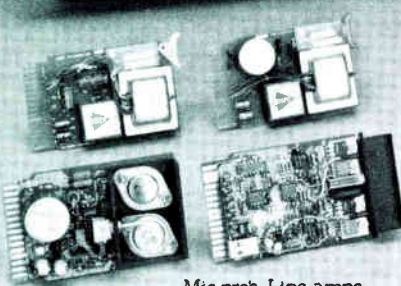
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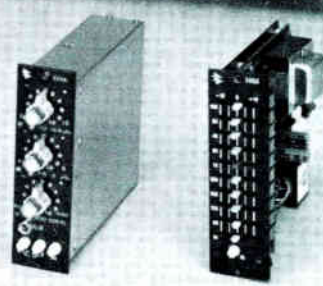
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dated." The desk is ready for grouping automation, which Holman will be installing shortly, as soon as he finishes the interface. He decided, based on his needs, to eschew fader automation.

"This board was designed to be as quiet and as fluid as possible and as non-coloring as possible while still remaining flexible. It's a 64-input console. It's got 18 sends per module. It is never at a loss for group muting. Almost everything that I produce, I mix here," says Holman.

Besides an occasional friend who Holman will let use the studio, the entire facility is reserved for his private production use. "The nice thing is, when I'm working for record companies, I can give them a budget and stick to it. But you've got to be careful about that: if you've got a budget of \$150,000 and you spend three years doing it, you're dead," he says.

Holman has an obvious fondness for valve-operated equipment. We asked him what a few of his favorite pieces were. "It varies from month to month," he says. "I'm kind of getting



Holman's KRK 4-way monitoring system, custom built by Keith Klawitter.

back into the Teletronics LA-2As right now. It goes around. I get into something, then I forget about it. I'm getting back into the Delta Labs Harmonic Computer now; things I haven't played with for awhile."

The control room is extremely open. The spacious design accommodates Holman's emphasis on the console end of things. With the exception of one small isolation booth for vocal and miscellaneous overdubs,

there is no "live" recording room.

Drums are recorded live elsewhere or sampled. If the samples already on hand are not enough, one of Holman's favorite studios around town will be employed to get the sounds. "I like the old big rooms," he says. "Although, I've gotten some really sensational sounds out of squashed little rooms, *a la* Westlake. My first inclination, though, is toward the big, big halls because most of the work that I've done has been done in rooms like the old RCA rooms or CTS in London. But sometimes with a small room, with the early reflections, you get a really great sound. You can hear the bounce."

He adds, "I like real hard floors. I'd rather have it all bouncing all over the place and baffle it and work with it, than to have a dead room that I'm trying to liven up." Right now, Holman's favorite haunts in L.A. for drum sounds include Power Tracks, David Kershenbaum's place, which used to be the old Wally Heider Studio D. He also likes Ocean Way.

The monitors in his home studio are KRKs, custom built by Keith Klawitter. It's a four-way system, needing 1,000 watts per side just for the woofers. The speakers are set beneath a pair of wooden arches filled with sand. Each arch weighs about one and a half tons. Each assembly is coupled to the floor and acts as a "wave guide."

Klawitter speaker designs are now fitted into Sound Castle, and three other systems are about to be installed elsewhere, according to Holman. "He [Klawitter] uses European speakers, pretty much," says Holman. "These are French woofers. They're pretty amazing. They deliver about 15,000

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Now you can make your 2-track machines synchronizer-ready for a fraction of the cost of a new machine. Otari's new TC-50 Time Code/FM Processor is primarily designed for the Otari BII or Mark III-2, but it is also adaptable to most 4-head-position 1/4" tape recorders.

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Gauss to the coil, which gives the option of using a very thin, light coil. So they have the speed and the accuracy of a 12-inch, but they have the air-push of a 15-inch," says Holman.

In addition, Holman uses a Klawitter-designed speaker that functions like the popular Yamaha NS10s. "The NS10 is a pretty good little speaker, but after working on it for a long time it tends to burn your top end off."

We asked him what he uses the big speakers for. "They're very accurate. They're wonderful to listen to. They have an incredible amount of bottom end, so we use them basically to hear what's going on with the bottom. And I do mix on them; they are clear enough to do that."

To power Holman's speakers, he employs Audire Amplifiers. He uses the Otez model for the bottom end. They are a locally-made amp that Holman claims have "tremendous amounts of power." Elsewhere, he's got Hafler and McIntosh pre-amps and Citation, Crown, McIntosh, Mitsubishi, Technics and Theta amplifiers which are basically used experimentally with different speaker set-ups.

As you might expect, to go along with Holman's collection of vintage electronic gear, he's got a fully loaded arsenal of classic microphones: "A beautiful set of C12s, a beautiful matched set of 251s. They're all mint—66s, 67s and 47s, church microphones, a whole line of C28s, C12As. I must have \$60,000 to \$70,000 worth of vintage mics.

"Anybody who's really getting serious about recording," counsels Holman, "gets into the concepts of their pre-amplifiers and their microphones. They're the most important things you can have. I've had pre amplifiers made for me for years. And it's always shown, because the recordings are always clean.

"Somebody asked me what I'm doing to get ready for digital recording and I said, 'I haven't done a thing.' Because every time I've ever made a record I try to make it as clean as possible. All the tracks are as clean and clear and quiet as you can get them."

Speaking of digital, we wondered if Holman had any plans for music by numbers. "Probably. But right now we're doing a lot with drum machines." He plays us a track he's working on and says, "What you're hearing right now is coming directly out of

the PPG. That's all digital basically.

"But," he says, "if I were to buy a machine right now, I'd probably go with the Mitsubishi." Holman cautions that the formats just haven't been standardized yet and the investment would be too heavy for something that may become obsolete rather soon. "I think everything is going toward hard disk systems," he says. "I think for me to get involved with an intermediate system that costs that much money is just too much."

Plus, he adds, "the records that I hear made on analog machines still hold up to the test. And, as a matter of

fact, digital is not quite there yet—it's not perfect audio."

Your first chance to hear the results of David Holman's new facility will be on the upcoming Real Life album due from Capitol Records. He produced and engineered it. ■

Stephen Padgett, formerly managing editor of Cash Box magazine, is a freelance writer who has contributed articles to Playboy, Billboard, Pulse!, Hits, Music & Sound Output and others. Paul Klingberg is head engineer at Ignited Productions Studios in Los Angeles.

Found, The Missing Link. Gauss Coaxial Monitors

It's a well known fact that loudspeakers are the missing link in studio, post production and broadcast facilities' audio chain. The accepted criteria for ideal speakers are: balanced, phase-coherent or time aligned, and with as little color as possible.

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NEW PRODUCTS



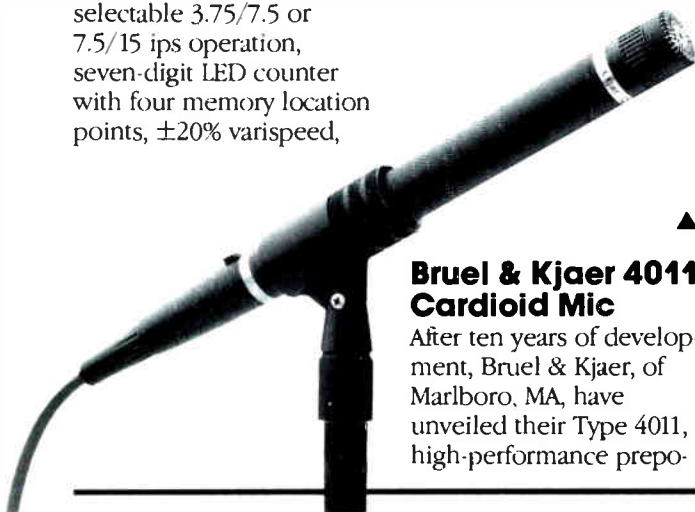
▲ Otari MX-55 Recorders

Otari Corp., of Belmont, CA, has introduced the MX-55, a new series of compact, cost-effective quarter-inch analog tape recorders. Designed especially for broadcast, post-production and studio applications, the new series is available in full-track mono, 2-track NAB or DIN stereo, and 2-track with center track time-code versions. The latter two styles are also available in a desk top overbridge cabinet. Standard features include user-selectable 3.75/7.5 or 7.5/15 ips operation, seven-digit LED counter with four memory location points, $\pm 20\%$ varispeed,

sync overdubbing mode, and internal monitor speaker. Options include editing scissors, fader start, two autolocators and a transport remote, and a unique voice editing module for dialog work at double speed without pitch error.

The standard 2-track model is available now and retails at \$3,695; the other models are planned for late spring release.

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▲ Bruel & Kjaer 4011 Cardioid Mic

After ten years of development, Bruel & Kjaer, of Marlboro, MA, have unveiled their Type 4011, a high-performance prepo-

larized cardioid condenser microphone. The 4011's mic capsule and 48-volt transformerless preamplifier combine to yield a frequency response stated as 40 to 20 kHz (+1, -2 dB), while the maximum SPL is rated at 158 dB before clipping. Each mic includes a detailed calibration chart, wooden case, cable, windscreen and an ultra-secure stand mount which encircles the mic and locks firmly to avoid slippage.

Circle #140 on Reader Service Card

module, which plugs into the 7300's rear panel octal sockets and provides a 24 dB/octave Linkwitz-Riley filter with 24 selectable frequencies on third-octave ISO centers.

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JBL 2450J Compression Driver

Said to be smaller and lighter than any comparable compression driver on the market, the 2450J from JBL Professional features new neodymium magnet technology and a newly designed Coherent Wave™



▲ E-V Model 7300 Power Amp

The new Model 7300 stereo power amplifier from Electro-Voice, Buchanan, MI, delivers 300 watts into 4 ohms, 200 watts into 8 ohms, and 600 watts in the (rear panel switchable) mono bridged mode. The 7300 offers a heavy-duty steel chassis, recessed dual attenuation controls, front panel protect/clip/AC power LED indicators, binding post outputs, and both XLR and quarter-inch balanced inputs—all at a \$758 price. A \$104 option is the APX crossover

phasing plug. Besides offering the advantages of a more compact design (allowing for tighter spacing of horn arc arrays) and reduced weight (always a factor in touring systems and flying rigs), the 2450J is 1 dB more efficient than the popular JBL 2445J, which uses a high-energy ferrite magnet structure. The "J" suffix of the 2450J indicates its 16-ohm impedance, and initial deliveries are slated for spring of this year.

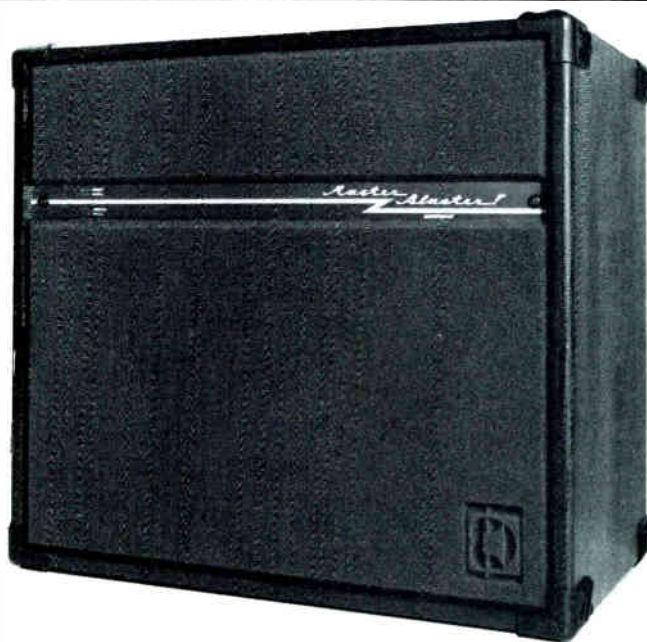
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Master Blaster P.A. Speakers

Developed in the Netherlands and now available through M.B. America of Rochester, NY, the Master Blaster system is a new approach to P.A. rigs. The system incorporates two self-powered modular units: the Supercompact, an MF/HF box with two 10-inch transducers and a one-inch compression driver, each coupled to a constant-directivity horn; and the Impact I port-

loaded bass box with a single 18-inch woofer. In spite of the built-in power amps (which are said to deliver in excess of 1,000 watts), each cabinet weighs approximately 100 pounds and comes with flying hardware, recessed handles and a one-year warranty. Maximum sound pressure level for a single Supercompact box and three Impact I cabinets is given as 140 dB (peak SPL, on-axis half-space).

Circle #138 on Reader Service Card



Crown Macro-Tech Amps

The line of Macro-Tech amplifiers from Crown International (Elkhart, IN) are designed for high-end professional sound applications where the amplifiers must be custom configured for a specific requirement. Optional plug-in rear panel accessories tailor the amps to user needs by adding functions in series with the input. Available modules include: an error-driven compressor, an electronic crossover, balanced transformer isolation and a "daisy chaining" module. All models in the line—except the single channel Macro-Tech 10,000—can

operate in either stereo or bridged mono, and the MA-2400 model is said to produce a peak power of 10,000 watts in this mode. Among the line's other features are Crown's patented IOC (Input-Output Comparator) and ODEP (Output Device Emulator Protection) circuitry, as well as a three-year, transferable warranty.

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Stewart Mic Preamp

Sacramento, California-based Stewart Electronics has unveiled their MP-2, a single channel mic preamp featuring: low impedance XLR-type connectors, -20 dB input pad, phase invert, active 3-band EQ with sweepable midrange, and switchable 48 VDC phantom power. The MP-2 is priced at \$399 including external 24 VAC supply; single- and dual-unit rack-mount adapters are optional.

Circle #141 on Reader Service Card



Digitech DSP 64

New from Digitech of Salt Lake City comes the DSP 64, offering two 16-bit digital effects, reverb processors in a single rack-mountable chassis. Each processor features stereo inputs/outputs and an effect defeat, so the DSP 64 can be operated as two independent units or as a single stereo unit with the ability to run different pro-

grams for the left and right channels. Thirty reverb programs are available, including large and small rooms, as well as gated and reverse reverb effects. Other features include input, output and wet/dry mix controls, and a rear panel jack is provided for effect defeat switching. The DSP 64 has a list price of \$499.95.

Circle #143 on Reader Service Card



QSC MX-2000 Amp

Expanding their MX Series of stereo power amplifiers, QSC of Costa Mesa, CA, has unveiled the MX-2000, a three rack-space unit delivering 625 watts per channel into a 4-ohm load. The MX-2000 uses a dual-monaural design, allowing each channel to operate as an independent amplifier, sharing only the AC cord and power switch. Features

include a front panel switch for selecting high/low speed forced-air cooling, electronically balanced quarter-inch RTS and barrier strip inputs, five-way binding post output terminals, front panel LED operating status indicators, and dual input gain controls that go all the way up to "12." Deliveries begin this spring.

Circle #142 on Reader Service Card

—FROM PAGE 37, WHAT'S NEW

The Control 5 speakers are designed for either vertical or horizontal placement, and can also be rack-mounted.

Designed and manufactured in Iisalmi, Finland, the entire Genelec line of monitors are now available in the U.S. from Nashville-based Redwood Marketing. All of the six Genelec models—from the 1019A biamped mini monitors to the substantial (340-pound) 1025A quad-amped 4-way system—are self-powered units, each containing internal crossovers and amplifiers optimized for that particular combination of driver and cabinet. The Genelec S30, a triamped, 3-way speaker, is the newest entry in the Genelec line, and is available in both standard and a special version optimized for near-field operation. Some recent S30 purchasers include Minnesota Public Radio, MCA Records (Nashville), New York's Sterling Sound and Flyte Tyme Productions, the home base of superproducers Jimmy Jam and Terry Lewis.

Developed as a cooperative venture between Klark-Teknik's Acoustic division and Munro Associates, the Jade One MkII is a compact, 2-way bass reflex system which also incorporates internal amplification and crossover networks. The Jade One MkII utilizes an 8-inch neoflex cone woofer crossing over at 2,500 Hz via a 24 dB/octave Butterworth filter to a 1.25-inch soft-dome tweeter. An XLR-type input (electronically balanced) drives a 100-watt MOSFET power amp for peaks of up to 113 dB at one meter. LF, HF and input level controls are provided and available options include input transformer balancing, a control panel security cover and speaker stands and wall mounting brackets.

The name "Tannoy" has long been associated with the loudspeaker business—in fact this British manufacturer nearly lost their trademarked name some years ago, as its almost universal acceptance and use in the UK as a synonym for the word "loudspeaker" required the firm to take legal action to protect it. Fortunately, Tannoy prevailed (as did Xerox, Kleenex and Q-Tips, in similar cases in the U.S.) and has been quite successful over the years, especially with their point-source



Tannoy PBM-6.5

co-axial speaker systems. The PBM-6.5 (Play Back Monitor), Tannoy's newest product, is a compact unit that uses a more conventional (non co-axial) 2-way design with a 6.5-inch woofer and ¾-inch dome tweeter, yet capable of handling 100 watts. The PBM-6.5's small size, grey cabinet and 57 to 20k Hz (± 3 dB) frequency response make it suited for either near-field studio or sound contractor/installer applications, especially at a weight of only 12 pounds each. The list price is \$298/pair.

Ottawa, Canada-based State of The Art Electronik, Inc., has unveiled their first medium sized monitor, the CF-750 by master designer Claude Fortier. The 750 is a 3-way hybrid system, 2-way active and 2-way passive, with five drivers: two 12-inch woofers are contained in separate, ported side enclosures, while an isolated central enclosure has dual 6.5-inch MF units and a 1.2-inch tweeter. The CF-750 uses the newly developed AAX-2 Acoustic Align Crossover System, which employs patented equal phase filters. System frequency response is

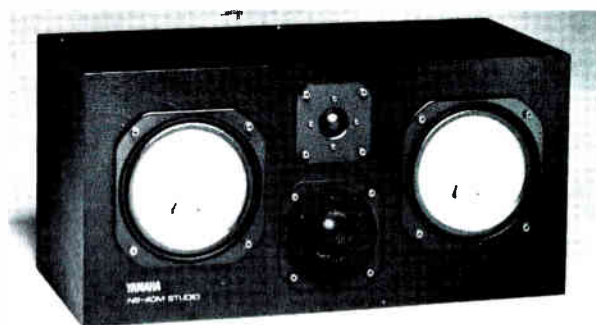
stated at 50 to 21k Hz (± 1.5 dB) and pricing is \$1,495 for the CF-750 and \$1,195 for the AAX-2.

From KRK Monitoring Systems of sunny Huntington Beach in Southern California comes a new line of near-field speakers. Owner/designer Keith Klawitter had previously specialized in producing high-end, all cone/dome mains systems for a number of top studios, such as Cannon Films, Baby-O Recorders, and David Holman, whose personal facility is featured in this month's "Artist Studio" column. While the KRK mains systems are priced from \$5,445 to \$7,648 (including electronic crossovers), the near-field offerings—such as the 2-way/7-inch woofer model 702—begin at a more affordable \$546/pair. The KRK 1203, the 3-way (12-inch woofer, 7-inch cone mid and inverted dome tweeter) top of the line near-field is priced at \$1,695/pair, and puts 250 watts of power handling capacity into a compact 16.5 x 20 x 17-inch enclosure.

There is no question that the Yamaha NS-10M has been one of the most common speakers used for monitoring in recording studios around the world for the past half-decade. Last year, Yamaha made some much-needed changes (especially in the HF driver) that considerably improved the NS-10's performance, and dubbed the new version the NS-10M Studio. More recently, Yamaha has shown their newest NS series monitor, the NS-40M Studio, which is a 3-way, acoustic suspension system featuring dual white-cone 7-inch woofers in each cabinet for extended bass response and greater power handling capacity. The NS-40M Studio monitors are priced at \$445 each.

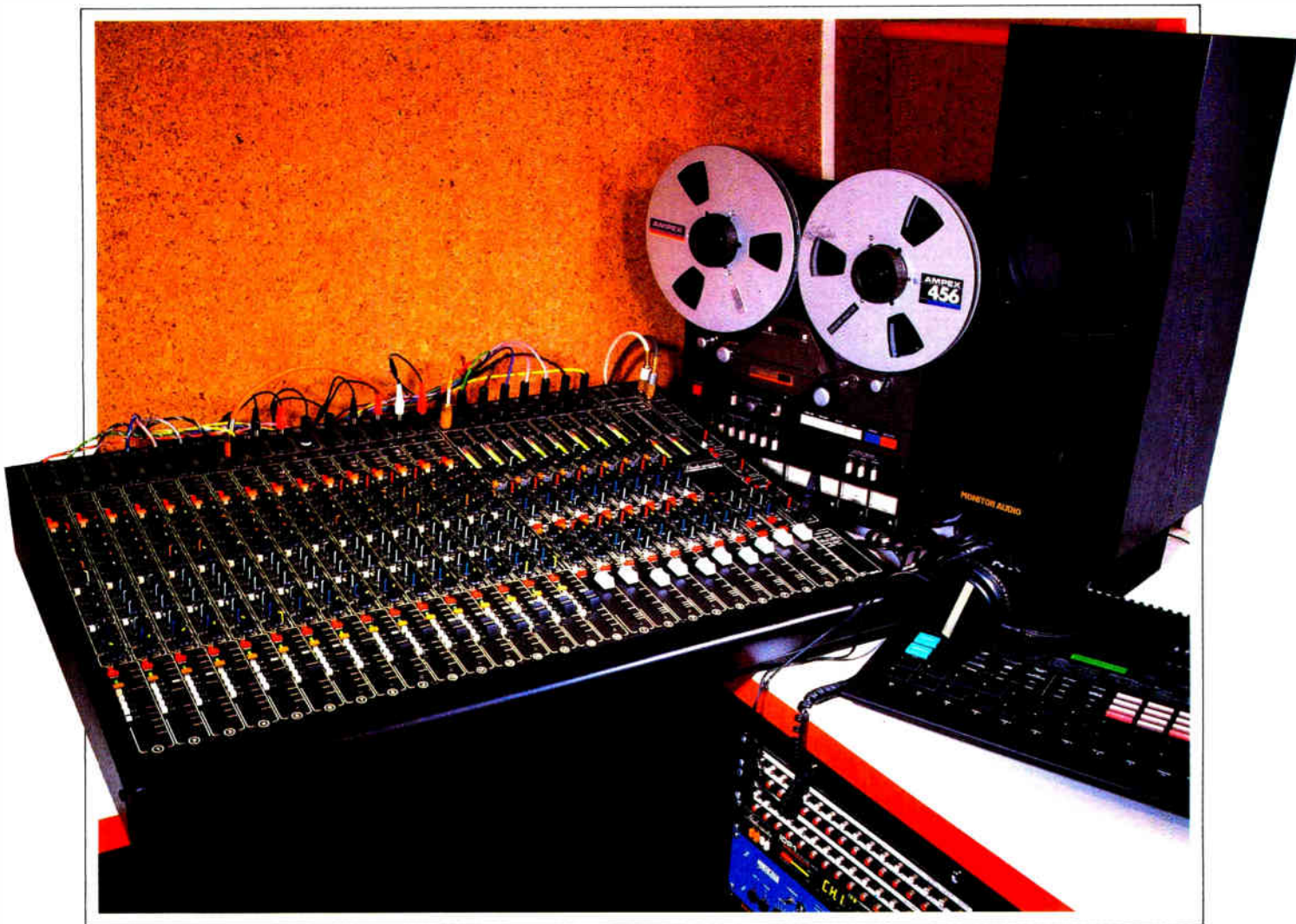
—George Petersen

The Yamaha NS-40M studio monitor is rated at 100 watts rms.



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For further details, contact Jim Giordano, Paul Reeve or Tony Allen at STUDIOMASTER INC., 1340-G Dynamics Street, Anaheim, CA 92806. Tel: (714) 524 2227 Fax: (714) 524 5096.

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by Andrew Scheps

RANE SP15

PARAMETRIC EQUALIZER

The SP15 is another in a long line of quality equalization products from Rane Corp. This five-band parametric/shelving equalizer/notch filter set is incredibly versatile.

The unit is logically laid out, making it easy to learn and use effectively. The front panel is set up with the five bands arranged horizontally. Each band includes a control for bandwidth, level, and frequency, a bypass switch, and for the lowest and highest bands there is a switch for shelving. This ability to switch between shelving and peaking equalization is useful for applications where both rolloff and peak equalization is required (e.g. for feedback control in a P.A. system).

The unit's four frequency bands are: 20Hz-300Hz; 60Hz-1kHz; 150Hz-2.5kHz; 450Hz-8kHz; 1kHz-20kHz; all approximately four octaves. This extreme overlapping of the bands is especially useful when the high and low bands are in shelving mode and further peak equalization is still needed in those frequency ranges.

The bandwidth of each section is continuously variable from 1/30-octave to 1.5 octaves. This range certainly allows for handling almost any equali-

zation problem or effect. The bypass switch included in each band (as well as the overall bypass) is a tremendous help during equalization. It is very easy to lose sight (or sound) of what you are trying to do with an equalizer and these switches make quick A/B comparisons possible. The level control allows for a boost of up to +12 dB and a cut of up to 15 dB through the unit; once again, enough for most applications. There is also an input level control which ranges from full attenuation to an overall boost of 12 dB.

The rear panel offers a variety of connection possibilities. For input there is a quarter-inch RTS (Ring-Tip-Sleeve) and a female XLR-type connector, both wired in parallel to allow daisy-chaining the SP15 input to another piece of gear. Both are actively balanced through a differential input stage. For output there is also a quarter-inch RTS jack and a male XLR connector. When the latter is used by itself, it is a differentially balanced line. If the two outputs are used at the same time, both will be floating lines. The RTS output is always a floated line.

The only other jack on the rear panel is a telephone-type jack for an optional

**I was instantly impressed
with the unit's ease of operation
and amazing sonic quality.**



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FIELD TEST

24 VDC supply, such as the Rane RS10. The notion of providing external DC powering for outboard gear has been kicked around by various manufacturers for some time now, although Rane has taken a major step forward by proposing the Telco 6-pin modular jack as an industry standard. Rane's RS10 was slated for delivery early this year, and should be available now. Eventually, these types of power supplies would eradicate the need for the bulky and expensive transformer power supply

**The unit I tested met
or exceeded spec in all
cases. In performance
it did just as well. I used
it in several different
applications.**

that is included in almost every piece of equipment you buy. One power supply could run a whole rack of outboard gear.

From the specifications the SP15 would appear to be a pretty beefy unit. The unit I tested met or exceeded spec in all cases. In performance it did just as well. After picking up the unit from the *Mix* office, I raced to a session at The Music Annex, a major San Francisco Bay Area recording studio where the unit was tested. The client had a home recording that needed help: a piano piece was floating in a sea of noise that threatened to drown it out. I double-parked the Rabbit, ran inside just ahead of the client and proceeded to the control room still carrying the SP15. The client entered with his tape, and asked what could be done. "Aha," I thought, "a chance to try out the Rane." So without a glance at the manual, I took it out of the box, hooked it

RANE SP15 PARAMETRIC EQUALIZER SPECIFICATIONS

Frequency Response:	20Hz-20kHz ± 0.25 dB	Maximum Input Level:	+23dBm
THD:	<.006% (20-20kHz, +4dBm output)	Input Impedance:	2,000 ohms
S/N Ratio:	(Unweighted, 20kHz Bandwidth)	Maximum Output Level:	+28dBm into 600 ohms
Boosts/Cuts Centered, Unity Gain	118 dB below +20dBm 102dB below +4 dBm	Output Impedance:	100 ohms
Boosts/Cuts Centered, Max Gain	118dB below +20 dBm 102dB below +4 dBm	Subsonic Filter:	Fixed at 15 Hz, -18dB/octave
Boosts/Cuts Max, Max Gain	98 dB below +20dBm	Ultrasonic Filter:	Fixed at 70kHz, -12dB/octave
Gain:	-infinity to +12dB	Dimensions:	1.75"H x 19"W x 5.25"D
		Weight:	5 pounds

up and turned it on. This is a situation where the ergonomics and logic design of a product are really put to the test. Not once did I have to even stop and ponder the operation of the unit. All controls responded just as I had assumed and hoped. The piano recording was easily and quickly pulled out of the noise and set afloat with a dark yet pleasing piano sound perfectly suited for Satie which, fortunately, was what had been recorded.

I was instantly impressed with the unit's ease of operation and amazing sonic quality. This tape had required some pretty drastic boosting and cutting, which can be a problem to set up on some parametrics, due to the inter-relationship between the boost/cut and the bandwidth control. The Rane's constant-Q design keeps these two controls completely independent of one another. What you set on the front panel is exactly what the filters are doing: no compensation is needed on your part, since large boosts or cuts do not affect the bandwidth or vice versa.

I also used the SP15 on several other applications, including drums, voice-overs, and overall program equalization. In all cases the SP15 did exactly what I had wanted and expected. This unit is great for both production applications as outboard gear and system applications (e.g., pre-crossover P.A. equalization). It is versatile, easy to use, and very well designed. There are graphs in the operation manual describing the equalization characteristics and performance of the SP15 that are very impressive and as far as I was able to test them, accurate. If you're in the market for a parametric/shelving EQ, whatever your application, at \$599 the Rane SP15 should definitely be a consideration. ■

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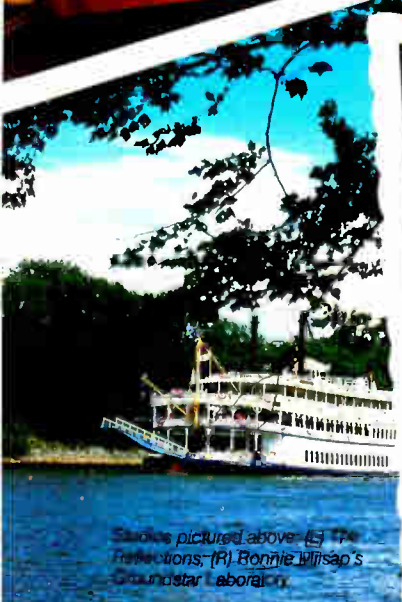
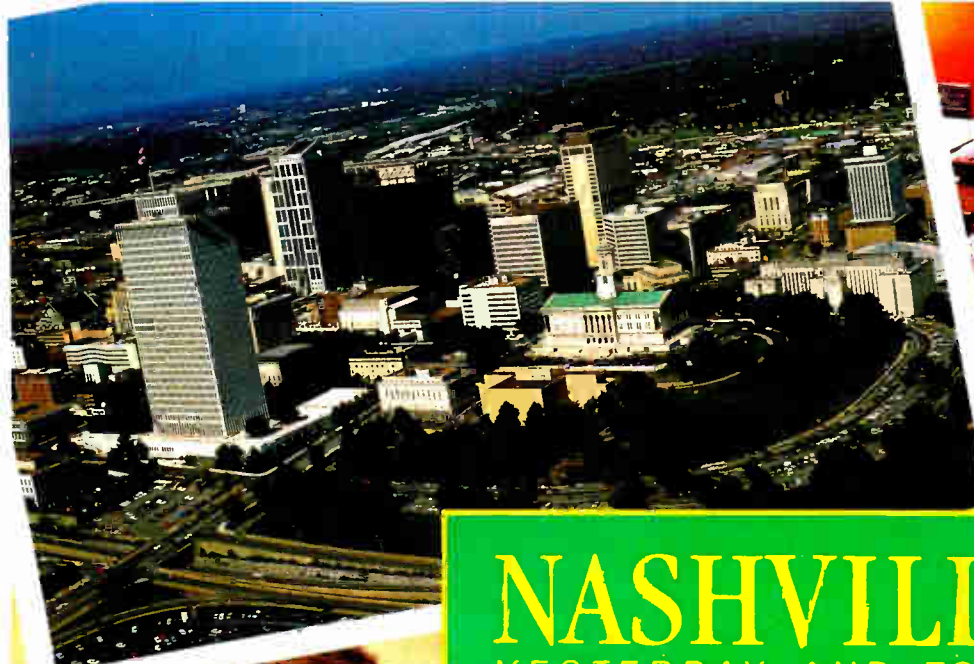
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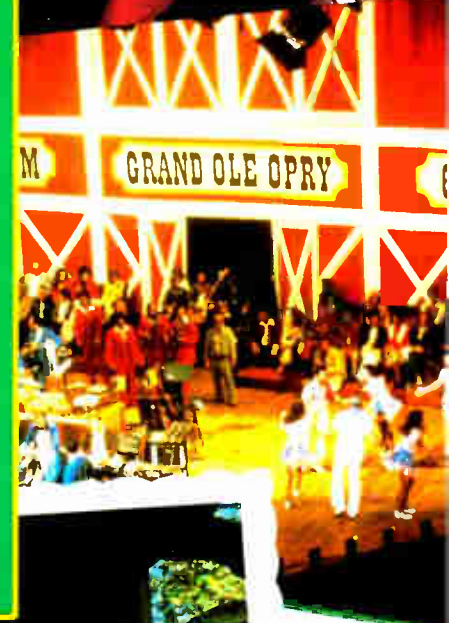


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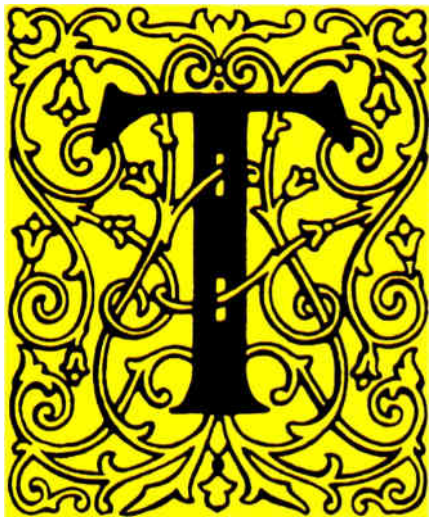
- 66 **THE HISTORY OF NASHVILLE RECORDING**
by Robyn Flans
- 70 **THE SOUND EMPORIUM:**
Changing with the Times
by Karen Margroff Dunn
- 74 **CASTLE GOES FULL CIRCLE**
by Karen Margroff Dunn
- 78 **AUDIO ENGINEERING:**
Getting Started in Nashville
by Greg Armbruster
- 80 **MAKING IT IN MASTERING**
by Linda Jacobson
- 83 **NASHVILLE: The Class of '88**
by Robert K. Oermann
- 86 **EMERALD SOUND REACHES FOR THE STARS**
- 87 **PRODUCER'S DESK: Harold Shedd**
at the Top of the Charts
by Robyn Flans

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THE HISTORY OF

by Robyn Flans

Harold Bradley (L) and Glenn Snoddy pose in front of the first stereo console constructed in Nashville (1961), and used at the basement studio owned by Harold and Owen Bradley on 16th Avenue.

The year is 1952. The scene is the Tulane Hotel on Church Street between 7th and 8th Avenue North, the resting place of Castle Recording Laboratories. The room is a relatively small dining room/ballroom, divided by large columns. One section functions as Castle. That half, in turn, is divided into two parts with fiberglass, one part functioning as the control room where publisher/producer Fred Rose is watching Aaron Shelton, one of Castle's three founders (along with George Reynolds and Carl Jenkins), mix the session, with Carl Jenkins running the tape machine and Scully lathe. On the other

side of the glass, MGM artist Hank Williams stands amidst studio musicians and his band members. His steel player Don Helms is providing his signature sound along with the fiddle player Williams nicknamed Jughead. Hank stands at one microphone, perhaps with the Gibson J-35 1930s guitar that is in the Hall of Fame Museum today. They're recording "Your Cheatin' Heart," not realizing these will be his last sessions before his untimely death New Year's Day, 1953.

They are cutting direct to the Scully disc recorder. The room has the 31st and 32nd tape recorders made by Ampex as a backup for the disc, and both the disc and tape will later be sent to the record company.

Four takes and they're done. Fred Rose rehearsed them well yesterday and the only criterion is that it feel good. They're mixing right to the lathe and thinking how glad they are to have eight whole channels.

"It was, of course, a tube mixing room and it had some standard components in it of that day and time," says Glenn Snoddy, who began working with Castle primarily as a second engineer in the early '50s. "I recall it did not have any equalizers on it. It had one outboard cinema equalizer that was really built for film. They could patch it in and use it if they wanted to, but there was very little EQ used. What you did was pick the microphone that sounded best, which isn't a bad way to record, really. I'm not sure who built the old radio console. Eddy Arnold did some live radio shows out of Nashville in those days and that equipment became available, so Castle purchased it and installed it in the Tulane. There was room on that console for eight microphones and we would use pretty much seven or eight on a session. There would be the steel, the rhythm, the bass, the piano, the drums, sometimes two guitars and the vocals of course."

"They usually put the bass and drums on the same mic, one on each



PHOTO: SID J. BERRY

NASHVILLE RECORDING

side of it," recalls Buddy Harman, who, in his 18,000 sessions, played drums for just about everyone *except* Hank Williams (although after Williams' death, Harman overdubbed on some old tracks). "It was a floor stand and it was set low. I played a snare drum, only, two brushes, and maybe a hi-hat. That went on for quite a while, probably for about three or four years until about 1956. By that time, the word got out that the drums helped fill up the rhythm section."

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"I'd say the first session of any importance was a session with Hank Williams," Shelton continues about the days when Castle was still operating from WSM. "Hank came up from Montgomery, Alabama, I believe, and he

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(L-R) Assistant engineer Rick Horton, songwriter Joe Nelson, Roy Orbison and Glenn Snoddy compare notes in a 1967 session.



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Laney explains that the plethora of rock acts have crept up in Nashville partly as a result of the punk rock scene, which created a local rock movement, and because a lot of people with rock and roll backgrounds have moved to Nashville over the last few years. "There are a lot more younger musicians that are coming up as session players, and they all come from a background where they probably listened to rock and roll music all their lives," Laney says. "They add that touch even into the country stuff. But I don't think that Nashville is ever going to give up country by any means. That's the bread and butter."

—Karen Margroff Dunn



NASHVILLE RECORDING

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billy talent," remembers Shelton. "Jim Bulleit, who was the manager of the artist service bureau at WSM, had a grand idea that there was going to be a big demand for records at the close of the war and he wanted to get in on the ground floor. We kicked it around and three of us engineers thought maybe we should provide a technical service to the record companies.

"Victor Damon in Kansas City had a machine that would cut what we call master lathe. It would cut these big 16-inch discs on which we put the original music. That was our first machine. We had equipment set up at the WSM standby transmitter out in West Nashville. We paid WSM a nominal fee to use their facilities. We did that for about six months until we set up at the Tulane Hotel," says Shelton. They bought the Ampex 200 tape machine that ran at 30 ips, for \$2,000, they borrowed \$1,000 from Third National Bank and pooled their resources. He guesses their total outlay to have been less than \$15,000 to set up the recording facility.

"Shortly after I came to work there, the musicians had their famous strike which closed the recording business

all over the country," recalls Snoddy. "We were recording day and night at the time, trying to get the artists done before the strike. It took several of us to moonlight and keep that place running during that time. Just about all of the country artists were recording then, like Ernest Tubb, Kitty Wells, Jimmie Dickens, Hank Williams and Red Foley.

"I always enjoyed Red Foley's sessions [including 'Chatanooga Shoe Shine Boy' and 'The Peace in the Valley']. Red was a very exuberant kind of a fella. He always got excited about what he was doing and he seemed to enjoy it and it seemed to be a part of him that you didn't see normally. Ernest Tubb was a nice fella to work with. He was the same way, always very outgoing and he always knew his songs. Kitty Wells was a very, very nice lady to work with, too. I always looked forward to those sessions."

"We did some sessions from the Ryman Auditorium," Snoddy explains. "We did a big band session down there with Ray Anthony for 'The Bunny Hop.' We had a console that had eight inputs, so that big band was done with eight microphones. It was done very well,

too. That record is still around being played. Red Foley did some songs from there, too. We fed it back on telephone lines to the Castle Studio. We would order two pairs of telephone lines and we equalized those to about 10kHz and fed it back to the studio and recorded it. It wasn't unheard of; of course we did radio shows from down there all the time."

Aaron Shelton was working about 90 hours a week between his full-time job at WSM, teaching algebra part-time at Vanderbilt University and Castle projects. So when WSM came to the trio of engineers—or so the story is documented—and asked them to give up Castle since it was interfering with their full-time jobs, it was probably a relief.

"By that time, television had come in and I had been appointed chief engineer for WSM television so I had my hands full with all the problems that went with a new TV station. We missed the excitement of being connected with Castle, though, and we missed it financially," says Shelton.

Financially? Was there money in record making in those days?

Aaron Shelton laughs. "No, there

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While digital recording has come along in a big way in Nashville, Laney finds that the Sound Emporium is doing a little more analog this year than a year ago when clients were requesting digital and analog about equally. (They rent digital equipment on the client's request.) "Digital is a great storage medium," he says, "but there's a certain warmth that comes with an analog recording that you just can't get with the digital."

Laney explains that the plethora of rock acts have crept up in Nashville partly as a result of the punk rock scene, which created a local rock movement, and because a lot of people with rock and roll backgrounds have moved to Nashville over the last few years. "There are a lot more younger musicians that are coming up as session players, and they all come from a background where they probably listened to rock and roll music all their lives," Laney says. "They add that touch even into the country stuff. But I don't think that Nashville is ever going to give up country by any means. That's the bread and butter."

—Karen Margroff Dunn



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ship as assistant/arranger to Decca's Paul Cohen. "We were following up 'I Fall To Pieces' and the record company felt it was a little too country, so they asked if we could make the next one a little more acceptable to cosmopolitan stations. We left off the fiddle and the steel. I think most everything you hear on it is Floyd Cramer on piano. If you listen real, real close, because I didn't let them turn me up, you can hear me. I'm just playing chords on the organ."

Just before Castle closed its doors in the mid-'50s, Bradley, wanting to keep his boss Paul Cohen happy, built a studio in an old lodge hall in South Nashville. When they raised the rent, he had set up shop in Hillsboro Village. The ceiling was too low there, so finally they moved to 16th Avenue in 1955 where he had the Quonset Hut built primarily to get into the picture business. It was then that Bradley asked Glenn Snoddy to work for him full time and the engineer left his job at WSM.

"It was an old building," Snoddy recalls. "Owen took out the floor and made a basement studio and had the ceiling be the ceiling of the second floor. He actually had a studio that went from basement level to the second story of that building, so it was something like 30x35 with a 20-foot ceiling in it. It was a fairly good room and in one corner he built a control room and my job was to build a stereo console for that room. What we did was fabricate a stereo console using some Ampex four-channel mixers and we built a stereo console with the concept that you had four channels dedicated to the left channel and four

channels to the right. We had a center split channel with four channels and some outboarded line amps and so forth. It worked fine for a number of years. He built the Quonset Hut on the back end of the studio primarily for doing films. It had a little mono control room, and he did some recruiting films and television spots there."

By the time Bradley moved from the position of Paul Cohen's assistant to the head of the Nashville division at Decca, he had phased out the film work. Soon after, Snoddy and Bradley took a trip to New York.

"We went to see a 3-track console they had installed up there. They had built two or three of those units and Owen wanted to get one of them in Nashville," says Snoddy. "On the plane coming back from New York, Owen and I drew out the control room design on a piece of paper. By the time we got back from New York, we had that pretty well fixed and started to tear into the Quonset Hut, building a place to put this console. Shortly thereafter, it was shipped down.

"Three-track changed things dramatically because now we could really do some production work in stereo, although we did not do a lot with the stereo. We were still making mono records essentially because that's what was selling. You were recording, mixing and listening to mono records because that's what radio was playing and that's what everybody depended on to get the hit. You didn't want to take the chance of missing something by monitoring the stereo version, so it was seldom we listened to the stereo version. That tape was, for the most part, just sent to New York and they

made a stereo mix up there, from whence they made the albums. But the singles were what we were interested in. That's what sold.

"I give Owen credit for a number of things," he continues. "One of them was that he was instrumental in having us isolate some of the musicians. For example, we built a little booth within the Quonset Hut which served as the rhythm booth where we put the drums and the bass. That was the beginning of isolating sections. Then we'd have a little area for the strings and we built moveable baffles where we could baffle off sections of the studio. We built some guitar platforms for amps and things. These items were in the studio and it was kind of a setup where we could pretty much leave it for the next session because most of the sessions were pretty much the same as far as some of the people and so forth."

Bradley discovered isolation quite by accident during the recording of Gene Vincent's "Be Bop A Lula" in the small room of the Quonset Hut.

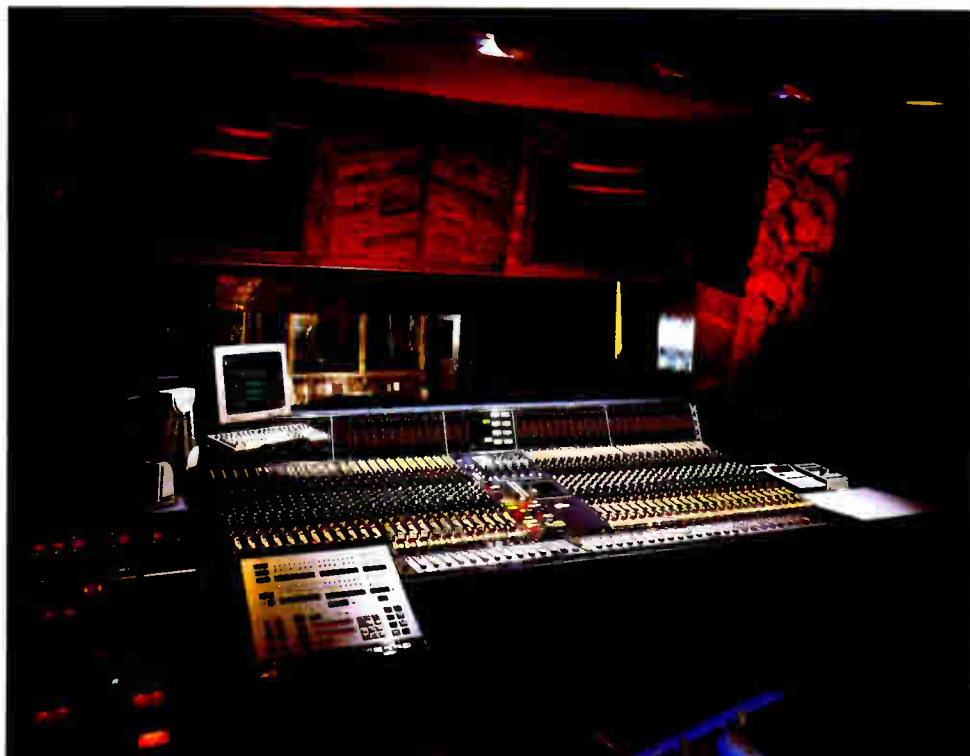
"It was actually one of my records," he reports. "Ken Nelson was making the record and my brother and I had been out to dinner with him. We came back and they started back up, but they were having a problem with the drums: the guy was just beating the corn out of the drums and getting into the vocal. So we were just trying to save face and keep our customer happy when we suggested, 'Why don't you put the vocal back in the little hall?' It was a pretty good sized hall between the two rooms and we kept backing him up in there until we could live with it. It worked out, so that was the beginning of isolation. I still get a big kick

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out of playing that record.”

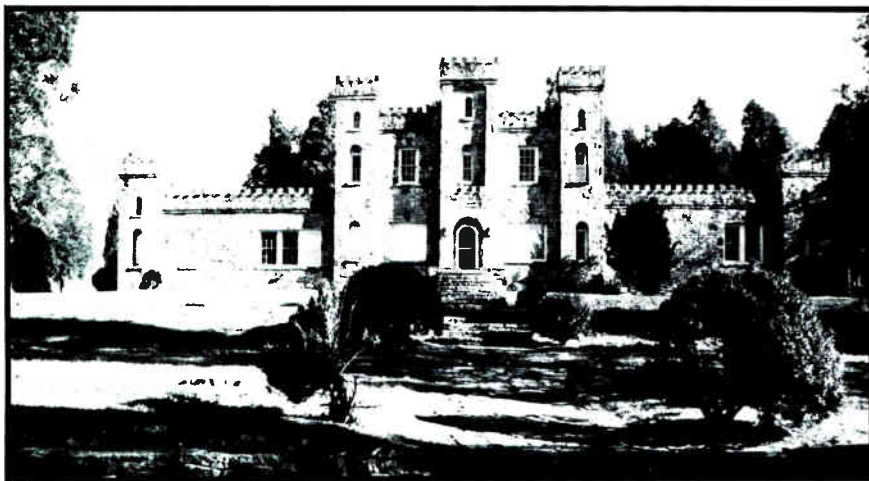
Bradley was busy recording Decca's entire roster of over 30 artists, in addition to all the other labels, except RCA, who had their own studio. In the spring of 1957, Steve Sholes, head of RCA A&R in Nashville, appointed Chet Atkins manager of operations. Atkins, in turn, convinced RCA they needed their own space, as opposed to sharing the building with the Methodist Radio & Television Foundation. By the winter, RCA had moved its headquarters on McGavock Street to their new facility on the corner of Hawkins Street and 17th

(now known as Roy Acuff and Music Square West). They were the first record company to establish permanent offices in Nashville (Capitol had come in 1950, but had closed its offices the next year.) Originally known as the RCA Victor Studio and later as “Little Victor,” the studio was equipped with a mono recording system which could be altered to stereo and a Scully lathe with a feedback cutter for cutting 45 rpm reference lacquers.

With all the recording that was being done, a formula was being established, one they called “the Nashville

Sound.” It utilized strings and background singers such as the Anita Kerr Singers and the Jordanaires, and employed a select group of session players on nearly everything, musicians such as Floyd Cramer (piano), Harold Bradley (electric bass and rhythm guitar), Pete Drake (pedal steel), Ray Edenton (rhythm guitar), Tommy Jackson (fiddle), Charlie McCoy (harmonica), Grady Martin (lead and rhythm guitar), Bob Moore (upright bass), Pig Robbins (piano) and Buddy Harman (drums).

In 1955, RCA Victor bought Elvis



CASTLE GOES FULL CIRCLE

Back in 1978 when Jozef Nuyens bought the Castle—an ex-gambling house, restaurant and residence dating back to the late 1920s—it didn't cause much of a stir in Nashville. It seemed like just another recording studio opening.

But it *was* more than that. Nuyens had a master plan. After much research, Nuyens purchased the first digital multi-track recorder (3M) and mixdown equipment in Nashville. Castle Recording Studios also became the first facility in Nashville to build a MIDI room. After some initial skepticism, his clients have embraced digital and the success of the studio eventually led to the creation of a production company.

“A studio business is not a business to make a lot of money,” he says, explaining his expansion into production. “There's overhead and the equipment changes so fast. It was all pre-planned to have a production company and a publishing company, so we could use the stu-

dio not only for outside clients, but also to use it as a tool for the production and the publishing companies.”

The production company, in business for only a little over two years, has already been successful. Concentrating purely on R&B, pop and rock and roll, Castle has gotten one of its R&B acts, Walk the West, signed to Capitol Records, and a Kentucky-based pop/rock group, Stealin' Horses, is coming out in March or April on Arista Records. Nuyens expects to have two more acts signed by major labels this spring.

Why not concentrate on country in the capital of country music? “We can be another country source, but there are so many already, why do exactly the same thing?” asks Nuyens. “There was nobody doing rock and roll, pop or R&B here in this town, so we decided to do it. And we've been successful with it so far.

“We have everything available,” says Nuyens, explaining the bene-

fits of an all-in-one music facility. “We can do everything in-house, so why go to extremes and spend a lot more money? And when you work in-house you have much more control over your budget than when you have to go other places. If something goes wrong here, you can always say, ‘Let's forget about these costs so we can stay within the budget.’”

Nuyens, who employs only nine people, is consciously trying to keep his staff small. “My philosophy is that even when it looks like you have success, keep your overhead as tight as you can instead of overreacting and thinking you're going to be the best company in the world, taking out loans and hiring a lot more people. You can overshoot yourself and then find out later—when something goes wrong or a mistake has been made—that you can't get out of it anymore. Then you have to file bankruptcy. I'd rather make the money first and use it for an expansion rather than take out the loans for the expansion and then find out that I can't make the money.”

The next step in the master plan, according to Nuyens, is to start actively pitching the Castle publishing company. Their catalog currently boasts about 180 songs. “That way we can use some of the songs for the production, the production for the studio, and the studio for the production and the publishing. We can make it an efficient circle. At least that's how I'd like to see it. It's working now with the production and I can't see why it won't work with the publishing.”

—Karen Margoff Dunn

Presley's Sun contract and in 1956 he recorded "Heartbreak Hotel" in Nashville.

"I think the biggest thrill I ever got was when I was called for my first Elvis Presley session," Harman says. "I want to be tactful about this, because he had his own drummer, but a lot of times, back in those days, people had their own musicians, yet wanted to use others also.

"Many times I left RCA, went home, got some breakfast and went on to a 10 o'clock session with no sleep, just maybe a nap during the night," Harman recalls. "Elvis would record all night and once in a while, real late, he'd get in a mood where he'd want just him and the keyboards, so I'd go catch a nap in the control room or out in the front lobby."

Since Elvis was kind of a rocker, Chet Atkins decided to be nice and use two drummers, so he called me in and both of us played all the time. Even on the movie soundtracks we did that, and sometimes they even added a third drummer when we went to Hollywood to do some of those soundtracks."

Twenty-three Presley sessions are documented at the RCA Studio B between January, 1956 and June 1971. After "Heartbreak Hotel," Presley returned to the studio to record "I Want You, I Need You, I Love You." "A Fool

Such As I" was among the four songs recorded in June, 1958. In 1960 sessions spawned "It's Now or Never" and "Are You Lonesome Tonight" among other album cuts. In October of that year, Elvis recorded 14 gospel songs, continuing to do so again in March, 1961. That year saw three more sessions, but in the following two years, he only recorded once each year in Nashville.

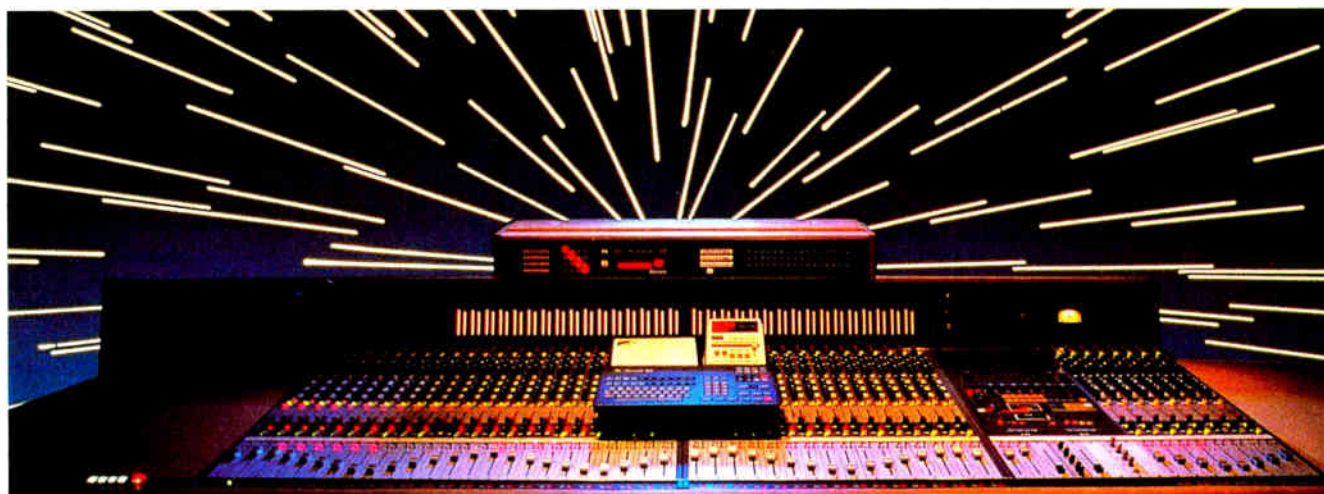
In January 1964, he recorded three tunes, one of which was "Memphis Tennessee," and in May, 1966 he continued his gospel recordings with 18 songs including "How Great Thou Art." The following year he returned to the studio to record three more songs and in February, 1967, he recorded eight songs including "Clambake." In September, 1967 the ten songs he recorded included "You Don't Know Me," and "You'll Never Walk Alone" and in January of the next year, he recorded "Too Much Monkey Business" and "U.S. Male." He held marathon sessions in June, 1970, working on approximately 31 new songs and in September he recorded "Whole Lotta Shakin' Going On" and "Rags to Riches." The following spring, he recorded "Amazing Grace," among others. His last sessions at RCA B in June, 1971 were comprised mainly of religious and gospel offerings as well.

The first year Presley recorded in

Nashville, Buddy Holly also visited Nashville for his first recording session for Decca.

"Mr. Cohen signed Buddy Holly before I took over the label," Bradley recalls. "In those days, he would call and say, 'I want you to do this or that,' and that was the case with Buddy Holly. This is not in any way to put the blame on someone; I would have probably done exactly what I did anyway. At the time we recorded him, we were trying to make country records with him, which was all wrong. If you saw the movie [*The Buddy Holly Story*] it would appear that we had bitter words and there was even a fist fight. I didn't see the movie, but my nephew saw it and told me about it. Buddy Holly and I were not intimate friends, but we both had the same problem. Mr. Cohen was our boss and we did what he said. If Buddy didn't like it, he could talk to Mr. Cohen and if I didn't like it, I could talk to Mr. Cohen, but there was no point in our beating up on each other, and we didn't, regardless of who says we did. I saw him with Mr. Cohen about two weeks before he was killed, and we had a very nice chat in New York City."

In 1962, Columbia bought Bradley's studio. He continued to patronize them until 1965 when Columbia started to use the studio exclusively for their artists. By that time, Bradley al-



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ready owned Bradley's Barn in Mt. Juliet, about 25 miles out of town. Started as a demo studio for his son, he commenced to fully equip it and continued to make hits.

Glenn Snoddy, who stayed with Columbia until '67 when they began to update that studio to handle multi-tracks, left to build one of the first independent studios (along with Bradley's), Woodland Studios.

"We started out with one studio in 4-track, and quickly graduated to 16 and later to 24," says Snoddy. "Now you're in a whole different ballgame of consoles and tape recorders, which is, of course, a story unto itself. Suffice it to say, you do whatever you have to do to make it work."

As studios began to crop up, the system had no choice but to change.

"That's when things started getting rough all the way around because some studios came up and the regular guys couldn't be everywhere at once," laments Harman. "So they had to start using other musicians. When there were only two studios here, it was easy. We were either at Owen's or RCA and I had a set of drums at each, and when Sam Phillips opened up a studio downtown, I put up a set there. Eventually I got tired of putting sets of drums in studios for everybody else to use. Back then there wasn't a cartage service. We weren't ready for it yet. But we started getting studios all around this county. Some days we'd have to drive to Mt. Juliet in the morning, be back out to town for a 2 o'clock and then back to Mt. Juliet for a 6 o'clock."

What the growing amount of studios and production did, however, was entice more outsiders to Music City. Ringo Starr recorded *Beaucoups of Blues* there in 1970, Paul McCartney recorded "Sally G" in 1974 and REO Speedwagon did their second album *T.W.O.* in 1972. Other pop acts who recorded there include Joan Baez, the Beau Brummels, Patti Page, Don McLean, Stray Cats, Rosemary Clooney, Dean Martin, Elvis Costello, Earl Klugh, Joe Walsh and Delbert McClinton.

Probably the biggest reason for many pop acts to come to Nashville was to follow in Bob Dylan's footsteps. He trekked to Nashville as early as 1966 to record *Blonde on Blonde*, still touted as one of the greatest albums in rock history. Producer Bob Johnston, a CBS staff producer, had already recorded Dylan's first electric album, *Highway 61 Revisited*, in New York, when

he suggested to Dylan that they record in Nashville.

"He met Charlie McCoy and he loved Charlie and loved the sounds, I guess, so he said, 'Yeah, let's go,'" recalls Bob Johnston who lived in Nashville during the years he produced *John Wesley Harding*, *Self Portrait* and *Nashville Skyline*. "He was enthralled with it because the people really cared. In L.A. and New York, the musicians play, but down here they really care; it was total openness and in the studio it was total freedom."

"He never did a song twice, I don't think," Johnston continues. "He had that inherent sense of rhythm. Nobody counted off for Dylan. He started tapping that foot and I always had all the machines rolling in the place. Dylan would pick up a guitar and start playing and I told everybody to play along and not to stop or I'd have to get somebody else. He'd pick up a guitar and play two lines, then he'd go over to the piano and then he'd get an acoustic guitar and all of a sudden, on one of those instruments, he'd break loose and go. I don't remember doing two takes on anything. He just didn't have time to wait because what he was saying and what he was putting down was really changing our society. He got it correct the first time because he had the freedom. I didn't care if he went and played the ukelele. No one told us what to do at that time; we did what we wanted to and there wasn't any record company head judging what we did. They took the records and ran with them. I remember he went out in the studio one day and he stayed for about ten hours. I had the pickers go down to the basement and to dinner so I could call them when he was ready. And when he came back, he said, 'I want to do this song,' and he started playing 'Sad-Eyed Lady of the Lowlands.' He's a bonafide genius."

"McCoy said it was the biggest thing to ever come out of Nashville and I really think Dylan is responsible for everything. I think Presley opened the body up and then Dylan opened our minds up. He changed this town, and he brought people from all over the world to work here once he made it fashionable. I give him full credit for all of that."

In the late '60s to mid-'70s, other changes took place when Owen Bradley, Chet Atkins, Don Law and Ken Nelson began to yield to a new regime of label heads. Billy Sherrill became

production head at CBS (although Bob Johnston ran the label for about a year in 1967), Bob Ferguson and Jerry Bradley headed RCA while Larry Butler oversaw the production at Capitol in 1969.

As one of the few independent producers before his label affiliation, Butler says. "There are pros and cons to everything. If you are head of a label, you have more control over the destiny of your product. If you believe in something, you can push buttons. The independents are handing over something they've given birth to and hoping the record company will take care of it."

He was using Sound Shop and Sound Emporium to cut artists such as Jean Shepherd, Ferlin Husky and Wanda Jackson, and he signed Kenny Rogers, Crystal Gayle and Dottie West before leaving the label, working for Columbia for a year before returning to the ranks of the independents. Today, Butler says he would return to a label in a second.

For the same reasons, Jim Ed Norman, executive vice president Nashville Division and vice president Warner Brothers Records, turned in his indy badge in 1983.

"I came to Nashville to work specifically for Jimmy Bowen because he was the head of Warner Brothers at the time. As an independent producer you are creatively involved in the product and then you deliver it, hat in hand, to a record company. What happens with the product and what the process is after that, you really don't know. I had gotten to a position with some of the artists I was working with where they began to ask my opinion and input over issues that I really felt unqualified to answer because I didn't have the information. I felt I had gotten to a place in my development as a producer to learn more about the business if I was going to contribute to the artists' career."

The days of production being handled by label personnel only are long gone, but the period of the independent monopolization of production during the '70s has given way to a balance of both.

"The in-house consciousness of four years ago was one of really trying to bring to bear that Nashville needed to address issues with recording and a general mentality. I think it was already there with a lot of the people who aspired to be producers, but not nec-

essarily a part of the system of recording. Now what the last four years have seen is not only an attention to this recording mentality of the best songs and the emphasis on the artist, but also the door is beginning to open to allow new young producers into the process.

"At Warner Brothers I think we've reached a happy medium. We have in-house production by virtue of the fact that I'm a producer and a part of Warner Brothers, but we also have a tremendous amount of input and support by the A&R department at this company. The hardest part of being a producer is finding the material and an A&R department that participates as heavily as this one does in finding not only artists and signing them, but finding material and coordinating this material with who the right producer is, creates for an in-house mentality that, for me, is a great partner for the independent who comes in from the outside. To me, there's a great marriage here."

Today, such label A&R heads as Norman, Jimmy Bowen (MCA), Tommy West (MTM) and Steve Buckingham (CBS) produce artists on their rosters

as well as utilize many of the independent producers such as Kyle Lehning, Brent Maher, Allen Reynolds, Harold Shedd, Paul Worley, Marshall Morgan, Josh Leo and James Stroud.

Moving from independents to labels isn't the only change that has swept through Nashville. As Glenn Snoddy said, whole books can be written on the equipment changes. Reportedly there is more digital recording going on in Nashville than anywhere else.

Among the many studios that feature digital 32-track are Audio Media, 16th Avenue, The Castle, Emerald, Eleven Eleven Sound (two machines), Digital Associates and Sound Stage (three machines).

"Philosophically, there seems to be a real interest in digital," says Jim Ed Norman. "There's also an assessment that can be made that digital technology befits country recording techniques with country music historically being centered around the singer and the song. Digital recording allows for a pristine clean sound which puts that emphasis on the singer and the song. Whether we use digital in the recording process becomes an issue of being a good steward of the artist's time,

talent and money. If you can afford digital and you feel the process will benefit the artist you're producing, you should use it. I love digital recording and would continue to use it whenever it makes sense."

"It was a lot simpler back in the earlier days, though," laughs Larry Butler, owner of Eleven Eleven Sound, which utilizes digital recording. "We were all going for a different thing back then and it was a lot more basic and not nearly as technical. When I came to town, it was 3-track. When I started producing, it was 8-track and then 16-track. When it went from 3 to 8, I said, 'I'll never use all those tracks.' Then when it went to 16, I said, 'That's the most ridiculous thing I've ever heard of. What are we going to put on those other tracks?' When it went to 24, I thought it was unheard of. Now my studio has 32 tracks and I'm still pinging." ■

Robyn Flans is a freelance writer who contributes to Mix, Modern Drummer, Pulse, Words & Music and other publications. She's also conducted interviews for radio and TV, and has authored three rock books.



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AUDIO ENGINEERING

GETTING STARTED IN NASHVILLE

by Greg Armbruster

Audio engineers are a special breed of musician, and it takes a special kind of person to be successful at it. Combining technological expertise and a sensitive, musical ear with an inventive, tactful personality, engineers are at the focal point of the record industry. How can you get started in this field? First, ask yourself this question: how determined am I to be an audio engineer? Second, listen to the advice of some industry pros.

"You have to be prepared to make a lot of sacrifices," says Lynn Peterzell, 32-year-old studio manager for House of David recording studio in Nashville, Tennessee. "You give up free time, nights, weekends, and maybe even a marriage, but if you really want to do it, I sincerely believe that you can do it here in Nashville. The opportunities are here, but *you* have to take the initiative."

Today, there are over 150 commercial recording studios in Nashville. Add to that the studios tucked away in publishing houses, jingle companies, advertising firms, radio and television stations, concert halls, schools, mobile recording vans, and private homes, and you can better appreciate Peterzell's observations.

"If you really want to climb the lad-

der here, then you're going to have to start as an assistant or second engineer," Peterzell says. "Assistants generally average \$5 an hour, and you can make as much as \$10 or more if you're really good. But it takes a strong personality to be successful as an assistant; maybe more so than a first engineer."

"The second engineer should know more about what's happening in a session than the first engineer," says Gene Eichelberger, 20-year veteran engineer and currently general manager of The Bennett House in Franklin, Tennessee. "The first is supposed to be listening to the sounds. The second engineer should know what's going to happen next by paying attention to the client/producer when he's talking to the artist. The second should be paying attention to everything that's going on. But he should be seen and not heard. He shouldn't be giving opinions or advice unless he's asked. It's a very responsible job when you get down to doing it well."

What are the responsibilities of a good second? "Well, I don't care how you can mix," Eichelberger continues. "All I care about is how well and how fast you can set up a studio, how accurately you can set up a tape recorder, and how you act around the clients. Be prepared to bring coffee and clean wastepaper baskets, but if I

ever get ill, you should be able to continue the session in my place."

Glenn Rose, 25, is the assistant engineer at the House of David. His dedication and determination are evident as he sums up his role in the studio: "I do whatever needs to be done: clean up the studio, make microphone cables, do maintenance on the console, clean faders, make tape dupes, set up the tape recorders, clean the piano and make sure it gets tuned for a session, make sure the mics are placed correctly, and make sure the musicians have everything that they need, from coffee to pencils and paper."

"As an assistant, I'm not directly involved in the project. I don't say anything unless I'm directly spoken to, which is just studio etiquette. But that's the best way to see how everything works. I observe how the producer relates to the musicians, how they relate to the artists and the engineer; all of which enhances my ability to be a good engineer."

Peterzell points out, "Most engineers have a lot of responsibilities that they would like to give to their assistants. The amount of confidence I have in Glenn determines how much responsibility I give him. He's now doing overdubs for me on some projects. It's great to have somebody working for you who knows what you need before you have to ask for it, but

"The second engineer should know more about what's happening in a session than the first engineer. The second should be paying attention to everything that's going on. But he should be seen and not heard."

—GENE EICHELBERGER



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Kling's experience as a business owner dates back to the late '50s and early '60s in Milwaukee, where he ran his own music recording studio and also did much remote recording. His gigs ran the gamut from organ concertos and church choirs to rock, jazz and polka ensembles. Earlier, Kling had attended the Milwaukee School of Engineering and Milwaukee Institute of Technology, so he acquired "the basic dry school background. And when I was in the Army, in the missile corps, I got a background in recording and electronics," says Kling. "As a student I worked at the Milwaukee public broadcast station, directing and producing TV programs and learning about recording them." He also worked nights while at school, at CBS Broadcast

ing, where he learned "sound in the studio, the different mics used for different programs, the live stuff."

In 1965 RCA Records of Chicago hired Kling, and although he'd had his own studio, "I started from the ground up in recording, which at that time was 3-track." In multi-track's early days, Kling says, "The more tracks we got into, the more time we spent on one song. I got to do live sessions with people like Alice Cooper, the Guess Who, The Monkees, Motown stuff, but the monotony of spending days on one song wore me out. I wanted the variety I had had recording different types of music. Mastering was a way of remixing, and doing things individually, sonically. In mastering you could work on Mozart one day, Guess Who the next day, jazz the next. I wanted to learn about all music and not get locked into one group for weeks."

Kling worked his way into the mastering lacquer channels at RCA, and cut albums for many of its labels: Chess, Checker, Motown, the Chicago Symphony. He points out that his work as a recordist, mixer and remixer, and his experiences setting up mics and doing maintenance, gave him "good tools for

mastering. Seeing what happens in the studio, knowing how singers sing, how violins sound, what halls do to the music, how electronics shape the sound, knowing how panning is done, all that let me recreate the music into a disc by manipulating the controls I *did* have [in the mastering process]."

When changes in RCA's structure closed the studio in Chicago (1971), Kling moved to RCA Nashville. "I had already cut several gold and platinum albums of country and gospel music because RCA's mastering facility was in Chicago. But I had a lot to learn about country music. I had some good teachers: Chet Atkins was my boss, I worked with Dolly Parton, Ernest Tubbs, and some great engineers like Jim Malloy, Tommy Strong, Elvis' people. I did studio work here first. All these engineers had been here forever and here comes this boy from Chicago. I didn't want to say, 'I'm going to show you guys how to cut records.' I said, 'Teach me what you know.' A year or two later, after I got a good basic idea of country and gospel, I locked myself into the mastering part. They had two cutting rooms, and when I came, the artists used to work with me in the cutting room, like Ronnie Milsap, Porter Wagoner, Dolly, Chet, all the heavy country people.

"Then around 1978, RCA Nashville closed," continues Kling. "And all the engineers scattered around facilities in town." Kling bought a lathe and tape machines from RCA and built a small mastering studio—Randy's Roost—in the RCA building. He had seen a need and filled it. A decade later the effort has evolved into Disc Mastering, a digital Neve/Studer mastering facility that also serves as a high-tech Tannoy showroom.

Kling's advice to those who crave the variety and challenge of a mastering career is "Go to New York and to Europe—don't get locked in with country music. A violin in Europe is a fiddle in Nashville; you can see heritage by traveling and having a relationship with other kinds of music and lyrics. Get into different cultures and be able to put that into a record. It helps for mixing and mastering everything. If you



Randy Kling, owner of Disc Mastering in Nashville.

—CONTINUED ON PAGE 204



"I observe how the producer relates to the musicians, how they relate to the artists and the engineer."

—GLENN ROSE

who also knows enough to lean over and say, 'This compressor is acting weird,' or 'That looks a little too hot on tape.' Things like that can help you when you're on your sixteenth hour in the studio. On the other hand, if your assistant is not hanging with you and keeping up with things, it's more of a problem than if you were there by yourself."

As any first engineer or studio manager will tell you, good assistants are rare, even with the growing number of applicants in Nashville. The need for qualified seconds is reflected in the rising number of studios here. But getting that first career opportunity requires more than just interest and determination. Where have the successful engineers come from? How did they first get started?

"I was a disc jockey for ten years before I got tired of just playing records," Eichelberger relates. "I had a first class [radio] license and had built a couple of radio stations when I got the chance to build a 4-track recording studio in Pennsylvania. We recorded a lot of Southern gospel groups, and I learned a lot from the musicians. I learned how to mix records by listening to what the musicians would say about their sound. When I arrived in Nashville in '69, it took three days going to 26 different studios to finally land a job with Wayne Moss at Cinderella Studios. Within six months, though, I met [pianist/arranger] David Briggs and [producer/bassist] Norbert Putnam, which got me involved with Quadrafonic Studios in the early '70s."

"In 1972, I left high school in my senior year to help a friend build a 24-track studio in Louisiana," Peterzell recalls. "I worked on construction for seven or eight months and then stayed on as an apprentice engineer for a year and a half. We did albums with Al

Hirt, Pete Fountain, Allen Toussaint, The Meters, Dr. John. So when I applied at Woodland Studios in Nashville in '75, I already had some experience as an assistant. Also, Woodland was going from 16 to 24 tracks at that time, so my experience at Studio in the Country [Louisiana] was particularly helpful."

"I came to town in 1985 to finish my degree in music and audio engineering from UNCA [University of North Carolina at Asheville]," Rose reveals. "I was looking for those studios that did internships. I was more confident calling studio managers knowing I had some college background, and that it was something I had to do to finish my degree. I felt that people would look at me not as a person just trying to get a job, but as somebody who was trying to get an education and eventually get a job in this industry."

"It used to be if you had a friend who worked at a studio and who could get you involved it might lead to your first job," he adds. "But today, there are so many people from engineering schools and college programs that it's almost necessary for you to go to school in order to know what's happening and get some recognition in the field. I did my internship at the Sound Shop [Nashville], and got to work on The Exiles' *Hang onto Your Heart* album."

"After I finished my degree, I applied at a dozen different studios, including the House of David. Lynn tried me out for a couple of weeks without pay to see how I got along with the clients and the other people who worked there. Fortunately, I had another job delivering pizzas at the time, but everything worked out at the studio, and I started there full-time at \$5 an hour."

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Internships, or cooperative education courses, have become popular ways for aspiring engineers to start their careers. But these programs are not guaranteed tickets to employment.

"No school can give you the same kind of experience you get working on the job," cautions Geoff Hull, coordinator of the Recording Industry Management program at Middle Tennessee State University (MTSU) in Murfreesboro, Tennessee. "But a student who has come through our program has been through an intensive screening process. They have a solid amount of background information on audio technology. With that, and some determination, they're one step ahead of the person walking in straight off the street. The internship gets them the inside experience and the contacts that are essential for future employment. A good internship experience will get the student recom-

mendations from people inside the industry, like chief engineers and studio managers. It's as close as we can come from the academic side to the real working world."

Chris Haseleu, director of the Center for Recording Arts, which is aligned with the MTSU program, offers this advice: "The best lead to getting a job as an assistant engineer is to get into an educational program that offers an internship. Those without any education or experience will be competing not only with MTSU graduates, but those from Belmont College in Nashville, as well as graduates from Full Sail in Miami, Berklee School of Music [Boston], the Recording Workshop [Ohio] and others around the country. Recently in the Nashville area, we've had interns at The Castle, Goldmine Studios, Woodland Studios, MTM Records' demo studio, Sparrow Corporation demo studios, Humming-

bird Studios, Pat Patrick Productions, as well as Universal Recording in Chicago and New River Studios in Florida.

"Typically, an internship is one semester, or 15 weeks," Haseleu continues. "The intern will work two 8-hour days, 16 hours, each week. We follow up on each internship with the studio manager or head engineer, whoever is supervising the student. We seem to be doing a pretty good job of providing the students with the general technical knowledge necessary to understand what's going on. But what I think they learn the most about in the studio is how to deal with the client, how to ask intelligent questions, and how to find out something without asking in the middle of a tense studio situation."

The internship program is not without its critics, however. "A lot of clients do not want a student in the room when they're spending \$1,000 a day on the project," Eichelberger says. "Sometimes interns are a burden more than they are a help *because* they're trying to learn. We have people here who have been to school and have interned or worked at other studios, and then we teach them if we're going to take them on. And even then, the client may not want them around at first."

Haseleu admits that studio etiquette is difficult to teach: "It's better experienced. But we do try to make our students aware of how much money is being spent by a client in a big session, and hopefully, they have the tact to deal with that. I tell the students that a good assistant engineer is one who never has to be asked to do anything, they know everything to do. But the people going out to studios in this program are interns, not assistant engineers. They haven't finished their schooling, they aren't getting paid, and they aren't there 24 hours a day, five days a week. Many of the things interns are criticized for are the very things they are trying to learn."

"And rarely does someone get employed at the studio where they interned," Haseleu adds. "Most of the time the internship leads to a job because the supervisor at the studio can recommend him to another studio that's looking for somebody. Typically, the studios where we get the internships are the most stable and established; they're already fully staffed. And, of course, they have a

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—CONTINUED ON PAGE 204

NASHVILLE

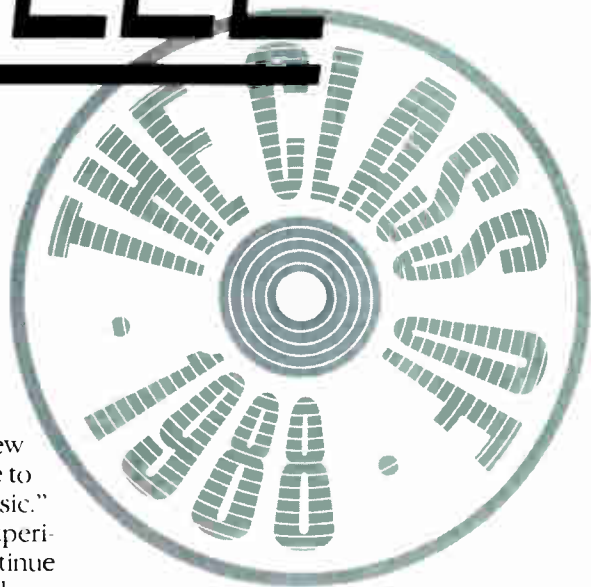
by Robert K. Oermann

A new wind is blowing through the streets of Nashville's famed Music Row. It's the wind of change. For years the city survived by recycling the same sounds and same stars for a musically conservative audience. That audience aged and began to lose interest after the "Urban Cowboy" popularity wave of the late '70s crested. In the backwash of that wave, country sales slumped.

By the mid-1980s, Music City resolved to reclaim its share of the American music marketplace. A raft of state-of-the-art digital studios put the town at the cutting edge of technology. A group of "new breed" producers and executives began to replace the hide-bound old guard.

Two new musical forms quietly began to take shape in the country capital. The first was a new type of gospel that became known as contemporary Christian music. It encouraged young pop-rockers. The second was a fusion style that spanned jazz, new age and ethnic sounds and came to be known as "new acoustic music." It encouraged instrumental experimentation. These new genres continue to grow and bear fruit in Nashville.

In 1986, the country community felt the new breezes blowing. During that year, more new country acts cracked the Top 20 than in any other year in country music history. Fully 23 newcomers "graduated" in the Class of '86, and 18 of them carried their success into 1987. Neo honky-tonker Randy Travis, blue-collar country-rocker Steve Earle and nouveau Bakersfield stylist Dwight Yoakam were the media sensations of 1986-87.



But the Class of '88 might be headed by their female counterparts. The biggest-selling artist to break through last year was K.T. Oslin (RCA), a 45-year-old former folkie and Broadway chorine whose earthy lyrics, cabaret sass and bluesy phrasing made her '80s *Ladies* album the fastest-selling disc RCA had all year, outpacing even pop platters by Starship and Mr. Mister, as well as the country titans Alabama.

The biggest-selling new band of the year was Highway 101 (Warner Bros.), led by singer-songwriter Paulette Carlson. Her Stevie Nicks-gone-country vocals and the band's kick-ass country-rock backing put all of Highway 101's first four singles into the country Top 10.

The Nashville industry selected Holly Dunn (MTM) as its brightest newcomer of the year at the annual Country Music Association Awards festivities. Dunn fought for and got creative control of her *Cornerstone* LP, then won listeners over to her cause with her pure heart-in-throat delivery and crisp, to-the-point tunes.

Critics have dubbed Sweethearts of the Rodeo (Columbia) "The Female Everly Brothers" for their commitment to frisky rockabilly and sibling harmony. Like the three acts above, the Sweethearts will undoubtedly gradu-



K.T. Oslin



Highway 101

ate magna cum laude in Nashville's Class of '88.

Randy Travis and Dwight Yoakam have been touted as examples of Nashville's "new traditionalist movement." That movement has three emerging female stars now. First out in 1988 is Patty Loveless (MCA), whose new *If My Heart Had Windows* finds her wailing with open-throated intensity. California's Rosie Flores (Reprise), whose debut was released last fall, seems poised for the same enthusiastic reception as she prepares her second effort. Boston's scrappy independent, Rounder, has a star in the making in 16-year-old Alison Krauss, whose new *Too Late to Cry* is as chilling and pristine as anything Emmylou Harris has ever sung.

Harris herself has re-signed a long term Warners contract and can be expected to sett off fresh musical sparks in the wake of her million-selling *Trio* collaboration with Dolly Parton and Linda Ronstadt last year (not to mention her stunning acoustic country gospel album, *Angel Band*). Trend-setting country-pop star Rosanne Cash (Columbia), newly spare-sounding veteran Juice Newton (RCA), vocal gymnast Reba McEntire (MCA), still-torchy Tanya Tucker (Capitol) and folkie Kathy Mattea (Mercury) will likely continue their winning ways this year. All have

developed strong, loyal followings.

Nashville has been flirting with a folk-country fusion sound for the past several months. The outstanding efforts to date have come from Nanci Griffith (MCA) and Mary Chapin Carpenter (Columbia). The men who are mining this vein and striking silver sounds so far are cult favorite Townes Van Zandt (Sugar Hill), David Olney (Rounder) and Hugh Moffatt (Rounder).

Also somewhere between folk and country are the bluegrass-tinged New Grass Revival (Capitol) and the nou-



veau-bluegrass Nashville Bluegrass Band (Rounder), both of whom are highly regarded for their instrumental wizardry and electrifying singing.

Bands, in general, have become all the rage in Music City. The standout breakthroughs of 1987 were those of The Desert Rose Band (MCA/Curb) and The O'Kanes (Columbia). The former creates classic California country-rock and boasts such vintage names as Byrds and Burritos alumnus Chris Hillman and the versatile Herb Pedersen. The latter is nominally a duo consisting of Music Row songwriters Jamie O'Hara and Kieran Kane, but is actually a mesmerizing, fluid ensemble that incorporates accordion, fiddle, mandolin and percussion as well as the team's harmony singing.

Foster & Lloyd (RCA) and Baillie & The Boys (RCA) are just now beginning to emerge as two of the town's freshest music makers. Both concoct truly unique country-pop fusion sounds. Foster & Lloyd rely on airy, almost Beatles-like melodies, while Baillie & The Boys emphasize the keening, yearning lead voice of Kathie Baillie, backed by the "Greek chorus" harmony echoes of Alan LeBoeuf and Michael Bonagura. These two eponymously titled debut efforts are LPs seemingly tailor-made for CD listening.

A cluster of even newer bands is coming right behind them. In 1988, The Goldens (Columbia) will introduce their bracing country-rock rhythms and invigorating visual style. Rusty and Chris Golden have Nashville in their pedigrees: they're the songs of former Oak Ridge Boy William Lee Golden. Also at CBS are two Muscle Shoals ventures, The Shooters, who boast catchy pop-ish songs, and Shenandoah, which has a troubadour-folk quality. The McCarters (Warner Bros.) are a sister trio who sport mountain harmonies courtesy of a fetching set of twins backing a liquid lead vocal.

Expect The Judds (RCA) and Restless Heart (RCA) to continue their appeal in 1988. Both have attracted attention well beyond the country field.

If there's a newcomer whose sound has the greatest potential for crossover success it's Lyle Lovett (MCA/Curb), whose eclectic *Pontiac* is a fascinating new album. He is by turns jazzy and barroom weepy, a rowdy redneck, then a waltzing gent.

Labelmate Steve Earle (MCA) re-

Steve Earle

mains the most important new song-writing visionary in country music, but joining him in 1988 is David Lynn Jones (Mercury), whose *Hard Times on Easy Street* has a similar rough-hewn populist quality and an equal rock kick.

Travis (Warner Bros.), Yoakam (Reprise) and movement-founder Ricky Skaggs (Epic) are still the "new traditionalist" kings. But on the horizon are bluegrass-trained Marty Stuart (Columbia), pop-star-turned-"heart"-singer Dan Seals (Capitol), silvery tenor/multi-instrumentalist Vince Gill (RCA) and robust baritone Ricky Van Shelton (Columbia), all of whom are readying new projects.

Honky-tonk stylist Dean Dillon (Capitol) is the songwriter behind most of the hits of Texas hero George Strait (MCA), and he's about to show us how the composer interprets his own material. Superstar songwriter Rodney Crowell (Columbia) is reportedly returning to his hillbilly roots after wandering in the pop-rock wilderness for several seasons.

Moving further left of center are the experiments being made by Cajun Joel Sonnier (RCA) and former Blasters rocker Dave Alvin (Columbia). And



Lyle Lovett

5 to 1 by Tom Kimmel (Mercury). Joining them this year as Music City pop composer voices will be Nashville's answer to Van Morrison, Pat McLaughlin (Capitol), and evergreen pop hit-maker Paul Davis (Capitol). On the distaff side are pop-rocker Wendy Waldman (Cypress) and steamy new screamer Joanna Dean (Mercury).

Critical praise has greeted such nouveau Nashville rockers as Jason & The Scorchers (A&M), In Pursuit (MTM), The Royal Court of China (A&M), Walk the West (Capitol) and Hege V (MTM). Coming up are the hard-rocking Rock City Angels (Geffen) and Whyte Lace (CBS).

Among the warmest-received of Music City's pop talents have been such new acoustic music exponents as Jerry Douglas (MCA), Mark O'Connor (Warner Bros.), Greenidge & Utley (MCA), John Jarvis (MCA), Edgar Meyer (MCA), Russ Barenberg (Rounder), Bela Fleck (Rounder), Giles Reaves (MCA), Billy Joe Walker Jr. (MCA) and Sam Bush (Rounder). The legendary Chet Atkins (Columbia) has also moved into this atmospheric arena with recent releases.

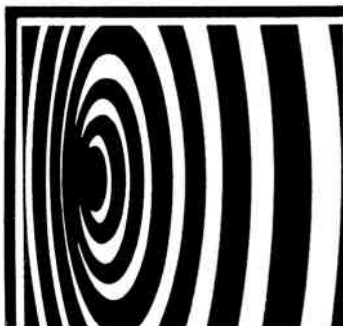
floating somewhere in the ozone above Nashville are East Village Appalachians The Last Roundup (Rounder), kookie Canadian diva K.D. Lang (Sire) and musical mesquite madcaps Riders In the Sky (MCA).

The core of the Nashville scene has always been the songwriting community. It, too, has shifted to the left. John Hiatt's brilliant *Bring The Family* (A&M) was the city's undisputed singer/songwriter masterpiece of 1987. Also impressive was the populist rock LP

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"When we reopened Emerald last year we made a commitment to be a leader in the burgeoning studio scene, not only in Nashville, but in the rest of the country as well," says Robert Porter, the studio's president. "Now, with the satellite dish in-

stalled, we believe that Emerald offers both radio and recording artists a unique facility. We have complete technology, an expertly trained staff, and have created a viable means of cross-country communication that can be transmitted with superb clarity and quality."

The linking of Emerald with IDB also enables Emerald to extend its recording and producing expertise to projects previously unfeasible in Nashville. The MCA Radio Network has already taken advantage of Emerald's studio broadcasting facility with its Sunday evening *Nashville Live* show, which is produced and beamed live from the studio to over 100 stations across the country. In addition, recording artists and spot producers can use the studio to instantaneously send or receive audio material in analog or digital formats to other studios or facilities that maintain a down-link capability.

— FROM PAGE 85, CLASS OF '88

The biggest pop noise to come from Nashville in the 1980s has come from a devout young woman named Amy Grant (A&M), who moved from contemporary Christian music into the pop mainstream and is now preparing her first all-out pop effort. Also distributed by A&M are her male counterparts, Russ Taff and Michael W. Smith. Taff is a tenor belter and propulsive rocker who is contemporary Christian music's biggest-selling and most award-winning male act, and his just-released *Russ Taff* finds him as close to Top 40 pop-rock as he's ever been. Smith's matinee idol looks and techno-pop production confections make him another name to watch.

Straddling the border between secular and sacred is hotshot electric gui-

tarist and singer/songwriter Dave Perkins (What). Petra (A&M) provides the best Christian arena rock and DeGarmo & Key (Benson) are the band with the catchiest tunes. Both are very well established already.

Nashville's black music scene is dominated almost completely by gospel music. Bobby Jones & New Life (Word) are still the leaders, but the Class of '88 includes gospel-to-funk graduate Bob Bailey (Airborne) and the astonishing vocal pyrotechnics of Take 6 (Reunion).

The air is rarified, indeed, in 1988 Nashville. For the city is breathing innovation and musical diversity like no other time in recent memory. ■

Robert Oermann is a music critic for the Nashville Tennessean.

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by Robyn Flans

HAROLD SHEDD

AT THE TOP OF THE CHARTS

Who knew that Harold Shedd was going to break records and make history when he first got involved with Alabama in 1979? Certainly the band which had been playing for tips in Myrtle Beach, Florida had no idea that 21 consecutive number one country hits were awaiting them, along with two Grammys, five American Music Awards and practically every other possible music industry honor. Nor did Harold Shedd, the son of a preacher from Bremen, Georgia, a former disc jockey and jingle producer, have an inkling he was about to coproduce (along with Alabama) albums that would sell more than 25 million copies.

Alabama was recording on MDJ Records, an independent label out of Dallas, when Shedd was asked to complete some unfinished masters. He knew they had something special, in addition to the fact that in those days there were only two *groups* in country music of any magnitude—the Statler Brothers and the Oak Ridge Boys, who had gone from gospel into secular music—but neither was a self-contained unit which played its own instruments. Alabama had slugged it out as a *band* for ten years, so Shedd used them in the recording process, a Nashville rarity.

“It started out originally with two guitars, bass and drums,” he recalls. “That was it. There was a guy singing and two guys doing harmony and that was pretty much the first and second albums, even though we gradually added other instruments to enhance a particular song. It’s gone from that to the *Feels So Right* and *Mountain Music* albums where we got into some more original ideas. We used strings where

we felt they were needed and then we hit an era where things started to become a little more electronic. The DX7 came along and everybody started to use one. There were types of guitar sounds with younger players coming into town and all these new ideas and we started to put some of those kinds of things on *The Closer You Get* album, like the snare drum being triggered, reverse echo and things like that. A



PRODUCERS • DESK

journalist once told me he heard that we overdubbed the snare 52 times. I told him that wasn't true, but that's when electronics started becoming more a part of it.

"Then records started to become technically better because equipment became better and then the digital thing happened, so what you hear is really what you hear. Our last two albums were totally digital and the two prior to that were analog until the final mixing stages and then they were mixed down to digital 2-track, so we started it actually four albums ago and gradually got into the all digital process."

Interestingly, though, Alabama plays less on their albums than they used to. "Recording techniques are changing," Shedd explains. "It's not that they *can't* play on their albums—they *do* play on their albums and they play on stage—but their schedule is really more hectic than it was in 1979, 1980 and 1981. They don't have as much time to come in and stay in the studio and it takes longer sometimes because when we get in with everybody there, we tend to want to experiment. What we've

been doing recently that makes a lot of difference is we take the band to [band-member] Jeff Cook's studio down in Fort Payne and do a lot of the pre-production work there. We get the arrangements worked out, so in reality, a lot of times what you're hearing is session players doing pure Alabama arrangements. We found out we can combine the great talents of some of the best players in the world right here in Nashville like Eddie Bayers, David Briggs, Larrie Londin, Brent Rowan, Steve Gibson, Mark Casstevens. If you can get these guys into what you're really doing and they can help you improve what you're doing, it really makes sense to do that.

"It's not valid to say the band isn't capable of playing on the records, but they work under different conditions every day. If they worked in the studio every day, it would be different. I've got to look at it from another point of view as a producer and that is if I take this guy who doesn't work very much in the studio and put him in with five guys who are double scale because they're so good, then what kind of pressure am I putting on this guy? Can he do his best? There are all these

different things that have to be taken into consideration. The thing in the studio is to create an atmosphere we can make records in and the easiest way to do that is to have a group of guys who are all going in this direction.

"The song and the artist dictate the kind of instrumentation, how it should sound and what it should have on it. I don't go in to try to cut a certain type of record with a formula. I just go in and try to reach that particular artist's audience—what it is demographically and musically—through songs and arrangements. If it's Reba McEntire, you're probably going to use your basic section plus a fiddle or a steel guitar maybe and mostly acoustic piano, whereas with another artist, you might take a totally different approach.

"Reba is a very pure country music singer," continues Shedd, who produced two Number Ones for Reba, "Somebody Should Leave" and "How Blue." "She's so pure. Recording Reba is a little different from recording Alabama, Mel Tillis or Glen Campbell because the main thing is to not overpower her with tracks. She doesn't need a lot of back-up voices or support. Just give her a basic rhythm track that she

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and he can work any hours he pleases. Originally a smaller studio in another location, the Music Mill has grown to house two rooms, a main cutting room and a mix overdub room. It contains Trident TSM automated consoles, both equipped with 32-track Mitsubishi digital machines, digital reverbs and other outboard gear.

"Being a studio owner/producer, I've been able to advance with Alabama a little more than we would have had we been renting studio time," Shedd says.

And advance with his other artists—like K.T. Oslin, who also recently made country music history at 45 years old when her initial release had the highest chart entry ever of a female's debut LP.

"What I like about working with Harold is he is a very honest, natural person," Oslin says warmly. "The Harold you see yesterday is going to be the Harold you see today and the one you will see tomorrow and in five years. He will grow and change, of course, like we all do, but he is basically what he is. As a producer, if you need to be



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told how to sing, how to phrase or how to feel, you're in the wrong ballpark. Harold is not there to tell you that. In my case, he's not looking for songs for me because I'm the writer. But he's a song man; he recognizes songs. Harold is willing to take chan-

ces. He also has a wonderful sense of humor," Oslin laughs, gearing up for a story.

"I had done a demo tape which got me Harold. Lots of people had heard it and some people said, 'This is some of the best stuff we've heard in years. How old is she?' They all said I was too old. That really got my goat. It crushed me at first, and then I got furious. I said, 'I'll do this if I have to take a life doing it—my own!' So when we were finished doing the stuff and we had about three songs, Harold took them into Joe Galante at RCA and when he got back, I asked him, 'Harold did he ask how old I was?' He said, 'Well, yeah.' 'What did you tell him?' Harold had never asked me how old I was, but it's obvious I'm not 22. He said, 'Well, I told him you were pushing 40, but I didn't tell him from which side.' ■

Robyn Flans is a Los Angeles-based freelance writer who contributes to Mix, Modern Drummer, Pulse, Words & Music, and other publications. She's also conducted interviews for radio and TV, and has authored three rock books.

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After an hour or so of listening to the playback and everybody screaming, I said, "Now wait a minute. What

are we going to put on the other side?" Somebody had been working on a line, and he said, "Hey, we'll go out there, make two takes and call it 'Green Onions'! We all laughed, right? After we did it, I said, "I don't believe this. This is a hit record!" About seven that night, Nick Charles, a DJ from WHBQ, dropped by, and we were still listening to the playback. He said, "I've got to play that on my show tomorrow."

So the next day I sent somebody over to Sam Phillips' to make a dub. On Monday night we had calls for the record at the record store [Stax owned next to the studio]. Dick "Cane" Cole was burning the record up on WLOK. They were playing it four or five times, one right after the other, screaming, "Smash!" God, those were the days. They would literally play a record for 15 minutes; play it the day it was cut. They couldn't wait to get a copy. Now that's when the record business was fun. You saw it happen immediately. We sent the parts down to Coldwater, Mississippi, and in 24 hours they were shoving them out. By the end of the week we had the records in the store. I'd send it to Atlantic [Stax's distributor at the time], and there was no way that they wouldn't put it out.

Mix: You produced Stax's early hits and everything on Otis Redding except his last song. How do you describe the Memphis sound?

Stewart: It's the separation. Each player was somehow maintaining his identity as he played. Even playing behind Otis, you could tell it was Steve Cropper. He wasn't trying to be a star; he wasn't trying to outshine Otis. Steve was playing what the record commanded. Even as he was doing so, you could hear him, the individual. You could feel his emotion and how he was interpreting the song.

The same way with the horns [The Mar-Keys, later called the Memphis Horns]. Prior to Stax, who ever heard of a horn section from a session getting a name or having an identity? We didn't use strings a lot. Only when Isaac came into the picture did strings become an important part. We used funky horns because horns were more compatible. Otis was really a challenge for the horn players. He'd come in with these horn lines he'd worked up in his head.

Mix: Some critics say that Stax died with Otis' death in '67, yet that was the

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beginning of Stax's better years in terms of financial success and national recognition.

Stewart: Otis was not our biggest moneymaker. We had Sam & Dave, Albert King, Eddie Floyd, William Bell; all these acts were selling records. The greatest loss was in not having Otis to inspire us. There was a certain magic about Otis, an enthusiasm. I don't think any of us ever got over Otis' death. It was a tremendous loss, not just for what he represented, but his personality—him as an individual.

Mix: Just four months after Otis' devastating death, Dr. Martin Luther King was assassinated less than three miles from the studio. How did that murder affect Stax?

Stewart: Memphis was a nonconformist town in a very strict society. It's a contradiction. There was a lot of emotion in our lives in the situation we were in. We were like a little island in the middle of Memphis during that time, and we were frowned on and misunderstood by a lot of people. There we were, a totally integrated company, working in harmony—without sounding trite—in a period that was not the best in America's history. We had all this pressure from the outside, and we had to shut ourselves off from it to be creative and to be totally uninterfered with. Underneath it all, it was the music that held us together. I saw a whole culture that I had never been exposed to before and knew nothing about, which added to my life.

Mix: The Stax legacy lives. What about those days makes you happiest?

Stewart: That we did some things that are appreciated still musically. We can look back and say we left something that maybe changed somebody's life for the better. If there is some little kid out there who can pick up an Otis Redding record and be inspired by it, then I feel like I have contributed something.

I think we were probably frontrunners in treating artists and writers right. We came up with some things that were not being done in the industry normally as far as incentives. We probably were one of the first to pay producers and musicians percentages. We were giving them points or an override on all sales—on everything they participated on. That was the Big Six: the M.G.'s and Isaac and David [Porter, co-writers of such hits as "Soul Man"



Stax writers David Porter (left) and Isaac Hayes

and "Hold On, I'm Coming"). Even when the company was sold we maintained that agreement.

I learned early that publishing was very important, not only from the standpoint of money, but as a source of songs for our artists. We had the publishing, but we paid a weekly advance, and in some cases a weekly salary that was not deducted from their royalties. We were paying them to learn their craft.

Anybody who showed an interest in wanting to learn, to improve himself, we tried to give an opportunity to do so. We had a security guard who became an engineer, and a mail clerk who became a promotion man. That's why we wanted to stay an independent company. Tell me where else in the world at the time could a black studio drummer have become a millionaire, like Al Jackson did?

Mix: Do you feel a company like Stax Records could work today?

Stewart: It would be difficult. It just depends on the people. If you could find the right spirits and the right combination of energies and minds, it could be done. Not in the same way. You can't go home again, they say. But,

they also said Lee Iacocca couldn't save Chrysler, and he did. So, don't say, "Never."

In the aftermath of Martin Luther King's death in '68, the team players at Stax began to change. Booker T. and Steve Cropper both left for the West Coast. Others, including Stewart, who had sold the company to Al Bell, left amid the building of fences around the property and the hiring of armed guards. There was other general craziness that varies from version to version depending on the mood of who's telling the tale.

There were lawsuits and countersuits involving Atlantic and CBS Records (Stax's distributors), Union Planters National Bank (the major lending agency), Stax and others. There was an indictment against Bell, who had taken over as president and CEO. There were FBI investigations into charges of payola and kickbacks. There were IRS inquiries of both Stax and Stewart.

No wrongdoing was ever confirmed. In the process, however, Stax was forced into bankruptcy by three small unsecured creditors whose combined claims totaled less than \$3,000. Although Stax had signed a new agree-

ment with CBS, formed a new label and scored a hit with Shirley Brown's "Woman To Woman," Union Planters would not wait and called in its loans. Stax was closed—prevented from collecting and paying royalties. Academy Award-winning *Shaft* composer Isaac Hayes was only one of those who suffered from the incident that eventually forced him into bankruptcy.

"I thought we were going to be able to stay in business," Stewart says, reflecting over the ordeal. "The judge said, 'Let them operate,' but something happened about two weeks later. He did a turnaround for no reason at all, from allowing us to operate under Chapter 11, to closing the doors permanently."

As Stewart can best explain it: "Union Planters Bank was going bankrupt. We were just one of their problems, but they saw a way out. Joe Harwell [the UP loan officer that handled Stax's account] was obviously a felon. They convicted him. So if they could prove a conspiracy between Harwell and Bell, they could get their money back.

"They sent a hatchet man down from Atlanta," Stewart continues. "He said, 'Wait a minute, I know how we can get our money back. We can indict Mr. Bell since he and Harwell are so close. Then a bond company will pay off.' That's the real nitty-gritty. That's why they had to put us out of business. In the meantime, who knows, put a black company out of business that's making too much loud noise around the country, because if they get enough support behind them from black organizations or whatever, the bank could be in trouble trying to foreclose on us."

After that, Union Planters took the Stax publishing companies, hired some new people, tried to hire some Stax writers, and even put out a blues record in an effort to get into the record business themselves.

"I spent a year of my life being accused of everything, and they could never prove anything," Stewart concludes. "Talk about pain. All for one little black record company. It is real scary when you realize what can happen to you. If I can help people realize that, then that would probably be the best record I ever made." ■

Rose Clayton is a freelance writer in Memphis and a longtime contributor to Mix.

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The cue box has been such a lowly animal in the studio—it's the last thing anyone thinks about, but it's the first thing the artist complains about." This observation by George Juodenas of Hi-Tech Labs in Nashville reflects a suspicion that we at *Mix* have held about traditional thinking regarding headphone cue monitoring systems in the recording studio. It's easy to see how cue systems can take a back seat in the race to keep abreast of the latest developments in digital recording, automation and MIDI. We decided to take a closer look at the subject of musicians' cue systems, and we learned that, indeed, people are coming up with their own improvements in this area. And George Juodenas is one of those people.

Juodenas' company, Hi-Tech Labs, designs hardware and software for the recording industry as well as for other unrelated areas. He recalls, "About one-and-a-half years ago I built a studio for Warner Bros. here in Nashville. We used the standard cue boxes in that facility. At that time people were starting to use Fostex headphones because they're loud and they don't blow up. These phones require a lot more current. They're rated at something like 400 milliwatts, but I found everyone was using them at 3 watts, and this was causing some serious problems. Everyone was having to replace the pots, and sometimes the series resistors inside the cue boxes. They literally were going up in flames.

"Another drawback of the standard cue box is that different impedance headphones interact differently with impedance of the potentiometer system, so your volume curves and levels are all different. And because of the basic inefficiency of the system, the power amps were squaring out, too. So I developed a special switched resistor network which can be used with all the common headphones. Instead of a pot, we switch through the network to get several steps of volume. Because the design is so efficient, it turns out to be much louder than any other passive system, so you have much more headroom. There's a real clarity to the sound, and no matter what headphone you use it always gives you the same dB increments as you step through the volume levels. You use just one headphone set per box. I brought this prototype in to Warners, and they went nuts.

Monitoring Systems

• F O R • Musicians

Studios demonstrate a new attitude about taking their cue

by Paul Potyen

"So then I built a whole bunch of them and they went like hotcakes. Here in Nashville, Audio Media, Eleven Eleven Sound, Omnisound and Creative Workshop are some of the facilities that have them. At the first session we ever used it the drummer said, 'Turn it down, it's too loud.' That's the first time I ever heard a drummer say that."

The finished box sells for about \$200, and Juodenas says he can also sell it in kit form. He adds, "Other people who want to improve their cue system have gone to some kind of

active system right away, thinking that's the only answer, but passive hasn't really been explored."

Passive vs. Active Cue Systems

Doppler Studios in Atlanta is one facility which has explored an active cue system. Joe Neil of Doppler explains: "Our cue system is a departure from a normal system in that each cue box has a 30 watt/channel amp in it. This system allows for low-level mixing in the studio by the players. Each station consists of two main left and right inputs, and auxiliary A and B inputs. Typically we'll send the stereo cue mix into the two main inputs, and then one auxiliary might have the click, while another might have a mono drum mix if, for example, the drummer needs to hear more of himself. We sometimes call the auxiliary inputs 'more me' inputs. We've wired the studio with two identical systems, giving us the ability to have eight different sends into the room. So we might put the same stereo feed on both systems, and then we'll have four auxiliary sends depending on whether the cue box is connected to system A or B. We can also use the boxes with two split mono feeds instead of the stereo mix. It's an extremely flexible system.

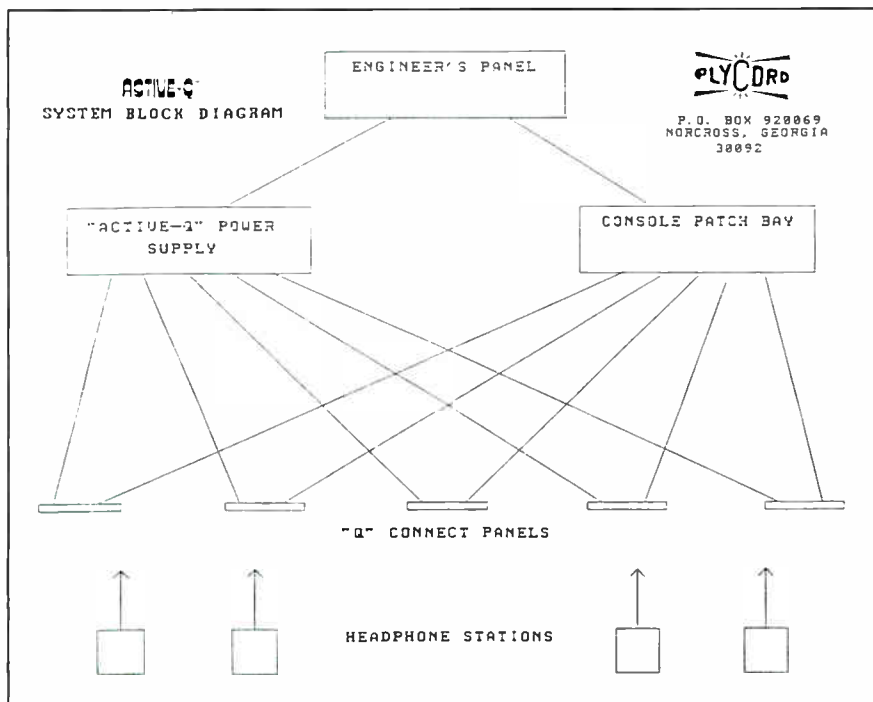
"Phil Young of Plycord [an Atlanta engineering consulting firm] designed this configuration with some input from us. He actually redesigned a cue system he had built for another studio to include the additional two auxiliary inputs. In addition to 15 units in the studio, we have two rack mounted units in the control room. Each box is designed to accommodate up to four headphones. All units run off a mono-polar 30 volt power supply. It's not cheap, but I haven't seen anything that comes close. We love it and our players love it."

Designer Phil Young adds, "The first system was designed [for Southern Tracks] to overcome the power limitations and the low damping factor inherent in passive cue systems. I created a second generation prototype using Doppler's suggestions. We took it into the studio and compared it to the passive system they had, and I made the sale on the spot. It has more than 20 dB of headroom, and enough power to plug in to a pair of Auratones with excellent results."

One of the players who has lauded the Plycord system is Ricky Keller. A

Plycord's Active-Q headphone station





bass player turned synthesist and arranger, Keller works frequently at Doppler. He agrees that it sounds better than any other system he has ever used. Keller also has his own 24-track

studio. "A lot of my work is with MIDI so I don't need anything as sophisticated as the Plycord system," he comments. "I have a TAC Scorpion mixing board, and I just run the stereo feed

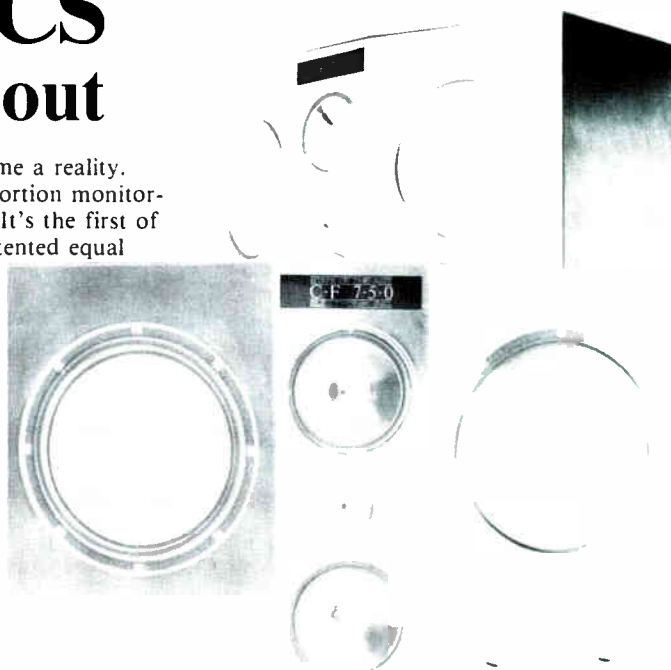
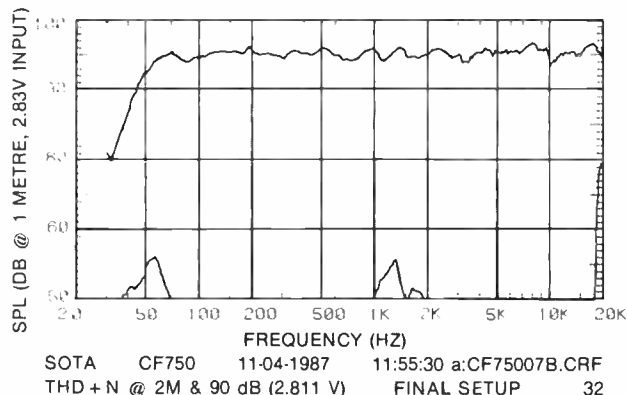
to my cue system with a Hafler amp. I use Fostex T20 phones. They work great. Most musicians I know like them because they're so comfortable."

Emerald Sound in Nashville has also installed an active cue monitoring system. "About a year ago we got a new console and redid the control room," comments Emerald's Kerry Kopp. "At that time we rewired the studio with an 8-channel active cue system made by Formula Sound in England. We also left in the 4-channel passive system that previously existed. We rarely use that system now, except for driving loudspeakers. We have 15 units wired permanently in the wall of the studio, and we use splitter boxes if we need to have more than two headphones on a mixer. It uses four power supplies. It was a real nightmare to install an active system like this, what with multing your DC power and audio sends. It takes a lot of physical space to do that. But the results are great. Everybody has control of his own mix. These guys really like this active system. Soundstage Studios has the same thing. It was built with MCA's input.

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"We had a standard 2-channel passive system for a long time. Then someone in town put in a 3-channel passive system where the third channel was an auxilliary mono. When you get beyond a 3-channel arrangement you start running into volume level and crosstalk problems. Nobody's been particularly thrilled with the way most passive systems sound. In fact that's the number one complaint from any veteran session player."

Several other companies besides

Formula Sound are marketing equipment to aid studio musicians in their monitoring process, among them Rane Corporation, Furman Sound and Simon Systems.

Guitarist Reggie Young has been working sessions in Nashville for 15 years with such artists as Hank Williams, Jr., Loretta Lynn and Glenn Campbell. He provides a musician's perspective on the cue systems at Emerald and Soundstage. "I run stereo direct 60 to 70% of the time, so the

cue mix is very important to me," he says. "I've worked in studios where you don't really know what you've got until you go into the control room and listen. Emerald and Soundstage are great because you can really hear everything clearly. It's important to get the adrenalin going for me to play well, and that can happen only if I can hear what's going on."

Another studio that has responded to the needs of its studio musicians is Ardent Recording of Memphis. Patt Scholes of Ardent explains that the technical staff custom-designed Ardent's headphone cue boxes with two stereo/mono toggles and volume controls to give flexibility to the musicians. He explains, "We have two stereo feeds out to the room, and we use standard power amps to send speaker level signal to the headphone boxes. So we can use one or both stereo feeds in split mono mode, giving us four separate channels. Each box is capable of driving up to four phones."

Still another approach is used by Soundscape Studios in Atlanta. "We recently made a change from a Neotek console to a Neve 8068 board," comments studio manager Jim Zumpano. "The Neve allows us to use two Studer amps for four separate cue mixes because there are that many sends on the Neve."

Jeff Carleton of House of David in Nashville spoke to us about the cue system there: "John Ryan Audio designed and built our boxes, which are configured for a 3-track system and include volume controls for each track. We usually send a stereo left and right signal, and an assignable auxilliary signal for vocal or click or whatever. We included a mono/stereo switch so we can also run it in split mono. It's powered by a Yamaha 2000 series amp. As far as headphones are concerned we use Fostex, AKGs and Sennheisers. We also have a couple of big, heavy Koss cans that the drummers seem to like a lot."

Headphone Headache Remedies

The subject of headphones in the studio proved to be an interesting one from the musicians' standpoint. Nashville keyboardist and arranger Mitch Walker has developed his own solution to the problem of bulky headphones. He tells us that he feels uncomfortable with a lot of the head-

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by Lou CasaBianca

AIM PRODUCERS GROUP

PREMIERE FIRST CD-I DISC

In this month's "Interactivity" we'll update the latest developments in CD-I from American Interactive Media. AIM held its first national Producers Group meeting this past December at the company's new studio facility in Los Angeles. The meeting was set up to show the world's first CD-I disc, and drew about 60 attendees representing more than two dozen companies. Nineteen companies currently in co-publishing agreements with AIM covering games, entertainment, computer software and video production were represented.

The session featured the U.S. premiere of the first functioning CD-I disc, a demonstration prepared by Philips, NV and AIM's creative and technical staff. The disc demonstrated different levels of CD-I encoding processes, used for different design needs and disc memory management. The levels of CD-I audio demonstrated ranged from speech ("Level C") to PCM (CD-audio quality). The visual encoding processes shown utilized varying numbers of available colors and hence, varying detail appropriate to the encoded natural, graphic and text images. In addition, the disc showed various visual effects, such as dissolves and wipes. The disc clearly demonstrated CD-I's ability to utilize full-motion, partial-screen video.

The disc also combined audio and visuals in several sample interactive applications. These programs offered

multi-lingual narration, quick access to requested information and other features unique to CD-I. AIM co-producers were given the opportunity for a hands-on look at the demonstration.

The AIM Producers Group meeting agenda included technical updates on studio operations, production processes and coordination; information on available development sessions for process-intensive titles such as games, and media-intensive titles, such as information programs. The product development sessions indicated the enormous progress in the area of CD-I design that has been made in the past few months.

Also scheduled were demonstrations and discussions of different systems being developed for CD-I. Bob Sorenson of Microware, developers of the OS-9 operating system, gave an overview of CD-RTOS, the Real Time Operating System, and pilot system utilities. Vince Dureau of Thomson International explained the features of InVision, Thomson's authoring system, with a demonstration that illustrated the many applications of CD-I's interactivity, and its ease of operation. Steve McKay of Sun Microsystems presented an update on the Sun development program. This is the officially sanctioned authoring software and hardware system for CD-I production.

A number of AIM staff members and consultants also made presentations. Mark Dillon, vice-president of techni-

INTERACTIVITY

cal and creative services, and the head of AIM's studio, discussed emulation, validation and premastering; capture and encoding of images; and writing of control code. Larry Lowe, CD-I designer; Rodney Wood, digital design engineer; and Frank Huttinger, CD-I producer, described hardware and software being used to develop programs. These tools include Targa, Sun Microsystems, Macintosh, Microware,

and authoring, graphic and design tools.

Additional presentations by AIM staff and consultants covered the areas of video imaging (by Gary Thompson, a video consultant), and workstations and 3-D graphics (design consultants Lisa Bolstad and Orlando Fernandez). Peter Bloch of Interactive Production Associates, Dick Bratt of Spinnaker Software, Dave Feldman of ICOM Simulations, Richard Currier of Intelligent Image, Inc., and Jim Hoekema and Larry Lowe of AIM all discussed title-specific issues, in some cases demon-

strating iconography, screen design and other elements of CD-I titles currently in production.

Gordon Stulberg, chairman of AIM, commented, "The CD-I reality is now here. We, along with our co-publishers, are having our dreams validated." Bernie Luskin, president of AIM, added, "The AIM Producers Group represents the heart of this new software industry and will be the pinion of its launch. This exciting demonstration is a major milestone in the birth of optical publishing, and CD-I in particular."

AIM CD-I Production Studio

American Interactive Media has also established a new state-of-the-art CD-I studio, the first of its kind, at 11050 Santa Monica Boulevard in Los Angeles. The 8,000-square-foot facility contains two of the world's first CD-I authoring stations. Headed by Mark Dillon, the new AIM studio hopes to lead the way in CD-I software development.

AIM has more than 50 CD-I titles in varying stages of development and production, in partnership with a variety of co-publishers. The titles are in the areas of games, entertainment, information, education and self-help. The new studio facility features two CD-I emulators, a Sun 2/280 workstation, two Paintbox workstations, a 3-D animation workstation and an insert stage, and is cabled with RGB, data and stereo audio.

The two CD-I emulators will encode CD-I data and act as a CD-I player for design and debugging operations. AIM is one of only two locations in North America where true CD-I emulation can take place; the other is OptImage, a Chicago-based joint venture between Philips and R.R. Donnelly. The Paintbox workstations are for production, design and image capture, while the insert stage is used for original imaging. CD-I is currently scheduled for introduction to the consumer marketplace in 1989. More developments can be expected at this month's Microsoft CD-ROM Conference. We will keep you posted. ■

Lou CasaBianca is involved professionally in advanced music, film and TV production, interactive authoring and visual design, and computers in media production. He heads the New Media Learning Center in San Francisco.

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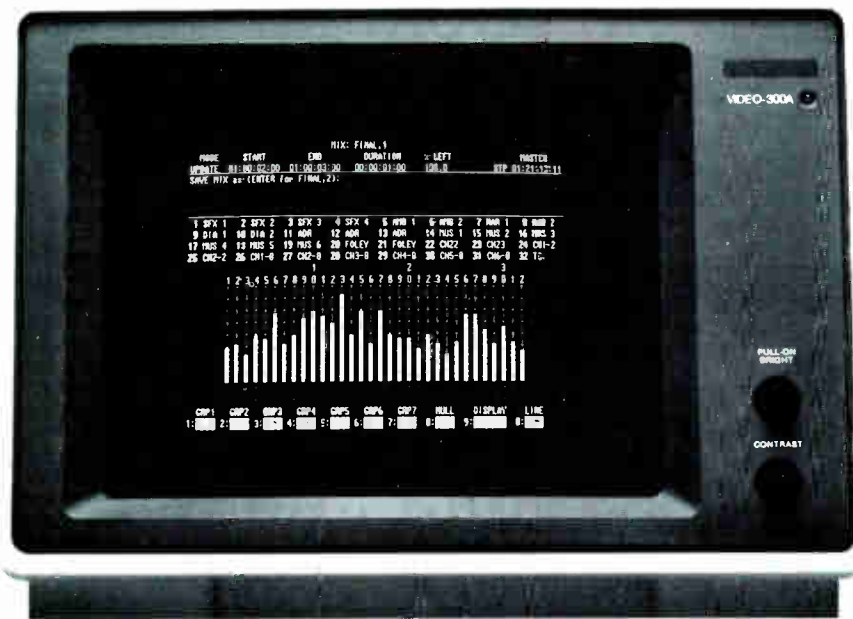
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How to make a living as a recording engineer.



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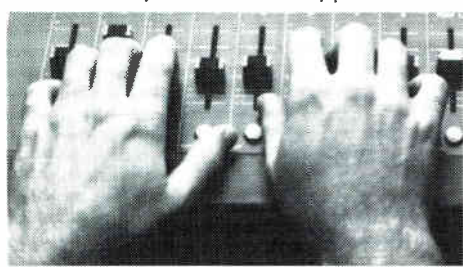
If you're serious about becoming an engineer whose services are constantly in demand by the music industry, there's something you should know. More than ever before, the hottest engineers will be those with the skills of both a technician *and* a musician. And now there's one place where you can develop your technical and musical awareness hand-in-hand—at the acclaimed Grove School of Music in Los Angeles.

Grove's new Recording Engineering Program is an intensive one-year course of study that gives you an exceptionally well-rounded approach to making music sound better. Grove instructors are working professionals based here in the entertainment capital of the world, where opportunities are at your doorstep in more studios and concert halls than you'll find anywhere else. Students from more than 30 countries have found the Grove School to be the most *practical* place to launch their music careers.

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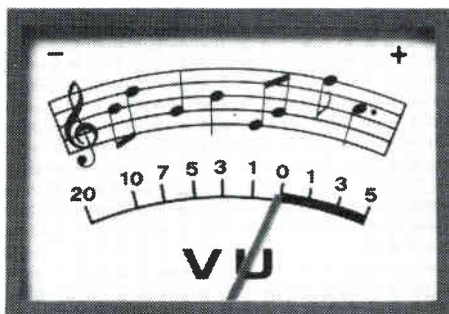
You'll work with a full spectrum of acoustic to electronic music, from Top 40 to film and television scores. And you'll learn sound reinforcement techniques for a wide variety of live music applications.



2. Get consistent hands-on experience.

There's no substitute for learning by doing. So you'll regularly have projects in Grove's two in-house studios, as well as taking advantage of the program's ongoing access to state-of-the-art 24-track facilities in the Los Angeles area.

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The most talented engineers are usually musicians as well. The Grove program is designed to insure that you'll *understand the music* you're recording, and that you'll be able to *effectively communicate* with musicians on their own terms. Grove's outstanding courses in eartraining,

harmony, sightreading and rhythm section arranging will result in some great advantages for you when you're behind the board.

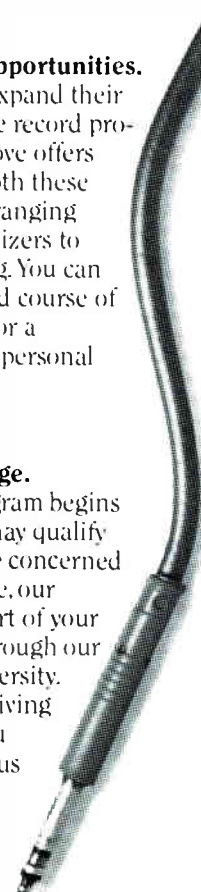
4. Prepare for related opportunities.

Successful engineers often expand their careers into related fields like record production and music video. Grove offers professional workshops in both these areas, as well as many others ranging from Songwriting to Synthesizers to Drum Machine Programming. You can build these into a customized course of study, and we'll help you tailor a complete package to fit your personal career goals.

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YAMAHA R&D

■ GOES UPTOWN AT NEW FACILITY IN NEW YORK ■

by Dan Daley

Go figure out West 57th Street. It's got record companies (Arista), recording studios (Media Sound), performance spaces (Carnegie Hall). Still, technology isn't the major motif. Not with the furriers, jewelers and boutiques that charge the annual GNP of Botswana for an earring.

It's not that everything there is nec-

essarily the best. It just seems that way. So maybe Yamaha got the best of both worlds when it decided to open its latest and most comprehensive research and development center on that *grande dame* of New York arteries. Glitz and glamor. Tradition. High rents.

"Some of the best musicians in the world live within a few blocks of here," says the center's general manager, Tom

Sheehan. "Within four blocks are some of the best recording studios in the world. We're also nine blocks away from the retail center (at West 48 Street). The vibe is why we came here."

Mix got a firsthand view of the multi-million dollar, 17,000-square-foot center, designed by Yamaha itself and built by Takanaka International, before its official opening last December. In the newly opened Metropolitan Tower, Yamaha has taken over the entire second floor. Access is by either a private door discreetly camouflaged in the lobby, or by private access elevator. As with the rest of West 57th Street, exclusivity is a watchword here. Entry will be by invitation only, according to Sheehan. "Top artists and music professionals, that's our target," he says.

Yamaha has several other R&D centers scattered throughout the world; and all have specialties: London is dedicated to electronics and has a recording studio; Tokyo also has one; Paris is aimed towards acoustic pianos, as is Frankfurt; Vienna's facility is geared to woodwinds; the emplacement in Glendale, CA, is in a commercial recording studio.

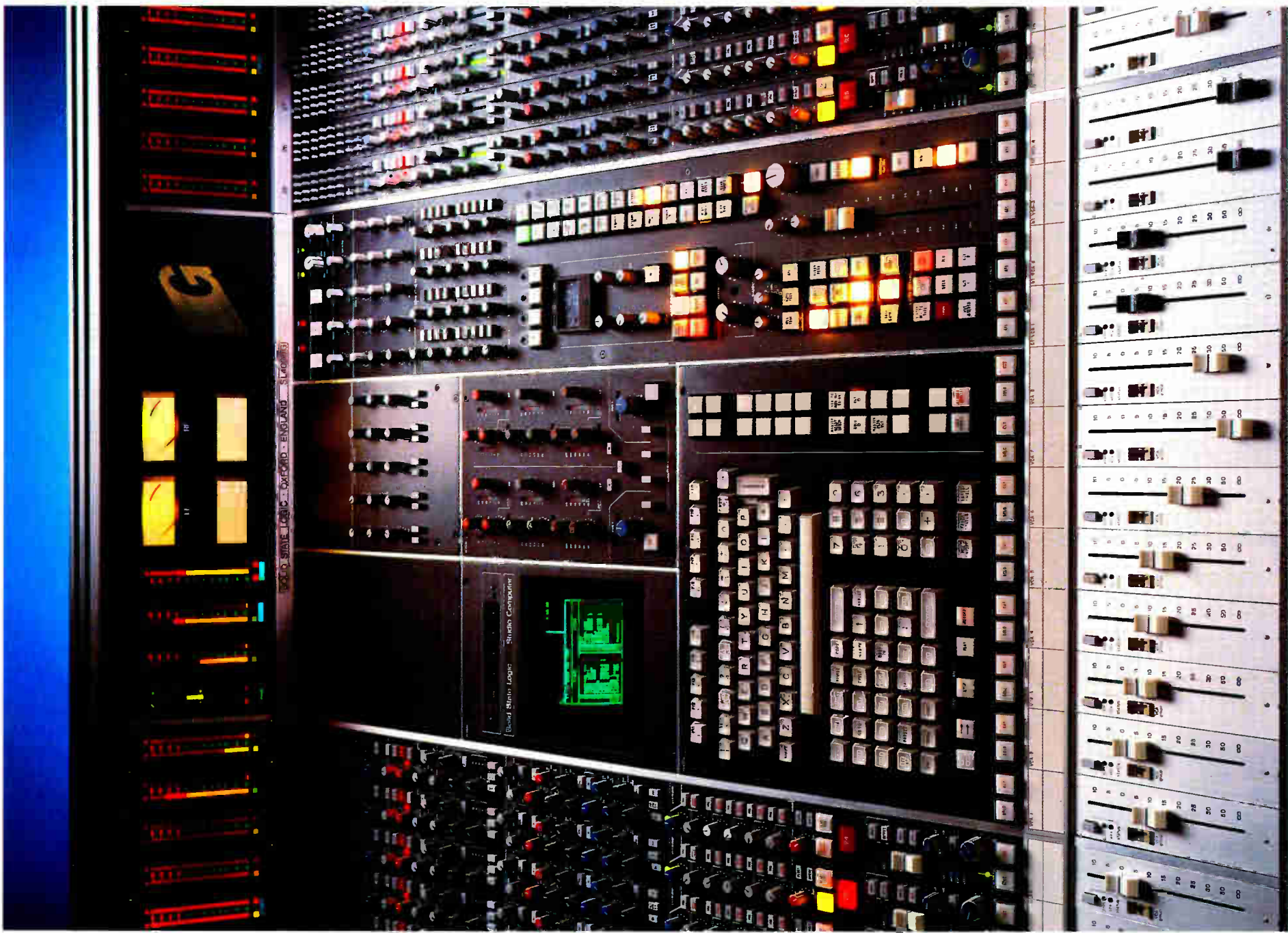
The center in New York City, however, differs from all the rest in that it has a multiple-use approach covering all the abovementioned bases. Furthermore, here Yamaha has scrupulously avoided any connection between the center and the commercial marketing subsidiaries of the parent corporation. Sheehan notes that the R&D operation is an entire subsidiary unto itself and that all contacts with other branches of Yamaha are at the senior management level, not marketing and sales. This approach grew out of an in-house study called the Century Project, designed to position Yamaha for its second hundred years of existence. On the managerial side, the company was restructured last April into four main companies: Yamaha Corp. in Japan, Ya-



The R&D studio for the Pro Products division features a custom Yamaha RM3000 console and a multitude of keyboards.



At the Grand Piano R&D center are William Santaella (seated) and Ike Kolke. Note acoustical well in ceiling.



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maha Oceana for the Pacific Basin excluding Japan, Yamaha Corp. of Europe, and Yamaha Corp. of America, which covers the western hemisphere. Separate companies responsible to each main division handle all sales, marketing and development. The parent name, Nippon Gakki, is history: it's all Yamaha now. "The key is the idea of a global strategy with local applications," Sheehan says. "Through the study of the Century project, the global strategy has been formed that leads to project one company, one image throughout the world but to take into consideration the taste and market needs of each area."

The New York R&D Center is laid out in a labyrinth of rooms and suites dedicated to specific areas of the company's product lines, all centered around the lobby hub. Tech colors—mainly shades of grey—pervade the place. Tom Sheehan, who looks a bit like a younger Tip O'Neill, led the way on a tour of the facility.

The first stop was the concert grand piano area. On either side of a foyer area are a concert studio with prototype pianos housed in a climate-controlled environment with low-velocity air conditioning to minimize noise, and a production selection room for production models where players can select their pianos. The ceilings above each instrument have small naves to direct the sound back to the player. MIDI has invaded this area of music, as it has everywhere else, it seems; several pianos, like the C7E, are fitted with the digital interface and have pitch and mod wheels built into the mahogany keyboards. Off the foyer is a repair workshop.

"What we're looking for here is to redefine the world standard for Yamaha's concert grand pianos," says Sheehan. "What that involves is extensive artist evaluations. We'll invite top classical artists in to play the instruments. Then we will have an evaluation session where we will discuss the artists' experience with the piano in terms of its touch and tone so that we will be able to begin to understand the range of preference in the American market for concert grand instruments."

Isn't that marketing, in a way? Not really, responds Sheehan: "Our benefit comes from advancing the state-of-the-art in musical instruments. That's what we're doing here: opening up a dialog between Yamaha staff and top

professional users of our equipment in order to show them the directions we're heading in and to learn from them where it is they would like us to go. So we have a very good, open, clear and noncommercial interchange of information. We're not looking for backdoor endorsements or to sell studios. That's marketing's job."

The electronic keyboard (EKB) room is where another type of synthesis distinct from frequency modulation is going on: consumer-grade keyboards like the HX1 Electone, originally an outgrowth of Yamaha's home organ line, are undergoing an upgrading into less domestic incarnations. "This group of instruments, particularly the

and research network worldwide by Yamaha, including other locations in Frankfurt, Vienna and Tokyo. "The purpose here is to really focus in on the needs of the classical symphony wind instrument player, someone who has concerns about very subtle phrasing and instrument capabilities," says Sheehan. Precision metal shaping and lathing equipment will be placed on the premises "to investigate the effects of subtle and dramatic design refinements in the instruments in an effort to bring the instrument forward in design." Yamaha plans to have a Japanese designer of Yamaha clarinets on call as part of the 14-person staff there.

There is a performance stage at the

The New York R&D Center is laid out in a labyrinth of rooms and suites dedicated to specific areas of the company's product lines, all centered around the lobby hub.

HX1 Electone, is an instrument that's beginning to gain some recognition in some very unusual areas," Sheehan points out. "The opera *Nixon In China*, to be performed at the Brooklyn Academy of Music, has been using the HX1 Electone to augment the orchestra."

The unit uses a combination of Yamaha-pioneered FM synthesis and a sampling technology known as Advanced Wave Memory (AWM). The HX1 Electone, however, has pre-programmed sounds and is not a sampler, using EPROMs to store and change samples. "It started out as a home organ and is turning out to be a one-person symphony where a single artist can create complex orchestral arrangements," says Sheehan. The HX1 is MIDI-capable—including MIDI time code capability with the Yamaha MSS1 MIDI-to-SMPTE converter—and has an on-board sequencer. According to Jeffrey Gusman, manager of Yamaha's Professional Products division, "In-house, we're looking for new applications for existing hardware."

The Wind and Band Instrument Atelier is the newest base in a workshop

center, but artists performing there may have to compete with a new psychoacoustic system created by Yamaha called the Advanced Acoustic (AA) system. The AA system is basically a combination of amplification, signal processing and graphic equalization which controls and enhances early reflections and initial room reverberations. Its effect is to turn a room into a pair of headphones. The system has Yamaha power amps and graphic EQs, and at the heart of the system are the SFPs, Sound Field Processors. These units are encased in SPX90 housings, and use the same controls for ergonomic purposes. (How the SFPs actually work is being regarded as proprietary information by Yamaha for the time being.)

Four Schoeps microphones are hidden in ceiling soffits and the speakers are soffitted into the walls. "Psychoacoustically, the room is experienced as having much larger dimensions than it does," explains Sheehan. "The sound in the room is picked up by microphones and then processed through the system instantaneously, which builds in delay and tone shaping, and



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then is fed back into the room through speakers. In some ways, you experience it best with your eyes closed. It adds considerably to the sense of performance by musicians."

The AA system has sound reinforcement applications at least in a monitoring sense, since with microphones and speakers in the same room the volume has to be kept below feedback threshold. Sheehan views environmental enhancements like the AA system as necessary so that performance environments keep pace with instrument tech-

**"Hopefully, we'll be
able to explore
some real
state-of-the-art,
frontier-pushing
projects."**

nology. "Instruments have to remain aligned with their environment. Otherwise they start to lose relevance," he notes.

The Professional Products Recording Studio is under the purview of the DMI (Digital Music Industries) division and the pro audio research and development company, which is managed by Jeff Gusman and assisted by Tech Kunii, a Japanese Yamaha staffer and the coordination manager of Professional Products. Michael Nicoletti is the Professional Products company's chief recording engineer for the facility.

The control room console is a customized Yamaha RM3000, a variation on the PM-3000, whose modifications were implemented by various Yamaha companies, says Gusman. The 40-input, 8-bus board has automated mix-down capability. Gusman plans to use Yamaha DMP7 automated 8 x 2 mixers ganged together and interfacing with some software programs they're about to release to augment the automation.

The room features totally floated floors and walls and all wiring is custom. Westlake TM-3 monitors are in place, as are the ubiquitous NS-10Ms. The multi-track is an Otari 900 32-track

digital recorder. Otari MTR-12 2-track decks are installed, one with 4-track center-track time code giving the room sync-to-video capability. MIDI implementation will be handled at a custom workstation with Yamaha devices, and the room will have mainly Yamaha out-board gear.

The facility is not available for rent, says Gusman, who once worked with Atari designing game software and who also has an engineering and technical background. "We're not competing with the other professional studios in New York City. So, we expect a lot of local engineers from great studios to show up, since they don't view us as competition," he says. "We're hoping this will become [a place] where the next major breakthroughs happen. There's a lot of cross-pollination of ideas that's going to take place here from the exchange of information between the artists and the engineers."

The studio's recording room also has an AA system. Use of the system in this application allows for miking the room to record the electronic ambience, as well as taping off it directly. "We can punch up a program that will give you a very sophisticated analysis of the Blue Note [jazz club]," says Gusman, who, like other area managers, is also his department's creative director. "As a result, here you have the ability to *play* in the Blue Note."

With no commercial expectations for the studio, Gusman is looking to take some chances with the place: "Hopefully we'll be able to explore the feasibility of some whacked-out recording projects; some real state-of-the-art frontier-pushing projects."

Yamaha plans further to add a street-level showroom for equipment in the near future, though Sheehan is quick to point out that its purpose will be purely for showcasing, not sales or demonstrations (though a positive potential impact on Yamaha's corporate image in New York has not been overlooked). "We see this as an opportunity to have an organized display of our products," says Sheehan. "In the retail stores we're mixed with other manufacturers, as it should be in the retail environment. Here it will be all Yamaha." ■

Dan Daley is a freelance writer, composer and owner of Pyramid Recording in NYC.

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—FROM PAGE 25

tions to this rule; studios specializing in electronic-music and synthesizer productions, for example, have little need for a large tracking area, but do require sufficient space to set up large banks of synths and computer sequencers in the control room.) Trying to pump large levels of full-frequency information into a room measuring perhaps 25 by 20 by 16 feet (a room of moderate proportions, I would suggest), and hoping to achieve a semblance of coherency at the monitoring position is pushing today's loudspeaker, amplifier, crossover and acoustics technology to its limits.

Although contemporary control room designs by the more competent acousticians can be made to work, I believe that a usable combination of high SPLs, enhanced sonic accuracy and stereo imaging is difficult, if not impossible, to achieve.

A far more practical design involves the use of near-field monitoring, with medium-size cabinets selected for their linear frequency response, transient response and stereo symmetry. (Despite what the manufacturer may try to tell you, matching a pair of off-the-shelf loudspeaker cabinets for axial and bilateral symmetry has its own inherent problems, to say nothing of how the natural aging process will affect their long-term ability to present coherent audio to the engineer.)

Practically all the major makers of loudspeakers currently include a wide range of small to medium-sized units that are designed for near-field monitoring. As long as you have checked that the room is not adding any time- and frequency-dependent anomalies of its own—remember to use swept tones, pink noise and transient clicks at a wide range of SPLs—I would hazard that any of them will keep you out of trouble in the control room. ■

Mel Lambert has been intimately involved in the pro audio industry—on both sides of the Atlantic—for the past decade. Formerly editor of Recording Engineer/Producer magazine, he currently is a partner in the Marcus Lambert PR firm, and the president of Media & Marketing, a consultancy service for the pro audio industry.



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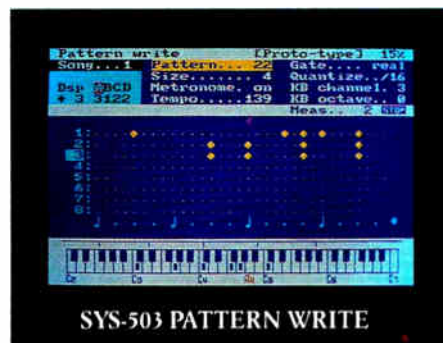
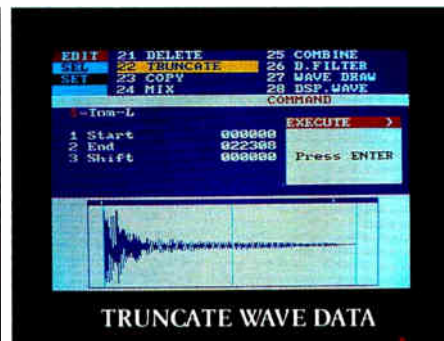
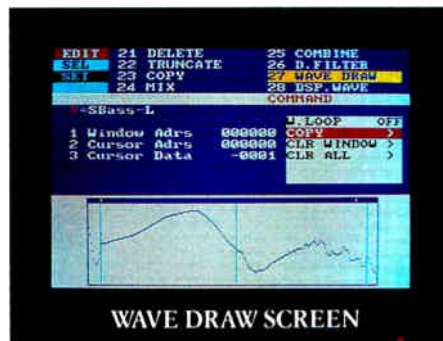
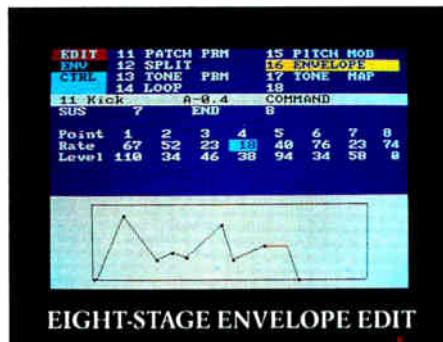
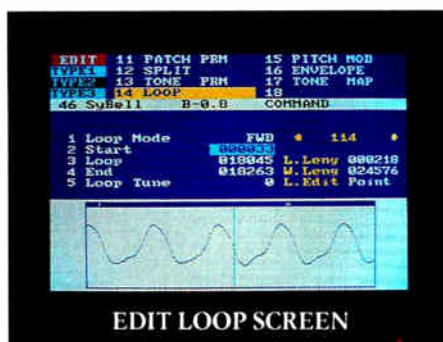
Baus Engineering's main PA and monitor system is composed of Meyer cabinets; 16 MSI3s, 16 USW1 subwoofers, and a good number of UPAs and UMIs. When I asked why he chose the USW1s instead of 650R2s Randy replied, "The Meyer USW1 sub fits the needs of our industrial clients because the sound isn't quite as heavy as the 650R2. For an industrial audio show you have to

ON THE ROAD

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Artist Sound Company Tour Dates & Region	House Console #1 House Console #2 Monitor Console #1 Monitor Console #2 Crossovers	Main Speakers Other Speakers Subwoofers Monitor Speakers Monitor Speakers	Main Amplifiers Other Amplifiers Sub Amplifiers Monitor Amplifiers	Engineers: (B) = band (H) = house (M) = monitor
Jimmy Buffett Sound Image Jan-Feb East Coast	Ramsa WR840 40x8x2 ---- Ramsa WR840 40x18 ---- BSS 340, TAC Modular	32 Phase-Loc Series 4 4 Phase-Loc Series 3 8 Phase-Loc Sub Sound Image 2x15	QSC 3800, 3500 QSC 3800 QSC 3800 QSC 1500, 1200	Don Jarvis (H) Ross Ritto (M) Rob Mailman
George Michael Showco Feb-Oct International	Harrison HM-5 32x16x2 w/32 ch. extender Harrison SM-5 32x16 w/16 ch. extender Showco	64 Prism** ---- 16 Prism Subwoofer Showco 100, 200, 300 & 400, flying Prism SF	Crown PSA2, MT1200 ---- Crown MA2400 Crown MT1200	Benji LeFevre (B, H) Chris Wade Evans (B, M) Randy Hutson Leon Hopkins
Oingo Boingo Schubert Systems Group Jan-Feb U.S.	Gambie EX 56x16x2 & 16x16 matrix Gambie SC 40x16 ---- SSG Custom	32 SSG Steradian ---- 16 SSG Sub 218 SSG M112, M115	Crest 8001 ---- Crest 8001 Carver 1.5	Dirk Schubert (H) Alan Bonomo (M) Mike Ferrara Bob Borbonas
Linda Ronstadt Showco Feb-March U.S.	Harrison HM-5 32x16x2 ---- Harrison SM-5 32x16 ---- Showco	16 Showco FR1 ---- 4 Showco SS Showco 100, 200, 300, & 400	Crown PSA2, MT 1200 ---- Crown MA2400 Crown MA1200	Jack Maxson (H) Bernie Bernil (M) Chris Kudrna
Kenny Rogers Clair Brothers ONGOING U.S.	Clair Custom 32x12x2 ---- Harrison SM-5 32x16 ---- Clair Custom	40 Clair S-4 ---- ---- Clair KR Custom	Carver 2.0 ---- ---- SAE 2600	Keith Bugos (B, H) Rex Ray (M) Steve Helm Tony Rossi
Suzanne Somers Audio Techniques Jan-March U.S.	Yamaha PM3000 ---- (RUN OFF HOUSE) ---- Yamaha F1040	6 ATI Mid-High 2 ATI 2x15 10 ATI Subwoofers ATI 2121, ATI Sidefill	UREI 6300 UREI 6300 Crest 4001 ATD 712	Terry Enlow (B, H) John Drane
Sting Clair Brothers Nov-Dec S. America Dec UK Jan-March N. America	Clair Custom 32x12x2 ---- Harrison SM-5 32x16 ---- Clair Custom	56 Clair S-4 ---- ---- Clair 12AM	Carver 2.0 ---- ---- SAE 2600	David Kob (H) Tom Hermann (B, M) Ed Dracoules Tom Ford Tom Folehinger

SAMPLE THE POWER OF THE ROLAND S-50



Image, and house engineer Don Jarvis. Every hall is different so the rigging arrangements differ daily.

11:30 a.m.—Unload the Second Truck

Once the lighting truss is raised to head height, the truck containing the sound system and band gear is unloaded. Local stagehands take the equipment off of the truck and are directed by Buffett crew member Johnny D. After the truck is unloaded, the local crew is divided up to work with the Buffett crew on various tasks. A blue Mylar floor is rolled out, keyboard and percussion risers are assembled, and AC distro with feeders for stage right (band) and stage left (power) are run. My part of this controlled chaos was to run the AC distro. One of the highlights of the tour for me was clearing up the mysteries of electrical power. I never knew how the heck all of that stuff was plugged into the local power! Suffice to say that it isn't done with one long orange extension cord.

The late morning and early afternoon is spent unloading and placing

The first meal often sets the tone for the rest of the day. Donuts with little rainbow sprinkles were many promoters' idea of a gourmet breakfast.

stage monitors (12 in all), matching microphone stands to microphone bases to microphone clips, and finally to microphones, and interfacing the on-stage monitor system.

2 p.m.—Lunch

The trick here is to get to the lunchroom just before the local crew attacks

the spread! Why we have to go through this exercise, I really don't know—generally the local boys want meat and potatoes, bread and Jell-O. We tend to stick to the lighter foods i.e. tuna and salads. Lunch for us is quick; a lot of work remains.

3:30 p.m.—Stacks and House

By this time the PA cabinets are being raised into the air. The house console is being hooked into the input and output snakes. The band gear is set up and by 4 p.m. a system check is conducted. A CD is played over the house system and Ross turns on and off every power amp in the entire system. Once satisfied that all is well with the amps, full range program music is played and Don EQs the house.

4:30 p.m.—Line Check

This is the time of day when every input to the house console is checked. This is generally an exciting, if unfulfilled, time for me. My job is to play every instrument and speak into every microphone. As an ex-musician, the chance to play Jimmy Buffett's guitars



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Roland samplers are based around a "clean computer" design of open architecture. This means that the main performance data of Roland samplers is resident in software — software that can be updated with new features and performance just by loading a new disk. Neat trick? That's exactly what our customers think. They've already benefitted from one software update, giving their samplers loads of new features. And more updates will follow.

Professional Performance Sampling

But before we get too far into the future, let's talk about today. The Roland S-50 Digital Sampling Keyboard and S-550 Digital Sampler Module deliver the professional-quality sound and extensive editing capabilities found only in instruments costing many times as much, all thanks to Roland's breakthroughs in proprietary VLSI Sampling technology. The S-50 offers a wave oscillator, amplifier, LFO, and an eight-stage envelope generator for each of its sixteen voices. Although the S-50's features list is far too extensive to be listed here, among its chief attributes are a 512k word of Wave Memory and 16-bit processing, sampling time up to 14.4 seconds at 30kHz, multi-timbral capabilities, and four polyphonic voice outputs.

The S-550 provides all of the S-50's performance with the addition of a 1.5M Byte memory (for up to 64 tone memories and 16 patch memory banks), and expands upon the S-50 by providing eight polyphonic voice outputs.

Quality Sound in the Roland Bank

But we think the best way to judge a sampler is with your ears. That's where the Roland Samplers really shine. Play any Roland Sampler and you'll hear a warm and full sound, with a better bandwidth and greater headroom that especially shows up in dynamic instrument samples. You'll experience an evenness of sound across the entire keyboard without the problems other samplers have of obvious split points. And you'll never run out of sounds, because the purchase of a Roland Sampler gives you access to the Roland Sound Bank — a continuously growing library of great sound samples. Plus, the S-50 is

already enjoying one of the fastest-growing bases of third party software support.

Quality In Means Quality Out

When it comes to user interface, Roland Samplers are simply unrivalled. Both the S-50 and S-550 allow the connection of a video monitor to greatly facilitate sampling process and use such new features as Wave Draw. The S-550 even allows the flexibility of mouse-style input by connecting the new DT-100 Digitizing Tablet. This kind of interface makes the experience of sampling sounds as fun as it is productive.

Today's Updates

The new 2.0 Software Update (available to all owners for a small handling charge) can now add in loads of new features — including twice as many tones, Automatic Loop Search, combined Wave Data, Polyphonic Multi-timbral performance, and much more. Not just new sounds, entirely new performance. Another new software program — the SYS-503 Director-S — can turn the S-50 or S-550 into a sixteen-channel MIDI sequencer, playing its own sounds as well as those of other MIDI instruments.

Put all this together and you can see why Roland Samplers are the choice of so many top pros. And why shouldn't they be? Because if Roland Samplers do this much today, imagine what they'll do tomorrow.

RolandCorp US, 7200 Dominion Circle, Los Angeles, CA 90040 (213) 685-5141.



do everything from podium mics to high-level sound reinforcement. The USW seems to fit the compromise best." He added, "It does a great job at concerts also." Baus Engineering has a 40-channel Yamaha PM3000 for their main house console and use Mark Levinson ML-3 amplifiers to power the Meyer PA.

More on that Stevie Wonder Honolulu date from Bauske: "That was a wild setup because we had 80 house input channels using two 40-channel PM3000s ganged together. Two different discrete monitor setups were required using a total of five different consoles; a Gamble SC 32x16 with the outputs of a Meyer ATL 32x12 summed into it to get a 64x12 mix for the conventional stage mix; and two PM2000s for Stevie's mobile radio monitors which were broadcast on the FM band. Many of the performers, Stevie included, wore Sony Walkman radio receivers with earphones. A Yamaha M1516 was also used for a drum submix. For the main PA there were 16 MSL3s and another 16 Clair S4s along with the USWs and some UPAs. The concert was done in the round with eight flying clusters, four cabinets each, ringing the stage. For monitor speakers and sidefills, we utilized eight UPAs, three UM1s, four USWs, and seven cabinets of our own design."

Asked how he handles island-to-island shipment of his equipment, especially the speakers, Bauske responded, "The Meyer UPA cabinet easily fits through the cargo doors of a Boeing 737, so it is no problem to ship via aircraft. The larger stuff requires a barge service that takes two or three days for delivery. We rent a container and fill it with gear for shipment."

GROSS! It's time to find out which tours grossed the most money in 1987. the envelope please. No surprise at #1: **U2** grossed \$35 million, #2: **Bon Jovi** with over \$28 million, #3: **Pink Floyd** hit the wall at \$27.5 million, #4: and \$26.5 million belonged to the greying **Grateful Dead**, #5: **David Bowie** and his glass spider drew \$22 million. The band with the highest average gross was Pink Floyd at just slightly over a million a show. Now you know how they can afford their elaborate staging... Ticket sales for major arena headliners was estimated to be over \$600 million for 1987, re-

flecting a 15% increase over the previous season... Leading all venues in number of top grossing shows was **Madison Square Garden** with 11 (including five by the Dead), followed by the **Meadowlands Arena** with nine.

Audio Techniques of Calabasas, CA, is a seven-year-old sound reinforcement company with two arena systems and three monitor systems, as well as a smaller horn-loaded PA for local L.A. shows. The speaker cabinets used are a 4-way proprietary design flyable two box system powered by UREI 6300 and Crest 4001 amplifiers... Owner **Bob Ludwig** told me, "We have a total of 70 house cabinets, enough for two full touring systems. The size of each system varies with client demand. Last year we went out with **Chicago** for almost a full year and they took out the majority of our speakers. The **Everly Brothers** and **Suzanne Somers** kept the rest of our stock busy with smaller systems. For consoles we have 40- and 32-channel Yamaha PM3000s and Soundcraft 500Bs for the house; a modified Yamaha PM2000 32x14 and modified Yamaha 1516s for monitors"... TV star, dancer and singer **Suzanne Somers** (see "On the Road") does a lot of casino work in Las Vegas and Atlantic City, as well as sporadic dates across the country. "She performs live more than you think," Ludwig says, "and this year her show is one of the most elaborate and biggest productions in Las Vegas. We are providing the sound for her current tour that began in January."

PPA, a Southern California sound reinforcement company out of Riverside, CA, recently announced several new equipment purchases. PPA president **Henry Austin** said, "With the purchase of this additional main PA system we have, as far as I know, the only major Turbosound system in Southern California. Coupled with our recent purchase of a 40x16x2 Soundcraft Series 4, and an extensive and varied monitor system, our large Turbosound PA gives us a stronger presence in the sound reinforcement marketplace"... PPA also offers Yamaha PM3000s and Soundtrac consoles, and separate Hill and Cerwin-Vega main PA systems... PPA also worked the outrageous **NAMM Jam** (Jan. 16) sponsored by **Seymour Duncan** and **Kramer**, at the **Celebrity Theater** in Anaheim, CA. PPA brought in their Hill PA, consoles and monitors to augment

the existing flying house PA system.

Manufacturer Profile: Eastern Acoustic Works speaker manufacturing company is quickly becoming known for their cost-effective 4-way **KF850 Virtual Array** loudspeaker system that features the KF850 cabinet. It consists of a 15-inch bass driver in a horn enclosure, a 10-inch driver loaded in a constant coverage horn with a center displacement/phasing plug, and a 4-inch compression driver mounted on a horn located in the low frequency horn's mouth. The 3-way KF850 box is designed to operate in multiples with the SB850 subwoofer, and with the MX800 electronic crossover... **Ken Forsythe**, chief engineer and one of the principle people at EAW, states, "The thing that makes the 850 work is the careful pattern control across the band. It is very uniform above 250 cycles." When asked if the system was flyable he said, "The 850 is especially designed to be used in an array. Our versatile and safe flying rig is designed to fly 850s four deep and exceed even Germany's strict seven to one safe working margin. For example, if you want to fly a 1,000-pound cabinet you need a 7,000-pound test point. We're almost at ten to one." I inquired how they build their enclosures: "All our cabinets are made out of 100% cross-grained laminated birch plywood and are precisely manufactured in a computerized cabinet shop where all the saws and routers are computer driven. This allows us to be able to do cabinet runs when needed so that we can quickly react to customer's needs. There is no time lost in setups like before." According to Forsythe, business is booming. Several large complete KF850 systems were recently delivered to waiting sound companies in the U.S. and a couple of big systems have just been sold in Europe. On future plans for EAW, Forsythe said, "We are taking the array technology that went into the 850 and putting it into some of our new smaller cabinets." ■

Author Mark Herman, owns Hi-Tech Audio, a sound reinforcement company specializing in console rentals.

Got any news? Call (415) 726-2428 or send press releases, photos, etc. to: Sound Reinforcement News, Mix Publications, 6400 Hollis Street #12, Emeryville, CA 94608.

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Circle #006 on Reader Service Card

by Greg McVeigh

I'LL SLEEP IN SEPTEMBER

THE TOURING LIFE IS HARDER THAN YOU THINK

Editor's note: *With much of the country still firmly in the grip of winter, a little blast of summer might be what is needed right about now. For the past couple of summers, Greg McVeigh, who is currently marketing director of QSC Audio Products of Costa Mesa, California, has used his vacation time to go on the road as part of the road crew for Jimmy Buffett & the Coral Reefer Band. Some vacation! What follows are Greg's "memoirs" from his maiden voyage on the road. We hope his regular job is a little easier!*

My first night on the bus was a nightmare: getting into a bunk bed on a moving (or stationary, for

that matter) tour bus can be tricky. My assigned bunk was a top one and I had no idea how to get into it without making a complete fool of myself and waking up everyone else. That first night I sat up all night watching as each crew member—all veterans—gracefully hopped into his bunk. Finally, when all were asleep, I gathered my courage, my shoes and my Corona beer and ventured forth to my bunk. Unfortunately, my smooth, graceful hop turned into a sick, desperate lurch as the bus made a left turn. "I'm sorry I stepped on your chin," I said to the lighting director. "It won't happen again. Yeah, I'm the guy who's the salesman."



Jimmy Buffett takes it easy while his road crew gets blisters and eats bad food.

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Professional Audio Systems

Image, and house engineer Don Jarvis. Every hall is different so the rigging arrangements differ daily.

11:30 a.m.—Unload the Second Truck

Once the lighting truss is raised to head height, the truck containing the sound system and band gear is unloaded. Local stagehands take the equipment off of the truck and are directed by Buffett crew member Johnny D. After the truck is unloaded, the local crew is divided up to work with the Buffett crew on various tasks. A blue Mylar floor is rolled out, keyboard and percussion risers are assembled, and AC distro with feeders for stage right (band) and stage left (power) are run. My part of this controlled chaos was to run the AC distro. One of the highlights of the tour for me was clearing up the mysteries of electrical power. I never knew how the heck all of that stuff was plugged into the local power! Suffice to say that it isn't done with one long orange extension cord.

The late morning and early afternoon is spent unloading and placing

The first meal often sets the tone for the rest of the day.

Donuts with little rainbow sprinkles were many promoters' idea of a gourmet breakfast.

stage monitors (12 in all), matching microphone stands to microphone bases to microphone clips, and finally to microphones, and interfacing the on-stage monitor system.

2 p.m.—Lunch

The trick here is to get to the lunchroom just before the local crew attacks

the spread! Why we have to go through this exercise, I really don't know—generally the local boys want meat and potatoes, bread and Jell-O. We tend to stick to the lighter foods i.e. tuna and salads. Lunch for us is quick; a lot of work remains.

3:30 p.m.—Stacks and House

By this time the PA cabinets are being raised into the air. The house console is being hooked into the input and output snakes. The band gear is set up and by 4 p.m. a system check is conducted. A CD is played over the house system and Ross turns on and off every power amp in the entire system. Once satisfied that all is well with the amps, full range program music is played and Don EQs the house.

4:30 p.m.—Line Check

This is the time of day when every input to the house console is checked. This is generally an exciting, if unfulfilled, time for me. My job is to play every instrument and speak into every microphone. As an ex-musician, the chance to play Jimmy Buffett's guitars



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SOUND · ON · STAGE

But we're getting ahead of the story here. I survived Jimmy Buffett's "Floridays" tour. In fact, I not only survived it, I was asked back to work on his next tour, which I did. Not bad for a guy who couldn't figure out how to get into his bunk. It was the summer of 1986 that I realized I would never be able to tie a necktie properly on a daily basis. So I quit my job and threw corporate opportunity to the wind. My friend Ross Ritto at Sound Image suggested that a summer on tour working on Jimmy Buffett's sound crew might be just the thing to recharge my salesman's batteries. He was right.

A DAY IN THE LIFE

9 a.m.—A Wake-Up Call From Joey

Last night we were in Denver at Red Rocks Amphitheater. After the equipment is torn down—about 2 a.m.—we drive by bus to Kansas City for the next show at Sandstone Amphitheater. The trip is a long one; some of the guys on the crew sleep on the bus all

night while others play cards in the back lounge (or so they tell me). Somewhere between 6 and 7 a.m. we check into our hotel. I fall asleep around 7 a.m. thinking, "This is the life! Great hotels, fine food, nice towels. Sleep all day. Play all night. Life doesn't get any better than this!" But then at 9 a.m. comes the call from Joey. Shit.

Joe Ciccoline is Jimmy Buffett's production manager; sort of the "keeper of the crew." "Lobby in 30 minutes," he says. So suddenly I'm back on the bus with all my friends. The bus call is for 9:30 and we're expected to be on stage by 10 setting up for that night's show. The ride to the show is usually a quiet one. In some ways it's similar to a baseball team riding to the ballpark wondering what will happen that day.

9:45 a.m.—Breakfast at the Gig

At every show on the tour, the promoter provides breakfast for the crew. This food ranges in quality from superb (bacon, eggs and salsa in Denver), to rancid (bug infested cold cereal in Biloxi.) The first meal often

sets the tone for the rest of the day. Donuts with little multi-colored rainbow sprinkles were many promoters' idea of a gourmet breakfast. The lighting crew has to eat fast because their truck will be unloaded first.

10 a.m.—Meet with the House Electrician

It is my first job of the day to provide the venue's house electrician with details of both sound and lighting power requirements. He will receive the tails (Cam Loc to bare wire) for sound and lights. Most venues have a stage left feed for sound and a separate feed for lights on stage right. In addition to the main power feeds, a feed for motor power is run for the motors that are used to fly the lighting truss and the sound system. At the end of the day, the lighting crew will collect all of the tails and pack them.

By 10:30, the first of two trucks is unloaded and the lights are assembled on stage. During the time that the lights are being built, rigging points for sound are being determined and executed under the direction of Ross Ritto, owner of Sound



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SOUND · ON · STAGE

or Matt Betton's drums over a huge concert sound system is a dream come true! My joy is usually short-lived, though, as Don generally needs less than a strum to get the sound that he is looking for. I plan to issue a Jimmy Buffett/Greg McVeigh *Sound Check Greatest Hits Album*. Look for it at stores near you! After all systems have been thoroughly checked and re-checked, the remaining flooring is laid out over the exposed monitor and subsnake cables. With 12 musicians onstage, quantities of Absolut, Corona and Mount Gay rum being consumed, and a new interest in wireless systems, the surface of the stage needed to be as clean and obstacle-free as possible.

5 p.m.—Dinner

I am sick of talking about food. Some is good and some is atrocious.

6:30 p.m.—Doors Open

The crowd filters in. In some cities it's faster than in others. Once a decent sized crowd is in, music is played through the house system. On this tour, the sound crew has a large part in selecting what music will be played. Lately we have been partial to the new Warren Zevon album, as well as Joe Walsh and Level 42. As showtime nears, a CD of The Beatles' *Sgt. Pepper* is played. The crowd responds to the timeless music, as the band prepares to go on stage.

8 p.m.—SHOWTIME!

This is the time when *the band* works. I spend the first three songs onstage watching for any problems. I am sorry to say that I rarely had any unusual situations once the show started. The band, crew and organization are professionals who have been together for over a decade. Because of this togetherness and teamwork, disasters are rare. I have been through the Ross Ritto course on the Seven Critical Points (or is it eight?) on a microphone stand. I made it a personal crusade to see that none of the 40 or so mic stands fell down. The bottom line is that the show opened on time, the people loved it, and few problems were incurred during it.

10:30 p.m.—Show is Over

After the first encore of each show,

Jimmy informs the crew if he wants to play one more or two more songs. As soon as the final song is completed, tear down begins. The first thing that I do each night is take Jimmy's microphone out of its stand and put it away. You'd be surprised how many well meaning fans want to jump on stage and take that mic. Once that is done, Joey once again assigns members of the local crew to work with us to dismantle the show and pack it in the trucks. The basic idea is to undo in a few hours what has taken eight hours to assemble. The idea is to tear down all of the band gear and sound onstage so that the lights can come down and be packed. Setting up the show is akin to running the Boston Marathon: intense, yet slow and methodical, pacing yourself for a long night. Tearing down the show is a sprint. How fast can you go for a short distance? The sooner you pack it up, the sooner you can get on the bus and head to the next city.

1:30 a.m.—Let's Get Out of Here!

A movie, the back room with the card players, maybe some pizzas, and a bottle of white wine for Kino and me. We'll be in Houston in the morning!

SOME CLOSING THOUGHTS & ASSORTED MEMORIES

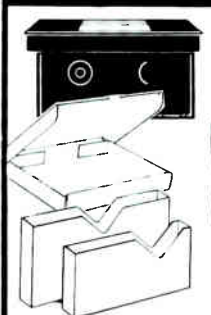
Shoes. God, you live in them! What used to be trendy \$85 white leather Reebok uppers become miserable leather leeches that want to suck the very life out of your feet. It seems as though you never take them off. Days begin at 9 a.m. and usually don't end until 2 or 3 a.m. Other articles of clothing can be changed daily, or even hourly, but those damn shoes....

Fingers. The first thing that go are the fingertips. Those delicate salesman's order-writing fingertips. Cables, microphones, stands, monitors, *everything* is labelled with little pieces of gaffer's tape. Tear it off the roll and then tear it down the middle into neat little pieces. After hours of this activity my fingers were a blistered mess. It's a great way to cure nail-biting.

Comedy and Catering. Often, the food was so bad at these shows that the crew decided to deduct \$500 from the catering budget to hire a local comedian to entertain us at dinner. These shows were a highlight of the tour, with the comedy ranging in

—CONTINUED ON PAGE 131

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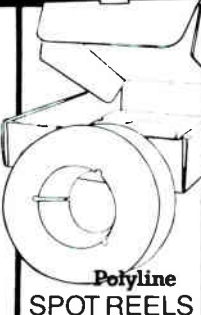


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Circle #007 on Reader Service Card

by Craig Anderton

GOT LIVE IF YOU WANT IT

It was 20 years ago today . . . that using electronic instruments live was at best a pain in the butt, and at worst, a disaster. Synthesizers were creatures of the studio, and even under those pristine conditions, tuning stability was a problem—not to mention the hours lost in shifting patch cords around when you wanted to change from one sound to another.

Thankfully, matters have improved greatly. Today, it's even possible to take your computer on the road and maintain a reasonable degree of peace of

mind. In fact, no fewer than three companies are offering IBM-compatible machines designed specifically for the rigors of the road. The Bandwagon from RPMicro is a compact rack-mount computer that uses an LCD instead of the more fragile and heavy CRT. This little guy mounts on your keyboard stand just as easily as any expander unit, and even includes a foam-lined, heavy-duty carrying case. Fully IBM-XT compatible, it comes standard with 640K memory; a hard disk drive is also available. Computer Music Supply also



Ensoniq's latest additions to the world of high-tech keyboards: the EPS Performance Sampler and the SQ-80 Cross Wave Synthesizer.



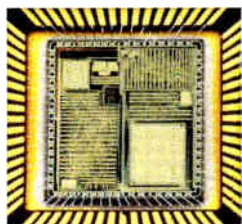
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As a musician, you know you've got to be free. Free to express the music that's inside you. But, sadly, buying an "affordable" keyboard or sound module often means compromising your expressive freedom by accepting second-rate sounds and limited capabilities.

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Freedom of Expression.

The 1000 Series' generous polyphonic capabilities free you from the expressive limita-

tions of 12-voice or 16-voice systems. The 1000 PX and K1000 offer the power of 24 voices while the 1000 SX, 1000 GX and 1000 HX each have 20 voices. And, if you need more voices, you can combine all four 1000 Series modules to create an 84 voice, 8-output super-system. So go ahead. Stack voices to your heart's content. Build complex, multi-voiced sequences. Go for those big, two-fisted chord shapes. The 1000 Series modules give you miles of sonic territory to roam at will.

Freedom of Choice.

The 1000 Series is truly democratic too. Three different operating modes let everyone—from novices to advanced programmers—benefit from the 1000 Series' bountiful capabilities. In Play Mode, you can use those great Kurzweil sound programs just as they are. Simply select a program and play. The Compiled Effects mode lets you apply a variety of popular effects to any of the preset sound programs. And the Modular Editing mode takes you deep inside the 1000 Series' voice architecture.

So stand up for your rights. You owe it to yourself to check out the 1000 Series. For more information, visit your nearby Kurzweil dealer. Or write to us at Kurzweil Music Systems, Inc., 411 Waverley Oaks Road, Waltham, MA 02154, (617) 893-5900. In Canada, write to Heint Electronics Inc., 16 Mary Street, Aurora, Ontario L4G 3W8, (416) 727-1951.

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* \$1995 suggested retail price for 1000 SX and 1000 HX. \$2,395 suggested retail price for 1000 GX and 1000 PX. \$2,595 suggested retail price for K1000. All specifications and prices subject to change without notice.

integrates hardware and software into a complete, portable, rack-mount computer package with an AT-style keyboard, monitor, and Roland interface; however, they also make a rack-mount conversion kit for existing IBM compatibles in case you've already met the computer of your dreams. A third contender, the MIDI-COMP 1000 from the Teknecom Group, is yet another high-performance IBM compatible with a 9-inch amber monitor and provisions for an optional hard disk.

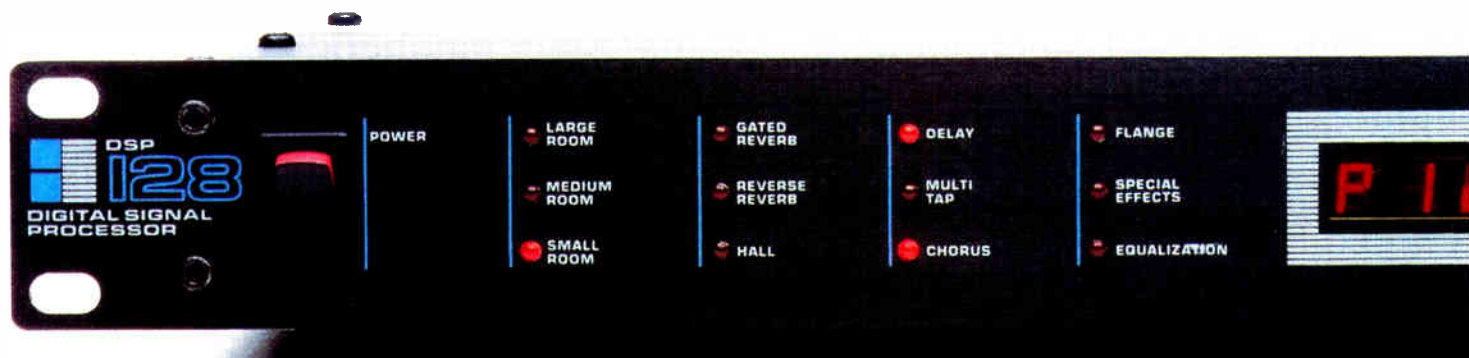
Keyboards are also getting more suited to live playing. Ten years ago, we were happy just to be able to recall several patches at the touch of a button. Nowadays, though, several patches are not enough, and many companies offer both internal and external memory/functional upgrades for popular keyboards. For example, the MSM 2000 from Forat Electronics is a small box that plugs into a synth's cartridge port and stores over 2,000 custom sounds for the DX7, RX11, or various Roland keyboards. The SynHance

Voice Vault TX512 is a similar unit designed expressly for the DX7. Internal upgrades are also handy when you want to increase a unit's functionality without adding extra outboard gear; Quad Monster (from the Monster Memory Company) makes a retrofit board for the DX7 that stores 512 sounds (plus function parameters for each sound) along with a number of other enhancements. And the people who started the whole retrofit craze in the first place, EI, have expanded their line to include retrofits for the DX7, DX7II, DX7S, and K3. These types of products, which typically list for under \$500, represent an excellent way to get what is essentially a whole new keyboard for a very reasonable price.

But what about samplers, with their humongous memory requirements? Luckily, the hard disk—a computer peripheral capable of storing 20, 40, 80, and sometimes even 360 Megabytes of data—offers lots of storage at ever-decreasing prices and with ever-increasing reliability. E-mu led the way a couple years ago with a hard disk retrofit for the Emulator II, and has

since gone on to put hard disks in "HD" versions of the Emax and Emax rack samplers (existing Emaxes can also be retrofitted for hard disk operation). Although a hard disk adds about \$1,200 to the cost of the Emax, once you've gotten used to loading sounds in just a few seconds, it's hard to think about going back to a floppy. E-mu's top-of-the-line Emulator III also includes an internal hard disk as standard equipment, and those who use the Oberheim DPX-1 sample player can now add the Oberheim HDX-20 hard disk—it's shock-mounted, rack-mounted, and loads sounds in five seconds. The only drawback with hard disks is that they make a fair amount of noise; hopefully future advances in hard disk technology will focus not just on increasing memory capacity, but in lowering their ambient noise levels.

Ensoniq has taken a different tack for their live performance-oriented sampler, the EPS. Although you can add an optional SCSI port to support a hard disk, you may not need to, since it is possible to continue playing the keyboard as you load in new sounds.



3 effects at the same

The new DigiTech DSP-128 does something no other digital signal processor can. It gives you up to three digital effects at the same time—for \$399. That means the creative possibilities are practically endless. Even though your bankroll isn't.

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The DSP-128 offers comprehensive MIDI control, plus the ability to download user programs to a MIDI recorder.

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This requires a little bit of strategy—you have to load the sounds you're going to use before you actually need them, due to the access time of the on-board 3.5-inch drive—but being able to play and load is a welcome feature that means you don't have to force your singer or guitarist to tell bad jokes while your floppy spins around. The only catch is that you must have enough free memory to load the sound in question; if not, you'll need to delete some previously loaded sounds to make room for the sounds you're about to load. However, since it's rare to use all the available memory for just one or two sounds (and if that happens too much, you can upgrade the memory), this catch is not all that serious.

Both the EPS and SQ-80 (Ensoniq's enhanced version of the ESQ-1) provide another useful live performance feature pioneered by Yamaha's DX7: IIFD: the ability to use the instrument's disk drive as a general purpose MIDI data recorder. This means that patch data and setups for just about any MIDI instrument can be saved on disk, and loaded into a MIDI setup just prior to

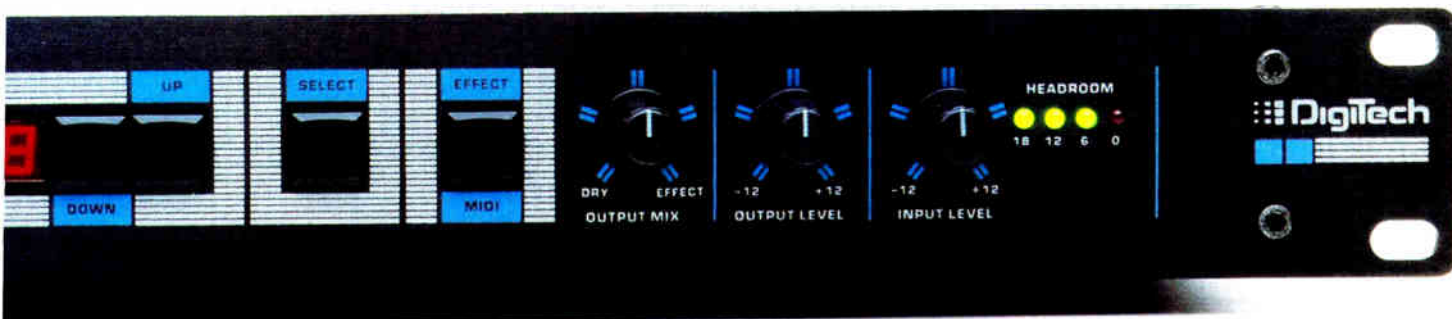
going on stage. This is certainly more convenient than loading a bunch of data from cassette, or transferring data from multiple storage programs loaded into an external computer.

Life is also getting easier for the electronic guitarist. In previous installments of "MI Update," we've touched on MIDI accessories that facilitate the routing of notes, splits, program change messages, and so on. But one of the neatest new products for this type of application is the MIDI Mitigator RFC-1, a MIDI footswitch controller from Lake Butler Sound Company. For under \$400, you get to store any MIDI command string of up to 255 bytes and trigger it via your choice of five individual footswitches. Thus, not only can you send program change commands and the usual MIDI messages, but you could even send system exclusive data—or for that matter, control your lighting via footswitch (with an appropriate MIDI lighting controller, of course). Data is organized as 128 songs (that should hold you over for at least one gig!), which can be chained together into three sets. Perhaps the

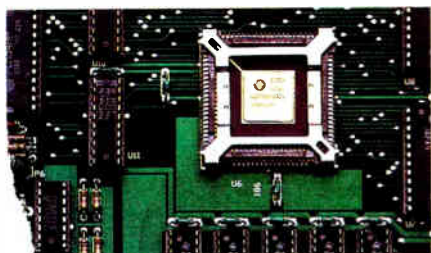
best feature, though, is a large, bright, 16-character alphanumeric display. Instead of having to remember bank numbers and such, you can actually name your songs in English. This may seem like a small point, but believe me, when the crowd is getting restless, you sure don't want to have to remember which song corresponds to some anonymous string of numbers. With devices like this, the Peavey RMC 4512, the Axxess Mapper, Akai's Programmable Note Separator and the like, guitarists can now avail themselves of many of the conveniences keyboard players have enjoyed for the past few years.

Playing live with electronic gear is not the nightmare it used to be, and from what I've seen on the drawing boards, matters will only improve. Just think—20 years from now, we'll probably look back in horror at the fact that we had to use those slow, limited memory hard disks instead of multi-gigabyte biological memories. ■

Craig Anderton edits our sister publication Electronic Musician.



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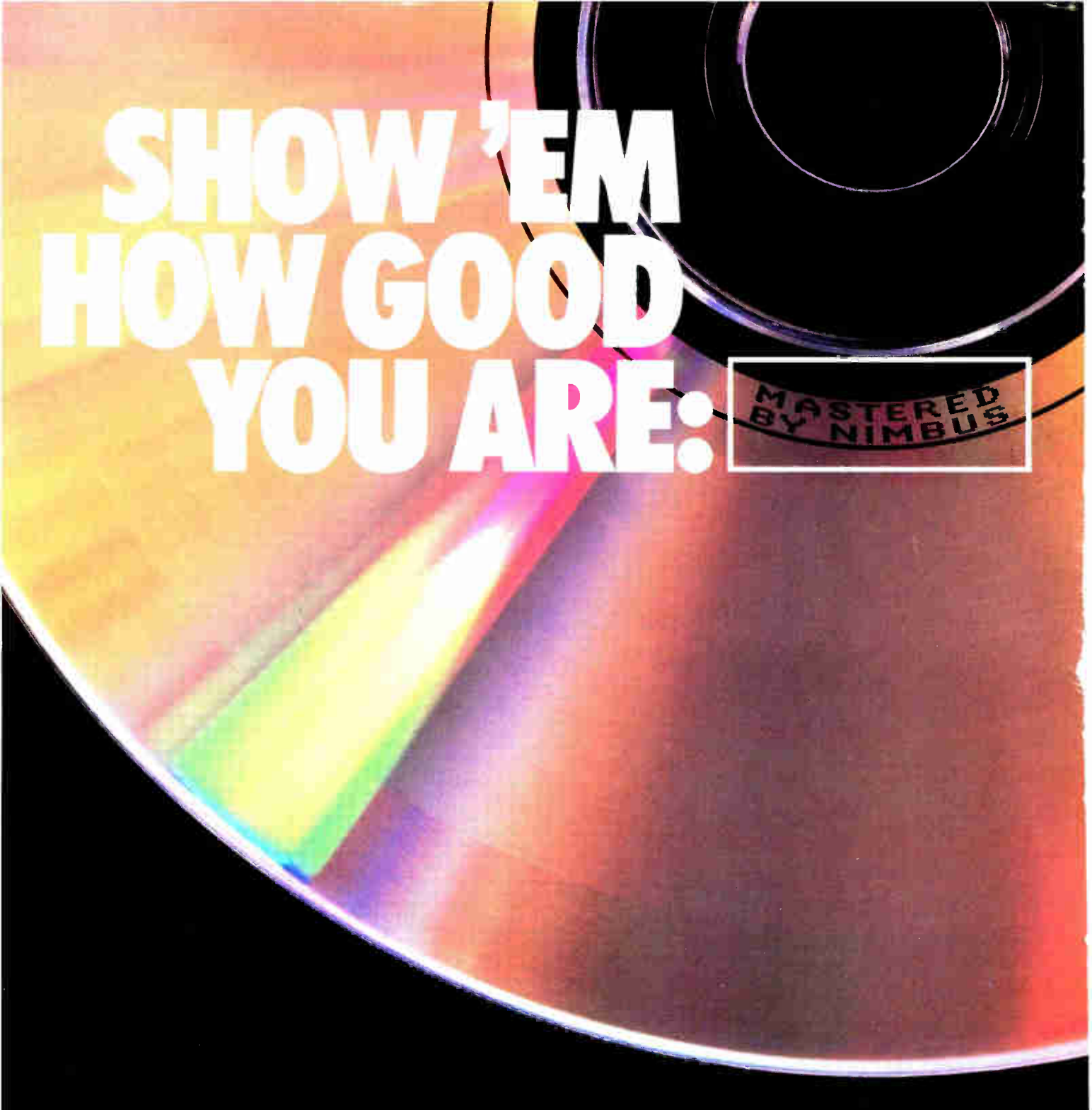


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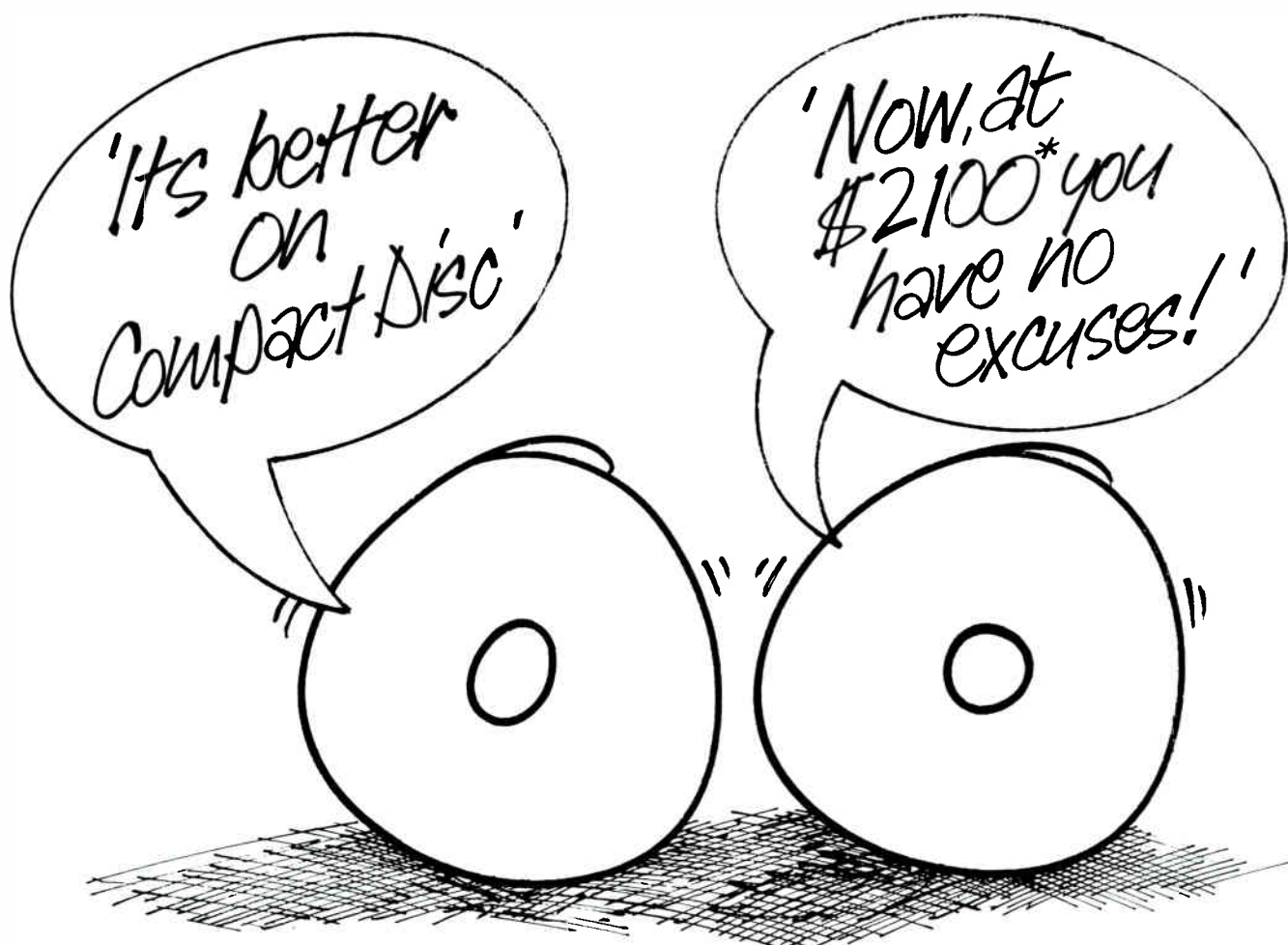
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ADVERTISERS INDEX

PAGE ADVERTISER

- 110 A & R Record and Tape Manufacturing
- 141 ACO Pacific, Inc.
- 136 Adams-Smith
- 119 Akai/IMC
- 41, 130 Alesis Studio Electronics
- 211 Allen & Heath Brenell
- 111 Alpha Audio
- 95 AMP Services
- 11 Ampex Corporation
- 53 API Audio Products, Inc.
- 62 Sam Ash Music
- 160 Audio Gallery
- 135 AudioLine, Inc.
- 192 Bertech Organization
- 23 Beyer Dynamic
- 42 Biamp Systems
- 47 Bryston
- 50 Burlington Audio/Video Tapes, Inc.
- 122-123 Carvin Corporation & 181
- 90 The Castle Recording Studio
- 55 Cetec Gauss
- 25 Cipher Digital, Inc.
- 152 Clarity Cassette Duplication
- 103 CMX Corporation
- 145 J.L. Cooper Electronics
- 99 Crawford Audio Services
- 98 Crosstown Recorders
- 173 D & R USA
- 177 dbx, Inc.
- 153 DIC Digital Supply
- 137 Digidesign, Inc.
- 77 Digital Recorders
- 128-129 Digitech/DOD
- 170 Disc Mastering
- 22 Diskmakers, Inc.
- 34-35 Dolby Laboratories, Inc.
- 85 E.A.R.S.
- 151 Electro-Voice, Inc.
- 73 Eleven Eleven Sound
- 160 Europadisk, Ltd.
- 138 Evatone Soundsheets
- 17 Eventide
- 108 Everything Audio
- 79 Fairlight Instruments

PAGE ADVERTISER

- 28 Fostex Pro Sound Division
- 134 Four Designs Company
- 131 Full Compass Systems
- 193 Fullersound
- 142 Furman Sound, Inc.
- 167 Future Disc Systems
- 150 Genelec
- 93 Georgetown Masters
- 15 GoldLine/Loft
- 29 Alan Gordon Enterprises
- 60 Granny's House
- 104 Dick Grove School
- 49 Hardy Company
- 36 JBL Professional
- 50 JRF Magnetic Sciences
- 139 KABA Research & Development
- 124 KCC Audio/Video
- 149 Klark Teknik
- 62 KRK Monitoring Systems
- 127 Kurzweil Music Systems
- 138 LD Systems
- 20 Lexicon, Inc.
- 64 LimeLite
- 51 Manny's Professional Audio
- 187 Marshall Electronics, Inc.
- 113 Meyer Sound Labs
- 18-19 Mitsubishi Pro Audio Group
- 168 1988 Mix Annual Directory
- 144 Mix Bookshelf
- 69 Nashville Record Productions
- 71 National Sound & Comm Association (NSCA)
- 195 National Sound & Video
- 3, 68, 89 Rupert Neve, Inc.
- 9 New England Digital (NED)
- 100 New River Studios
- 134 Opus Recording & Equipment
- 12 Orban Associates, Inc.
- 7, 54 Otari Corporation
- 27 Peavey Electronics
- 143 Penn Fabrication
- 63, 191 Penny & Giles, Inc.
- 124 Polyline Corporation
- 140 Power Studio Supply

PAGE ADVERTISER

- 166 The Production Garden
- 102 Professional Audio Services & Supply
- 121 Professional Audio Systems
- 16 Prosonus
- 95 QCA Record Pressing
- 156 Ramsa
- 147 Rane Corporation
- 199 RCA Test Tapes
- 111 The Recording Workshop
- 88 The Reflections
- 182 Reliable Music
- 167 Rhythm City
- 115-117 RolandCorp U.S.
- 155 Ross/IMC
- 166 Seam Tech
- 106 107 Solid State Logic (SSL)
- 38-39, Sony Professional Audio & 125
- 75 Sound Emporium
- 159 Sound Genesis
- 154 Sound Impressions, Inc.
- 212 Soundcraft
- 158 Soundscape Studios
- 110 Sprague Magnetics
- 97 State of the Art Elektronik
- 2 Studer Revox
- 49 Studio Consultants
- 59 Studiomaster
- 31 Tannoy Professional Products
- 33 TASCAM
- 179 Thoroughbred Music
- 199 Vertigo Recording Services
- 146 Wise Music
- 81 Woodland Sound Studios
- 187 World Records
- 161-164 Yamaha Music Corporation, Professional Audio Division

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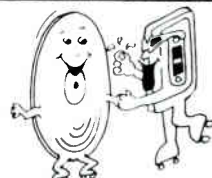
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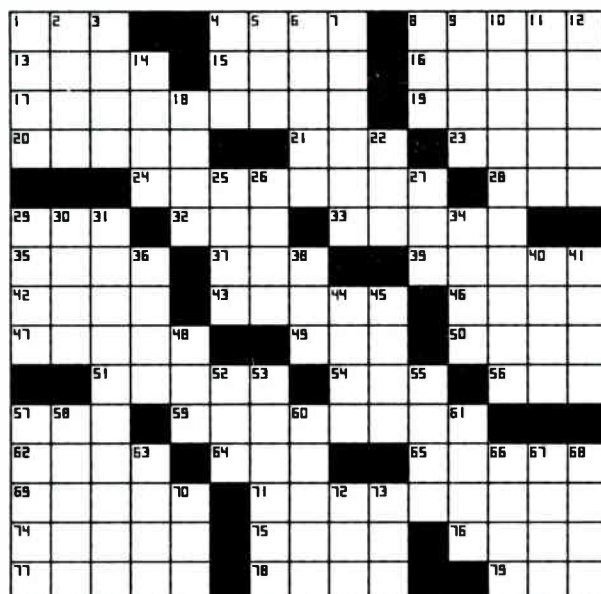
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MIX WORDS



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CRESCENT CITY SOUND

ACROSS

1. Profit
4. Not here
8. Chesterfields
13. "When I was ____ . . ."
15. Green land
16. Recede
17. Music from 31D
19. Ancient city of Jordan
20. Mongol, e.g.
21. Haiphong holiday
23. Belgian river
24. 31D's "Bach of Rock"
28. ____ Moines
29. Fogelberg
32. Lunar area
33. "Blue ____ ala Turk"
35. Familiar spread
37. A Gabor
39. Greek island
42. Eft
43. A Kennedy
46. Music signal standard
47. Film music
49. Period
50. Wife of Geraint
51. Celebrity ____
54. Affirmatives
56. Buddhist 57A
57. Everything
59. 31D trombone style
62. Hard fat
64. Latin lesson word
65. Have origin
69. "I ____ Myself"
71. Foremost 31D musician
74. Sea birds
75. Field's oath
76. Portico
77. Trials
78. Jane ____
79. One of the oldest tools

DOWN

1. Zilch, to Zorro
2. Region of ancient Greece

3. Type of dancing

4. Spotlight adjunct

5. Mouths

6. Beethoven's ____

7. Become liked

8. Weaken

9. Follow orders

10. R&R great from 31D

11. Up ____

12. Makes black-fish

14. Radio part

18. Seth's son

22. Spanish uncle

25. Drink style

26. Donated

27. Hospital folk

29. Spanish V.I.P.s

30. Guinness

31. Home of Congo

Square

34. British title

36. Spanish other

38. Summer drink

40. Norse god

41. ____-fills

(monitors)

44. Type of racing

45. Gumbo ____

48. Consume

52. Measurement type

53. Angry speech

55. RBI, e.g.

57. Something worth

having

58. Money

60. Truck, to Ringo

61. Slips

63. Waste allowance

66. Bit

67. Mislead

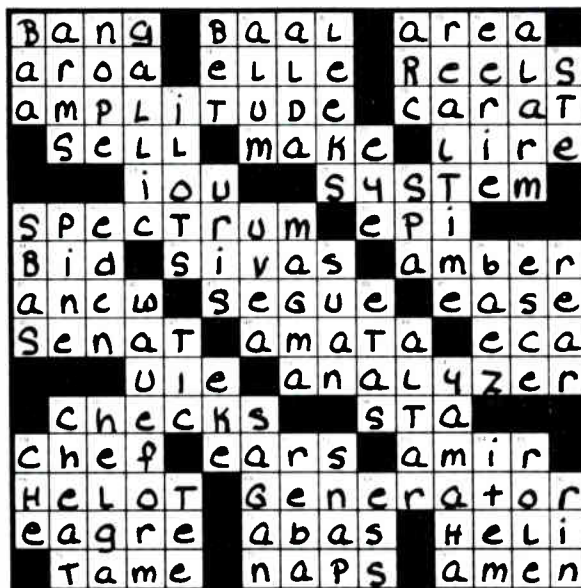
68. Equal, in Lyons

70. Curve

72. Deface

73. Holy woman, in Orleans

Solution to February Mix Words



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—FROM PAGE 37, WHO'S LISTENING

an enormous amount of power, but the speakers are very efficient. [Criteria's other rooms have triamped three-way speakers with JBL components, custom-designed by the studio.]

"Most people work on smaller speakers in all-day use," notes Pechenik, "because of the overwhelming sound of the large speakers. Our reference monitors float from room to room. Virtually everyone still wants the NS10s. We've been demoing two

kinds of Genelec speakers, which sound phenomenal. And we have a pair of Spicas from a New Mexico company. They're audiophile speakers like the Genelec, not necessarily geared to the studio environment. People are funny when they work. They like to use what they're used to using, even if they don't sound great." ■

Linda Jacobson is an assistant editor at Mix Publications.

—FROM PAGE 82, AUDIO ENGINEERS

ready supply of interns."

"I was hoping they would hire me at the Sound Shop," Rose remembers. "When they couldn't afford to, I thought, 'What am I going to do now?' So I went around town giving out my resume. I hung around and got my name into the pile with the rest of them. And I was persistent. I kept on trying until I found a gig. Above all, you have to have faith in yourself; faith in what you're doing as a career."

"You have to start meeting people and making connections," Peterzell advises. "You can't come to Nashville, drop off your resume at the top 20 studios, and sit around waiting for the phone to ring; that's out, even for the guy who's got gold records hanging on his wall! You've got to meet studio managers, musicians, producers, artists. Fortunately, in Nashville, it's not hard to meet people who are in the music business. Get in touch with studio suppliers and companies that build studios; they know when someone's buying a studio and putting in new gear. Remember, you can make a job for yourself if you're open to all possibilities, not just the ideal situation you're looking for right then."

"There's really a hard step between school and the studio," Eichelberger observes. "Almost no step. I couldn't hire somebody from just a resume and a tape. And it's really hard to hire a person fresh out of college without any experience unless they are just exceptional. Try getting some experience in smaller studios and learn as much as you can. You might try running live sound on the road for awhile. You can learn an awful lot trying to make a PA system work every night in a different place. You get experience setting up and dealing with a full range of sound problems. And when you think you're ready to apply for a

second engineering position, you should know signal flow when you walk into any studio, period. When you look at the patch bay and the mic patching on the wall, you should understand totally what's going on and where you want to patch in your equipment."

"There aren't any rules in the music business that say you can't get a degree, walk into a studio, and engineer a Number One record," Peterzell offers. "But the odds are that you're not going to be able to do it because this is more than just a technical business; it's a personality business. And that's something you can only really learn by being here."

And after you get that first job as an assistant, work for months or years, apprenticed to a first engineer, how do you graduate to the big padded chair directly in front of the mixing board? Maybe this anecdote from Lynn Peterzell will give you a clue: "I had been working at Woodland as an assistant for several months. One day we did a session where the head engineer didn't have time to do any rough mixes for the producer. So I took the initiative and said, 'I'll run off some roughs tonight, if you want, after I'm done in the studio.' I mixed them after midnight, after 16 hours in the studio. About a month later, one of those rough mixes came out as a record. As a result, I got that producer as a client. From that, I got several of the top country acts in this town as clients, and I became a full-fledged engineer." ■

Musician and writer Greg Armbruster lives in the Nashville area where he works as house pianist for the Maxwell House Hotel. Formerly assistant editor of Keyboard magazine, Greg's byline has appeared in Keyboard, Frets and Mix.

POST · SCRIPT

—FROM PAGE 167, AUDIO-FOR VIDEO

help them come up with unique and interesting sounds that would otherwise take them hours to develop for themselves.

In the final analysis, though, it's people who make a facility worth going to. Virtually anyone can install the necessary hardware in a good sounding room, but without great people running it, all that care and attention is for nothing. Having good, competent people on your staff leads to a creative atmosphere in the control room. And that's what every client is looking for. ■

Miles Christensen is co-owner with Mike Busby of Post Logic Studios, Hollywood, a two-room complex that has been designed to handle music recording and post-production sweetening. A seasoned percussionist and drummer, Christensen has toured with Iron Butterfly, plays regularly with the band Stabilizers, and now produces and engineers a wide range of record label and sweetening sessions at Post Logic.

—FROM PAGE 80, MAKING IT

want to design automobiles, you don't want to be on an assembly line for four years putting spark plugs in a car, never seeing its front or back end. Music is the same. It's OK to say all you want to do is country music, but a lot of the music we do today in Nashville comes from different parts of the South, not just Nashville. Get out and learn about all kinds of music."

Kling notes that learning how to cut a vinyl record "takes good side-by-side training with a mastering engineer." Possession of an engineering degree almost goes without saying. Among the characteristics he lists for a potential mastering engineer are: "Good attitude, creativity and lots of mental energy. The ability and desire to learn and grasp. It's important to be diversified, to be into pop as well as country, and to know that this is exactly what you want to do. If you're just oriented toward Van Halen then you can't put your whole heart into mastering."

—Linda Jacobson

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Owner: Bob Fazioli
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[8] TRUSTY TUNESHOP RECORDING STUDIO
also *REMOTE RECORDING*
Rt. 1, Box 100
Nebo, KY 42441
(502) 249-3194
Owner: Mrs. Elsie Childers
Studio Manager: Michael Cain

[8] TWIN OAKS STUDIO
also *REMOTE RECORDING*
PO Box 187
Rocky Point, NC 28457
(919) 675-9226
Owner: Tempo I Inc.
Studio Manager: L. Joseph Teachout

underground music

Recording Studio

UNDERGROUND MUSIC RECORDING STUDIO
Vicksburg, MS

[8] UNDERGROUND MUSIC RECORDING STUDIO
5413 Gibson Rd.
Vicksburg, MS 39180
(601) 638-7068
Owner: R.J. Alexander, Steve Alexander
Studio Manager: Steve Alexander
Engineers: Steve Alexander, Bill Garmon, Steve Thomas.
Dimensions: Studio 16 x 16, control room 8 x 16.
Musical Instruments: E-mu EMAX, Roland JX-8P, Roland TR-707, Roland Juno 1, Fender Stratocaster, Gretsch bass, Fender acoustic, Alvarez electric/acoustic classical.
Other MIDI Equipment: Roland MSQ-100 sequencer.
Other: Extensive sound library for EMAX, Atari 1040ST computer system and music software. Photographic services also available for demo photos.
Rates: Please call for rates.

[8] UNDERGROUND RECORDING
also *REMOTE RECORDING*
808 Houston Dr.
Seymour, TN 37865
(615) 573-5269
Owner: Matt & Shirley Lincoln
Studio Manager: Matt Lincoln
Engineers: Matt Lincoln, Jeff Stansberry.
Dimensions: Room 1: studio 12 x 14. Room 2: studio 9 x 6. Room 3: studio 5 x 4. Room 4: control room 11 x 9.
Mixing Consoles: Studiomaster 16 x 8.
Audio Recorders: Tascam 38 8-track, Tascam 32 2-track.
Cassette Recorders/Duplicators: Nakamichi MR-1, Mitsubishi 156.
Noise Reduction Equipment: (2) dbx 166, dbx 150, Symetrix 522.
Echo, Reverb, & Delay Systems: Yamaha REV7, DeltaLab Effectron I, Fostex 3180.
Other Outboard Equipment: TEAC EQA-5, (8) Headphones (A-T, Sennheiser, Koss).

Microphones: (2) Sennheiser, (4) Shure, (2) E-V, (2) AKG, (2) Audio-Technica, (2) Crown PZM.
Monitor Amplifiers: Onkyo, Crown, Rane.
Monitor Speakers: (2) JBL, (2) Auratone 6-C, (2) Altec Lansing.
Musical Instruments: Gulbransen baby grand, Akai AX-80, Gibson 1985 Les Paul, Fender 1971 Stratocaster, Fender 1976 jazz bass, Gibson 1968 S-G, Guild 1977 D-25M, Tama drum set, Slingerland drum set, Zildjian and Paiste cymbals.
Other: Ampeg, Fender, Traynor amps, Tom Scholz Rockman, assortment of guitar pedal effects, full bath, lounge and workout facilities.
Rates: \$25/hr., \$100/5-hour block.

[8] USC SOUND ENTERPRISES
only *REMOTE RECORDING*
4829 Barfield Rd.
Memphis, TN 38117
(901) 682-7002
Owner: Rodney Peppenhorst
Studio Manager: John Jenkins

[2] VENUS VIDEO AND SOUND ARTS
also *REMOTE RECORDING*
2219 N. Columbus St., Ste. 104
Arlington, VA 22207
(703) 524-7443
Owner: John J. Ozolins
Studio Manager: John J. Ozolins

[4] VIDEO IDEAS
also *REMOTE RECORDING*
3965 N. Federal Hwy.
Ft. Lauderdale, FL 33308
(305) 561-1447
Owner: Doug Donohoe
Studio Manager: John DePace

[8] VMR STUDIOS
173 W. Putnam Ferry Rd.
Woodstock, GA 30188
(404) 926-3268
Owner: Deryl Voutila
Studio Manager: Deryl Voutila

[4] WFSU-FM
also *REMOTE RECORDING*
2561 Pottsdamer St.
Tallahassee, FL 32304
(904) 487-3086
Owner: Florida State University
Studio Manager: Wayne Lynch

[4] WHITEWATER RECORDING
20 Battery Park Ave., Ste. 612
Asheville, NC 28803
Owner: Adam Greenberg
Studio Manager: Adam Greenberg

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

[8] WISTARIA STUDIO, INC.
also *REMOTE RECORDING*
607 Piney Point Rd.
Yorktown, VA 23692
(804) 898-8155
Owner: Kim Person
Studio Manager: Lana Puckett

[8] WKRL RADIO
2 Corporate Dr., Ste. 550
Clearwater, FL 34622
(813) 579-9790
Owner: Sandusky Radio
Studio Manager: Steve Schneider
Engineers: Steve Schneider.
Dimensions: Studio 10 x 7, control room 14 x 12.
Mixing Consoles: Soundcraft 600 24 x 8.
Audio Recorders: Otari MX-70 8-track 1", (2) Otari MTR-10 2-track 1/4".
Cassette Recorders/Duplicators: (2) Tascam Model 122 2-track.
Noise Reduction Equipment: Dynalox DX-2.
Echo, Reverb, & Delay Systems: ART DR-1 digital reverb/delay, Eventide H949 Harmonizer/delay, Roland SDE-3000 digital delay.
Other Outboard Equipment: (4) Valley People 440 limiting/compression/expansion/de-essing, Aphex Type C Aural Exciter, (2)

Technics compact disc players, Audioarts 4200A parametric equalizers.
Microphones: (6) E-V RE-20.
Monitor Amplifiers: BGW Model 85, Rane headphone amp.
Monitor Speakers: (2) E-V Sentry 100, (4) AKG 240 headphones.
Other: Technics SL-1200 MkII turntable.
Rates: \$50/hr. from 9am - 5pm Monday thru Friday. \$70/hr. other times.

[4] WLM RECORDING
also *REMOTE RECORDING*
2808 Cammie St.
Durham, NC 27705
(919) 471-3086
Owner: Watts Lee Mangum
Studio Manager: Watts Lee Mangum

[8] WOODRICH RECORDING STUDIO
also *REMOTE RECORDING*
PO Box 38
Lexington, AL 35648
(205) 247-3983
Owner: Woody Richardson
Studio Manager: Woody Richardson

[4] WOOTTEN CUSTOM AUDIO PRODUCTIONS
also *REMOTE RECORDING*
1711 Chadsworth Dr.
Cayce, SC 29033
(803) 794-1341
Owner: Edwin Wootten, Jr.
Studio Manager: Edwin Wootten, Jr.

[4] WTPF-RADIO/TAPE PRODUCTIONS
also *REMOTE RECORDING*
3012 Monument Ave., #2
Richmond, VA 23221
(804) 359-4726
Owner: Keith Brodie
Studio Manager: Keith Brodie

[8] X COMMUNICATIONS STUDIO ONE
PO Box 720009
Orlando, FL 32872
(305) 277-8372
Owner: Jay Fradet
Studio Manager: Chip Fradet

[4] Z.A.O. MUSIC
PO Box 1489
Andrews, NC 28901
(704) 321-4175
Owner: Scott Duncan
Studio Manager: Scott Duncan

Want More Information?

The advertisers in *Mix* are happy to supply readers with additional information about the products and services advertised in this issue. To receive more information, just circle the appropriate numbers on the Reader Service card on page 178.

[8] STEVE ROGERS PRODUCTIONS
940 Tarpon St.
Ft. Myers, FL 33901
(813) 337-4244
Owner: Steve Rogers

[8] RUM PRODUCTIONS
also REMOTE RECORDING
824 Baronne St.
New Orleans, LA 70113
(504) 522-5979
Owner: Jim Rumsfeld
Studio Manager: Jeffrey Talbot

[8] STEVE RUSSELL AUDIO
1789 Banbury Rd.
Charleston, SC 29407
(803) 763-1816
Owner: Steve A. Russell
Studio Manager: Steve A. Russell

[8] R.W. STUDIO
also REMOTE RECORDING
1509 Hoy Taylor Dr.
Norcross, GA 30093
(404) 381-5658
Owner: Rick Ware
Studio Manager: Rick Ware

[4] SAC-AU-LAIT MUSIC INC.
also REMOTE RECORDING
PO Box 3766
618 Gouaux Ave.
Houma, LA 70364
(504) 868-5493
Owner: Mark Mayer
Studio Manager: Johnny Pontiff

[8] SENSELESS PRODUCTIONS
also REMOTE RECORDING
803 W. Waters Ave.
Tampa, FL 33604
(813) 935-2117
Owner: Terry Devane
Studio Manager: Terry Devane

[4] SERVANT STUDIO
also REMOTE RECORDING
8512 Deerfield Dr.
Chalmette, LA 70043
(504) 277-7879
Owner: James D. Gaulon II
Studio Manager: James D. Gaulon II

[8] SEVEN POINTS RECORDING STUDIO
also REMOTE RECORDING
1215 Hermitage Park Drive
Hermitage, TN 37076
(615) 889-7737
Owner: Imran H. Rahmani
Studio Manager: Michele J. Borowy

[8] SILHOUETTE STUDIOS
14269 Palmwood Rd.
Lake Park, FL 33410
(305) 622-7861
Owner: Mark Brown
Studio Manager: Cecilia Erazo

[8] SIMPLE DREAMS RECORDING
Box 811
Pikeville, KY 41501
(606) 478-9445
Owner: Wil and Deanne Freebody
Studio Manager: Derek Skeens

[8] SING-A-SONG RECORDING STUDIOS
also REMOTE RECORDING
10227 Hanover Woods Pl.
Charlotte, NC 28210
(704) 542-9761
Owner: Slep-Tone Entertainment Corp.
Studio Manager: Derek J. Slep

[8] SONG PRO
also REMOTE RECORDING
821 19th Ave. So.

S O U T H E A S T

4&8 TRACK

STUDIOS

Nashville, TN 37203
(615) 321-4803
Owner: Jim Buckner
Studio Manager: Jim Buckner

[4] THE SOUND CATEGORY
only REMOTE RECORDING
PO Box 9
Merrifield, VA 22116
(703) 280-9119
Owner: Ralph & Mary Haller
Studio Manager: Mary Haller

[8] SOUND CENTER RECORDERS
also REMOTE RECORDING
329 N. Main, PO Box 233
Church Point, LA 70525
(318) 684-2176
Owner: Lee Lavergne
Studio Manager: Lee Lavergne

[8] SOUND EFFECTS STUDIO
2923 Sagemont Place
Snellville, GA
(404) 979-7648
Owner: Herbie Sully
Studio Manager: Herbie Sully

[8] SOUND PLUS
also REMOTE RECORDING
Rt. 4, Box 41
Leesburg, VA 22075
(703) 777-7176
Owner: Philip W. Goshorn
Studio Manager: Bob Gaskill

[8] SOUND SHACK RECORDINGS
also REMOTE RECORDING
PO Box 34 VAMC
Tuskegee, AL 36083
(205) 727-0292
Owner: B. Curtez Huntley
Studio Manager: B. Curtez Huntley

[4] SOUND STAGE
also REMOTE RECORDING
2042 N. Rio Grande Ave., Suite F
Orlando, FL 32804
(305) 849-9767
Owner: Fletcher/Franklin Assoc., Inc.
Studio Manager: Dan Franklin

[8] SOUNDS. REASONABLE!
also REMOTE RECORDING
10203 Bent Tree Ln.
Manassas, VA 22111
(703) 631-6376 Metro DC
(703) 369-4250
Owner: Fred Wygal
Studio Manager: Fred Wygal

[8] SOUTHERN CITY STUDIO
also REMOTE RECORDING
7317 Bayhill Ct.
Raleigh, NC 27615
(919) 872-6443
Owner: John Hopkins
Studio Manager: John Hopkins

[8] STARSOUNDS MUSIC PRODUCTIONS
1440 Ludlow Dr.
Virginia Beach, VA 23456
(804) 474-2492
Owner: Alan V. Sharps
Studio Manager: Kathy Sharps

[8] STONEBRIDGE RECORDING
Rt. 15, Box 54
Maryville, TN 37801
(615) 983-7448
Owner: Michael Ishibashi
Studio Manager: Michael Ishibashi

[8] STONESILK AUDIO
2824 Clearwater Rd. S.W.
Atlanta, GA 30331
(404) 349-4452
Owner: Bill Campbell
Studio Manager: Bill Campbell

[8] STUDIO HELL
917 N. Oceanfront
Jacksonville Beach, FL 32250
(904) 246-8972
Owner: M. Fitzgerald
Studio Manager: Greg Smith

[8] SUN SOUND STUDIOS
also REMOTE RECORDING
PO Box 4271 CRS
Rock Hill, SC 29731
(803) 328-1723
Owner: Jake Hunter, Rod Hunter, Mark Dickson
Studio Manager: Jake Hunter, Mark Dickson

[8] THE SYNC PRODUCTIONS
1094 Ponce De Leon Ave.
Atlanta, GA 30306
(404) 874-1564
Owner: Paul B. MacDonald
Studio Manager: Paul B. MacDonald

[8] SYNC RECORDS
also REMOTE RECORDING
9111 Parliament Dr.
Burke, VA 22015
(703) 978-4999
Owner: George A. Bowley
Studio Manager: Laurie A. Bowley

[8] SYNGRINER SOUND
also REMOTE RECORDING
280 Northern Ave. #201
Avondale Estates, GA 30002
(404) 294-6910
Owner: Bernie Griner
Studio Manager: Bernie Griner

[8] T&S STUDIO
also REMOTE RECORDING
67 Colony Road
Jupiter, FL 33469
(305) 746-6520
Owner: Tom Green
Studio Manager: Tom Green

[8] TAPEWORM PRODUCTIONS
250 Eagle Creek Drive
Lexington, KY 40502
(606) 263-4290
Owner: Michael J. Schneider
Studio Manager: Michael J. Schneider

[8] THE TIME MACHINE RECORDING & DUPLICATING
also REMOTE RECORDING
2852 20th Ave. N. #2
St. Petersburg, FL 33713
(813) 321-7900
Owner: Steve Repetti
Studio Manager: Steve Repetti

[4] TREST AUDIO/VIDEO PRODUCTIONS
also REMOTE RECORDING
PO Box 4625
Jackson, MS 39216
(601) 981-3385
Owner: Perry Trest

[8] TREY RECORDS
also REMOTE RECORDING
PO Box 538
Gordon, GA 31031
(912) 628-2594
Owner: Willie W. Smith, Jr.
Studio Manager: Willie W. Smith, Jr.

BACK ISSUES

- ☐ **1985 January, Northwest Studios.** Super Bowl Sound. Springsteen on Stage. Ray Parker Jr. Leon Russell.
- ☐ **1985 February, Independent Engineers & Producers.** Brian Eno. The Art of Touring. Roger Powell on MIDI. Les Paul.
- ☐ **1985 March, Southeast Studios.** Loudspeaker Technology. Martin Rushent. Cotton Club Sound. John Fogerty.
- ☐ **1985 April, Video Production Supplement with Facilities Listings.** Compact Power Amps. Radio Recorders. Harry Bryant. Eurythmics.
- ☐ **1985 May, Northeast Studios.** Digital Reverb. Flo & Eddie. Holophonics. Emmylou Harris. Humberto Gatica.
- ☐ **1985 June, Sound Reinforcement & Remote Recording Listings.** Location Recording Tutorial. Grateful Dead Sound. Weird Al Yankovic. Synthesizer Oriented Studios. David Sanborn.
- ☐ **1985 July, Recording School Listings and Southwest Studios.** Mixing Consoles. Dr. Demento. Kashif's Studio. Roger Nichols and John Denver.
- ☐ **1985 August, Studio Design Issue: Listings of Designers & Suppliers.** Control Room Acoustics. Thomas Dolby. Orchestral Recording. On the Road with Prince. Neil Young.
- ☐ **1985 September, Southern California Studios.** Film & TV Sound. Frank Zappa. Digital '86 Supplement. *Mishima* Sound. David Foster.
- ☐ **1985 October, New Products for AES.** Maintenance & Testing. Abbey Road Studios. Ambisonics. Ben Hunt on Inmix. Nile Rogers.
- ☐ **1985 November, North Central & Canadian Studios.** George Massenburg. Video Supplement. Alligator Records. Women in Media Production.
- ☐ **1985 December, Tape-to-Disc Listings.** Mastering, Pressing & Duplication. TEC Award Winners. Sound for the *Turklight Zone*. Tom Waits.
- ☐ **1986 January, Northwest Studios.** Equipping Home Studios. Paul Winter. SMPTE/MIDI Connection. Yoko Ono.
- ☐ **1986 February, Independent Engineers & Producers.** Microphone Special Report. Laurie Spiegel. Budgeting for Sessions. Joni Mitchell.
- ☐ **1986 March — SOLD OUT**
- ☐ **1986 April — SOLD OUT**
- ☐ **1986 May, Northeast Studios.** Digital Supplement. Sampling Primer. CD Facilities. Future of Console Design. Steve Lillywhite.
- ☐ **1986 June, Remote Recording & Sound Reinforcement Listings.** Roadability. Russ Tiebman. CD ROM & CD I. Ry Gooder.
- ☐ **1986 July — SOLD OUT**
- ☐ **1986 August — SOLD OUT**
- ☐ **1986 September, Southern California Studios.** Film Sound. Telecommunications. Production Music Libraries. David Byrne's *True Stories*.
- ☐ **1986 October — SOLD OUT**
- ☐ **1986 November, New Products Directory.** CD I Supplement. Kenny Loggins. Tour Sound. Daryl Hall. Grounding Primer. Rupert Neve.
- ☐ **1986 December — SOLD OUT**
- ☐ **1987 January — SOLD OUT**
- ☐ **1987 February, Independent Engineers & Producers.** International Recording Supplement. APRS Studio Directory. Bruce Lundvall. DMM for CD. Kitano.
- ☐ **1987 March, Southeast Studios.** Digital Recording Supplement. Tom Jung. CD Mastering Forum. Richard Thompson.
- ☐ **1987 April, Video Production & Post-Production Facilities.** Location Mic Techniques. Adrian Belew. Synchronizer Survey. Pee-wee's Playhouse.
- ☐ **1987 May, Northeast Studios.** Stevie Wonder & Nile Rodgers Record by Satellite. Programmable Signal Processors. GRP Records. Digital Video Interactive. George Martin.
- ☐ **1987 June, Remote Recording & Sound Reinforcement Listings.** Touring Consoles. Video's Stephen Johnson. Women in Sound Reinforcement. Paul Simon Live in Zimbabwe.
- ☐ **1987 July — SOLD OUT**
- ☐ **1987 August SOLD OUT**
- ☐ **1987 September, Southern California Studios.** Recording in Hawaii. The Doors. Analog 2 tracks. Phil Spector.
- ☐ **1987 October, New Products Directory.** Producers' Forum. John Hiatt. Tape Recorder Maintenance. Laurie Anderson.
- ☐ **1987 November, North Central and Canadian Studios.** George Harrison. Pioneers and Trends in Film Sound. Localization. Maurice Jarre.
- ☐ **1987 December, Mastering, Pressing, Tape Duplication and CD Facilities.** Chet Atkins. Alf Clausen's Scoring for TV. Steve Lukather.
- ☐ **1988 January, Northwest Studios.** Music Software Programs. On the Road with Pink Floyd. CD Video. Mick Jagger.
- ☐ **1988 February, Independent Engineers & Producers.** International Recording. Automation & Control Systems. Remixing with Alan Parsons.

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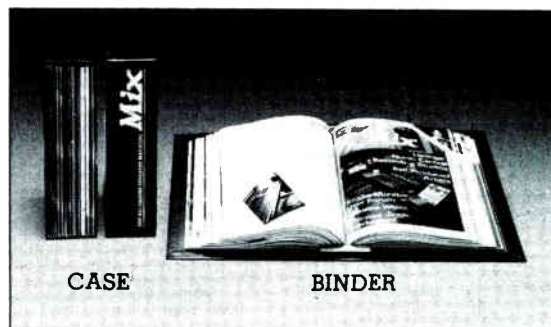
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Tuskegee Institute, AL 36088
(205) 727-3921
Owner: Nan Poole Spicer
Studio Manager: Nan Poole Spicer

[8] NITESHAD STUDIO
927½ N. Hagan Ave.
New Orleans, LA 70119
(504) 488-7408
Owner: Donald J. Hull
Studio Manager: Donald J. Hull

[2] NOMAD PRODUCTIONS
only *REMOTE RECORDING*
PO Box 6868
Mobile, AL 36660
(205) 479-2769
Owner: Barry L. Little
Studio Manager: Barry L. Little

[4] NOMADD IV
also *REMOTE RECORDING*
15228 Pond Woods Dr. East
Tampa, FL 33618
(813) 961-7567
Owner: Andrew Dobson
Studio Manager: Marina Dobson

[8] OFFBEAT STUDIO
965 Old U.S. 1 South
Southern Pines, NC 28387
(919) 692-6594
Owner: Bob Hensley
Studio Manager: Bob Hensley

[8] OMNI RECORDING
also *REMOTE RECORDING*
2104 Hibiscus Dr., Suite F
Edgewater, FL 32032
(904) 423-6664
Owner: Bill Chapin
Studio Manager: Marianne Chapin

[4] ORANGE STREET RECORDERS
305 Orange St. E.
Tuscaloosa, AL 35401
(205) 752-3191
Owner: Brook Clement
Studio Manager: Brook Clement

[8] RICK PAINTER SOUND STUDIO
also *REMOTE RECORDING*
2826 Iroquois Ave.
Jacksonville, FL 32210
(904) 388-7649
Owner: Rick Painter
Studio Manager: Donna Painter

[8] PERSPECT AUDIO
2512 Cleveland St.
Hollywood, FL 33020
(305) 925-3629
Owner: Michael Cohagen
Studio Manager: Jamie Cohagen

[8] PINK PELICAN MUSIC CO.
2908 Edenwood St.
Clearwater, FL 34619
(813) 799-0661
Owner: Tom Klepacki
Studio Manager: Tom Klepacki

[8] PLATINUM PRODUCTIONS OF CENTRAL FLORIDA, INC.
6427 Undine Way
Orlando, FL 32818
(305) 298-3917
Studio Manager: Michael Creamer

[8] THE PRODUCTION LAB
515 North Highland Ave.
Memphis, TN 38122
(901) 324-1919
Owner: The Production Lab, Inc.
Studio Manager: Rick Tarrant

[4] PROJECT 70 AUDIO SERVICES, INC.
also *REMOTE RECORDING*

S O U T H E A S T

4&8 TRACK

STUDIOS

777 Lambert Dr. NE
Atlanta, GA 30324
(404) 875-7000
Owner: Jerry L. Connell
Studio Manager: Jerry L. Connell

[8] PROSOUND LABS, INC.
5625 S.W. 108 Pl.
Miami, FL 33173
(305) 595-7071
Owner: M.S. Crislar Jr.

[8] PROTECH PRODUCTIONS RECORDING STUDIO
also *REMOTE RECORDING*
950 Manson St.
Marrero, LA 70072
(504) 341-2454
Owner: Rick Naiser
Studio Manager: Tom Andrews

[8] PROTOLOG INC.
also *REMOTE RECORDING*
4470 57 Ave. N.
St. Petersburg, FL 33714
(813) 345-8836
Owner: Protolog Inc.
Studio Manager: Michael Petrucci
Engineers: Michael Petrucci
Dimensions: Studio 15 x 17, control room 10 X 8.
Mixing Consoles: Trident Series 65 24 x 16, Soundcraft Series 200 24 x 4 x 8, Yamaha PM1000 16 x 4, Yamaha PM700 12 x 6 custom headphone mix, Rane HC-6 6 x 2.
Audio Recorders: Tascam 58-OB 8-track, Fostex A20 2-track center SMPTE, TEAC 3340-S 4-track.
Cassette Recorders/Duplicators: Nakamichi MR-1 2-track Noise Reduction Equipment: (8) dbx 180 Type I balanced, (2) dbx 150 Type I balanced.
Synchronization Systems: SMPL lock (MIDI/FSK/SMPTE) Echo, Reverb, & Delay Systems: (4) dbx 160X compressor, Yamaha SPX90 II, Lexicon PCM60 update software, Lexicon PCM41 DDL, Roland SRV-2000, Yamaha D1500.
Other Outboard Equipment: (2) Klark-Teknik DN300 EQ, Carver holographic pre-amp, IQS FFT analyzer, Eventide RT60 and spectrum analyzers, Sony CD player, Rane HC-6 headphone amp, Crown OC 150A meter bridge.
Microphones: (12) Sennheiser 421, (4) Sennheiser 431, (2) AKG 460B pre-amp, (2) AKG CK-1 capsule, AKG VLS-62 capsule, (2) E-V RE20, E-V D-35, (4) Shure SM57, SM58, SM60, (2) Shure 5M, AKG 414B-ULS.
Monitor Amplifiers: Crown DC 300A Series II, Carver 1.5.
Monitor Speakers: Auratone 5C, Yamaha NS-10M.
Musical Instruments: Fender 1965 jazz bass, Yamaha DX7, TX812, RX11, Emulator II+ with upgrade, Emulator SP-12 turbo, Kurzweil MIDIboard, Oberheim Matrix-6R, Roland JX-3P, Ensoniq drum computer, Commodore 64, IBM PC Jr., Prophet-5, Hammond B-3, most other equipment on request (Synclavier II).
Other MIDI Equipment: Apple IIe w/256K, Macintosh w/512k and 10 mg hard drive, Opcode Studio Plus interface, Yamaha 8 x 8 MIDI patch.
Video Equipment: Sony-JVC equipment on request, SMPTE/TBC, tape machines.
Other: Digidesign Sound Designer, Soft Synth, Opcode Seq. 2.0, DX-TX librarian/editor, Matrix 6 lib/editor, various custom written acoustics programs, 32-track MIDI program.
Rates: \$25/hr., programming and production extra.

[8] PROTRACKS
75 Steele Rd.
Covington, GA 30209
(404) 786-1397
Owner: Steve Jeffries
Studio Manager: Steve Jeffries
Engineers: Steve Jeffries
Dimensions: Studio 24 x 30 (including drum booth), control room 8 x 10.
Mixing Consoles: Tascam M-50 12 x 8.
Audio Recorders: Tascam 38 8-track, Tascam 22-2 2-track.
Cassette Recorders/Duplicators: Technics RS-B11W, Akai CS-M02
Echo, Reverb, & Delay Systems: Lexicon PCM60 digital reverb room simulator, Furman spring reverb, ADA 1280 digital delay, DigiTech 1000 digital delay.
Other Outboard Equipment: dbx noise reduction, Ross 31-band EQ, Yamaha GC2020 limiter/compressor w/noise gate, Furman limiter/compressor, Furman parametric EQ, Aphex

Aural Exciter, Ibanez, DOD, Morley, Electro-Harmonix, electronic metronome, Korg tuner, Conn Stroboluner.
Microphones: AKG 414, Shure SM57, Shure SM58, Shure SM80, E-V, PZM.
Monitor Amplifiers: Pioneer
Monitor Speakers: E-V Sentry 100, Auratone cubes, KLH, custom built 3-way main studio playback system.
Musical Instruments: Casio CZ-1000 synth, upright piano, Slingerland drums w/rototoms, Syndrum, other percussion, Marshall amps, Fender amps, Mesa Studio 22 amp, Telecasters, P-Bass, Gibson Firebird, Yamaha acoustic mandolin, Sho-Bud LDG steel guitar, many others!
Rates: \$25/hr

[8] PYRAMID SOUND LABS
also *REMOTE RECORDING*
600 New Street
Macon, GA 31201
Owner: Stanley Jackson
Studio Manager: Stanley Jackson

[8] R.A.M.S. STUDIO (RECORDING AND MUSIC SERVICES)
also *REMOTE RECORDING*
Esto Road, Box 220
Jamestown, KY 42629
(502) 343-4503
Owner: Rickie Mann
Studio Manager: Rickie Mann

[8] RCM SOUND STUDIO
300 Flanagan Station Rd.
Winchester, KY 40391
(606) 744-5345
Owner: Bill Martin
Studio Manager: Paul Martin

[4] REAL TO REEL
also *REMOTE RECORDING*
14805 NE 14th Ave.
North Miami, FL 33161
(305) 949-3530
Owner: Gary Wilhoite
Studio Manager: Angelo Enriquez

[4] REASON'S EDGE RECORDING STUDIO
also *REMOTE RECORDING*
3530 Seagrape Ave.
Naples, FL 33942
(813) 643-0927
Owner: Gary J. Edgington

[4] RED ROAD PRODUCTIONS
also *REMOTE RECORDING*
4537 W. Wendover Ave.
Greensboro, NC 27410
(919) 855-1525
Owner: Bryan Smith
Studio Manager: Bryan Smith

[8] REEL SOUNDS
75 Parris Ave.
Nashville, TN 37210
(615) 255-6347
Owner: Mr. Dana L. Clark
Studio Manager: Cindy B. Clark

[8] REELPEOPLE RECORDING SERVICES & CONSULTANTS
also *REMOTE RECORDING*
3210 Gary Ct.
Falls Church, VA 22042
(703) 532-REEL
Owner: Remy David
Studio Manager: Bob Lloyd

[4] RIDGE RECORDING STUDIOS
also *REMOTE RECORDING*
407 South St.
Greenville, AL 36037
(205) 382-7800
Owner: Cleveland Poole
Studio Manager: Cleveland Poole

[8] RIVER CITY SOUND PRODUCTIONS
2146 Old Lake Cv
Memphis, TN 38119
(901) 756-3843
Owner: Steve Wenger, Bob Pierce
Studio Manager: Bob Pierce

7425 Buckland Rd.
Charlotte, NC 28208
(704) 588-2491
Owner: Jim Deal
Studio Manager: Jim Deal

[8] MAYS KENTUCKY DEMO SERVICE
340 N. Broadway
Georgetown, KY 40324
(502) 863-1533
Owner: Elmer Jones
Studio Manager: Norman L. Mays

[4] MCDONALD SOUND STUDIO
2808 Napier Ave., PO Box 2186
Macon, GA 31203
(912) 746-2586
Owner: Ray McDonald
Studio Manager: Ray McDonald

[8] MEDIA PRODUCTIONS/RESISTOR RECORDS
also *REMOTE RECORDING*
125 Miller Ave.
Oak Hill, WV 25901
(304) 465-5786
Owner: W. Doug Gent
Studio Manager: W. Doug Gent

[2] MERCER UNIVERSITY EDUCATIONAL MEDIA CENTER
also *REMOTE RECORDING*
1400 Coleman Ave.
Macon, GA 31207
(912) 744-2985
Owner: Mercer University
Studio Manager: John Chaffa

[8] THE MIGHTY MIX
also *REMOTE RECORDING*
PO Box 3809
Tallahassee, FL 32315
(904) 877-1467
Owner: David Murphy
Studio Manager: Martha Graham, Mark Friedemann

[8] MILLER RECORDING
also *REMOTE RECORDING*
Rt. 5, Box 447, Hwy. 25 S.
Starkville, MS 39759
(601) 323-0728
Owner: Bill & Virginia Miller
Studio Manager: Bill Miller

[8] MILLER RECORDING STUDIO
also *REMOTE RECORDING*
2513 S. Scales St.
Reidsville, NC 27320
(919) 349-8911
(919) 342-1892
Owner: Robbin D. Miller
Studio Manager: Robbin D. Miller

[8] MIRROR IMAGE RECORDING STUDIO
4617 Rollingwood Drive
Durham, NC 27713
(919) 544-6660
Owner: B.J. McAlister
Studio Manager: Ali McAlister

[8] MISSION CONTROL PRODUCTIONS
also *REMOTE RECORDING*
PO Box 210902
Nashville, TN 37221
Owner: Steven Cooper
Studio Manager: Laurie Cooper

[8] MO HUNCH
also *REMOTE RECORDING*
Aldie, VA 22001
(703) 471-7612
Owner: Roadducks Inc.
Studio Manager: Bill Culver

[4] MOBILE SOUND SERVICE
also *REMOTE RECORDING*
1010A Dorothea Dr.
Raleigh, NC 27603
(919) 834-3158
Owner: Ted E. Bisette
Studio Manager: Ted E. Bisette

[2] MONETT MEDIA (AMBISONICS)
only *REMOTE RECORDING*
400 Colony Sq., Ste. 2010
Atlanta, GA 30361
(800) 222-9050 out of GA
(404) 876-3929
Owner: Monett Media, Inc.
Studio Manager: David Monett

[4] MOUNTAIN BEAR PRODUCTIONS AND BROADCAST
RECORDING
136 Union Chapel Road
Asheville (Weaverville), NC 28787
(704) 645-4269
Owner: K-r-n Mays
Studio Manager: Ken Mays

[8] MOUNTAIN EAR PRODUCTIONS
also *REMOTE RECORDING*
PO Box 77
Mountain City, TN 37683
(615) 727-5070
Owner: Ralph Nielsen
Studio Manager: Marc Nielsen

[8] MR. O AUDIO
also *REMOTE RECORDING*
2035 S. Lumpkin Rd.
Columbus, GA 31903
(404) 687-6221
Owner: Maurice R. Owens
Studio Manager: Maurice R. Owens
Engineers: Maurice Owens, David Norman, Mike Osborn
Dimensions: Studio 30 x 50, control room 20 x 14
Mixing Consoles: Soundcraft 500 32 x 8, Canary 32 x 8,
Studiomaster 20 x 4, Studiomaster 20 x 8 monitor, Yamaha 12 x 4
Audio Recorders: Tascam 38 8-track, Tascam 234 4-track,
TEAC A3300 SX 2-track, Tascam 32 2-track
Cassette Recorders/Duplicators: (5) Nikko ND-350
Noise Reduction Equipment: (2) Tascam DX4D, dbx Type I
Echo, Reverb, & Delay Systems: Lexicon Prime Time II 95,
Yamaha REV7, Yamaha SPX90, Yamaha SPX90 II, (2) Eventide
H910 Harmonizer, Ibanez HD-1500, Effectron III.
Other Outboard Equipment: (2) Valley People Dyna-Mite, (2)
UREI 539 1/3 octave EQ, (4) Yamaha 2031 dual 1/3 octave EQ,
(2) dbx 161 comp/limiters, (2) dbx 160 comp/limiters, (2) UREI
525 crossovers, (4) Symetrix 501 comp/limiters, (3) Furman
TX-3 crossovers
Microphones: (8) Shure SM58, (8) Shure SM57, (8) Shure
PE56P, (4) Sennheiser 421, AKG 414
Monitor Amplifiers: (6) Crown DC-300A, (6) BGW 750, (6) Ya-
maha 2200
Monitor Speakers: (2) JBL 4312, (2) JBL L-36, (2) Auratone 5C
Musical Instruments: Oberheim DX drum machine, Roland 505
drum machine, Korg Poly 61M, Minimoog, Akai AX13 synth,
Akai S612 sampler, disk and delay, Fickelbacker bass, (10)
assorted guitars, Rockman sustainor and chorus, Rane HC-6
headphone amp.
Other: (12) OAP DP-118 full-range speakers, all JBL loaded
(one 18" two 12", one 2441 on bi-radial), (12) OAP SM-115
monitors (one JBL 15" & one 1" JBL 2425 in each), (8) HME/
Beyer headset comm., (72) PAR 64 w/trusses & dimming
Rates: Call for rates

[8] MUFEX
919 Bluff Rd., Suite 104
Columbia, SC 29202
(803) 254-4463
Owner: Leslie Mizzell

[8] MUSIC & SOUND PRODUCTION SERVICES
also *REMOTE RECORDING*
1908 S. Randolph St.
Arlington, VA 22204
(703) 892-6615
Owner: Gregg Krech
Studio Manager: Gregg Krech

[8] THE MUSIC ROOM
310 Williams St.
Hattiesburg, MS 39401
(601) 583-1815
Owner: Tim Frazier
Studio Manager: Tim Frazier

[8] MUSICAL REFUGE STUDIOS
also *REMOTE RECORDING*
6403 Elliot Dr.
Tampa, FL 33615
(813) 884-2854
Owner: Gary Griffith, Carl Esselmeyer
Studio Manager: Carl Esselmeyer

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[8] H&G RECORDED PRODUCTIONS
also *REMOTE RECORDING*
PO Box 161
Chalmette, LA 70044
(504) 469-7963
Owner: N.B. Hardy
Studio Manager: Marcelle B. Hardy

[4] HAMPTON UNIVERSITY DEPT. OF MUSIC
PO Box 6583, Hampton University
Hampton, VA 23668
(804) 727-5511
(804) 727-5404
Owner: Hampton Univ
Studio Manager: Bob Ransom

[8] HAPPY FACES PRODUCTIONS
419 Lanier Ln.
Winter Haven, FL 33884
(813) 324-3487
Owner: Charlie Massey

[8] HAYES RECORDING STUDIO/WEST
6331 Bahama Shores Dr. S.
Saint Petersburg, FL 33705
(813) 867-8330
Owner: Tech-Coh Communications Corporation
Studio Manager: Paul Hayes

[8] HAYMON HOUSE STUDIO
also *REMOTE RECORDING*
Rt. 2, Box 23F, Hwy. 383
Kinder, LA 70648
(318) 738-5181
Owner: Stephen C. Haymon
Studio Manager: Stephen C. Haymon

[8] HIGH SPIRITS RECORDING
1705 Cedar Shoals Dr.
Athens, GA 30605
(404) 546-9425
Owner: Robin Kristal
Studio Manager: Robin Kristal

[8] HIGH ST. STUDIO
1504 High St.
Bowling Green, KY 42101
(502) 842-7316
Owner: Marc Owens, Billy Smith
Studio Manager: Marc Owens

[8] HIRDLER ENTERPRISES
2200 Cypress Bend Dr. S., #302
Pompano Beach, FL 33069
(305) 971-1457
Owner: Bruce F. Hirdler
Studio Manager: Bruce F. Hirdler

[8] HORIZON PRODUCTIONS
1010 W. Platt St.
Tampa, FL 33606
(813) 254-3399
Owner: Robert Stephenson
Studio Manager: Phil Schwarz

[8] HORIZON RECORDING STUDIO
2607 Eastland Ave.
Nashville, TN 37206
(615) 226-2227
Owner: Richard Owens
Studio Manager: Richard Owens

[8] HOUSE OF COMMONS COMMUNICATIONS
also *REMOTE RECORDING*
705 Werne Dr.
Lexington, KY 40504
(606) 252-0369
Owner: Ed Commons
Studio Manager: Neil Kesterson

[8] HUNTWICK MUSIC GROUP
7454 Huntwick Trail
Nashville, TN 37221
(615) 662-2025
Owner: Joseph W. Morris
Studio Manager: Allen H. Tuten

[8] JACK O'DIAMONDS RECORDING STUDIO
also *REMOTE RECORDING*

S O U T H E A S T

4&8 TRACK

STUDIOS

4201 Central Pike
Hermitage (Nashville), TN 37076
(615) 883-9600
Owner: Alex Zanetis
Studio Manager: Jon "Mr. Big" D'Amelio

[8] JINGLE WORKS RECORDING STUDIO
PO Box 717
Pass Christian, MS 39571
(601) 452-2331
Owner: Rick Sierra
Studio Manager: Marsha Daniel

[8] JUST IN PRODUCTIONS
also *REMOTE RECORDING*
2573-1 Seaford Cir.
Tampa, FL 33613
(813) 971-8719
Owner: Dan Smith
Studio Manager: Dan Smith

[8] LADY SABRE'S DUNGEON
also *REMOTE RECORDING*
PO Box 1323
Delray Beach, FL 33447
(305) 734-4657
Owner: Chris Warren, Sandra Thomas
Studio Manager: Chris Warren

[8] LAKESIDE PRODUCTIONS
PO Box 24482
Nashville, TN 37202
(615) 361-4081
Owner: Steve Thomas
Studio Manager: Steve Thomas

[8] LEATHERWOOD SOUND
also *REMOTE RECORDING*
4107 Bynum-Leatherwood Rd.
Anniston, AL 36206
(205) 238-1038
Owner: Kevin Freeman
Studio Manager: Kevin Freeman

[8] LEFT FIELD RECORDS
13 E. Pike St.
Cynthiana, KY 41031
(606) 234-3161
Owner: Wm. D. Field, Larry White
Studio Manager: Wm. D. Field

[8] LEGGETT RECORDING STUDIO
223 Broadmoor Ave.
Baton Rouge, LA 70815
(504) 923-0729
Owner: Chuck & Therese Leggett
Studio Manager: Chuck Leggett

[8] LENTZ & ASSOCIATES, INC.
also *REMOTE RECORDING*
501 Washington St.
Raleigh, NC 27605
(919) 828-6761
Owner: L.A. Lentz
Studio Manager: L.A. Lentz

[8] GERALD LEWIS RECORDING
only *REMOTE RECORDING*
Box 3671
Arlington, VA 22203
(703) 521-1871
Owner: Gerald Lewis
Studio Manager: Gerald Lewis
Engineers: Gerald Lewis, George Duman, Mark Walters, Mike Robinson.
Dimensions: Remote recording only from fully equipped Dodge van
Mixing Consoles: Audiotronics 110 24 x 8
Audio Recorders: Otari MX-5050 8-track, Otari MX-5050 2-track, Studer B67 2-track, (2) Sony 2000 2-track PCM w/Nakamichi DMP-100 processor.

Cassette Recorders/Duplicators: (50) Nakamichi LX-5, Nakamichi ZX9, Nakamichi B-300.
Noise Reduction Equipment: dbx 208 8-track, dbx 150 2-track, (2) dbx 154 4-track, dbx 157 2-track
Echo, Reverb, & Delay Systems: Lexicon PCM70, Lexicon PCM60
Other Outboard Equipment: (2) UREI 1176 limiters, UREI 1178 stereo limiter, UREI LX-4 limiter, (2) UREI 530 graphic equalizers, Barcus-Berry BBE-802 processor, (2) Poly-graph graphic equalizers
Microphones: (3) Schoeps omni (colette series) condensers, Sennheiser M-20 omni condenser, (3) AKG 414EB condenser, (2) AKG P-40 condenser, (4) Neumann U87 condenser, (2) Neumann KM84 condenser, (2) AKG 460 w/cardioid and omni capsules (condenser), (5) AKG 224E (dynamic), (5) AKG 320 dynamic, (9) Shure SM57
Monitor Amplifiers: Bryston 3B, Nakamichi A7
Monitor Speakers: JBL 4311B, ADS 1590, Yamaha NS-10M, JBL 4310, JBL 4301.
Video Equipment: 12" monitor for recording purposes.
Rates: Recording: \$60/hr. for 2-track, \$70/hr. for 8-track, plus mileage and expenses when applicable, mixing \$50/hr, editing \$40/hr.
Extras & Direction: A location recording service by musicians specializing in digital and analog 2- and 8-track recording, mixing and editing. Production includes CDs, albums, 45s, stereo cassettes (real time duplication only!) and all related printing and fabricating services including color separations, one- to four-color album printing, one- to four-color cassette J cards, album and cassette labels. No custom job too small!
Prices and literature available upon request

[4] LINDEN INC.
also *REMOTE RECORDING*
229 N. Henry St.
Alexandria, VA 22314
(703) 549-4424
Owner: Katherine Monteith
Studio Manager: Gregg Powers

[8] LOCONTO PRODUCTIONS & STUDIOS
7766 NW 44 St.
Sunrise, FL 33351
(305) 741-7766
Owner: Frank X. Loconto
Studio Manager: Phyllis Finney Loconto

[4] LOST RIVER RECORDING STUDIO
631 N. 9th St.
Paducah, KY 42001
(502) 444-7594
Owner: Clyde F. Wood
Studio Manager: Clyde F. Wood

[8] L.P. PRODUCTIONS
also *REMOTE RECORDING*
9522A Fuller Rd.
Chattanooga, TN 37421
(615) 899-3364
Owner: Larry Patton
Studio Manager: Larry Patton

[8] MAKIN' TRAX PRODUCTIONS
PO Box 22951
Jackson, MS 39225
(601) 355-7306
Owner: Evans and Associates, Inc.
Studio Manager: William Evans

[8] MAPLE HILL PRODUCTIONS
2910 Elm Hill Pike
Nashville, TN 37214
(615) 883-3649
Owner: Barry Greer

[8] MARIAH RECORDING
also *REMOTE RECORDING*
337 N. 25th Ave.
Hattiesburg, MS 39401
(601) 545-1886
Owner: Vaughn Wilson
Studio Manager: Vaughn Wilson

[8] MARTIN AUDIO
only *REMOTE RECORDING*
1205 Martin St.
Winston-Salem, NC 27103
(919) 721-1729
Owner: Frank Martin

[8] MASTERSOUND, INC.
only *REMOTE RECORDING*

[4] COMEDY NOW/MOUNTAIN BEAR PRODUCTIONS
136 Union Chapel Rd.
Weaverville (Asheville), NC 28787
(704) 645-4269
Owner: Ken Mays
Studio Manager: Ken Mays

[8] CRUTCH RECORDERS
also *REMOTE RECORDING*
PO Box 33301
Raleigh, NC 27636
(919) 851-0767
Owner: Doug Llewellyn
Studio Manager: Doug Llewellyn

[8] CUSTOM RECORDING AND SOUND, INC.
also *REMOTE RECORDING*
1225 Pendleton St., PO Box 7647
Greenville, SC 29610
(803) 269-5018
Owner: Sara Edwards
Studio Manager: Jere Davis

[8] D&J STUDIOS
also *REMOTE RECORDING*
405A Belmont Dr.
Warner Robins, GA 31088
(912) 929-5533
Owner: David A. Klee, Sr
Studio Manager: Julia W. Klee

[4] DAVE'S PRICE AUDIO PRODUCTIONS
also *REMOTE RECORDING*
4701 Kenmore Ave., Ste. 506
Alexandria, VA 22304
(703) 370-5066
Owner: David S. Pulwers

[8] DAVIS PRODUCTIONS
also *REMOTE RECORDING*
1208 Elm Ave.
Americus, GA 31709
(912) 924-2521
Owner: King C. Davis
Studio Manager: Russell L. Lowe

[8] DAVROY STUDIO
2427 Kingsley Dr. NE
Marietta, GA 30062
(404) 973-9536
Owner: Roy Franco, David Hobbs
Studio Manager: Roy Franco, David Hobbs

[4] DCO LAB, INC.
also *REMOTE RECORDING*
1401 Meridian St. SE
Atlanta, GA 30317
Owner: Sheryl M. Martin
Studio Manager: Sheryl M. Martin

[8] DEBRA J. STUDIOS
3204 Sydney Dover Rd.
Dover, FL 33527
(813) 659-1066
Owner: George Riddle
Studio Manager: George Riddle

[8] DESIGN RECORDING
only *REMOTE RECORDING*
2576 Liberty Hill Rd.
Powhatan, VA 23139
(804) 794-6701
Owner: C.L. Bolling
Studio Manager: B.L. Bolling

[4] DIGITAL GRAPHICS & AUDIOVISUALS
710-B Thimble Shoals Blvd.
Newport News, VA 23606
(804) 873-3303
Owner: Richard Joyce
Studio Manager: Richard Joyce

[8] DIGITRAXX PRODUCTIONS, INC.
5 Francis St.
Cocoa Beach, FL 32931
(305) 799-2352
Owner: David Blackburn, Jim Docter
Studio Manager: David Blackburn

[8] DM & DM STUDIO INC.
also *REMOTE RECORDING*
205 Davis Ln.
Belmont, NC 28012
(704) 825-9179
Owner: Doug McKinnon
Studio Manager: Doug McKinnon

[4] DOVE SOUNDS
also *REMOTE RECORDING*
1305 Glen Eden Dr.
Raleigh, NC 27612
(919) 782-1095
Owner: Matthew Dove
Studio Manager: Christopher Droessler

[8] DRUID CITY SOUND
3511 18th St., E.
Tuscaloosa, AL 35404
(205) 556-3968
Owner: Jim Ingram
Studio Manager: Jim Ingram

[8] DUB STUDIO DIV. OF TECH SOUND IND.
also *REMOTE RECORDING*
1705 Shirley St.
Atlanta, GA 30310
(404) 755-6113
Owner: Curtis Cain, Fred Townsend
Studio Manager: Curtis Cain

[8] EARWORKS, INC.
PO Box 1303
Virginia Beach, VA 23451
(804) 425-0745
Owner: Robert C. Smith
Studio Manager: Robert C. Smith

[4] EAST AMERICAN RECORDINGS
(EAST AMERICAN ENTERTAINMENT)
also *REMOTE RECORDING*
PO Box 582
Norcross, GA 30091
(404) 497-0134
Owner: Landon B. Lee
Studio Manager: Landon B. Lee

[4] EBONY STAR/BRIEFCASE OF TALENT
also *REMOTE RECORDING*
1612 Marlbrook Dr.
Atlanta, GA 30307
(404) 371-8583
Owner: Robert Howell
Studio Manager: Stan Hodgins

[8] EG STUDIO
Rt. 2, Box 349-A
Denver, NC 28037
(704) 483-3798
Owner: Michael Eagen
Studio Manager: Danny Graves

[8] ELECTRONIC MUSIC & RECORDING
2741 E. 10th St.
Greenville, NC 27858
(919) 758-5316
Owner: Ronnie Daw
Studio Manager: Kelly Craven

[8] EZ RECORDING AND PRODUCTIONS
119 Williamsburg Ln.
Woodstock, GA 30188
(404) 924-0433
Owner: Ricky & Connie Payne
Studio Manager: Ricky Payne

[8] FISHER STUDIOS
also *REMOTE RECORDING*
113 Mallette St.
Chapel Hill, NC 27514
(919) 968-4931
Owner: Steve Fisher
Studio Manager: Steve Fisher

[8] FLARE AUDIO RECORDING
also *REMOTE RECORDING*
Rt. 2, Box 88-B
Fayette, AL 35555
(205) 932-3806
Owner: Stephen Fowler, Greg Lowery
Studio Manager: Greg Lowery

[8] FORREST ANDERSON RECORDING STUDIO
3217 Norwich St.
Brunswick, GA
(912) 265-1256
Owner: Paul O'Berry, John Jackson
Studio Manager: Paul O'Berry

[8] FREELANCE PRODUCTIONS
6464-93rd Terr. N., #505
Pinellas Park, FL 34666
(813) 545-8040
Owner: Lance Abair
Studio Manager: Lance Abair

[8] FRONT ROW PRODUCTIONS, INC.
also *REMOTE RECORDING*
1104 Myrtle Dr.
Jasper, AL 35501
(205) 221-5282
Owner: Ross Roberts, Betsy Simmons

[8] FULL SKY RECORDING & PRODUCTION STUDIO
PO Box 261072
Tampa, FL 33685
(813) 855-5901
Owner: Michael A. Normandeau

[8] GALAXY SOUND RECORDING STUDIOS
also *REMOTE RECORDING*
1508 Harlem, Ste. 203
Memphis, TN 38114
(901) 274-2726
Owner: GCS Communications Int.
Studio Manager: Dominic Herron

[4] GARDEN SOUND STUDIO
also *REMOTE RECORDING*
PO Box 4870
University, MS 38677
(601) 236-1246
Owner: Britt A. Fitts
Studio Manager: Britt A. Fitts

[8] G.I.D. STUDIO
25 Music Square E.
Nashville, TN 37203
(615) 244-8950
Owner: Charley Pride
Studio Manager: Jim Scherer

[8] GLOBAL VILLAGE RECORDING STUDIO
also *REMOTE RECORDING*
117-B Welk Pl.
Charlottesville, VA 22903
(804) 979-4081
Owner: Magruder Dent III
Studio Manager: Magruder Dent III

[8] GOLDEN ANGEL MUSIC
4104 Hillsboro Rd.
Nashville, TN 37215
(615) 297-7222
Owner: Angel Pontier
Studio Manager: Angel Pontier

[8] GOLDREEL STUDIO
3611 Centreville Rd.
Chantilly, VA 22021
(703) 481-3453
Owner: Golder O'Neill

[4] GROSVENOR BANG!
also *REMOTE RECORDING*
318 Grosvenor Ave.
Lexington, KY 40508
(606) 252-7372
(606) 233-1568
Owner: Billy Quinn, Jamie Tittle
Studio Manager: Billy Quinn, Jamie Tittle

[8] GROUND LEVEL SOUND
2717-A Clayton Dr.
Huntsville, AL 35810
(205) 852-7454
Owner: John Heilman, William Roof, Len Bullard, Steve Weber
Studio Manager: John Heilman

S O U T H E A S T

4&8 TRACK

STUDIOS

[8] AC PRODUCTIONS
also *REMOTE RECORDING*
3750 N. Lyons St.
Macon, GA 31206
(912) 784-1891
Owner: Alfred C. Cotton Sr

[8] ACCURATE RECORDING
952 Poplar Dr.
St. Albans, WV 25177
(304) 727-4008
Owner: Bill Stevens
Studio Manager: Bill Stevens

[8] ACOUSTIC CREATIONS
also *REMOTE RECORDING*
4813 W. Wendover Ave.
Greensboro, NC 27410
(919) 299-6307
Owner: Kip Williams
Studio Manager: Kip Williams

[8] THE AD SHOP
PO Box 31261
Charleston, SC
(803) 766-6095
Owner: Ronald E. Clifton
Studio Manager: Edd Salen

[2] AIRSHOW, INC.
only *REMOTE RECORDING*
5727 N. 25th Rd.
Arlington, VA 22207
(703) 237-8312
Owner: David Glasser
Studio Manager: Ann Blonston

[8] AMBERWOOD RECORDING STUDIO
12538 Cavalier Dr.
Woodbridge, VA 22192
(703) 494-0234
Owner: Jim and Paula Williams
Studio Manager: Jim Williams

[4] ARCHER PRODUCTIONS, INC.
24 Music Square W.
Nashville, TN 37203
(615) 254-1149
Owner: Nick Archer
Studio Manager: Terr Kawczynski

[2] PHIL ARNOLD SOUND SERVICES
only *REMOTE RECORDING*
4201 Saddlebrooke Pl.
Hermitage, TN 37076
(615) 889-4182
Owner: Phil Arnold

[8] ATLANTIC AUDIO/VIDEO
also *REMOTE RECORDING*
616 20th Ave. N.
North Myrtle Beach, SC 29582
(803) 249-5632
Owner: Ron Simpson
Studio Manager: Ron Simpson

[8] ATLANTIS AUDIO INNOVATIONS
3147 Northplace Way
Smyrna, GA 30080
(404) 432-4511
Owner: Vincent Luciani
Studio Manager: Vincent Luciani

[8] AUDIO CRAFT
288 Fourteenth St. NW, Ste. 100
Atlanta, GA 30318
(404) 876-1600
Owner: Henry Howard
Studio Manager: Henry Howard

[8] AUDIO RECORDING & DUPLICATING (+MIDI)
323 Santa Villa Dr.
Milton, FL 32571
(904) 994-9297
Owner: Ty Bracken
Studio Manager: Ty and Glenda Bracken

[8] AUDIO ZONE PRODUCTIONS
937 Allensville Ridge
Sevierville, TN 37862
(615) 453-1654
Owner: Harold Peters
Studio Manager: Harold Peters

[4] AUDIOIMAGE RECORDING
also *REMOTE RECORDING*
110 N. Jefferson St.
Richmond, VA 23220
(804) 644-7700
Owner: John Valentine
Studio Manager: Roger Price

[8] A/V CONSULTANTS
also *REMOTE RECORDING*
9601 Shalimar Ct.
Tampa, FL 33615
(813) 884-4423
Owner: E.R. Barlick

[4] AV-TEK PRODUCTIONS
only *REMOTE RECORDING*
PO Box 35356
Richmond, VA 23235
(804) 745-4462
Owner: Richard R. Hencye
Studio Manager: Sharon L. Hencye

[8] THE BALANCE RECORDING COMPANY
also *REMOTE RECORDING*
PO Box 3413
La Grange, GA 30241
(404) 884-3138
Owner: Jeffrey W. Gray
Studio Manager: Jeffrey W. Gray

[8] BOB BARNES CREATIVE SERVICES
2994 Edgewater Dr.
Orlando, FL 32804
(305) 422-2035
Owner: Bob Barnes
Studio Manager: Bob Barnes

[4] BARR-NOTE
also *REMOTE RECORDING*
316 Thomas St.
Staunton, VA 24401
(703) 885-2454
Owner: Denny Barr
Studio Manager: Eric John

[2] BGA PRODUCTION SERVICES
also *REMOTE RECORDING*
4420 Dunwoody Pl.
Orlando, FL 32808
(305) 290-5747
Owner: Bruce Gerstein

[8] MIKE BILLS PRODUCTIONS
also *REMOTE RECORDING*
Rt. #1, Box 310
Heiskell, TN 37754
(615) 457-4990
Owner: Mike Bills
Studio Manager: Mike Bills

[8] BLACK DOG STUDIO
17 Third St.
Elkins, WV 26241
(304) 636-0388
Owner: Brad Gurn
Studio Manager: Melody Meadows

[8] GRANT BLAIR PRODUCTIONS
2748 Woodlore Trail
Winston-Salem, NC
(919) 765-4188
Owner: Grant Blair
Studio Manager: Grant Blair

[4] BLUE BUCKY MUSIC CO.
also *REMOTE RECORDING*
1613 Saint Anne's Rd.
Charlottesville, VA 22901
(804) 971-3894
Owner: Robert L. Pomerantz
Studio Manager: Bob Varsity

[8] BRANTLEY SOUND ASSOC., INC.
only *REMOTE RECORDING*
724 Vanoke Dr.
Madison, TN 37115
(615) 859-9568
Owner: Leland P. Brantley
Studio Manager: Bobby Brantley

[4] BRIGHT STAR MUSIC
also *REMOTE RECORDING*
3117 Bright Star Rd.
Douglasville, GA 30135
(404) 949-6335
Owner: Michael Butorac
Studio Manager: Michael Butorac

[8] STEVE CAMPBELL'S SOUNDCRAFTERS
also *REMOTE RECORDING*
105 Cool View
Seneca, SC 29021
(803) 882-2762
Owner: Steve Campbell

[2] LOU CASINI RECORDING
only *REMOTE RECORDING*
1001 Neville St.
Follansbee, WV 26037
(304) 527-1758
Owner: Lou Casini
Studio Manager: Lou Casini

[4] CHARISMA STUDIOS
also *REMOTE RECORDING*
PO Box 7654
Greensboro, NC 27417
(919) 852-1678
Owner: Steve & Deirdre Monroe
Studio Manager: Deirdre Monroe

[4] CHEAPSKATEBOARD PRODUCTIONS
also *REMOTE RECORDING*
118 Bay Valley Dr.
Milledgeville, GA 31061
(912) 453-8934
Owner: Tim Vacula
Studio Manager: Tim Vacula

[8] CHILE STUDIOS
9960 Abbey Ln.
Jonesboro, GA 30236
(404) 473-9741
Owner: Mike Childers
Studio Manager: Jim Mitchell

[8] CHRISTIAN RECORDING
718 Melson Ave.
Jacksonville, FL 32205
(904) 388-1705
Owner: Bill Sorrells Jr.
Studio Manager: Suzie Sorrells

[12] T.C. ENTERPRISES STUDIO PRODUCTIONS
1002 Mendheim Dr., PO Box 1566
Dothan, AL 36302
(205) 677-2370
Owner: Steven Acklin
Studio Manager: Steven Acklin

[16] THRESHOLD RECORDING
410 Elm Ave. SW
Roanoke, VA 24016
(703) 345-2539
Owner: F. Howard Beasley, J. Harold Thompson
Studio Manager: F. Howard Beasley

[12] TOP TRACKS RECORDING STUDIO
1019 17th Ave. South
Nashville, TN 37143
(615) 321-4876
Owner: Tom Pallardy
Studio Manager: Clark Williams

[16] TOTAL TRACS, INC.
4194 Meadow Ct.
Marietta, GA 30066
(404) 924-2141
Owner: Dwight Waggener
Studio Manager: Dwight Waggener

[16] TRACKS RECORDING STUDIO
also REMOTE RECORDING
Rt. 6, Box 304A
Waycross, GA 31501
(912) 283-5369
Owner: Billy Ray Herrin
Studio Manager: Cindy Johnson



TROPICAL RECORDING STUDIO
Miami, FL

[16] TROPICAL RECORDING STUDIO
7393 SW 42 St.
Miami, FL 33155
(305) 264-4511
Owner: Danny Diaz, Gary Real
Studio Manager: Rick Reed
Engineers: Rick Reed
Dimensions: Studio 24 x 23, control room 13 X 16
Mixing Consoles: Trident 65 24 x 16
Audio Recorders: Tascam MS-16 16-track, Otari MTR-12 2-track, Otari MX-5050 MkIII 2-track, Otari MX-5050
Cassette Recorders/Duplicators: Nakamichi MR-1, Nakamichi ZX-9
Noise Reduction Equipment: Drawmer DS-201 dual noise gate, dbx 16-channel multi-track system
Synchronization Systems: SBX-80 synchronizer, Hybrid Arts "SMPTE Mate"
Echo, Reverb, & Delay Systems: Yamaha REV7 reverb, Yamaha SPX90 effects processor, ART 01a reverb, TC Electronics TC-2290 digital delay, Roland SDE-3000 digital delay, Roland DE-200 digital delay
Other Outboard Equipment: Aphex Aural Exciter, TC Electronics TC 1140 parametric equalizer, TC Electronics TC 1210 stereo chorus/flanger, (2) dbx 166X stereo compressor, Kia Electronics XZ-100 digital mixing automation system
Microphones: Neumann U87, Sennheiser MD-441, (3) Sennheiser MD-421, (2) AKG C-461, AKG D-112, AKG D-12E, AKG D-321, Crown GLM-200, (2) Shure SM57, Shure SM58, E-V PL6
Monitor Amplifiers: Yamaha 2200, Rane MA6
Monitor Speakers: (2) JBL 4430, (2) Yamaha NS-10M, (2) Klipsch Cornwall, (2) Auratone 5C
Musical Instruments: E-mu SP-12 turbo drum machine, Ober-

heim DX drum machine, Ensoniq Mirage sampler, Korg DW-6000 synthesizer, Korg EX-800 synthesizer.
Other MIDI Equipment: Atari 1040 ST w/Hybrid Arts "SMPTE Mate" 60-track sequencer

[16] TWENTY-TWENTY INTERNATIONAL RECORDING
2020 Capitol St.
Savannah, GA 31404
(912) 236-0000
Owner: Ferman Tyler, James Barefoot
Studio Manager: James Barefoot

[16] UNDERGROUND SOUND
3010-Skyland Blvd. E.
Tuscaloosa, AL 35405
(205) 556-0030
Owner: Andy Chappell
Studio Manager: Joey Laycock

[16] WILDWOOD RECORDERS
1005 Tate Dr.
Dothan, AL 36301
(205) 792-7172
Owner: Michael Boyd

[16] WILLOW CREEK RECORDING STUDIOS
2228 Redmond Cir.
Rome, GA 30161
(404) 232-6954
Owner: Morgan Ayers
Studio Manager: Morgan Ayers

[16] WITNESS PRODUCTIONS
also REMOTE RECORDING
723 Saratoga Dr.
Alpharetta, GA 30201
(404) 594-7210
Owner: Tom Knesel
Studio Manager: Judy Knesel

[16] WOODHOUSE RECORDING
2900 Brittany Way
Chesapeake, VA 23321
(804) 483-6212

Owner: Larry K. Carr
Studio Manager: Larry K. Carr
Engineers: Larry K. Carr
Dimensions: Studio 22 x 24 x 10, control room 10 x 8
Mixing Consoles: Tascam M520 20 x 8 x 16
Audio Recorders: Tascam MS-16 16-track, Tascam 38 8-track, Tascam 32 2-track
Cassette Recorders/Duplicators: Technics RST80R, Tascam 122, Tascam Portastudio
Noise Reduction Equipment: dbx on all recorder channels, Rocktron Hush IIC
Echo, Reverb, & Delay Systems: (2) SPR-1000, (2) Yamaha SPX90, DM-500, DM
Other Outboard Equipment: (2) Yamana QC2020B gate/limiters, Biamp quad gate/limiter, BBE Maxie 402
Microphones: AKG D12, AKG D112, Tascam 250, (2) ATM 33, (5) ATM 63, (5) Beyer M69, (2) Shure SM57, (2) Shure SM58, (2) AKG D190, others
Monitor Amplifiers: Carver 175, AMR PMA 200, Rane HC6
Monitor Speakers: AMR 312, AMR 308

[16] Z/BOP/AV
also REMOTE RECORDING
Walnut Hollow - 1301 Briar Creek Rd
Charlotte, NC 28205
(704) 376-2864
(704) 889-4508
Owner: Cal Walker
Studio Manager: Cal Walker

HYPERMEDIA.

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(404) 447-1717



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—CONTINUED FROM PAGE 193

NEC CT1901 monitor, NEC CT1420 monitor, Hedco VDA, Hedco video switcher, Sanyo AVM-150 monitor
Other: (50) music and sound effects libraries (70,000 cuts), Denon CD player, Sony CD player, computer shipping and expediting, remote recording
Rates: 8-track \$75/hr., 16-track \$95/hr., audio post-production starting at \$105/hr. Please call for quotes.

[16] SAGE PRODUCTIONS
also REMOTE RECORDING

5757 Arlington Road
Jacksonville, FL 32211
(904) 743-5106
Owner: John Calvin, Scott Shepard, Jane Shepard
Studio Manager: Bert Hazel

[16] SHOOK SHACK

802 18th Ave. South
Nashville, TN 37203
(615) 242-1421
Owner: Don Cox, Hoyt Henry
Studio Manager: Hoyt Henry

[16] SILVER STAR RECORDING STUDIO
also REMOTE RECORDING

PO Box 428
McBee, SC 29101
(803) 335-7703
Owner: Don Tiller
Studio Manager: Terry Tiller

[16] SOUND DESIGN

1943 NE 148 St.
N. Miami, FL 33181
(305) 945-1728
Owner: Sound Design Studio Inc.
Studio Manager: Anny Novoa

[16] SOUND LAB RECORDING STUDIO, INC.
also REMOTE RECORDING

2319 Fernwood Dr.
Greensboro, NC 27408
(919) 288-0185
Owner: Thomas Rowan
Studio Manager: Mary Schenck
Engineers: J. Thomas Rowan, Mary L. Schenck
Mixing Consoles: Soundcraft Series 1600 24 x 16
Audio Recorders: Tascam MS16 16-track, Tascam 42 2-track, Tascam 58 8-track, Tascam 32 2-track, Tascam AQ-65 auto locator, TEAC A 2300 SX 2-track, Sony PCM-F1 digital
Cassette Recorders/Duplicators: Nakamichi, TEAC, Technics, Telex
Noise Reduction Equipment: LT Sound NR-8
Synchronization Systems: On the way!
Echo, Reverb, & Delay Systems: Lexicon 200, (2) Lexicon PCM70, Lexicon PCM41, Vesta, MXR, Eventide Harmonizer
Other Outboard Equipment: dbx, LT Sound comp./limiters, Soundcraftsman & Ashly equalizers, Drawmer, Ashly, Symetrix, LT Sound noise gates and de-essers, Aphex Aural Exciter
Microphones: (2) AKG 414, AKG D12E, (3) SM81, AKG C 451EB, (3) Shure SM57, (3) Shure SM58, (3) E-V RE20
Monitor Amplifiers: Crown D150A, Crown DC 300A
Monitor Speakers: JBL 4411, (2) Auratone, (2) EPI
Musical Instruments: Korg Poly 6, Yamaha DX72D, LinnDrum, Roland DDR-30, Sequential Prophet 2002, Tama Imperial Star drums, Wuritzer piano, Custom designed bass cabinet, and Fender head, Fender super reverb amp w/Marshall A-3203 head, Scholz Rockman X100
Other: Macintosh computer, printer and sequencer
Rates: \$50/hour, \$360/day, project rates (quoted).

[16] SOUND ON SOUND

7109 Apple Orchard Ln.
Crestwood, KY 40014
(502) 241-5115
Owner: Howell H. Gano
Studio Manager: Howell H. Gano

[16] SOUND PICTURE RECORDING
also REMOTE RECORDING

2730 NW 105th Ln.
Sunrise, FL 33322
(305) 742-0019
Owner: Charles Reichel
Studio Manager: Robin Reichel

[16] THE SOUND ROOM, INC.

325 Patterson Ave.
Fort Oglethorpe, GA 30742
(404) 866-2432
Owner: Steve Mullinix
Studio Manager: Steve Mullinix

S O U T H E A S T

12&16 TRACK

STUDIOS

[16] SOUND STAGE MUSIC CO.

also REMOTE RECORDING
PO Box 1082, 300 Main St.
Calera, AL 35040
(205) 668-1981
Owner: Charles A. Sampson
Studio Manager: Greg Brown

[16] SOUND TRAXX

3391 S. Perkins
Memphis, TN 38118
(901) 794-6277
Owner: Jeff Robinson
Studio Manager: Jeff Robinson

[16] SOUNDTRACK, INC.

1975 NE 149th St.
North Miami, FL 33181
(305) 945-4449
Owner: George Blackwell
Studio Manager: Jenny Blackwell

[16] SOUNDTRAX RECORDING INC.

also REMOTE RECORDING
Rt. 2, Box 291 C
Johnson City, TN 37601
(615) 926-3986
Owner: Richard Hinchman
Engineers: Rick Monday, Curtis Cecil, Virginia Fuentes
Dimensions: Room 1: studio 35 x 16, control room 16 x 30, Room 2: studio 12 x 12, Room 3: studio 16 x 12, Room 4: studio 12 x 13
Mixing Consoles: Neotek Series II 24 x 16, Hill Multmix 16 x 4 (for keyboards)
Audio Recorders: Fostex E16 16-track 15 ips/30 ips, Tascam 80-8 8-track, Tascam 70-H 8-track, Tascam 32 1/2-track
Cassette Recorders/Duplicators: Yamaha K1020, Nakamichi BX-300
Noise Reduction Equipment: dbx DX 2B, DX 8DS Type 1, (2) dbx 155, Dolby C, Rocktron Hush IIB
Synchronization Systems: Fostex 4050, Fostex 4030, SU 1000 locator
Echo, Reverb, & Delay Systems: Alesis XTC, Alesis MIDverb, Yamaha SPX90, DigiTech 3.6 delay, Ibanez DM-2000, Lexicon PCM70
Other Outboard Equipment: (2) dbx 163X, (2) dbx 163, dbx 160, DOD EXR projector SP11 R860, (2) Toa 910 EQ, Sony CDP-30 CD player
Microphones: Neumann U89, Neumann U87, E-V RE20, Sennheiser 441, (2) Shure SM58, (2) Shure SM77, (2) Shure 588, Shure 588SB, Shure SM81, Shure SM85, Sony ECM-22P
Monitor Amplifiers: Crown PS200, Toa P912, Aiwa AAV 301
Monitor Speakers: (2) Yamaha NS-10M, (2) JBL 4430 studio monitors, (2) Scott Pro II studio monitors
Musical Instruments: Roland JX-8P, Korg DW-6000, Kawai SX 240, Roland JU-6, Yamaha DX7II FD, Roland MSQ-70, Yamaha RX5 drum machine, Ensoniq Mirage, Roland MKS-30 module
Other MIDI Equipment: Commodore 64 computer w/ Dr T software, MasterMix complete unit, JL Cooper MSB MIDIpatcher, custom made program for tracks
Video Equipment: JVC CR850 1/4" recorder and editor, Sony VP-3800 3/4" portable recorder, Sony VP-2011 3/4" playback only, Sony VP1600 3/4" recorder and playback, NEC 14" color monitor, Panasonic 21" color monitor, Bally Miratel monitor, various other monitors and video equipment
Other: NEC 14" color monitor, Panasonic 21" color monitor, BALLY Miratel monitor, various other monitors and video equipment
Rates: On request

[16] SOUTH SOUNDS RECORDING STUDIO

3004 Timber Ridge Ln.
Rock Hill, SC 29730
(903) 327-9613
Owner: W.R. Proctor
Studio Manager: W.R. Proctor

[16] SOUTHERN SOUND PRODUCTIONS & STUDIOS

717 Dauphin Island Pkwy.
Mobile, AL 36606
(205) 476-1171
Owner: Jerry Powell
Studio Manager: Jerry Powell

[16] SPECTRUM STUDIOS

410 Dunwoody Street
Tallahassee, FL 32303
(904) 224-6737
Owner: Stuart Reese, Scott Carswell
Studio Manager: Scott Carswell

[16] SPLICE OF LIFE RECORDING STUDIO

also REMOTE RECORDING
PO Box 123
Nicholasville, KY 40356
(606) 885-7257
Owner: J. Michael McKenney
Studio Manager: Cheryl McKenney
Engineers: J. Michael McKenney, Cheryl McKenney
Dimensions: Room 1: studio 24 x 24, control room 12 x 12, Room 2: studio 14 x 14
Mixing Consoles: SECK 1882 MkII 18 x 8 x 2
Audio Recorders: Fostex E-16 16-track, Revox B-77 2-track, Tascam 32 2-track
Cassette Recorders/Duplicators: Aiwa AD-520 stereo, Sony CFS-W440 stereo, Tascam Porta/One 4-track
Noise Reduction Equipment: Dolby B and C systems
Echo, Reverb, & Delay Systems: (2) Yamaha SPX90
Other Outboard Equipment: Aphex Aural Exciter, Fostex 3070 compressor/limiter, Furman QN-4 noise gates-quad, (2) MXR 31-band EQ
Microphones: (4) AKG C414, D1000E, (2) E-V PE20, SD357, (2) Crown P2M, (2) Sennheiser 421, (4) Shure SM57
Monitor Amplifiers: Phase Linear A30, Crown D150, Peavey M-2600
Monitor Speakers: (2) Toa 312-ME, (2) Auratone cubes, Advent II
Musical Instruments: Bush & Lane grand piano (12 x 12 room), Yamaha DX7, Crumar Orchestrator, Fender Rhodes, E-mu Drumulator, 12-pc drum kit (12 x 12 booth), Hascall-Hale acoustic guitars, Music Man bass, Gibson Les Paul guitar, (2) saxophones, flute, French horn, timbales
Other: Guitar amps, bass amps, various percussion, various effects pedals
Rates: \$45.00/hour

[16] STUDIO B

also REMOTE RECORDING
1119 Bell St.
Montgomery, AL 36104
(205) 834-6881
Owner: Jayonn Bearden
Studio Manager: J. Michael Bryan

[16] STUDIO ONE SOUND

PO Box 9411
Birmingham, AL 35126
(205) 681-5856
Owner: Mark A. LeBerte
Studio Manager: Mark A. LeBerte

[16] STUDIO 105

105 Devon Dr.
Mauldin, SC 29662
(803) 288-5908
Owner: Phil Blackwell

[16] SUN-RAY/SKY-VUE

also REMOTE RECORDING
1662 Wyatt Parkway
Lexington, KY 40505
(606) 254-7474
Owner: James T. Price
Studio Manager: Darrel Burtin

[12] SUN STUDIO

706 Union Ave.
Memphis, TN 38103
(901) 521-0664
Owner: Gary A. Hardy
Studio Manager: David Aron

[16] SWEETSONG PRODUCTIONS/MUSIC FACTORY

also REMOTE RECORDING
Rt. 9, Box 332-A
Parkersburg, WV 26101
(304) 428-7773
Owner: Roger Hoover
Studio Manager: Jim Rauhoff

[16] TAMAMI PRODUCTIONS, INC.

12245 S.W. 130th St.
Miami, FL 33186
(305) 253-9397
Owner: Roberto Arana
Studio Manager: Roberto Arana

Dimensions: Studio 21 x 11, control room 8 x 14.
 Mixing Consoles: Tascam M-520 20 inputs.
 Audio Recorders: Fostex B16D 16-track, TEAC A3300 SX 2-track
 Noise Reduction Equipment: dbx stereo noise reduction.
 Echo, Reverb, & Delay Systems: Yamaha REV7, Yamaha SPX-90, Yamaha R1000 reverb, DeltaLab ADM 1024 digital delay.
 Other Outboard Equipment: (2) Yamaha GC2020 stereo comp/limiters, DOD stereo graphic EQ, Scholz Rockman, Aphex Type C Aural Exciter.
 Microphones: Shure, Audio-Technica, Beyer, E-V.
 Monitor Amplifiers: Crown D-150A Series II, Tascam MH-40.
 Monitor Speakers: JBL 4311B, Yamaha NS-10M.
 Musical Instruments: Korg DSS-1 sampling synthesizer, (2) Seymour Duncan Convertible guitar amps, (2) Latin Percussion congas, various percussion instruments, Story & Clark console piano, Ludwig 9-piece drum set.
 Rates: \$30/hr. Block discounts available.

[16] STEVE MILES AUDIO PRODUCTIONS
 also **REMOTE RECORDING**
 2643 Mohawk Cir.
 West Palm Beach, FL 33409
 (305) 471-1774
 Owner: Steve Miles
 Studio Manager: Steve Miles

[16] MIRROR MUSIC RECORDING
 Virginia Beach, VA 23452
 (804) 340-4053
 Owner: Ira White
 Studio Manager: Ira White

[16] OAK BOWERY RECORDING
 also **REMOTE RECORDING**
 Rt. 3, Box 185
 Lafayette, AL 36862
 (205) 749-8804
 Owner: E. Logan Patton Jr.
 Studio Manager: E. Logan Patton Jr.

[16] OLIVERIO MUSIC, INC.
 750 Ralph McGill Blvd., NE
 Atlanta, GA 30312
 Owner: James Oliverio
 Studio Manager: Richard B. Burgess

[16] ORACLE RECORDING STUDIO
 also **REMOTE RECORDING**
 PO Box 464188
 Lawrenceville, GA 30246
 (404) 921-7941
 Owner: Gene Smith
 Studio Manager: Gene Smith
 Engineers: Gene Smith
 Dimensions: Studio 12 x 12, control room 21 x 12.
 Mixing Consoles: Soundcraft 200 16 x 4.
 Audio Recorders: Tascam MS-16 16-track 30 ips, Otari 5050-B II 2-track, Sony Digital PCM F-1 2-track, Sony SL-HF 450 2-track Super Beta Hi-Fi.
 Cassette Recorders/Duplicators: Tascam 122 MkII.
 Synchronization Systems: JL Cooper PPS-1.
 Echo, Reverb, & Delay Systems: Lexicon PCM70, Alesis MIDI-verb II.
 Other Outboard Equipment: CDT MC-8 compressor/limiter.
 Microphones: Beyer MC 740 N, (2) AKG 460B, AKG 460 ULS/61, Sennheiser MD-409 U3, Sony ECM-23, Beyer M-500, Shure SM59.
 Monitor Amplifiers: Hafler XL-280, Hafler P-125, Tascam PA-20B.
 Monitor Speakers: (2) Tannoy LGM 12B, (2) E-V Sentry 100, (2) Tascam CM-4.
 Musical Instruments: DX7IIDF, Oberheim OB-8, Oberheim DMX drum machine, Martin D-28 acoustic guitar, Fender Strat, Fender pre-CBS custom Telecaster, Epiphone 12-string acoustic guitar, Guild G-37 acoustic guitar, 360 Systems MIDibass, Casio FZ-1 sampler.
 Other MIDI Equipment: Macintosh Plus w/Performer 2.2 software, Opcode Systems Studio Plus.
 Other: Tascam AQ-65 auto-localizer, Technics SH-CDB7 compact disc player, Ampeg V-7 guitar amp.
 Rates: Call for rates.

[16] PENGUIN STUDIO
 also **REMOTE RECORDING**
 1305 Cedar Keys Ct.
 Stone Mountain, GA 30083
 (404) 299-2614
 Owner: Alex Ayers
 Studio Manager: Alex Ayers

[16] PINEGROVE STUDIO
 10985 S.W. 172 Terrace
 Miami, FL

(305) 255-1495
 Owner: Newton Simmons
 Studio Manager: Newton Simmons

[16] THE POWER HOUSE
 3505 Macon Rd.
 Memphis, TN 38122
 (901) 452-8063
 Owner: Steve Hauth
 Studio Manager: Steve Hauth

[16] PREMIER STUDIO
 also **REMOTE RECORDING**
 1024 16th Ave. So.
 Nashville, TN 37212
 (615) 254-4455
 Owner: Andy Anderson
 Studio Manager: Mike Hopkins

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

[16] RAIN MOON STUDIO
 85 NW 67th Ave.
 Miami, FL 33126
 (305) 261-5947
 Owner: Rafael M. Irizarry

[16] REAL TO REEL RECORDING STUDIO
 970 E. Lake Dr.
 Bartow, FL 33830
 (813) 533-4650
 Owner: Stanley Warren
 Studio Manager: Howard Warren

[16] REAL TO REEL STUDIO, INC.
 4911 N. Henry Blvd.
 Stockbridge, GA 30281
 (404) 474-4776
 Owner: Bill Turpin
 Studio Manager: Ed Roland, Joe Randolph

[16] RED D PRODUCTIONS
 1845 SW 4th Ave., #13
 Delray Beach, FL 33444
 (305) 265-1825
 Owner: Dennis Tooker
 Studio Manager: Brad Ducoat

[16] RON ROSE PRODUCTIONS, INC.
 also **REMOTE RECORDING**
 3409 W. Lemon St.
 Tampa, FL 33609
 (813) 873-7700
 Owner: Ron Rose Productions, Ltd.
 Studio Manager: Mike Stram
 Engineers: Five.
 Dimensions: Room 1: studio 11 x 12, control room 16 x 18.
 Room 2: studio 11 x 12, control room 15 x 18. Room 3: studio 9 x 11 (middle booth). Room 4: control room 12 x 26 (duplication).
 Mixing Consoles: (2) Soundcraft 600 16 x 8 x 2, TEAC Model 58 x 4 x 2.
 Audio Recorders: Tascam MS-16 16-track 1", (2) Tascam Model 58 8-track 1/2", (6) Tascam Model 52 2-track 1/4", (2) MCI JH-110C full track mono 1/4", Tascam 44 4-track 1/4", Technics RS-1520 2-track 1/4", Tascam 70-4 4-track 1/2".
 Cassette Recorders/Duplicators: (2) Tascam 122B 2-track, Tascam 122 MkII 2-track, (2) Sony TC-FX2i0, Marantz PMD221, Telex 6120 4-track mono/stereo cassette dup 11 slaves, Magnefax 652-1 mono/stereo reel-to-reel duplicator 5-slave.
 Synchronization Systems: BTX 4700 w/Shadowpad and 2 event starts, modified to sync 16-track or 8-track audio to Sony BVH-2000 1" VTR or Sony VO-5850 3/4" VTR.
 Echo, Reverb, & Delay Systems: (2) Lexicon PCM60, Yamaha SPX90 digital audio processor, Eventide H910.
 Other Outboard Equipment: Orban 621 B/R parametric EQ, Orban 536A de-esser, (2) Aphex Compellers compressor/limiter, (3) Symetrix TI-101 telephone/interface, Bryant Eng. variable pulser, LT Sound Vocal Eliminator.
 Microphones: (5) AKG C-414EB condensers, (3) Sennheiser MD-421, Shure SM7, Shure SM57, (3) Crown PZM 180, others available.
 Monitor Amplifiers: (2) Hafler P-225, (2) Sony.
 Monitor Speakers: (4) JBL 4411, (2) Tannoy NFM-8, (4) Auratone 5C, (8) Infinity RS-9B, (2) Infinity RS-11, (2) Infinity RS-1000.
 Musical Instruments: Keyboards/samplers/drum machines available.
 Video Equipment: Sony BVH-2000 1" VTR, Sony VO-6500 3/4" VTR, ESE time code generator, Sony VO-5850 3/4" VTR, Kenwood KV917 1/2" Hi-Fi, (2) NEC 1/2" VCR, VAC sync generator.

—CONTINUED ON NEXT PAGE

**Billboard's
#1 Album
"Dirty Dancing"**

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S O U T H E A S T
12&16 TRACK
STUDIOS

[16] J.M. RECORDS
also REMOTE RECORDING
Calle 24, AU-6, 3 Secc
Santa Juanita
Bayamon, PR 00620
(809) 787-5945
Owner: Juan Morales Mercado
Studio Manager: David Iurita

[16] J.Y. RECORDING
PO Box 2602
West Monroe, LA 71291
(318) 325-4413
Owner: James E. Young
Studio Manager: Greg Hough

[16] JOHN KEANE STUDIO
165 Hillcrest Ave.
Athens, GA 30606
(404) 548-4137
Owner: John Keane
Studio Manager: John Keane

[16] KEY RECORDING STUDIO
also REMOTE RECORDING
2969 Edison Ave.
Jacksonville, FL 32205
(904) 388-7491
Owner: John L. Key II, Jim Durbin
Studio Manager: John L. Key II

[16] BOB KRUSEN'S STUDIO
also REMOTE RECORDING
2216 White Ave.
Nashville, TN 37204
(615) 383-9602
Owner: Bob Krusen
Studio Manager: April Barrows

[16] KYTCHEN SYNC
also REMOTE RECORDING
103 Broadway
Birmingham, AL 35209
(205) 879-0728
Owner: Persuasive Media
Studio Manager: Frank Pigott

[16] L.A. EAST RECORDING STUDIOS
PO Box 1380
Ozark, AL 36361
(205) 774-0225
Owner: J.H. Brown
Studio Manager: J.H. Brown
Engineers: Michael Janero
Dimensions: Studio 20 x 24, control room 21 x 24
Mixing Consoles: Yamaha RM2408 24 x 16
Audio Recorders: Tascam M16 16-track, Tascam M58 8-track
Cassette Recorders/Duplicators: Nakamichi
Noise Reduction Equipment: dbx
Synchronization Systems: Kurzweil RM250
Echo, Reverb, & Delay Systems: Lexicon, Eventide, Yamaha
Microphones: Neumann, AKG, Sennheiser, Audio-Technica,
Beyer, Milab, Shure
Monitor Amplifiers: Yamaha 2200
Monitor Speakers: Tannoy, Toa
Musical Instruments: Roland RD-1000, Korg DSS-1, Yamaha
DX7, Korg Poly 8000, E-mu SP-12, Kurzweil RM250.
Rates: \$35/hr Weekly rates available.

[16] L-7 STUDIOS
273 NW 1 St. #30
Deerfield Beach, FL 33441
(305) 427-1836
Owner: Robert Wlos
Studio Manager: Andrew LaRue

[16] LAMON SOUND STUDIOS INC.
6870 A Newell Hickory Grove Rd.
Charlotte, NC 28229
(704) 537-0133
(704) 537-9310
Owner: Dwight L. Moody Jr. & Sons
Studio Manager: David B. Moody

[16] LEAVELL STUDIO
2045 Anderson Snow Rd.
Spring Hill, FL 33526
(904) 799-6102
Owner: John & Becky Leavell
Studio Manager: John Leavell

[12] LEE'S STUDIO
PO Box 18
Wayland, KY 41666
(606) 358-4411
Owner: Curtis B. Lee
Studio Manager: Curtis B. Lee

[16] LIVE NOTE STUDIO
PO Box 16
Hampton, VA 23669
(804) 838-6930
Owner: Tom & Fonda Breeden
Studio Manager: Fonda M. Breeden
Engineers: Tom Breeden
Dimensions: Studio 18 x 30, control room 12 x 15 x 10
Mixing Consoles: Amek/TAC Scorpion 16 x 8 x 2 w/16 monitor
tracks
Audio Recorders: Tascam MS-16 16-track, Tandberg TD-20SE
2-track
Cassette Recorders/Duplicators: (2) Sony, (2) Pioneer
Echo, Reverb, & Delay Systems: Yamaha REV7, Yamaha SPX-
90 digital processor, Alesis MIDiverb, DeltaLab Super TimeLine,
MXR-01A digital reverb
Other Outboard Equipment: BBE 402 Maxie Sonic Maximizer
audio enhancer, (2) Audioarts 1200 compressor/limiter, (4) Loft
Model 400 noise gate/limiters
Microphones: Neumann U89, Neumann U87, (3) Sony C38-B,
(4) Sony 23-F, (2) Audio-Technica AT-10, (4) Shure SM55, AKG
D-112, assorted others
Monitor Amplifiers: Bryston 4-B
Monitor Speakers: Yamaha NS-10, Infinity/Magnepan QRS-ID
Musical Instruments: Ensoniq Mirage DSK sampling w/all-fac-
tory disk, Steiff acoustic piano, Yamaha DX21, Roland Juno 106,
Sequential Circuits Six-Trak, Ludwig drum kit w/Zildjian cym-
bals, Yamaha RX5 drum machine, Aria Pro II Cat bass, Ibanez
BE-10 bass EQ, Scholz Rockman guitar and bass sustainer,
Yamaha SPX90, Sigma acoustic guitar
Video Equipment: Audio transfer to 1/2" or 3/4" video tape
Rates: \$35/hr subject to change without notice. Sessions by
appointment only

[16] LOYOLA UNIVERSITY RECORDING STUDIO
Loyola University College of Music
6363 St. Charles Ave.
New Orleans, LA 70118
(504) 865-2773
Owner: Loyola University
Studio Manager: Sanford Hinderlie

[16] MANGUM/ALFORD RECORDING STUDIO
also REMOTE RECORDING
3524 Morton St.
Jacksonville, FL 32217
(904) 737-9242
Owner: Larry Mangum, Jeff Alford
Studio Manager: Larry Mangum

[16] MASTERCRAFT RECORDING
also REMOTE RECORDING
7145 Rosemary Ln.
Port St. Lucie, FL 34952
(305) 878-2041
Owner: Marc and Kerry Rabins
Studio Manager: Marc and Kerry Rabins

[12] MID-SOUTH RECORDING
685 Milliken's
Woodburn, KY 42170
(502) 542-7340
Owner: Stephen Webber
Studio Manager: Susan Webber

[12] MIDI SOUND RECORDING CENTER
903 Neptune Rd.
Kissimmee, FL 32743
(305) 847-9757
Owner: Angelo Ballestero
Studio Manager: Virginia Ann Forsley

[16] MILEDGE RECORDING STUDIO
5281 Lochinvar
Memphis, TN 38116
(901) 346-8818
Owner: Michael Elledge
Studio Manager: Michael Elledge
Engineers: Michael Elledge, Dean Bryant, Wayne Loden

[16] FMR - MAGIC MUSIC
120 S. Court Ave. #223
Orlando, FL
(305) 648-8666
Owner: Michael Redman
Studio Manager: Michael Redman

[16] GOSPEL WORLD STUDIOS
Rt. 2, Box 366
Middlesex, NC 27557
(919) 235-4691
Owner: Jerald Boykin
Studio Manager: Dale Adkins

[16] GRAPEVINE STUDIOS
PO Box 8324
Gadsden, AL 35902
(205) 546-6249
Owner: Chris Mahy
Studio Manager: Karen Mahy

[16] GRIFFIN MUSIC DESIGN
Ste. 425, Carr Mill Mall
Carrboro, NC 27510
(919) 942-8075
Owner: Robert Griffin
Studio Manager: Burton Whicker

[16] GROUP EFFORT SOUND STUDIO
also REMOTE RECORDING
2656 Crescent Springs Rd.
Erlanger, KY 41017
(606) 331-8273
Owner: Dan Murphy, Wayne Hartman, Jeff Seeman, Bill Gwynne
Studio Manager: Dan Murphy, Wayne Hartman, Jeff Seeman, Bill Gwynne

[16] GYPSY STUDIO
also REMOTE RECORDING
3039 Hazelton St.
Falls Church, VA 22044
(703) 241-7445
Owner: Mike Rivers
Studio Manager: Mike Rivers

[16] HERITAGE RECORDS & RECORDING STUDIO
Rt. 3, Box 280
Galax, VA 24333
(703) 236-9249
Owner: Bobby Patterson
Studio Manager: Bobby Patterson

[16] HOLLYWOOD SYNC
3130 Pembroke Rd., #448
Hollywood, FL 33009
(305) 962-1586
Engineers: Wayne Ricker, Jamie Swartz
Dimensions: Room 1 studio 25 x 19, control room 15 x 17
Room 2 studio 4 x 6
Mixing Consoles: Sound Workshop Series 30 16 x 16
Audio Recorders: Tascam 85-16 16-track, Tascam 35-2B 2-track, Ampex 2-track
Cassette Recorders/Duplicators: (5) Tascam 25000, JVC KD-A3
Noise Reduction Equipment: dbx 150 on 16-track
Synchronization Systems: KMS 30 sync box, SMPTE time code generator
Echo, Reverb, & Delay Systems: Yamaha REV7 digital reverb, ART 01A digital reverb, Eventide H949 Harmonizer, Lexicon Prime Time, DeltaLab DL-4 digital delay
Other Outboard Equipment: dbx 165 compressor, Valley People Dyna-Mite, Aphex Aural Exciter, Moog MPKE parametric equalizer
Microphones: Neumann U87, Neumann U47 FET, (6) Sennheiser 421, Sennheiser 441, (2) AKG 451, Shure SM81, (3) Shure SM57
Monitor Amplifiers: SAE, Carver
Monitor Speakers: JBL 4311, Yamaha NS-10
Musical Instruments: Roland D-50 Linear synth, Yamaha DX7, Yamaha CP80 electric grand piano, E-mu SP-12, LinnDrum
Other MIDI Equipment: Linn sequencer

[16] HOMESTEAD RECORDINGS, INC.
also REMOTE RECORDING
Rt. 1, Box 1097
Norton, VA 24273
(703) 679-4182
Owner: Ron Swindall
Studio Manager: Ron Swindall

[16] HUMMINGBIRD RECORDINGS
also REMOTE RECORDING
113-A Nelson Ave.
Melbourne, FL 32935
(305) 259-6576
Owner: John O. Foley
Studio Manager: John O. Foley

[16] IMPORTANT RECORDING STUDIO
also REMOTE RECORDING
352 Broadway
Estero, FL 33928
(813) 947-0103
Owner: John McLane, Danker Bernet
Studio Manager: Danker Bernet

[16] INNER EAR RECORDING STUDIOS
712 S. Ivy St.
Arlington, VA 22204
(703) 892-2123
Owner: Don Zientara
Studio Manager: Eli Janney

[16] IVS MEDIA PRODUCTIONS
also REMOTE RECORDING
517 Meeting St.
Charleston, SC 29403
(803) 577-9185
Owner: Corporation
Studio Manager: Steve Green

[16] IZZIT REEL PRODUCTIONS
also REMOTE RECORDING
14019 Beach Blvd., Lot 914, Box 162
Jacksonville Beach, FL 32250
(904) 223-3338
(904) 641-9690
Owner: Howie Lucero
Studio Manager: Howie Lucero

[16] JAG STUDIO, LTD.
also REMOTE RECORDING
3801-C Western Blvd.
Raleigh, NC 27606
(919) 821-2059
Owner: Joy Cook
Studio Manager: Byron T. McCay

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[16] BTM STUDIOS
PO Box 928
Burnsville, NC 28714
(704) 675-5685
Owner: Frank Wyatt
Studio Manager: Frank Wyatt

[16] CACTUS RECORDING STUDIO INC.
also REMOTE RECORDING
105 W. 5th St.
Sheffield, AL 35660
(205) 383-2702
Owner: Cactus Inc
Studio Manager: Don Srygley
Engineers: Don Srygley, John Pcwelt, Greg Pace, Kim Srygley
Dimensions: Studio 40 x 15, control room 20 x 12
Mixing Consoles: Neotek Series 11 24 x 16, Audiotrack 16 x 8
Audio Recorders: Otari MX-5050 MkIII 8-track, Fostex E-16 16-track, JVC 2-track digital processor, Sony SL-H750 2-track Beta Hi-Fi, Tascam 35-2 2-track
Cassette Recorders/Duplicators: Hitachi DX-10, JVC, TEAC
Noise Reduction Equipment: dbx, Dolby
Synchronization Systems: Hybrid Arts SMPTEmate
Echo, Reverb, & Delay Systems: Yamaha REV7 digital reverb, Yamaha SPX90 digital reverb, Lexicon PCM70 digital reverb, (2) ART 01A digital reverb, ART DR2 digital reverb, Ibanez SDR-1000 digital reverb, Korg SDD-3000 digital delay, Roland SDE-1000 digital delay, Ibanez DMD-2000 digital delay
Other Outboard Equipment: dbx 166 compressor/limiter/gates, (2) Gain Brains compressor/limiter/gates, Furman LC-3 compressor/limiter/gates, Kexex compressor/limiter/gates, Eventide 901 Harmonizer, Eventide FL201 flanger, Rane PE15 parametric EQ, UREI 31-band graphic EQ, Aphex Type C Aural Exciter, Hitachi compact disc player
Microphones: Neumann U87, (2) AKG 421, (14) Shure SM57, (9) Audio-Technica various, (3) Beyer various, (3) Crown PZM Monitor Amplifiers: BGW 250-D, Marantz 250-M, Crown 0-60 Monitor Speakers: (2) JBL 4311, (2) JBL L-100, (2) D A P.S. 6, (2) Auratone
Musical Instruments: Steinway 6' baby grand piano, Roland MKB-3000 MIDI controller, Yamaha TX812, Roland MKS-100 digital sampler, Roland Juno-1, Prophet T-8, Prophet 600, Korg Poly-800, Yamaha RX11 drum computer, (2) Scholz Rockmans and Bass Rockman, (4) Fender Strats, Precisions, GTRs, Pearl 7-piece drum set, (5) vintage amps, Marshall, Fender, Ampeg B-15, tube amps
Other MIDI Equipment: Atari 1040ST computer-Hybrid Arts software, Atari 130XE Hybrid Arts MIDI Mate, Apple IIe computer w/popular software, large sample library
Video Equipment: Sony Beta Hi-Fi, Mitsubishi VHS
Rates: No hourly rates, price per project. Please call

[16] CARNEGIE HALL RECORDING STUDIO
1901 Murfreesboro Pk. #112
Nashville, TN 37217
(615) 360-9840
Owner: Vaughn R. Skow
Studio Manager: Vaughn R. Skow

[16] CHARISMA SOUND PRODUCTIONS, INC.
17394 118th Terr.
Jupiter, FL 33478
(305) 747-3432
Owner: Douglas G. Knauff
Studio Manager: Sharon V. Hearn

[16] CLASSIC RECORDING STUDIO
also REMOTE RECORDING
13 Moore St.
Bristol, VA 24201
(703) 466-8675
Owner: Classic Records
Studio Manager: Bandy Brownlee

[16] WALLY CLEAVER'S RECORDING
also REMOTE RECORDING
1518 Princess Anne St.
Fredericksburg, VA 22401
(703) 373-6511
Owner: Peter L. Bonta
Studio Manager: Lorie Stannard
Engineers: Peter Bonta, Pete Fields, Lin Arroyo
Dimensions: Studios: main room 20 x 22, dead room 9 x 13.5, isolation booth 6 x 7 Control rooms: main room 12 x 14, post-production room 10 x 10
Mixing Consoles: Sound Workshop Series 30 24 x 24 x 2 w/ARMS VCAs
Audio Recorders: Tascam 85-16B 16-track, Revox A77 2-track, 3M M-79 4-/2-track 1/2", Otari 5050 2-track, Scully 280 2-track
Cassette Recorders/Duplicators: (3) TEAC
Echo, Reverb, & Delay Systems: Yamaha REV7 digital reverb, AKG BX-1011, Lexicon PCM60, Lexicon PCM41, DeltaLab DL-2, DeltaLab Electron 1024, Micmix "Master Room"
Other Outboard Equipment: (2) UREI 1176LN, Eventide 910 Harmonizer, (2) UREI LA-4, Symetrix 522, (2) Valley People Dyna-Mite, (3) dbx 160, (2) dbx 163, Aphex Aural Exciter, dbx

S O U T H E A S T

12&16 TRACK

STUDIOS

n/r on all channels. SMPTE sync on 16-track, DOD 15 x 2 EQ, Accessit noise gate, Roland digital delay/comp., MXR flanger, Ibanez stereo chorus, Rat box, Audioarts stereo parametric EQ. Microphones: AKG D12E, Neumann U87, Neumann U47FET, (4) Neumann KM84, (2) AKG C414, (4) AKG C451EB, (2) E-V RE20, (3) Shure SM57, Shure SM54, Shure SM55, (3) Sennheiser MD-441, Sennheiser MD-421, Sennheiser MD-409, RCA 44a, RCA 77DX, RCA BK-5B, (2) PZM, Audio-Technica ATM-11, (2) Adams transducers, misc. DIs
Monitor Amplifiers: Crown DC 300A power amp, Crown D-150A, (2) Dyna 60 (mono), Dyna ST-70, Uher CV-140
Monitor Speakers: JBL 4311s, Altec 9842-8As, Minimus 7s, JBL custom monitors
Musical Instruments: Ensoniq Mirage, Oberheim DX drum machine, Yamaha 6' grand piano, Yamaha DX7 synthesizer, Roland TR-707 drum computer, Rogers 6-piece drum set, Vox AC-30 amp, Vox AC-15 amp, Marshall 50-watt amp, Roland Playbus amp, Fender Telecaster, Fender Stratocaster, Fender Precision 1957 bass, Gibson 1952 acoustic guitar, misc. percussion instruments, Fender 1966 12-string guitar, Yamaha FB01
Other MIDI Equipment: Commodore C64 Computer w/Sonus Super 64 8-track sequencer, (2) Mirage visual editing systems, FB01 and DX7 voice library
Video Equipment: Call for rates and info.
Rates: \$38 50/hr. Call for block rates
Extras & Direction: We offer the most affordable remote 16-track rates combined with exceptional audio quality. Our remote truck has been to Pittsburg to tape a 42 member choir, Windgap, PA to record the three-day Windgap Bluegrass Festival and to the Birchmere in Alexandria, VA to record "The Johnson Mt. Boys Live," which received two Grammy nominations and is considered one of the best live bluegrass records ever recorded. Clients: Rounder Records, Rebel Records, Song-Bird Records, Del McCoury, Jimmy Arnold, Mark Wenner, The Prevaricators, Johnny Sportcoat & The Casuals, First Hall Records, The Suspects, Artful Dodger, Gary Herrewig, Kenny Wilson, Special Blend, Joyful Noise, Mountain Laurel, Nocturnal Zoo, Jimmy Goodreau, Polygram recording artist Gene Ryder and the Lifters, and many more. We offer a comfortable, creative environment in historic Fredericksburg, and offer a reasonable alternative to Washington, DC and Richmond rates

[16] CLOUD NINE RECORDING
also REMOTE RECORDING
1221 Baker Street
Mount Dora, FL 32757
(904) 383-1888
Owner: Steven A. Farrell
Studio Manager: Sharon O. Farrell

[16] COLEY RECORDING STUDIO
10 Harris St.
Carrollton, GA 30117
(404) 832-0616
Owner: Phil Coley
Studio Manager: Phil Coley

[16] COMPUTERS & MUSIC
also REMOTE RECORDING
19470 NW 59 Ave.
Miami, FL
(305) 620-4483
Owner: Jim Atlas
Studio Manager: Jim Atlas

[16] CRS RECORDING STUDIO
113 N. Chestnut St., PO Box 85
Marion, VA 24354
(703) 783-6828
Owner: James K. Cornick
Studio Manager: James K. Cornick

[16] DAN-SING RECORDING STUDIO
also REMOTE RECORDING
120 Ridgecrest Dr.
Danville, VA 24540
(804) 836-1209
Owner: Dan-Sing Enterprises, Inc.
Studio Manager: Roy Frazier

[16] DERBYTOWN SOUND STUDIOS
5900 Outer Loop
Louisville, KY 40219
(502) 968-2320
Owner: John Wesley

[16] DOGWOOD RECORDING
also REMOTE RECORDING
2813 Springhill Ave.
Mobile, AL 36606
(205) 476-0858
Owner: Tad Denson
Studio Manager: Kevin Wicker

[16] DREAM MAKER STUDIOS
613 Powell Rd. NE
Lenoir, NC 28645
(704) 758-0220
Owner: Henry Starnes
Studio Manager: Lisa Starnes

[12] E 1212
also REMOTE RECORDING
Ave. Andalic #769
Puerto Nuevo, PR 00926
(809) 782-2745
Owner: Carlos A. Bigio Agosto

[16] EAGLE ROCK RECORDING INC.
Rt. 1, Box 109 Taylor Rd.
Wendell, NC 27591
(919) 365-9446
Owner: Rex A. Bost, Buddy Bryan
Studio Manager: Rex A. Bost

[16] EASLEY RECORDING
also REMOTE RECORDING
3744 Marion
Memphis, TN 38111
(901) 323-5407
Owner: Doug Easley
Studio Manager: Doug Easley

[16] ELECTRIC LEE STUDIO
Rt. 3, Box 250
Canton, MS 39046
(601) 856-5324
Owner: Keith Lee, Debbie Lee, Kerry Lee, Kendall Lee
Studio Manager: Keith Lee

[16] EMERY RECORDING
10407 Headly Court
Fairfax, VA 22032
(703) 323-0263
Owner: James D. Emery, Jr.

[16] EVANSOUND PRODUCTIONS (ESP)
Five Wall Street
Fredericksburg, VA 22405
(703) 371-8000
Owner: Jim Evans
Studio Manager: Jim Evans

[16] EXOCET
3264 Shallowford Rd., Suite D
Chamblee, GA 30341
(404) 455-7256
Owner: Michael D. Adams
Studio Manager: Steven S. Boyes

[12] FAIR WARNING RECORDING STUDIO
also REMOTE RECORDING
246 Eisenhower Dr.
Nashville, TN 37211
(615) 367-1737
Owner: Fair Warning Ministries
Studio Manager: Mark G. Shipsey

[16] FIVE SQUARE RECORDING
PO Box 420
Bells, TN 38006
(901) 772-6216
Owner: Paul T. Jackson
Studio Manager: Paul T. Jackson

[16] FLIGHT ONE STUDIO
Rt. 2, Box 104
Ridgeley, WV 26753
Owner: Greg Johnson
Studio Manager: Greg Johnson

S O U T H E A S T

12&16 TRACK

STUDIOS

[12] ADVENT PRODUCTIONS
also REMOTE RECORDING
2518 Southview Dr.
Lexington, KY 40503
(606) 278-5852
Owner: Don C. Morgan
Studio Manager: Don C. Morgan

[16] ADVID STUDIO
also REMOTE RECORDING
Mitchell St.
Junction City, KY 40440
(606) 854-6756
Owner: Richard Akin
Studio Manager: Richard Akin

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

[16] ALPHA RECORDING CO., INC.
also REMOTE RECORDING
207 S. Mulberry St.
Elizabethtown, KY 42701
(502) 765-7899
Owner: James Cottrell
Studio Manager: Keith Pacey

[16] AMAZING MUSIC
also REMOTE RECORDING
3795 Mercer University Dr.
Macon, GA 31204
(912) 474-4700
Owner: Edward Vance
Studio Manager: Edward Vance

[16] ARTISTS' RECORDING SERVICE
also REMOTE RECORDING
980 Barret Ave.
Louisville, KY 40204
(502) 581-9294
Owner: Artists' Recording Service, Inc.
Studio Manager: Bob Hunter/Mike Franklin

[16] A.S.I. STUDIOS, INC.
102 Warren St.
Bolivar, TN 38008
(901) 658-5500
Owner: Jeff Shackelford
Studio Manager: Jeff Shackelford
Engineers: Jeff Shackelford
Dimensions: Studio 18 x 20, control room 12 x 15
Mixing Consoles: Allen & Heath Brenell CMC 24 x 16
Audio Recorders: Fostex B-16 16-track, Otari MX-5050IIB 2-track
Cassette Recorders/Duplicators: Nakamichi MR-2, Akai CS-M02, Recorex Mini-Max high speed stereo duplicator
Noise Reduction Equipment: Dolby "C" (standard equipment on Fostex B-16)
Echo, Reverb, & Delay Systems: Yamaha REV7 digital reverbator ART 01A digital reverb, DeltaLab ADM 4096 digital delay loop.
Other Outboard Equipment: Rane PE-15 parametric EQ, Rane GE-14 stereo graphic EQ, (2) Symetrix 501 compressors/limiters, Fostex 4050 autolocator w/SMPTE and MIDI sync, (3) Symetrix 32 point patch bays.
Microphones: Beyer M-500, (2) Beyer 201, (2) Audio-Technica ATM 11, (2) Audio-Technica ATM 63, AKG D12E, (3) E-V PL76B, (2) E-V PL88L, (2) E-V PL95, (2) Stewart ADB-1 active direct boxes, (3) Whirlwind IMP2 direct boxes.
Monitor Amplifiers: Symetrix A-220 headphones, NAD 2200

Monitor Speakers: (2) Fostex SM-6600, (6) Fostex T-20 headphones
Musical Instruments: Korg DW-6000, Sequential Circuits MAX-MIDI voice expander, Roland DR-220A drum machine, Tama 8-piece drum kit, Fender twin reverb amplifier, Peavey Bandit amplifier, Lab Series L2 bass amplifier, Fender Telecaster, Gibson Les Paul standard, Ibanez Artist 50, Alvarez acoustic, Epiphone acoustic, Vantage bass guitar.
Rates: \$25/hr. Block rates available upon request

[16] ATLANTICOAST RECORDING
PO Box 64784
Virginia Beach, VA 23464
(804) 495-1348
Owner: Dean Kohler
Studio Manager: Dean Kohler

[12] THE ATTIC
1503 Madison Ave.
Memphis, TN 38104
(901) 276-8525
Owner: John Scott, John David
Studio Manager: John David

[16] AUDIO ARTS RECORDING STUDIOS
AND PRODUCTIONS
Rt. 1, Box 59, Hwy 43 N.
Greenville, NC 27834
(919) 758-2240
Owner: Audio Arts, Inc.
Studio Manager: Sonny Johnson

[16] AUDIO CONCEPTS RECORDING COMPANY
5 Cedar St.
Milton, FL 32570
(904) 626-0139
Owner: Gregory D. Pendleton
Studio Manager: Gregory D. Pendleton

[16] AUDIO VISION, INC.
also REMOTE RECORDING
1102 17th Ave. S., Ste. 200
Nashville, TN 37212
(615) 321-3612
Owner: Jim Reyland, Jim Gilmore
Studio Manager: Jim Reyland

[16] AUDIO WORKS PRODUCTION SERVICES INC.
2310-D Marietta Blvd.
Atlanta, GA 30318
(404) 355-0909
Owner: Tim Larsen
Studio Manager: Tim Larsen
Mixing Consoles: Trident Series 65 24 x 16.
Audio Recorders: Soundcraft 760 MkIII 16-track 2", Soundcraft Series 20 2-track 1/4" and 1/2", JVC VP101 PCM 2-track digital Cassette Recorders/Duplicators: Revox B710, (10) Technics M205 real time.
Echo, Reverb, & Delay Systems: (2) Eventide 2016 reverb and fx units (well stocked), Lexicon 224 reverb unit, Audio Digital TC-2 DDL, Eventide Ultraharmonizer, Eventide 949 Harmonizer, Eventide 910 Harmonizer
Other Outboard Equipment: Barcus-Berry 202R, dbx 120X subharmonic synthesizer, EXR Exciter, (2) dbx 160X compressors, (2) dbx 160 compressors, (2) LT Sound companders/kephexes, (2) UREI 1176 LN limiters, Orban stereo parametric EQ
Microphones: Beyer C740 condenser, (2) Neumann U87, (2) AKG C414, (2) AKG C460, (2) AKG C450, (2) Crown PZM 31S, Crown 6LP, (6) Sennheiser 421, Beyer 380 kick mic, E-V RE20, Beyer 420, Beyer 422, Beyer M500, Shure SM57, Shure SM58, and C-Ducers
Monitor Amplifiers: Hafler pre and power amps, QEC, AB systems



AUDIO WORKS PRODUCTION SERVICES INC.
Atlanta, GA

Monitor Speakers: Gauss 3588 coaxial mains, Auratone cubes, Tannoy NFM 8s
Musical Instruments: Complete MIDI production room Macintosh-based, Akai S900, Ensoniq Mirage samplers, Roland D-50, Yamaha RX5, Oberheim Xpander, Yamaha TX802, Roland Super JX, Yamaha G5 grand piano, Sonor drums, much more
Rates: Call for rates

[16] AUDIOCRAFT - SOUND HUT STUDIOS
also REMOTE RECORDING
1604 W. New Bern Rd.
Kinston, NC 28501
(919) 527-8845
Owner: Clark Tutt
Studio Manager: Clark Tutt

[16] B & B PRODUCTIONS
Rt. 2, Box 653
High Point, NC 27260
(919) 769-3714
Owner: Mark A. Black
Studio Manager: Mark A. Black

[12] BATES BROTHERS RECORDING
also REMOTE RECORDING
25 Joy Ave., Ste. 101
Hueytown, AL 35023
(205) 491-4066
Owner: Eric Bates, Eugene Bates
Studio Manager: Eugene Bates

[16] BEECHTREE RECORDING STUDIO
2804 Beechtree Dr.
Sanford, NC 27330
(919) 774-8926
Owner: Bill Tripp
Studio Manager: Bill Tripp

[16] BIRDLAND RECORDING STUDIOS, INC.
3116 Sandlin Rd.
Decatur, AL 35603
(205) 353-8324
Owner: James Murphree, Owen Brown, Jeff Simpson
Studio Manager: Owen Brown

[12] BLACK & SILVER STUDIO
605 Kimberly Ln., Apt. A
Atlanta, GA 30306
(404) 881-6127
Owner: James Lanier
Studio Manager: James Lanier

[16] BOONE SOUND
also REMOTE RECORDING
313 Highland Ave.
Albany, GA 31701
(912) 436-6508
Owner: Jesse Boone
Studio Manager: Jesse Boone

[12] BOTTOM LINE STUDIO
also REMOTE RECORDING
450 NW 69th Ter.
Margate, FL 33063
(305) 755-1868
Owner: Mark R. Nowak
Studio Manager: Mark R. Nowak

[24+] STUDIOEAST
 5457 Monroe Rd.
 Charlotte, NC 28212
 (704) 536-0424
 Owner: Don Lawrence, Tim Eaton
 Studio Manager: Tim Eaton, Don Lawrence
 Engineers: Doug Hawthorn, Jim Brock
 Dimensions: Studio 45 x 42 x 25(H), control room 20 x 24
 Mixing Consoles: 1986 Amek Angela 36 x 24 with Audio Kinetics Master Mix MX644 floppy disk drive, Amek Scorpion S3 16-, 8- and 2-track
 Audio Recorders: Studer A80 24-track, MCI 110 1/2" master 2-track, Otari MkIII 8-track, (3) Scully 280B 1/2" 2-track
 Echo, Reverb, & Delay Systems: Lexicon 224XL, EMT 140 stereo reverb plate, EMT 140 mono reverb plate, Eventide instant flanger, Eventide Clockwork Harmonizer, (2) Yamaha REV7, Yamaha SPX90 MkII, Yamaha SPX90 MkIII, Lexicon PCM60
 Other Outboard Equipment: dbx limiter/compressor equalizer, Microphones: Neumann U87s, Neumann U47s, Neumann KM84s, Neumann KM86s, Sennheiser MKH-405s, Sennheiser MD-42105s, AKG, Beyer, E-V, and RCA
 Monitor Amplifiers: Tannoy 840, Crown DC-300A, (2) Crown DC-150, McIntosh 2300
 Monitor Speakers: Tannoy FSMs, Tannoy NFM-10M, JBL 4411, Yamaha NS-10, Auratones
 Musical Instruments: Kurzweil 250, Yamaha 7'4" grand, Hammond C-3 w/Leslie tone cabinet, Gretsch drum kit, Ludwig Octaplex Vistalight drum kit, Minimoog, Hohner D-6 clavinet, Baldwin harpsichord, Fender 88 electric piano, Fender amps, Music Man amp, Yamaha RX5 digital drum machine, Simmons SDS-5, Marshall guitar amp, Kustom Hi Watt 50
 Other MIDI Equipment: Macintosh 512K computer
 Rates: Available upon request

[24+] SYNCRO SOUND RECORDING
 1030 16th Ave. S.
 Nashville, TN 37212
 (615) 242-1666
 Owner: Mike Robertson, Randy Wachtler
 Studio Manager: Patii Sedon

[24+] TELSTAR
 also **REMOTE RECORDING**
 2074 17th St.
 Sarasota, FL 33580
 (813) 365-0337
 Owner: Rick Moulton
 Studio Manager: Lynn Nieder
 Engineers: Rick Moulton, Bud Snyder
 Dimensions: Studio 25 x 30, control room 20 x 16
 Mixing Consoles: Sony/MCI JH-636 30 x 24
 Audio Recorders: Sony/MCI JH-24 24- and 16-track, Sony/MCI JH-110 (1/4") 2-track, Sony/MCI JH-110 (1/2") 2-track, Sony PCM-F1 2-track
 Cassette Recorders/Duplicators: Otari-Tascam real time duplication
 Echo, Reverb, & Delay Systems: Lexicon 224XL, Lexicon PCM-60, Lexicon PCM42s, Prime Time, Eventide Harmonizer
 Other Outboard Equipment: UREI 1176s, LA-3s, dbx 160s, Allison Research Gain Brains, Kepex's, Valley People DynaMites, Dyna-Mics 610, Orban 516EC, Audioarts parametrics, AXE direct boxes
 Microphones: Neumann U87s, AKG 414s, PZMs, Shure SM-85s, Shure SM81s, Shure SM57s, Shure SM56s, Beyer 160s, etc.
 Monitor Amplifiers: BGW, JBL, SAE, Yamaha
 Monitor Speakers: JBL 4430, Yamaha NS-10, Auratone
 Musical Instruments: Kawai 6' grand piano, Hammond B-3 w/Leslie, LinnDrum computer
 Rates: Upon request

[24+] TERMINAL RECORDING STUDIOS
 4747-B McWillie Dr.
 Jackson, MS 39206
 (601) 932-2627
 Owner: Rick Garner
 Studio Manager: Randy Everett

[24+] TOTAL TAPE COMPANY LIMITED
 1300 NW 31st Ave.
 Fort Lauderdale, FL
 (305) 581-1166
 Owner: Craig Bulmer
 Studio Manager: Craig Bulmer
 Engineers: Craig Bulmer, Vince Vezzi
 Dimensions: Studio 16 x 22, synclover suite
 Mixing Consoles: Tascam M-520 20 x 8
 Audio Recorders: Otari MX-5050 4-track, Tascam 44 4-track, MCI 8-track, Akai 1730DSS 4-track, Akai 4400 2-track
 Cassette Recorders/Duplicators: TEAC Z-7000
 Microphones: (4) Shure, E-V
 Monitor Amplifiers: (4) Sunn power amps, Yamaha power amps
 Monitor Speakers: JBL 4301 broadcast monitors
 Musical Instruments: Synclavier digital music system w/direct-to-hard disk recording capability, Pearl CB700 9-piece drum set, Wurlitzer upright piano, Rickenbacker 330 electric 6-string,

S O U T H E A S T

24+ TRACK

STUDIOS

Ovation Ultra acoustic 6-string, Peavey T-140 electric bass.
 Video Equipment: Ikegami HL-79EAL, Sony BVH-500 1" VTR, BVP3 Betacam, BVW field player, single and multi-camera mobile units and download packages
 Rates: Jobs bid on per project basis, brochure available upon request

[24+] TRANSMEDIA PRODUCTIONS, INC.
 561-F Thornton Rd.
 Lithia Springs, GA 30057
 (404) 948-4813
 Owner: Hugh Harrer
 Studio Manager: Hugh Harrer

[24+] TREASURE ISLE RECORDERS
 2808 Azalea Pl.
 Nashville, TN 37204
 (615) 297-0700
 Owner: Mariner Trust
 Studio Manager: Fred & Dave

[24+] TURTLE POINT RECORDING
 also **REMOTE RECORDING**
 PO Box 7472
 St. Thomas, 00801 Virgin Islands
 (809) 776-2104
 Owner: John L. Johnston
 Studio Manager: John L. Johnston

[24+] TWELVE OAKS STUDIO
 3830 S. Cobb Dr.
 Smyrna, GA 30080
 (404) 435-2220
 Studio Manager: Randy Bugg

[24+] TWENTY-FIVE SIXTY RECORDING STUDIO
 also **REMOTE RECORDING**
 2560 Niskey Lake Rd. SW
 Atlanta, GA 30331
 (404) 349-7511
 Owner: Theodore Bland
 Studio Manager: Eddie Irons

[24+] ULTRASONIC STUDIOS INC.
 also **REMOTE RECORDING**
 7210 Washington Ave.
 New Orleans, LA 70125
 (504) 486-4873
 Owner: Jay Gallagher
 Studio Manager: Scott Goudeau
 Engineers: Jay Gallagher, Scott Goudeau
 Dimensions: Studio 50 x 50, control room 25 x 16 (2) isolation booths, drum room
 Mixing Consoles: MCI 652 52 x 48 w/automation
 Audio Recorders: MCI JH-24 24-track, Sony 5003 2-track w/center track timecode, MCI JH-110 2-track, Otari 5050 2-track, Sony PCM-F1 2-track
 Synchronization Systems: Audio Kinetics Pacer synchronization
 Echo, Reverb, & Delay Systems: (2) Yamaha REV7, live chamber, (2) Yamaha SPX90, Lexicon Prime Time, Lexicon PCM42
 Other Outboard Equipment: (4) UREI 1176, Allison Kepex/Gain Brains, EXR Exciter, Gemini compressor/limiter, UREI 565 filter set, outboard EQ
 Microphones: Neumann, Sennheiser, RCA, AKG, Shure, Beyer
 Monitor Amplifiers: BGW, Crown
 Monitor Speakers: JBL 4331-A, Yamaha NS-10, Auratones
 Musical Instruments: Kawai grand, Ludwig drums, Mesa Boogie, Yamaha, Fender guitar amps, keyboards, drum machines, etc. Available on request, Fender P-Bass
 Video Equipment: Sony 5800 3/4" U-matic
 Rates: 48-track recording available on request

[24+] VIRGINIA ARTS PRODUCTION STUDIOS
 also **REMOTE RECORDING**
 Box 800
 Louisa, VA 23093
 (703) 967-2245
 Owner: R. Paul Brier
 Studio Manager: R. Paul Brier

[24+] THE WAREHOUSE RECORDING STUDIO
 also **REMOTE RECORDING**
 2071 Emerson St., Unit 20
 Jacksonville, FL 32207
 (904) 399-0424
 Owner: Thomas H. Markham, Sr.
 Studio Manager: Roger J. Peck



WESTPARK SOUND
 Nashville, TN

[24+] WESTPARK SOUND
 3212 West End Ave., Ste. 201
 Nashville, TN 37203
 (615) 292-5838
 Owner: Duncan Nelson
 Studio Manager: Tom Reeves
 Engineers: Ted Wilson, Dan Wujcik
 Dimensions: Room 1 studio 10 x 12, control room 13 x 30
 Room 2 studio 9 x 7
 Mixing Consoles: MCI 636 28 x 24, Soundcraft 8 x 4 sub-mixer
 Audio Recorders: MCI JH-24 24-track, Revox PR99 2-track, Sony 701-ES 2-track digital processor (Beta format)
 Cassette Recorders/Duplicators: Nakamichi MR-1
 Synchronization Systems: Roland SBX80 sync box
 Echo, Reverb, & Delay Systems: Lexicon 224XL, (2) Yamaha SPX90 II, Yamaha REV7, Korg DRV-1000, Ibanez SDR-1000+, Lexicon PCM42
 Other Outboard Equipment: (2) dbx 160 compressor/limiter, Symetrix 501 comp/limiter, (2) dbx 163, Aphex B Exciter, Galax, BBE 200-2R, (5) Kepexs, AudioArts 4200A EQ 2 channels, Roland SDD-320 Dimension D, Iota systems MIDI fader
 Microphones: Sanken CU-41, Neumann U89, Neumann TLM-170, (4) AKG 414, (5) Sennheiser 421, (3) Shure SM57, Sennheiser 441, (2) PZMs
 Monitor Amplifiers: Yamaha P2200, Yamaha P2100, Crown D-150A
 Monitor Speakers: Yamaha NS-10, Fostex RM865, Auratones
 Musical Instruments: Kurzweil 250 QLS Version 4, Emulator II+, Yamaha DX7, Yamaha DX7IIDF, Roland Juno 106, Roland D-50, Young Chang 6'1" acoustic grand piano, Yamaha KX88, E-mu SP-12 turbo, Roland Super Jupiter w/programmer, Oberheim Xpander, Roland Octapad, Pearl drum set w/RIMS and drum bug triggers
 Other MIDI Equipment: (2) Macintosh computers, Mac Plus w/4 meg internal 80 meg external (20 meg data/ramp), Opcode Studio Plus interface, full software facilities incl Performer/Pro Composer/MidiPaint/Sound Designer/DrumMite/Sequencer 2.53/Patch Librarian/Opcode/Southworth/Digidesign
 Video Equipment: Available upon request--monitor, 3/4" machine
 Other: Casio CZ-101, 360 Systems MIDibass, (2) Altec 436C compressor amps (tube), huge keyboard and SP-12 libraries available on Macintosh
 Rates: \$65/hr with staff engineer or \$50/hr without staff engineer \$650/day 12 hours with engineer
 Extras & Direction: Westpark Sound is a studio looking towards the '90s. We offer the full spectrum of cutting-edge music technology... at an affordable price. Our staff is committed to service, creativity and expertise. Hear your demos, jingles, albums, film scoring and video post-productions come to life as never before at Westpark Sound

[24+] W.J.S. RECORDING
 1320 National Rd.
 Wheeling, WV 26003
 (304) 242-8601
 Owner: Bill Shwlin
 Studio Manager: Bill Shwlin

[24+] WOODLAND SOUND STUDIOS, INC.
 1011 Woodland St.
 Nashville, TN 37206
 (615) 227-5027
 Owner: AVI
 Studio Manager: Tim Farmer

[24+] SOUTH COAST RECORDING CO.
1975 NE 149th St
Miami, FL 33181
(305) 945-7272
Owner: Paul Kaminsky, George Blackwell
Studio Manager: Jenny Blackwell

[24+] SOUTH LAKE RECORDING STUDIO
3229 8th St.
New Orleans, LA 70002
(504) 833-7926
Owner: Paul DeCorte
Studio Manager: Steve Himelfarb
Engineers: David Farrell, Steve Himelfarb
Dimensions: Studio 35 x 25, control room 25 x 15
Mixing Consoles: MCI JH-600 32 x 24
Audio Recorders: Studer A80 MkIV 24-track, MCI JH-110 2-track, Fostex E2 2-track, Sony F1 digital
Cassette Recorders/Duplicators: Yamaha, Sony
Echo, Reverb, & Delay Systems: (3) Yamaha SPX90, Lexicon 200, PCM42, Roland DEP-5, Eventide 949, others available upon request
Other Outboard Equipment: (6) Valley People Kepex II and (2) Gain Brain, Drawmer gates, (2) UREI 1178 limiters, Vocal Stresser, (4) Audioarts parametric EQ, Orban 424A compressor/de-esser, BBE 802
Microphones: (2) Neumann 89, Neumann 249, (2) AKG 414, (4) Shure 57, (2) AKG 451, (4) Beyer M201, (2) Beyer 88, (2) Sennheiser 421, E-V RE20, (2) Shure SM81, (3) E-V RE16
Monitor Amplifiers: Crown, Peavey, BGW
Monitor Speakers: JBL, Yamaha, Fourier, Auratones, Peavey
Musical Instruments: Yamaha 6' grand, Premier drum set, (2) snare drums to choose from Roland S-50, Roland D-50, Yamaha DX7 plus other synthesizers upon request. If you need it we'll find it
Video Equipment: Fuji Betacam system, 3/4" off-line editing, VHS and Beta duplicating
Rates: Call for information

[24+] SOUTHERN TRACKS RECORDING
3051 Clairmont Rd., Studio Complex
Atlanta, GA 30329
(404) 329-0147
Owner: Bill Lowery
Studio Manager: Russ Fowler

[24+] SP SOUND PRODUCTIONS
709 Shadowfield Ct.
Chesapeake, VA 23320
(804) 547-4000
Owner: Steve Peppos

[24+] SPECTRUM RECORDING STUDIO
also REMOTE RECORDING
999 S. Federal Hwy.
Deerfield Beach, FL 33441
(305) 428-0119
Owner: Jim Kalamasz
Studio Manager: Jim Kalamasz

[24+] STARGEM RECORDING STUDIO
43 Music Square E.
Nashville, TN 37203
(615) 244-1025
Owner: Wayne Hodge
Studio Manager: Barbara Brown

[24+] STARKE LAKE STUDIOS
also REMOTE RECORDING
275 N. Lake Shore Dr.
Ocoee, FL 32761
(305) 656-8989
Owner: Glen Gettings
Studio Manager: Paul Miner

[24+] STRAWBERRY SKYS RECORDING STUDIOS
1706 Platt Springs Rd.
West Columbia, SC 29169
(803) 794-9300
Owner: Gary Bolton
Studio Manager: Gary Bolton
Engineers: Ron Hollins, Gary Bolton, independents
Dimensions: Studio 28 x 36 w/large iso room, control room 17 x 22 w/video and MIDI interface
Mixing Consoles: MCI automated w/plasma displays, JH-636 AF-LM automated 28 x 24
Audio Recorders: MCI JH-24 24-track, MCI JH-110C 2-track with 1/2" heads 30 ips, Tascam 80-8 w/DX-8, TEAC 2300 w/dbx 150, Pioneer RT-707 1/4-track
Cassette Recorders/Duplicators: (2) Awa F770
Echo, Reverb, & Delay Systems: Lexicon 224, Yamaha SPX90, Lexicon Prime Time 93, (2) DeltaLab 2048, ART DR2, MXR flanger/doubler



STRAWBERRY SKYS RECORDING STUDIOS
West Columbia, SC

Other Outboard Equipment: Aphex Aural Exciter, GateX 4-channel gates, dbx 162 limiter (stereo), (2) dbx 160X limiter/compressor, (3) UREI 1176 limiters, Symetrix 150 limiter, Magnavox CDB-650 CD player, Panasonic color video monitor
Microphones: Neumann U47, Neumann KM84, AKG C414EB, AKG C451, AKG C452, Sennheiser 421, Sennheiser 441, Shure SM57, Shure SM58, Sony EC-9
Monitor Amplifiers: Haller, Crown, Phase Linear
Monitor Speakers: JBL 4435 bi-amped bradials, Yamaha NS-10M, Auratone 5C
Musical Instruments: LinnDrum w/MIDI interface, Alari 1040ST, Oberheim Prommer, Fender bass and guitars, Takamine acoustic guitar, Yamaha bass and guitar amps, anything available by rental
Rates: Call for quote, our rates are surprisingly affordable!
Extras & Direction: Already one of South Carolina's most progressive studios, Strawberry Skys continues to meet the growing demand for album, jingle and film work in the Southeast. We are committed to providing the finest recording services within as environment that is conducive to creativity. To all our clients who have contributed to our success---Thank You!

[24+] STUDIO CENTER SOUND
14875 NE 20th Ave.
North Miami, FL 33181
(305) 944-2911
Studio Manager: Craig Powell

[24+] STUDIO FOUR
also REMOTE RECORDING
1918 Wise Dr.
Dothan, AL 36303
(205) 794-9067
Owner: Jerry Wise
Studio Manager: Steve Clayton

[24+] STUDIO 19
821 19th Ave. S.
Nashville, TN 37203
(615) 327-4927
Owner: Larry Rogers
Studio Manager: Larry Rogers

[24+] STUDIO ONE
3864 Oakcliff Industrial Ct.
Doraville, GA 30340
(404) 449-5147
Owner: Georgia State University
Studio Manager: Gregory M. Quesnel

[24+] STUDIO "T" RECORDING CO.
also REMOTE RECORDING
PO Box 57
Smith Station, AL 36877
Owner: Frank B. Gowan
Studio Manager: James Gregory Jenkins

[24+] STUDIO SOUTH
also REMOTE RECORDING
2510 Peach Orchard Rd.
Augusta, GA 30906
(404) 793-7800
Owner: Howard Lovett
Studio Manager: Howard Lovett



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160 compressor/limiter, (2) Drawmer DL-231 expander/compressor, Eventide H949 Harmonizer, Roland DEP-5 digital effects processor, (2) Aphex Type B Aural Exciter, Teletronix LA-2A leveling amplifier
Microphones: AKG Tube, AKG 414, AKG C-460B, AKG D12, Neumann U87A, Neumann U47, Sennheiser MD-421, Shure SM57
Monitor Amplifiers: Meyer MS-1000, UREI 6300, Yamaha P2075
Monitor Speakers: Meyer 833, Meyer 834, Yamaha NS-10M, Auratone
Musical Instruments: Emulator II+ keyboard, Yamaha DX7 keyboard, Emulator SP12 drum machine, Roland DDR-30 digital drum
Rates: Negotiable

[24+] SKYLINE RECORDING STUDIO
2628 State Blvd.
Meridian, MS 39305
(601) 482-8541
Owner: Tim Chesney
Studio Manager: Tim Chesney

[24+] SOUND CELL
also REMOTE RECORDING
601 Meridian St.
Huntsville, AL 35801
(205) 539-1868
Owner: Douglas G. Smith

[24+] SOUND EMPORIUM
3102 Belmont Blvd
Nashville, TN 37212
(615) 383-1982
Owner: Roy Clark
Studio Manager: Gary Laney, Susan Howell
Engineers: Gary Laney, Todd Sholar
Dimensions: Room 1: studio 33 x 40, control room 20 x 22, Room 2: studio 14 x 23, control room 15 x 17
Mixing Consoles: Neve 8128 48 x 32, Harrison 28/24 28 x 24
Audio Recorders: Otari MTR-90II 24-track, Sony/MCI JH-24 24-track
Cassette Recorders/Duplicators: (2) Revox B-170
Synchronization Systems: (2) Adams-Smith 2600
Echo, Reverb, & Delay Systems: (2) EMT 140 plates, AMS RMS-16, (2) Lexicon PCM70, Yamaha SPX90, Lexicon Prime Time 90, Lexicon Prime Time II, Lexicon PCM42, Marshall Time Modulator, Quantec room simulator, Lexicon 224XL, (2) 910 Harmonizers, 969 Harmonizer, (2) live chambers
Other Outboard Equipment: (3) LA-2A, 1179, (2) Trident stereo compressors, (4) dbx 160 compressors, Neve stereo comp., Vocal Stresser, (4) Jensen mic preamps, (2) Pultec 16A EQ
Microphones: (10) Neumann U87, Neumann U67, Neumann M49, (2) Neumann U47 FET, (2) Neumann KM84, (2) Neumann KM86, (2) AKG 441, (8) AKG 414, (8) Sennheiser 421, (2) AKG D112, (6) Shure SM57, Shure SM7, (2) Sanken 41, (2) Shure 81, (4) Studer, (2) PZM, (2) RCA 77DX, (3) E-V RE-20, (4) Sony ECM-50
Monitor Amplifiers: BGW 750, BGW 500, BGW 250, Hafler 500, Tannoy, Perreux, Crown
Monitor Speakers: Tannoy LGM-12, Yamaha NS-10M, Ed Long Synergetics, Westlake, Auratone, Fostex, BGW, JBL 4310
Musical Instruments: Baldwin piano, Chickering piano, B-3 organ, C-3 organ, Roland drum machine, Minimoog, Akai synth, clavinet, marimbas, celeste, elec harpsichord, Wuritzer, Fender Rhodes

[24+] SOUND INTERNATIONAL CORPORATION
4730 E. 10th Lane
Hialeah, FL 33013
(305) 685-8409
Owner: Enzo Caputo
Studio Manager: Ayal Joshua

[24+] SOUND LAB, INC.
also REMOTE RECORDING
1639 Tullie Cir. NE, Ste. 115
Atlanta, GA 30329
(404) 321-6300
Owner: Winton Cobb
Studio Manager: Sheryl Martin

[24+] SOUND OF BIRMINGHAM
also REMOTE RECORDING
3625 5th Ave. S.
Birmingham, AL 35222
(205) 595-8497
Owner: Don Mosley
Studio Manager: Noah White

S O U T H E A S T

24+ TRACK

• STUDIOS

[24+] SOUND STAGE STUDIO
10 Music Circle S.
Nashville, TN 37203
(615) 256-2676
Owner: Ron Kerr
Studio Manager: Ron Treat

[24+] SOUND-TREK RECORDING STUDIO
PO Box 172
Pensacola, FL 32523
(904) 434-0052
Owner: Glen Fowler, C.B. Fowler
Studio Manager: Glen Fowler

[24+] SOUNDING BOARD
also REMOTE RECORDING
PO Box 1072
Hendersonville, TN 37077
(615) 822-7865
Owner: Otis & Sharon Forrest
Studio Manager: Otis Forrest

[24+] SOUNDS UNREEL STUDIOS
also REMOTE RECORDING
1902 Nelson Ave.
Memphis, TN 38114
(901) 278-8346
Owner: Jon Hornyak, Don Smith
Studio Manager: Jon Hornyak
Engineers: Don Smith, Jack Holder, Evan Rush, Andy Black
Dimensions: Studio 44 x 19 x 12, control room 19 x 15 1/2 x 11 1/4
Mixing Consoles: Soundcraft TS24 32 x 24
Audio Recorders: Otari MTR-90II 24-track, Otari MTR-10 2-track, Otari MX5050B 2-track
Echo, Reverb, & Delay Systems: Lexicon 224XL, Lexicon 200, AMS RMX 16, Ursa Major 8 x 32 digital reverb, AMS DMX 15-80S digital delay/harmonizer, Korg programmable digital delay, Yamaha SPX90
Other Outboard Equipment: dbx 900 mainframe with limiter/compressors, noise gates and de-esser, Symetrix 501 limiter/compressor, LA-2A, Fairchild Instruments 670, Roland Dimension-D, EXR Exciter, MARC MXI and MXE, Universal 1176, BBE 802
Microphones: AKG Tube, AKG 414, AKG 451, AKG D12E, AKG 224, Neumann U87, Neumann KM84, Shure SM7, Shure SM57, Shure SM58, Shure SM81, Sennheiser 421, E-V RE20, E-V RE16, Crown PZM, Beyer M500
Monitor Amplifiers: Yamaha, Crown, BGW, McIntosh
Monitor Speakers: Steven Durr custom monitors (JBL, TAD), Yamaha NS-10M
Musical Instruments: Steinway grand piano, Hammond B-3, Yamaha DX7, PPG 2 3 w/Waveterm, Fairlight CMI, Emulator II, Roland JX-8P, JX-3P, MSQ700, Juno 60, Oberheim DMX 4-voice, Fender Rhodes, Prophet-5, Minimoog, LinnDrum, Marshall amps, Carvin amps, strings and things, custom guitars and basses
Rates: Upon request

[24+] SOUNDScape STUDIOS
677 Antone St.
Atlanta, GA 30318
(404) 351-1003
Owner: Jon Marett
Engineers: Larry Turner, Edd Miller
Dimensions: Room 1: studio 50 x 60, control room 28 x 29
Room 2: studio 18 x 14, control room 15 x 16
Mixing Consoles: Neve 8068 32 x 24 w/Necam I, Neotek Series III C 28 x 24
Audio Recorders: Studer A820 24-track w/Dolby SR, Studer A80 MkIV 24-track transformerless, Studer D820X 2-track dash digital recorder, Studer A80 2-track 1/2" transformerless, Studer A810 2-track 1/4", Studer B76 2-track, TEAC A3440 2-track
Cassette Recorders/Duplicators: Tascam T-122, Studer A710
Noise Reduction Equipment: Dolby SR 24-/2-track
Synchronization Systems: Adams-Smith Zeta III
Echo, Reverb, & Delay Systems: Quantec QRS, 224XL, EMT 1405 plate, PCM70, PCM42, PCM41, AKG BX20E1, Super Prime Time, (2) Marshall TM, (2) Eventide H910 Harmonizers, Eventide 1745 DDL, AMS 1580S, AMS RX16 available
Other Outboard Equipment: BBE 202, BBE 2002, (6) Drawmer



SOUNDScape STUDIOS
Atlanta, GA

201 dual gates, (4) Kepex gates, (3) CLX C/L/E, (5) UREI 1176, (4) Neve 32264 comp/lim, RCA tube limiter, dbx 162, Pultec EQP10S, Sontec stereo PEQ, Klark-Teknik ST 27-band graphic EQ, UREI 545 PEQ, LT Sound PEQ
Microphones: Neumann, AKG, Crown, Beyer, Sennheiser, Schoeps, Shure, RCA, E-V, Sony
Monitor Amplifiers: FM Acoustics, Belles, Hafler, Crest, McIntosh, Studer
Monitor Speakers: Yamaha NS-10, Minimus 7, Tannoy 10B, Auratone, Hartman sub-sat system, custom design four-way, all coned w/DYN Audio and RCF components
Musical Instruments: Yamaha C7 piano, Prophet-5, Oberheim OB8, Yamaha DX7, Gretsch drums, guitar amps
Video Equipment: Sony 5850 3/4", Panasonic AG6800 1/2"
Rates: Call for rates
Extras & Direction: Extensive lighting system includes 50 PARs (500-1,000 watts), (3) Far-cycs, Strand Century console with programmable dimmer assignment; assortment of 1 5-10 KW Mole-Richardson and McAllister lights; stage for band rehearsals and showcases upon request. Developing MIDI system and room. Large drive-in door and comfortable lounge facilities with kitchen, bedroom and private bathroom with shower. Soundscape Studios is a state-of-the-art multi-media complex which combines a qualified, amiable staff to serve a client's full spectrum of needs. The flexible 3,000 sq ft. Studio A allows for a simple transition from a recording studio to a soundstage for video or movie production. The built-in comfort of the control room and lounge facility provides the perfect complement to a quality industrial, commercial or album production

[24+] SOUNDShine PRODUCTIONS, INC.
also REMOTE RECORDING
723 W. Sunrise Blvd.
Ft. Lauderdale, FL 33311
(305) 463-9882
Owner: Thomas M. Graefe
Studio Manager: Frank Cornelius

[24+] SOUNDShop RECORDING STUDIOS
1307 Division St.
Nashville, TN 37203
(615) 244-4149
Owner: Wm. D. Killen
Studio Manager: Patrick McMakin
Engineers: Mike Bradley, John Dickson, Mike Psanos, Pat McMakin
Dimensions: Room 1: studio 40 x 36, Room 2: studio 25 x 18
Mixing Consoles: (3) MCI JH-528 28 x 32
Audio Recorders: (2) Studer A800 24-track, Otari MTR-90 24-track, (2) Studer A810 2-track 1/4", (2) Studer A80 2-track 1/2", (2) Studer B67 2-track 1/4", Studer A80 2-track 1/4"
Noise Reduction Equipment: (3) Dolby M-16 racks w/Dolby A 24 channels each rack, dbx K-9 cards 24-channel
Synchronization Systems: Studer TLS2000
Echo, Reverb, & Delay Systems: AMS RMX-16 reverb, AMS DMX digital delay, PCM70 reverb, (6) EMT plates, Yamaha REV5 reverb, (2) Lexicon Super Prime Time digital delays, Yamaha SPX90 multi-effects, Yamaha REV7 reverb
Other Outboard Equipment: (4) Sontec preamps, (2) ADR ES900 sweep EQ, (8) UREI LA-3A, (6) dbx 160 limiters, dbx 165 limiter
Microphones: (2) Neumann U67 tube, Neumann U47 tube, Neumann 249 tube, Neumann U48 NuVistor, (2) B&K 4006, (2) Studer SKM5, (6) AKG 414, (6) AKG 452, (6) Sennheiser 421, many others
Monitor Amplifiers: Hafler, (2) Yamaha 2200P, (6) BGW various
Monitor Speakers: Tannoy LGM, (3) Yamaha NS-10M, UREI 815 Time Aligned, 6048G custom, JBL custom
Musical Instruments: Pearl, Steinway 7' 1930s vintage, Steinway 9' Yamaha C7, (3) Fender Rhodes 88
Video Equipment: JVC 8200 3/4" video for sync-to-multi-track
Other: Studio A: wired exclusively with Mogami cable
Rates: Call

Studio Manager: Jim Crockett
 Engineers: Clinton Smith, James Crockett
 Dimensions: Studio 32 x 22, control room 15 x 12.
 Mixing Consoles: MCI 416LM 24 x 24 w/5534 ICs and Valley, Xlrless mic preamps.
 Audio Recorders: MCI JH-24 24-track w/autolocator III, (2) MCI JH-10B 2-track, Sony PCM-601 2-track digital encoder w/ Sony HF-750 Beta.
 Cassette Recorders/Duplicators: (2) Tascam 122B.
 Synchronization Systems: MCI JH-45.
 Echo, Reverb, & Delay Systems: (2) Lexicon 200, Lexicon Prime Time, Eventide H910, Eventide H949.
 Other Outboard Equipment: (4) Gain Brain I, (7) Kexex I.
 Microphones: AKG, Crown, Shure, Sennheiser, Neumann.
 Monitor Amplifiers: (2) Crown DC-300, Crown DC-150, Crown D-75.
 Monitor Speakers: Control room: JBL 4411, Yamaha NS-10M. Studio: Bozak Monitor "C".
 Musical Instruments: Kawai GS-30 6' grand piano, Fender Rhodes, Yamaha DX7, Ludwig 6-piece drum kit, Oberheim DMX drum machine.
 Video Equipment: Sony 3/4" VTR, Canon VHS VTR, Sony Beta VTR.
 Rates: Rates upon request. Block rate bookings are available.

[24+] SCRUGGS SOUND STUDIO, INC.

2828 Azalea Pl.
 Nashville, TN 37204
 (615) 383-7994
 Owner: Randy Scruggs
 Studio Manager: Sloan Edwards
 Dimensions: Studio 32 x 26, control room 21 x 14.
 Mixing Consoles: MCI 636 32 x 32 automated console.
 Audio Recorders: Mitsubishi X-850 32-track digital recorder, MCI JH-24 24-track analog recorder, MCI JH-10 2-track 1/2" 2-track, MCI JH-10 2-track 1/4".
 Cassette Recorders/Duplicators: (2) Aiwa 990 cassette machines.
 Noise Reduction Equipment: dbx 208 24-chan. noise reduction.
 Echo, Reverb, & Delay Systems: EMT 250 digital reverb, AMS reverb, Lexicon 200 digital reverb, Lexicon Prime Time delay, Lexicon Super Prime Time delay, Yamaha REV7, Yamaha SPX90.
 Other Outboard Equipment: Eventide Harmonizer, (4) dbx limiter/compressors, vocal stresser, UREI LA-3 limiter/compressor, (6) noise gates & other misc. gear.
 Microphones: Sanken, (2) Neumann U87, (2) AKG 414, other assorted mics from AKG, Neumann, Studer, Shure, Beyer, Cal-

rec, Sony, Sennheiser.
 Monitor Amplifiers: McIntosh 2300 amplifier, Yamaha, B&W, Crown amps.
 Monitor Speakers: 604E Big Reds, Yamaha NS-10, E-V Sentry 100, Auratone.
 Musical Instruments: Yamaha 7.5' acoustic piano w/Forte MIDI-mod, Yamaha DX7 synth, Linn 9000 drum machine/sequencer, Hammond organ, Fender, Ampeg, Polytone amps.
 Rates: Rates available upon request.

[24+] SIXTEENTH AVENUE SOUND

1217 Sixteenth Ave. South
 Nashville, TN 37212
 (615) 327-8787
 Owner: Services Mgmt. Inc.
 Studio Manager: Barry Sanders
 Engineers: Dave Parker, Barry Sanders.
 Dimensions: Room 1: studio 23 x 28, control room 22 x 24 (w/2 iso booths). Room 2: studio 29 x 15, control room 13 x 15. Room 3: control room 16 x 13.
 Mixing Consoles: SSL 4000E 48 x 32, Soundcraft 1600 24 x 16, Soundcraft 400B 20 x 16.
 Audio Recorders: Mitsubishi X-850 32-track digital, Soundcraft 760 MkII 24-track analog, Tascam 8516B6 16-track analog, Studer A820 2-track 1/4" - 1/2" analog, Tascam 42 2-track analog, Nakamichi DMP-100 2-track digital.
 Cassette Recorders/Duplicators: (2) Nakamichi MR-1, (3) Tascam 122.
 Synchronization Systems: Adams-Smith Zeta 3.
 Echo, Reverb, & Delay Systems: (2) Yamaha REV7 effects processor, Yamaha SPX90 effects processor, Lexicon PCM42 digital delay, AMS DMX 15-805, AMS RX 16, Lexicon 480L, Lexicon 224X, Lexicon PCM70, Lexicon PCM41, Effectron ADM 1024.
 Other Outboard Equipment: Drawmer 1960 compressor/amp, dbx 165 A, Valley People 440 compressor/limiter, Valley People leveler, Valley People Kexex II.
 Microphones: Neumann TLM170, KM84, U47, FET, KM86, Sony C-48, AKG 414, AKG 460 w/61 capsules, Sanken CU-41, Sennheiser MD-421, Shure SM57, E-V RE20/PC 20.
 Monitor Amplifiers: Perreux PMF 5150B, Yamaha P2250 C, Halber.
 Monitor Speakers: B&W 808, B&W DM 100, Yamaha NS 10M, Tannoy SRM 12B, Auratone.
 Musical Instruments: Kawai 7' grand piano, Yamaha U-1 studio upright piano, LinnDrum computer, Music Man Stingray bass guitar.
 Other: Pool table, fully equipped kitchen, lounge with cable TV & stereo, VHS VCR.
 Rates: Please call for rate quotes. Block rates are available.



SKD INC. RECORDING STUDIO
 Miami, FL

[24+] SKD INC. RECORDING STUDIO

6157 NW 167th St., Unit F-4
 Miami, FL 33015
 (800) 654-7047
 Owner: Kenneth Black
 Studio Manager: Wellesley Charoo
 Engineers: Oswald Palmer
 Dimensions: Studio 15 x 19, control room 18 x 15.
 Mixing Consoles: SSL 6000E 56 x 56.
 Audio Recorders: Sony PCM-3324 24-track 1/2" digital, MCI JH-16 24-track 2" analog, (2) MCI JH-110 2-track 1/4" analog, (2) Sony PCM-3202 2-track 1/4" digital.
 Cassette Recorders/Duplicators: Technics RS-B100.
 Noise Reduction Equipment: (2) Drawmer DS-201, (6) ADR Scamp S-30.
 Echo, Reverb, & Delay Systems: Lexicon 224X digital reverb, (2) Yamaha REV7 digital reverb, (4) Yamaha SPX90 digital effects processor, Lexicon PCM70 digital effects processor, AKG BX-10 reverb.
 Other Outboard Equipment: (20) API 550A parametric equalizer, (2) Orban 622B parametric equalizer, (2) UREI Model 546 parametric equalizer, (2) dbx 165A compressor/limiter, dbx

—CONTINUED ON NEXT PAGE

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Mail to: Mix Directories
6400 Hollis St. #12
Emeryville, CA 94608

NOTE: Questionnaires for specific issues will be mailed five months prior to issue date.

Monitor Speakers: Fostex LS-3, Fostex RM780, Yamaha NS-10, UREI 811, Auratone
Musical Instruments: Yamaha C7 grand piano. Rental of any required instrument with 24-hour notice

[24+] THE PEACH
P.O. Box 150
Covington, GA 30209
(404) 787-1843
Owner: Kerry Lvgren

[24+] PERFECT PITCH RECORDING & PRODUCTION CO.
Rt. 8, Box 433-A
Statesville, NC 28677
(704) 872-2360
(704) 328-2489
Owner: Marcus Kearns
Studio Manager: Melody Hicks

[24+] PERFECTION SOUND
2871 Jonquil Dr.
Smyrna, GA 30080
(404) 436-7410
Owner: Herb Morris
Studio Manager: Kent Morris
Engineers: Steve Easter, Donnie Glass
Dimensions: Room 1: studio 55 x 65, control room 20 x 13
Room 2: studio 28 x 33, control room 18 x 11
Mixing Consoles: Neotek Series 3C 28 x 24, Sound Workshop Series 30 20 x 16
Audio Recorders: MCI JH-24 24-track, MCI JH-16 16-track
Cassette Recorders/Duplicators: King, Liberty loop bins, (5) Liberty slaves, (3) King autolocators
Noise Reduction Equipment: dbx, Dolby A
Synchronization Systems: BTX Shadow
Echo, Reverb, & Delay Systems: Lexicon, Ursa Major, Alesis, Yamaha
Other Outboard Equipment: Klark-Teknik EQ, Altec 436 compressors, Dynatech limiters
Microphones: (62) Telefunken, AKG, Neumann, E-V and Shure
Monitor Amplifiers: Yamaha
Monitor Speakers: JBL, Auratone
Musical Instruments: Yamaha grand, Kawai grand, Korg DSS1, Korg DDD1 drum machine
Other: MIDI Equipment: 48-track PC (sequencing software)
Other: Mastering suite w/Scully lathe
Rates: 24-track \$80/hr., 16-track \$60/hr.

[24+] POLYMUSIC STUDIOS, INC.
225 Oxmoor Cir., #812
Birmingham, AL 35209
(205) 942-3222
Owner: Daniel E. Whiteside
Studio Manager: Daniel Whiteside
Engineers: Mike Panepento, Andy Bray, Daniel Whiteside
Dimensions: Studio 25 x 23 main, keyboard room 15 x 20, isolation 12 x 8, control room 25 x 23 main, Synclavier room 35 x 18
Mixing Consoles: Trident 80B 30 x 24, Quantum QM-128 20 x 8
Audio Recorders: Otari MTR-90 24-track, Ampex ATR-800 2-track, Ampex ATR-102 2-track, Ampex ATR-700 2-track
Cassette Recorders/Duplicators: Technics and JVC
Echo, Reverb, & Delay Systems: Lexicon 224, Eventide Harmonizer and flanger, Lexicon PCM41, Lexicon PCM42 DDL, (2) Yamaha REV7, Yamaha SPX90, Roland SRV-2000, Yamaha REV-1 digital reverb, Roland Vocoder
Other Outboard Equipment: Bercus-Berry 202R, Orban parametric, UREI, Eventide and dbx compressor/limiters, (4) dbx noise gates
Microphones: Neumann, Shure, E-V, RCA, Sennheiser, AKG
Monitor Amplifiers: BGW and Yamaha
Monitor Speakers: JBL 4411, JBL 4311B, JBL 4401, Auratones, (2) Yamaha NS-10M "Studio"
Musical Instruments: Synclavier II w/16 synth voices, 16 Polyphonic sampling voices, music printing, Yamaha DX7, Yamaha TX816 rack, Roland RD-1000 digital piano, LinnDrum, Yamaha G2 piano, Hammond B-3 w/128 Leslie, Prophet-5, ARP 2600, Odyssey, ARP Omni, Poly and MicroMoog, full Yamaha and Pearl drum sets, vibes and a complete array of Latin percussion, assorted guitars and amps
Rates: \$60/hr. for 24-track, \$50/hr. for Synclavier Block rates: call
Extras & Direction: Polymusic has a highly qualified, friendly staff of musicians, writers, lyricists and arrangers to assist you. We also have an in-house jingle production company. 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

[24+] THE PROCESS RECORDING STUDIOS
also REMOTE RECORDING
3404 West Wendover Ave., Suite E
Greensboro, NC 27407

S O U T H E A S T

24+ TRACK

STUDIOS

(919) 855-1941
Owner: The Process Recording Studios Inc.
Studio Manager: Patrice Hamden
Engineers: Ron Schrank, Bobby Kelly, Hayden Clement
Dimensions: Room 1: studio 40 x 30, control room 22 x 22
Room 2: studio 11 x 11, control room 16 x 14, Room 3: studio 14 x 14, control room 16 x 15, Room 4: control room 14 x 12
Mixing Consoles: Sound Workshop Series 34 w/ARMS II Automation, 40 x 24, Trident 65 32 x 16, Tascam M-512 12 x 8, Tascam 106 6 x 4
Audio Recorders: New England Digital 8-track digital direct to disk system (125 min. per track), Studer A-80VU 24 24-track, Tascam 58 8-track, Otari MTR-12C 2-track w/CB-109 locator, Otari MTR-10C 2-track, (7) Otari 5050B MK III various 1-, 2- & 4-track
Cassette Recorders/Duplicators: Nakamichi MR-2, (2) Tascam 122, Otari DP-4050C1 hi-speed 4-track duplicator
Noise Reduction Equipment: dbx Type A available on all recorders
Synchronization Systems: Fostex 4030 & 4035 to sync to all recorders including Synclavier and direct to disk
Echo, Reverb, & Delay Systems: (2) Yamaha REV7, Lexicon PCM60, Micromix XL-305, (2) Yamaha SPX90, DeltaLab ADM 1024, DeltaLab ADM 64
Other Outboard Equipment: (2) dbx 166 limiters, (2) dbx 160x limiters, (2) Ashly SC-50 limiters, (2) Roger Mayer RM-50 noise gates, Symetrix SG-200 noise gates, Orban 526-A sibilance controller, Aphex Aural Exciter, Audioarts 4100 parametric equalizer, Soundcraft 2012-A graphic equalizer
Microphones: Neumann, AKG, Sennheiser, E-V, Crown, Beyer, Sony, Shure (over 30 mics)
Monitor Amplifiers: Hafler, Crown Micro-Tech, UREI
Monitor Speakers: (2) JBL 4430, (4) Fostex RM780, (4) Yamaha NS-10M, (4) Auratone, (2) Toa
Musical Instruments: Synclavier System: 64-voice, optical disc, 20 meg ram, multiple timbre and six libraries, 8 tracks direct to disk digital recorder, Emulator II w/ hard drive and CD-ROM, Akai S900, Yamaha DX7, TX7, Yamaha RX11, Korg DDD-1, Takamine GTM-6 MIDI guitar, 5' grand piano, Fender Rhodes Stage, Crumar Performer, Crumar DS-2, Tama Techstar drums, Rogers acoustic drums
Other MIDI Equipment: Atan 1040 ST w/Steinberg Pro 24 software, Apple Macintosh II+ w/Opcode Studio Plus, Digidesign Sound Designer
Video Equipment: Panasonic AG-6800
Rates: Call Patrice Hamden for rate card

[24+] PYRAMID RECORDING
1228 Lula Lake Rd., Box 331
Chattanooga (Lookout Mtn.), TN 37350
(404) 820-2356
Owner: R.H. Macellan
Studio Manager: Jim Stabie

[24+] QUADRADIAL CINEMA CORP.
14203 NE 18th Ave.
North Miami, FL 33181
(305) 940-7971
Owner: Robert Ingria & Mary Shaham

[24+] RADIO ACTIVE AUDIO
also REMOTE RECORDING
9 W. Grace St.
Richmond, VA 23220
(804) 643-2022
Owner: Victor Benshoff
Studio Manager: Victor Benshoff

[24+] RAINBOW RIVER STUDIOS
also REMOTE RECORDING
P.O. Box 1708
Auburn, AL 36831
(205) 821-4876
Owner: Larry Barker, Kittie Watson
Studio Manager: Larry Barker

[24+] REELPEOPLE RECORDING SERVICES & CONSULTANTS
also REMOTE RECORDING
3210 Gary Ct.
Falls Church, VA 22042
(703) 532-REEL
Owner: Perry David
Studio Manager: Bob Lloyd

[24+] REFLECTION STUDIOS
1018 Central Ave.
Charlotte, NC 28204
(704) 377-4596
Owner: Wayne Jernigan
Studio Manager: Mark Williams
Engineers: Steve Haigler, Mark Williams
Dimensions: Studio A: 44 x 32 w/18' ceiling, Studio B: tape duplicating, Studio C: 28 x 24 w/12' ceiling, control room A: 19 x 24 plus 8 x 10 isolation room; Control room C: 18 x 14 plus alcove for recorders
Mixing Consoles: Sony MX-3036 36-input automated, MCI JH-636 24-input
Audio Recorders: (2) Sony APR-5002 2-track, Sony/MCI JH-110C 2-track (1/2"), Sony PCM-3202 digital (dash format), (2) Sony/MCI JH-24 24-track, Otari 5050 1/4-track, MCI JH-C8 8-track
Echo, Reverb, & Delay Systems: Lexicon 224XL, EMT, Lexicon PCM70, Lexicon 200, DeltaLab delays, Effectron, Super Time Line
Other Outboard Equipment: UREI comp, (2) dbx 900 series w/de-essers, gates, limiters, (2) Valley People 440, Orban comp, Drawmer turntable gates
Microphones: Neumann, AKG, Shure, E-V, Sennheiser, RCA, Sony
Monitor Amplifiers: AB Systems, BGW, Hafler
Monitor Speakers: TAD custom components, double woofer system, JBL 4401, ROR
Musical Instruments: Yamaha grand, Kawai grand, Fender Rhodes stereo, Wuritzer electric piano, Farfisa, upright tack piano, Sonor drums and percussion, Musser vibes
Rates: Upon request. Block rates available

[24+] THE REFLECTIONS
2741 Larmor Dr.
Nashville, TN 37204
(615) 269-0828
(615) 269-3405
Owner: Gene Lawson
Studio Manager: Gene Lawson

[24+] REVELATION RECORDING
P.O. Box 1098
Corbin, KY 40701
(606) 528-1111
(800) 782-1771
Owner: Revelation Production Group, Inc.
Studio Manager: Tim Collins
Engineers: Tim Collins, Jeff Woodlee
Dimensions: Studio 44 x 30, control room 23 x 20
Mixing Consoles: Sound Workshop Series 1600 28 x 24
Audio Recorders: Sony JH-24 24-track w/ALIII, Otari MkIII 2-track
Cassette Recorders/Duplicators: Yamaha 1200
Echo, Reverb, & Delay Systems: Lexicon PCM60 reverb unit, Alesis Microverb reverb unit, ADA digital delay system
Other Outboard Equipment: CDT multicompressor in polyframe units (compressors, gates, etc.), BBE 802, (2) White 28-band EQ
Microphones: (4) AKG 414 ULS, (3) Neumann 841, (10) Shure SM57, PZM system, AKG D112
Monitor Amplifiers: (2) Hafler P500, (2) Hafler P230
Monitor Speakers: (2) UREI 809, (2) Yamaha NS-10M studio
Musical Instruments: Yamaha 6' pro grand piano, Pearl 7-piece pro drum kit, Yamaha DX7, ARP Omni II, Yamaha RX5 drum machine

[24+] R.I.M. SOUND STUDIO
Middle Tennessee State University
Murfreesboro, TN 37132
(615) 898-2518
Owner: Recording Industry Management
Studio Manager: Christian L. Haseleu

[24+] ROADHOUSE RECORDING
7472 Old Hwy. 78
(5 minutes from SE Memphis)
Olive Branch, MS 38654
(901) 365-4234
Owner: Mark Patrick, Ronnie Vandiver
Studio Manager: Mark Patrick, Ronnie Vandiver

[24+] SAM'S TAPE TRUCK
also REMOTE RECORDING
2785 Osborne Rd.
Atlanta, GA 30319
(404) 237-9075
Owner: Joe Neil, Larry Goode
Studio Manager: Ruth Neil

[24+] SATURN SOUND STUDIOS INC.
also REMOTE RECORDING
515 S. Olive Ave.
West Palm Beach, FL 33401
(305) 832-2148
Owner: Clinton Smith, Allen Pearson

Cassette Recorders/Duplicators: (2) Studer A710
Synchronization Systems: Mitsubishi X-850 hook-up.
Echo, Reverb, & Delay Systems: EMT 250, Lexicon 224X w/LARC, (2) EMT 140 plate reverbs, (2) BAE L140 plate reverbs, Marshall AR-300 tape eliminator.
Other Outboard Equipment: Sontec DRC202, (4) Kepex II, (6) Scamp expander/gate, Aphex Type B Aural Exciter, ADR Vocal Stresser, (2) Eventide H949 Harmonizer, (2) Lexicon Prime Time 93, (4) dbx 160X, (4) Teltronix LA-3A, Teltronix LA-2A Microphones: (2) Sanken C-41, Neumann M49, (5) Neumann U87, (2) Neumann U67, Neumann U47 FET, (2) AKG C452, (2) AKG C460, (5) AKG C414EB, (4) Shure SM57, (2) Shure SM56, (2) Sony ECM-30
Monitor Amplifiers: (4) McIntosh 2300, (4) BGW 250, (2) McIntosh 2205.
Monitor Speakers: (2) Super Reds w/Mastering Lab crossovers, (2) Yamaha NS-10M, (2) Auratone 5C, JBL 4430
Musical Instruments: Yamaha 5'7" grand w/Forte Music MIDI-mod, Dyno-My-Piano, 73 w/chorus and tri-stereo unit, Wuritzer electric piano, Pearl drum kit, D-6 clavinet, misc. amplifiers.
Other MIDI Equipment: Forte Music MIDImod
Other: Revox B-790 DD turntable.
Rates: On request

[24+] MUSIPLEX
2091 Faulkner Rd. NE
Atlanta, GA 30324
(404) 321-2701
Owner: T.G. Wright, Jr.
Studio Manager: Steve McCormick

[24+] NASHVILLE TELEPRODUCTIONS/
OAK VALLEY SOUND
also REMOTE RECORDING
105 Oak Valley Dr.
Nashville, TN 37207
(615) 262-2600
Owner: Nashville Teleproductions Inc.
Studio Manager: Kevin McManus
Engineers: Kevin McManus, Rick Salyer, Chris White, Denis Ryan.
Dimensions: Room 1: studio 40 x 30, control room 18 x 22.
Room 2: control room 10 x 20.
Mixing Consoles: Anek Angela 28 x 28, Sound Workshop Series 30 28 x 28, Hill Multimix 16 x 4 x 2
Audio Recorders: Studer A80 24-track, Tascam MS-16 16-track, Studer A80 2-track, Studer B67 2-track, Otari 5050 2-track.
Cassette Recorders/Duplicators: Nakamichi, Tascam
Noise Reduction Equipment: dbx 24-channel, dbx 16-channel, dbx 2-channel
Synchronization Systems: Adams-Smith, SMPTE generator, readers and syncro.
Echo, Reverb, & Delay Systems: (2) EMT plates, Yamaha REV7, Yamaha SPX90, Lexicon PCM60, DeltaLab Effectron, Eventide H910 Harmonizer, DeltaLab Acousticcomputer, Roland SDE-1000, Sundholm 2103 EQ, SAE stereo 1/2-octave
Other Outboard Equipment: (4) Gatex gates, Audio & Design Vocal Stresser, (16) dbx limiters, (2) Orban parametric EQs
Microphones: Wide variety from Shure, AKG, Neumann, Sennheiser, E-V, Sony, (2) Neumann tube mics.
Monitor Amplifiers: NAD 2200, Haller 400, Symetrix 60.
Monitor Speakers: (2) EAW MS-50, (2) EAW MS-30, (2) EAW MS-30B, (4) Auratones.
Musical Instruments: Baldwin 7' grand piano, Yamaha DX7, Slingerland drums, LinnDrum machine
Video Equipment: JVC 3/4" SMPTE-based A/B roll edit system w/Pallex controller, Pallex Gemini DVE/frame sync, Crosspoint 6112 SEG, Chyron VP2 C.G., Panasonic monitors, (3) JVC 320 pro-cams w/CCUs.
Other: 30' audio/video remote truck multi-camera w/multi-track audio.
Rates: On request

[24+] NEW AGE SIGHT & SOUND
also REMOTE RECORDING
120 Interstate N. Pkwy. E., #164
Atlanta, GA 30339
(404) 956-7956
Owner: William Allgood
Studio Manager: Mitch Dorf
Engineers: William Allgood, Mitch Dorf, Jason Bonnette
Dimensions: Room 1: studio 40 x 50, control room 23 x 21
Room 2: studio 20 x 13, control room 20 x 11. Video room: studio 40 x 50, control room 20 x 11.
Mixing Consoles: Sound Workshop Series 34 50 x 24, Sound Workshop Series 34 28 x 24, Sound Workshop Logex 8 12 x 8
Audio Recorders: Sony PCM3324 24-track, Otari MTR-90 24-track, Sony PCM-1610 2-track, MCI JH-110 2-track, Sony PCM-501 2-track, Sony PCM-F1.
Cassette Recorders/Duplicators: (10) Nakamichi BX-100
Noise Reduction Equipment: (2) Dolby A
Synchronization Systems: (2) Lynx Time Code modules.
Echo, Reverb, & Delay Systems: Lexicon 224X, Lexicon PCM-70, Lexicon Prime Time, Lexicon PCM41, (2) Yamaha SPX90, Eventide H969
Other Outboard Equipment: Eventide H969 Harmonizer, (2) dbx 900 racks, (4) Gatex noise gates, (4) Symetrix noise gates/

expander, (2) Aphex Aural Exciters, (2) dbx 166, (2) dbx 165A Microphones: (3) Neumann TCM170, (6) Neumann KM84, (4) AKG 414, Neumann SM2 tube, (6) Sennheiser 421, (6) Shure SM57, E-V PL-20, (2) Sony 535-P, (2) Sony 555-P
Monitor Amplifiers: (2) Haller P-500, (5) Haller DH-220, Haller P-225
Monitor Speakers: UREI 813, Yamaha NS-10M, UREI 809, Auratone, JBL 4411, Tannoy SRM-15X.
Video Equipment: (3) Sony BVU-800, (3) Sony M-3 cameras, Pallex editor, Cnryon VP2+.
Other: Symetrix telephone interface.



NEW RIVER STUDIO
Fort Lauderdale, FL

[24+] NEW RIVER STUDIO
408 S. Andrews Ave.
Fort Lauderdale, FL 33301
(305) 524-4000
Owner: New River Productions
Studio Manager: Virginia Cayia
Engineers: Dave Barton.
Dimensions: Studio 36 x 35, control room 35 x 25
Mixing Consoles: Neve 8108 56 x 48 w/Necam 96
Audio Recorders: (2) Studer A800 MkIII 24-track, (2) Studer A80 MkIII 2-track 1/2" and 1/4", Studer B77 1/4"
Cassette Recorders/Duplicators: (2) Studer B710, (2) Yamaha K1000
Noise Reduction Equipment: (2) Dolby SP24, (4) Dolby 361.
Synchronization Systems: Q Lock 3 10 synchronizer, Adams-Smith 2600
Echo, Reverb, & Delay Systems: AMS RMX-16 digital reverb, Lexicon 224XL digital reverb, Lexicon 480L digital effects system, EMT 140S stereo tube plate, Eventide H910 Harmonizer, (2) Eventide H949 Harmonizer, (2) Teltronix LA-2A, (2) API 550 equalizer, (2) API 550 A equalizer, Drawmer DS-201 dual noise gate and many more.
Other Outboard Equipment: Compressors, limiters, noise gates
Microphones: Neumann M49 tube, (2) Neumann KM84, (2) Neumann KM86, (2) Neumann U47, (2) Neumann U89Z, (4) Neumann U87Z, (7) AKG, (6) Beyer, (7) Schoeps, (4) Sennheiser, (13) Shure, and many others.
Monitor Amplifiers: Acoustats and many others.
Monitor Speakers: (2) Meyer 833, (2) UREI 813B, (2) JBL 4311, (2) JBL 4430 studio monitors, Yamaha NS-10M, (2) Auratone 5C
Musical Instruments: Yamaha C7D grand piano, Fender Rhodes, Hammond B-3 w/Leslie, drum kit, Mesa/Boogie amp, Yamaha KX88, Yamaha TX802 module, others too numerous to mention
Other MIDI Equipment: Mac Plus computer w/Opcode software
Video Equipment: JVC 3/4" U-matic, (2) JVC monitors.
Other: Dyaxis direct to disc: 2-track recorder
Rates: Upon request
Extras & Direction: We have established contacts with hotels, rental cars, yacht charters, etc., with special rates for our clients. We would be happy to structure a package to suit your needs. The studio has a private lounge, producer's office and conference room for our clients. It is situated off the New River, only three miles to the beaches and airport. Having completed five years in operation, New River has established itself as Florida's premier full service facility. Our staff is top notch, with well maintained equipment. We are proud to have worked with Jimmy Buffett, Miami Sound Machine, Peter Frampton, The Everly Brothers and all the other fine artists. We thank you for your support.

[24+] O'CONNELL PRODUCTIONS, INC.
3954 Peachtree Rd.
Atlanta, GA 30319
(404) 266-0020
Owner: Kevin O'Connell
Studio Manager: Bruce Irvine

[24+] OMNISOUND RECORDING STUDIOS
1806 Division St.
Nashville, TN 37203
(615) 321-5526
Owner: Esprit Sound, Inc.
Studio Manager: Richard Headen

[24+] ON LINE AUDIO
also REMOTE RECORDING
701 E. Bay St., Ste. 436
Charleston, SC 29403
(803) 724-3506
Owner: Robert Graves
Studio Manager: Gregory O. Larkins

[24+] ONYX SOUND RECORDING STUDIO
1646 Bonnie Dr.
Memphis, TN 38116
(901) 346-1483
Owner: Robby Turner
Studio Manager: Robby Turner

[24+] PACE RECORDING SERVICE
only REMOTE RECORDING
2504 Bayou Rd.
New Orleans, LA 70119
(504) 949-2414
Owner: Glen Himmaugh
Studio Manager: Glen Himmaugh

[24+] PARALLAX RECORDING STUDIO
also REMOTE RECORDING
123 E. State St.
Ridgeland, MS 39157
(601) 856-2525
(800) 257-5539
Owner: Parallax Records
Studio Manager: James Griffin



PARC STUDIOS
Orlando, FL

[24+] PARC STUDIOS
also REMOTE RECORDING
PO Box 547877, Orlando, FL 32854
658 Douglas Ave.
Orlando, FL 32714
(305) 788-6341
Owner: Pat Armstrong/Parc Records, Inc.
Studio Manager: Andy deGanahli (for bookings: Pat Armstrong, (305) 299-0077)
Engineers: Andy deGanahli
Dimensions: Studio 40 x 30, control room 25 x 25
Mixing Consoles: SSL 6000E 56 x 44, Sphere Eclipse Model A 32 x 24 (mobile)
Audio Recorders: Studer A800 24-track, Studer A80 4-track, Studer A80 2-track, (2) dbx 700 w/Sony U-matic 5800 2-track VCR, Otari MX-80 24-track, Otari MTR-10 2-track (mobile), Otari MTR-12 2-track (1/2")
Echo, Reverb, & Delay Systems: AMS RMX-16 reverb, Lexicon 224 XL reverb, (2) Lexicon 200 reverb, Micmix Super C reverb, AMS DMX 1580 delay, Eventide 969, (2) Lexicon PCM42, (2) Lexicon PCM41, (2) Lexicon Prime Time 93.
Other Outboard Equipment: (2) Drawmer DS-201 dual gate, Drawmer stereo tube compressor, dbx 900 rack w/(2) compressors/(2) de-essers/(4) parametric EQ, Aphex compellor, Eventide flanger, Eventide phaser, Aphex Aural Exciter
Microphones: Neumann U47 tube and FET, Neumann U89, Neumann KM84, AKG 460, AKG 414EB, AKG C-12A, Sennheiser 421, Sennheiser 441, Sanken CU41, B&K 4000 Series, Shure SM57, Shure SM58, Shure SM81, UREI direct boxes
Monitor Amplifiers: (3) Haller DH-500, (3) Haller DH-220.

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mann U89, AKG D-12E, (2) AKG 460, (8) Sennheiser MD-421, (7) Shure SM57, AKG 452EB, Audio-Technica RE-20, Shure SM5B, plus 20 other various mics.
Monitor Amplifiers: (2) McIntosh MC-2300, McIntosh MC-2100, (2) QSC 1400
Monitor Speakers: Stephen Durr design, Yamaha NS-10M, Auratone 5C, JBL 4430, JBL 4301B, JBL 46120K
Musical Instruments: Yamaha TX816, Yamaha DX7, Ensoniq Mirage, Akai MPC-60 MIDI production center, Korg P-61M, Yamaha grand piano, Hammond B-3 w/Leslies 122 and 147, Ludwig Pearl acoustic drums, Fairlight CMI III (upon request), LinnDrum w/MIDI, Fender Twin Reverb II
Other MIDI Equipment: Apple Macintosh Plus w/Dataframe (20 meg drive), Opcode Studio Plus II, DX7 software w/over 5,000 voices, Soundlab software for Mirage and voice storage
Rates: Call for rates.

[24+] MIAMI SOUND STUDIO

697 NW 28th St.
Miami, FL 33127
(305) 635-4890

Owner: Carlos and Angie Diaz-Granados

Studio Manager: Angie Diaz-Granados

Engineers: Carlos Diaz-Granados Jr., Paul Khouri

Dimensions: Studio 17'5" x 13'75" x 28', control room 17' x 10' x 15'

Mixing Consoles: Neve 8028 24 x 16-24

Audio Recorders: Studer A80 24-track, Ampex 440-B 2-track, Scully 2-80 24-track, Studer/Revox 77 2-track, Studer 810 2-track

Echo, Reverb, & Delay Systems: Echo delay tape, (2) EMT 140 echo chambers, Lexicon 200 digital reverb, Lexicon Prime Time 93

Other Outboard Equipment: Eventide Harmonizer, Scamp Rack, UREI Teletronix LA-2A and LA-3A limiters, Pultec equalizers/compressors, Neve limiters/vocal doubler, Electra digital delay, Roland phase shifter, Roland stereo flanger, Simmons Clap Trap, LinnDrum, Simmons electronic drums, Roland Dimension D

Microphones: Neumann U87, Neumann U67, Neumann KM84, AKG 451, E-V RE20, Sennheiser, Shure 57, Sony C-37P, RCA 77-DX, RCA 44

Monitor Amplifiers: McIntosh 2300, McIntosh 2105, McIntosh 255

Monitor Speakers: JBL 4343 (Gauss), JBL 4311, Auratone, Tannoy SC, Fostex

S O U T H E A S T 24+ TRACK STUDIOS



MIAMI SOUND STUDIO
Miami, FL

Musical Instruments: Yamaha grand piano, Fender Rhodes, Roland synthesizer, rhythm box harmonizer, Slingerland drums, Synare, Hammond B-3

Rates: Rates upon request

Extras & Direction: Studio philosophy: simply that our engineers strive to treat every recording as if it were their own aspiration, to be categorized as a hit making quality studio "We've got the sound you want"

[24+] MIRROR IMAGE RECORDING

also REMOTE RECORDING

619 S. Main St.

Gainesville, FL 32601

(904) 376-8742

Owner: Bob McPeck, Paul Pavelka

Studio Manager: Mark Pinske

[24+] MORRISOUND RECORDING

12111 N. 56th St.

Tampa, FL 33617

(813) 989-2108

Owner: Morrisound Recording Inc.

Studio Manager: Tom Morris

Engineers: Tom Morris, Jim Morris, Rick Miller, Scott Burns, Judd Packer

Dimensions: Room 1 studio 32' x 40', control room 25' x 23' Room 2 studio 32' x 15', control room 25' x 23'

Mixing Consoles: Sound Workshop Series 34 32' x 24' w/automation, Artek Scorpion 24 x 16

Audio Recorders: Otari MTR-90 24-track w/autolocator, Otari 5050 MkIII 8-track, Otari MTR-12 2-track, (2) Otari 5050-B MkII 2-track

Cassette Recorders/Duplicators: (6) Denon DR-M33HX

Noise Reduction Equipment: (4) dbx 150

Synchronization Systems: BTX Shadow

Echo, Reverb, & Delay Systems: Lexicon 224XL, Lexicon PCM-60, (2) Lexicon PCM70, (2) Lexicon PCM41, Lexicon PCM42, Lexicon Prime Time, Loft 450, Ecoplate, Yamaha REV7, TC

Electronics I2290

Other Outboard Equipment: DeltaLab DL5 and Eventide 910H Harmonizers, (2) dbx 165 and (2) UREI LA-4 compressor/limiters, (2) Valley People Dyna-Mite, (2) EXR EX-3 Exciter, Omni

Craft noise gates, Audioarts stereo parametric equalizer, (2) dbx 166

Microphones: (3) Neumann U87, (5) AKG 414, (12) Sennheiser 421, (2) Sennheiser 441, (2) AKG 451, (3) E-V RE20, assortment of Shure, E-V and Audio-Technica

Monitor Amplifiers: (6) Haller

Monitor Speakers: UREI 811A, UREI 813B, JBL 4312, (2) Yamaha NS-10M, E-V Sentry 100, (2) Auratone 5C

Musical Instruments: Yamaha grand piano, Hammond C-3 w/Leslie, Gretsch 5-piece drum set, Yamaha 5-piece drum set, Synclavier II, Emulator II, Emax, Yamaha DX7, Roland D-50, Oberheim DX drum machine, (2) Oberheim OB-8, Ensoniq

Mirage, Korg DDD-1 drum machine

Video Equipment: Audio post-production for film or video, Sony VO-5800, (2) JVC CR850U

Rates: P1ease call

[24+] MUSIC CITY MUSIC HALL

30 Music Square W.

Nashville, TN 37203

(615) 244-1060

Owner: Owen Bradley

Studio Manager: Michael Bevington

Engineers: Bill Harris, Doug Crider, Bobby Bradley

Dimensions: Studio 50' x 80' x 30', control room 28' x 18' x 10'

Mixing Consoles: Neve 8038 32' x 24' w/Allison Research, Fader automation

Audio Recorders: Studer A80 24-track, Studer A80 2-track master recorder, Studer B67 2-track

Cassette Recorders/Duplicators: (2) Studer B710

Noise Reduction Equipment: Dolby

Echo, Reverb, & Delay Systems: Lexicon 224XL, (3) EMT plates, Gotham Audio digital delay, Eventide Harmonizer, JL Cooper

Time Cube

Other Outboard Equipment: (2) ADR Vocal Stressers, Scamp rack, Teletronix compressors, LA-2A limiter, LA-3A limiter, EXR

Exciter, Eventide Phaser, Yamaha REV7, Yamaha SPX90

Microphones: Neumann U87, Neumann U67, Neumann U47, Neumann U48, Neumann M49, Neumann KM84, Neumann

KM56, E-V RE16, E-V RE20, Sony ECM-50, Sony C-500, Sony C-55, RCA 44, RCA 77, ELA 251, AKG 414

Monitor Amplifiers: McIntosh 2100

Monitor Speakers: UREI 813, JBL 4313B, Auratone, Yamaha NS-10M

Musical Instruments: Baldwin 9' grand w/MIDI capabilities, Yamaha PF15 electronic piano, Fender Rhodes stereo, Wuritzer electric piano, Hammond B-3 organ w/Leslie, Hohner D-6

clavinet, celeste, Zucker electric harpsichord, Deagan vibes, marimba

Rates: Available upon request

[24+] MUSIC MILL

1710 Roy Acuff Pl.

Nashville, TN 37203

(615) 254-5925

Owner: Harold Shedd

Studio Manager: Paul Goldberg

Engineers: Jim Cotton, Paul Goldberg, Joe Scarfe

Dimensions: Room 1 studio 23' x 19', control room 31' x 36' Room 2: studio 23' x 19'

Mixing Consoles: (3) Trident TSM 32' x 32' w/Fader/Allison automation

Audio Recorders: (2) Mitsubishi X-850 32-track digital multi-tracks, (2) Studer A800 24-track multi-tracks, (2) Studer A80

2-track 1/2", (3) Studer B67 2-track 1/4", JVC BP-90 2-track digital

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650 East Stonewall Street Charlotte, NC, USA 28202

[24+] MASTERMIX
1808 Division St.
Nashville, TN 37203
(615) 321-5970
Owner: Trio Entertainment Co.
Studio Manager: Hank Williams
Engineers: Tom Brown
Dimensions: Overdub/sampling room with RPG diffusion, control room 23 x 19 x 11
Mixing Consoles: Calrec AMS automated UA-8000, 56/64 x 32
Audio Recorders: Otari DTR-900 32-track digital, Otari MTR-90 24-track, Otari MTR-10 2-track (1/2" and 1/4"), Sony digital PCM-1630
Echo, Reverb, & Delay Systems: AMS RMX 16, AMS 15-80, Publison Internal 90, Lexicon 224 XL, Lexicon Super Prime Time, EMT 250/251, Eventide H-949, Studer DAD-16
Other Outboard Equipment: Valley People, Trident, Sontec, ITI, dbx, Audio+Design, API, Scamp, UREI, Teletronix, Neve, Fairchild Instruments, BBE
Microphones: Sanken, Calrec, Neumann, AKG and classic tubes
Monitor Amplifiers: Briston, Lenco, Hafler, Yamaha
Monitor Speakers: State-of-the-art Elektronik CF 1000, 4-way cone system, Meyer, Fostex, Rogers, Auratone, Yamaha, MasterMix near fields
Video Equipment: Sony BVU-800
Rates: Please call for hourly and block rates.
Extras & Direction: Stereo disc mastering, CD prep, Sony digital editing.

[24+] MASTERWORKS STUDIOS
also **REMOTE RECORDING**
4024 Williamsburg Ct.
Fairfax, VA 22032
(703) 385-1780
Owner: Michael Zook

[24+] MEDIA GENERAL BROADCAST SERVICES-STUDIO FIVE
1711 Poplar Ave.
Memphis, TN 38104
(901) 320-4254
Owner: Media General Broadcast Svcs.
Studio Manager: Cindy Reding

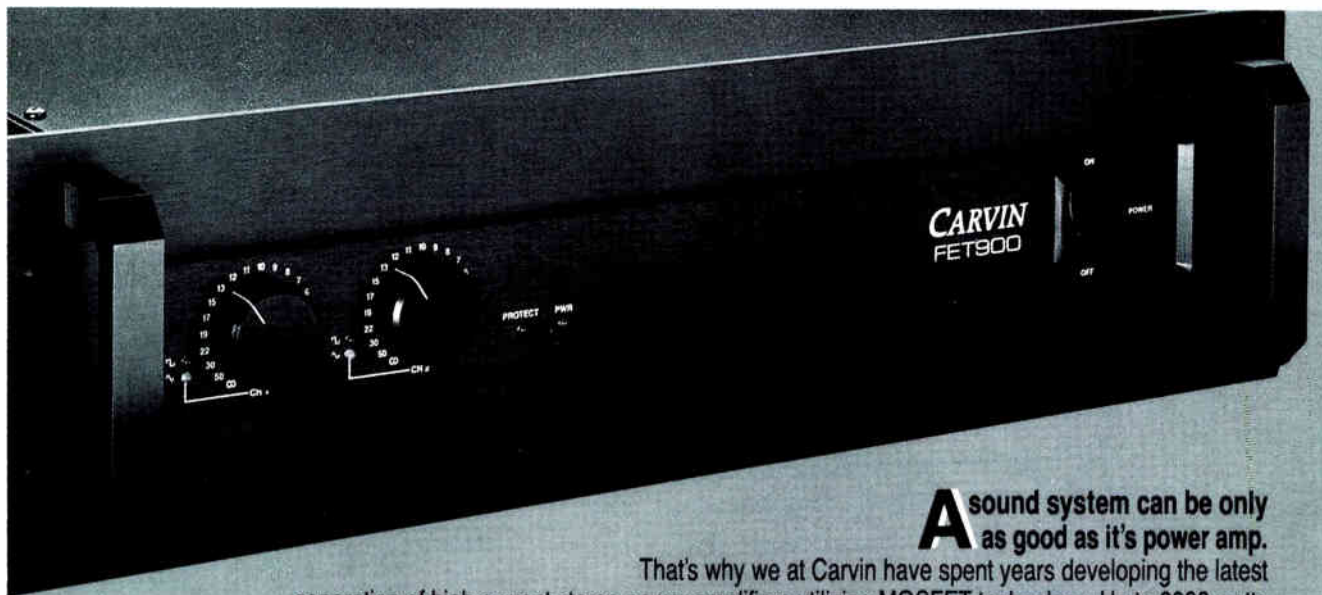
[24+] MEGA SOUND STUDIOS, INC.
542 E. Main St., PO Box 189
Bailey, NC 27807
(919) 235-3362
Owner: Richard H. Royall, Daniel R. Dixon III
Studio Manager: Richard H. Royall
Engineers: Dan Dixon, Johnny Falzone, Richard H. Royall
Dimensions: Studio 18 x 30, control room 12 x 18
Mixing Consoles: Harrison w/864 autotune computer 3232 A/B 32 x 32, MCI 416 24 x 24, location mixer, custom 12 x 8
Audio Recorders: MCI JH-114 24-track w/autolocator III, Scully 280B 2-track, Revox A-77 2-track, Revox A-77 1/4-track
Cassette Recorders/Duplicators: Sony, Nakamichi, Hitachi
Noise Reduction Equipment: dbx 28 channels
Echo, Reverb, & Delay Systems: Lexicon 224 XL w/LARC, DeltaLab DL-2, Lexicon Prime Time
Other Outboard Equipment: dbx and UREI compressor/limiters, Ashly and Scamp parametric EQs, Scamp EQ gates and expanders, UREI 1/3-octave EQs, Eventide audio analyzer w/Ap-ple computer, Roland Dimension D
Microphones: AKG, E-V, Neumann, RCA, Sennheiser, Shure, Sony
Monitor Amplifiers: Crown, McIntosh, Phase Linear, Yamaha
Monitor Speakers: JBL bi-amplified, Yamaha, Auratone
Musical Instruments: Yamaha conservatory grand piano, Hammond B-3 organ, Fender precision bass guitar, Pearl drums w/cymbals by Paiste and Zildjian, Roland and Yamaha synthesizers, Linn and Yamaha drum machines, Ibanez electric guitars, Yamaha acoustic guitars
Video Equipment: Full video production services in association with Southeast Video Services JVC, Sony, Panasonic equipment, Datamax computer animation
Rates: Write or call for rate schedule and brochure
Extras & Direction: Available AMS 15-805 with loop editing and 2-channel pitch change, AMS-RMX-16 digital reverb, MDB 16-bit window recorder, Lexicon PCM70, dbx 160X compressor/limiters, Drawmer dual noise gates, Valley People Dyna-Mite noise gates, Roland SDE-3000 delay, ART 01A digital reverb, Roland RE-201 space echo, US Audio Gatex, "Fast Forward."

[24+] MELODY RECORDING STUDIO
De Diego #2, Urb. San Francisco
Rio Piedras, PR 00927
(809) 763-3555
Owner: Javier D. Hernandez
Studio Manager: Javier D. Hernandez
Engineers: Rei Pena, Javier Hernandez
Dimensions: Studio 25 x 30, control room 20 x 15 (plus two iso).

Mixing Consoles: Neotek 36 x 26.
Audio Recorders: Otari MTR-90 24-track, Otari MTR-12 2-track, Otari MX-5050 2-track
Cassette Recorders/Duplicators: Nakamichi MR-1
Echo, Reverb, & Delay Systems: Lexicon M200, Lexicon PCM-70, Lexicon PCM60, Lexicon PCM42, Cornerstone plates
Other Outboard Equipment: LA-4 compressors, Drawmer noise gates, Aphex Aural Exciter, API EQs, Eventide Ultra A-3000
Microphones: Neumann U87, Neumann U89, Sennheiser MD-441, Sennheiser 421, Crown PZMs, AKG 414, Shure SM81
Monitor Amplifiers: (6) Briston
Monitor Speakers: JBL 4430, Yamaha NS-10, Auratone 5-C
Musical Instruments: Steinway grand piano, Yamaha CP80, Yamaha drum set w/triggers, Simmons SDS-8 w/pads, complete Latin percussion array, Poly 800, Roland Juno 106, DX7IID, Emulator, SP1200, MKS-20 piano module, (2) bass guitars, (3) guitars
Other MIDI Equipment: Octapads, MD-32 module, JL Cooper MIDI patcher, Simmons MTI interface
Rates: \$55-65/hr., depending on how many hours.

[24+] MEMPHIS SOUND PRODUCTIONS
315 Beale St.
Memphis, TN 38103
(901) 525-5500
Owner: J. Fleskes, T. Goodwin, J. McDowell
Studio Manager: T. Goodwin
Engineers: Robert L. Jackson (T.D.), John L. Fleskes, Dan Pfeiffer, Richard Scott
Dimensions: Studio 50 x 40, control room 27 x 25
Mixing Consoles: Soundcraft TS-24 44 x 24, Tascam M-50 12 x 8, E-V 100M 10 x 2
Audio Recorders: Otari MTR-90 24-track, Otari MTR-12 2-track, Otari MTR-10 2-track, (2) Studer/Revox PR-99 2-track, Nakamichi DMP-100 2-track, Tascam 38 8-track
Cassette Recorders/Duplicators: Nakamichi CR-7A, Tascam 122, Recordex ST/Pro H 16-1
Noise Reduction Equipment: Dolby A 24-channel, (2) dbx 411, (4) dbx 150
Echo, Reverb, & Delay Systems: (2) Lexicon 224XL 8.2v, Lexicon 224 4.1v, Yamaha REV7, (2) Yamaha SFX90II, (2) Lexicon PCM60, (2) Lexicon PCM41, Eventide H949 Harmonizer, Ursa Major 8 x 32, DeltaLab Effectron II
Other Outboard Equipment: (8) dbx 903 comp/limit, (6) dbx 904 noise gate, Teletronix LA-2A tube limiter, Valley People Dual Dyna-Mite, Orban 622B para/EQ, Aphex Type B Aural Exciter, Valley International HH2x2B bump-box
Microphones: (2) AKG 414 B-ULS, AKG "The Tube", (2) Neu-

—CONTINUED ON NEXT PAGE



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FACTORY DIRECT PRICES: FET 400 (200+200 watts)—\$449 • FET 900 (450+450 watts)—\$599 • FET 2000 (1000+1000 watts)—\$995

Audio Recorders: Mitsubishi X-800 32-track digital, Studer A80 24-track, Studer A80 2-track, Mitsubishi X-86 2-track digital.
Cassette Recorders/Duplicators: (2) Yamaha C300.
Noise Reduction Equipment: Dolby 24-track.
Echo, Reverb, & Delay Systems: (3) Yamaha REV5, Yamaha REV7, Yamaha SPX90, Korg DRV-3000, EMT 140 plate, Lexicon 480, Lexicon 224, live chamber.
Other Outboard Equipment: UREI 1176, dbx 160, Aphex Aural Exciter, Kexex, Prime Time.
Microphones: AKG 414, AKG 460, AKG D112, Neumann U87, Neumann KM84, Shure SM57, Sennheiser 421, Neumann TLM170.
Monitor Speakers: JBL, Yamaha NS-10.
Musical Instruments: Yamaha DX7IIIFD, Baldwin acoustic, Hammond B-3, Roland Juno 106, Roland D-550, PPG, clavinet.

[24+] LAMBRON INC. RECORDING SERVICE
 8461 NW 21 Ct.
 Sunrise, FL 33322
 (305) 748-7010
 Owner: Lambtron Inc.
 Studio Manager: Gary Lambert

[24+] LECHE RECORDING WORKSHOP
also REMOTE RECORDING
 PO Box 121702
 Nashville, TN 37212
 (615) 321-5479
 Owner: Carl Tatz
 Studio Manager: Carl Tatz

[24+] LIMELITE VIDEO
 7355 NW 41 St.
 Miami, FL 33166
 (305) 593-6911
 Owner: Frank D. Tolin
 Studio Manager: Mike Garrett
 Engineers: Richard Achon, Mike Hoffmann.
Mixing Consoles: Neve V36 36 x 36 w/Necam 96.
Audio Recorders: Mitsubishi X-850 32-track, Otari MTR-9011 24-track, Otari MTR-20 2-1/4-track, Nagra TC 2-track.
Cassette Recorders/Duplicators: (2) Nakamichi MR-1.
Noise Reduction Equipment: Dolby SR 24 channels.
Synchronization Systems: Adams-Smith AV-2600.
Echo, Reverb, & Delay Systems: Lexicon 224XL, AMSRMX-16, Quantec room simulator, (2) Lexicon PCM42, (2) Lexicon PCM-70, (2) Yamaha SPX90, AMS 15-80S, Lexicon 480L.
Other Outboard Equipment: (2) Drawmer gates, Aphex compeller, (2) dbx 165, Sontec parametric EQ, Symetrix phone patch, Lexicon 2400 time compressor/expander.
Microphones: (4) AKG 414/P48, (4) Neumann TLM170, (2) Neumann U87A/2, (2) Neumann FET47, (2) Neumann KMR82, (2) Neumann KMR81, (4) Neumann KM84, (4) Sennheiser MD-421, (6) Sennheiser MKE-23, Calrec Soundfield stereo mic, Neumann SM69 stereo mic.
Monitor Amplifiers: Perreux 3000B, Perreux 9000B.
Monitor Speakers: Ed Long MDM-TA3, Yamaha NS-10, Auratone cubes, Ed Long custom monitors.
Musical Instruments: Fairlight CMI III, Yamaha 7' grand piano, Yamaha DX7.
Video Equipment: Sony BVH-2800 1" video w/two PCM audio channels.
Other: Adams-Smith A/V 2600.

[24+] LONDON MUSIC, INC.
 5120 N. Florida Ave.
 Tampa, FL 33603
 (813) 238-3900
 Owner: Howard Conder
 Studio Manager: Ken Burchenel

[24+] LONE PINE RECORDING STUDIOS
 5024-A Simmons Rd.
 Orlando, FL 32812
 (305) 281-6881
 Owner: Michael Hurley

[24+] LUNDY RECORDING & CASSETTE DUP.
also REMOTE RECORDING
 PO Box 408
 Hidrick, KY 40949
 (606) 546-6650
 Owner: David Lundy
 Studio Manager: Duran Lundy

[24+] MAJESTIC SOUND STUDIO
also REMOTE RECORDING
 3800 Keith St.
 Cleveland, TN 37311
 (615) 472-8200
 Owner: Church of God of Prophecy (HDQ)
 Studio Manager: Thomas Duncan

S O U T H E A S T

24+ TRACK

STUDIOS

[24+] MARK FIVE/SANDCASTLE
also REMOTE RECORDING
 10 Michael Dr., PO Box 7620
 Greenville, SC 29610
 (803) 269-1111
 Owner: Rick Sandidge, Eddie Howard, Chris Cassels
 Studio Manager: Rick Sandidge

[24+] MASTER SOUND RECORDING STUDIO
also REMOTE RECORDING
 5249 Challedon Dr.
 Virginia Beach, VA 23462
 (804) 499-0000
 (804) 496-0553
 Owner: Robert E. Uish
 Studio Manager: Robert E. Uish
 Engineers: Robert Uish, Bruce Buehlman, Brent Havens, Mark Olmstead.
Dimensions: Room 1: studio 45 X 35 w/two isolation booths (10 x 12 and 10 X 8), control room 22 X 20. Room 2: studio 45 x 35, control room 18 X 12 MIDI room.
Mixing Consoles: Artek G 2520 40 x 24 x 80 returns with VCA bypass mode and Master Mix automation, Ramsa WRT 820 16-track 20 X 16 MIDI program console.
Audio Recorders: Sony/MCI JH-24 24-track with auto locator III, Otari MTR-12H 30 ips, 1/2" 1/2-track, (2) Tascam 52 1/2-tracks, Tascam 58 8-track recorder.
Cassette Recorders/Duplicators: (2) Tascam Z-7000 cassette recorder.
Noise Reduction Equipment: (2) dbx 180A 1/2 track units.

Synchronization Systems: Sony JH-45 SMPTE time code lock up, Southworth Jam Box IV SMPTE to MIDI, Sony JH-48 Video SMPTE lockup w/24-track.
Echo, Reverb, & Delay Systems: (2) Lexicon 200 stereo digital reverb, (2) Yamaha SPX90 stereo digital effects processor, Yamaha REV7 stereo digital reverb, Ibanez SDR-1000 stereo digital reverb, Eventide 969 Harmonizer/delay, Lexicon PCM41 digital delay, Lexicon PCM42 digital delay.
Other Outboard Equipment: (2) Drawmer DS 201 noise gates, Orban 424 A stereo compressor/limiter, LT Sound CLX-2 stereo compressor/limiter/exp., Universal Audio 175 tube limiter, Aphex Aural Exciter, Valley People 4-channel noise gate, (2) dbx 160X compressor/limiter, dbx 166 stereo compressor limiter, Artek 4-band fully parametric EQ, (2) Rane 1/3 octave stereo EQ.
Microphones: (2) Neumann TLM170, (6) AKG 414P-48, AKG TLM-414ULS, (8) AKG C451-460, AKG "The Tube", AKG D12E, Neumann U89, AKG D112, (6) Sennheiser 421, (2) Sennheiser 441, (17) add'l assorted dynamic microphones.
Monitor Amplifiers: Acoustal Trans Nova Twin 200 mos-fets, Kenwood Basic M-2 440 watts.

Monitor Speakers: (2) JBL/UREI 4435, (2) JBL 4411, (2) Yamaha NS-10, (2) Auratone, (2) Toa.
Musical Instruments: Yamaha C7 7'6" concert grand piano, Ludwig 7-pc acoustic drum set, Emulator SP-12 drum machine, Emulator II digital sampling keyboard with extensive library, Emulator Emx digital sampling keyboard, Fender Rhodes keyboard, Yamaha DX7, Yamaha FB01, Oberheim Matrix-6, Ensoniq ESQ, System 360 MIDI bass, (4) acoustic guitars (6- and 12-string), (5) electric Fender and Hamer guitars and basses, (3) Mesa/Boogie, Laney and Yamaha amplifiers, Martin D-35 Anniversary acoustic guitar.
Other MIDI Equipment: Apple Mac SE with 20 meg hard drive, Southworth Jam Box III SMPTE to MIDI controller, (3) Southworth MidiPaint, Performer, Digidesign Sound Designer, Apple IIe w/Synth sequencing program.
Video Equipment: Sony BVU-800 3/4" video recorder, Sony 19" color monitor, Sony JH-45 SMPTE video to 24-track controller.
Rates: 24-track \$85/hr., 16-track \$70/hr., video sweetening \$125/hr.

[24+] MASTER TRAK SOUND RECORDERS (STUDIO A & STUDIO B)
 413 N. Parkerson Ave.
 Crowley, LA 70526
 (318) 788-0773
 Owner: Jay Miller
 Studio Manager: Mark Miller

[24+] MASTERFONICS, INC.
 28 Music Square E.
 Nashville, TN 37203
 (615) 327-4533
 Owner: Glenn Meadows
 Studio Manager: Margaret Meadows



MASTERFONICS, INC.
 Nashville, TN

Dimensions: Control room 38 x 35.
Mixing Consoles: SSL-4000E 48 x 32.
Audio Recorders: Otari DTR-900 32-track, Otari MX-80.
Cassette Recorders/Duplicators: Awa F-660.
Synchronization Systems: Zeta III.
Echo, Reverb, & Delay Systems: EMT-250, EMT-252, (2) Lexicon 224XL, Publison Internal 90 21 sec. sample, Lexicon PCM70, Quantec room simulator, Eventide H969.
Other Outboard Equipment: LA-2A, (2) dbx 160X, (2) Neve 32254e compressors, Wendel percussion system, Sontec DRC, Sontec 2-channel parametric.
Microphones: M49, (2) Telefunken 251, AKG 441P48.
Monitor Amplifiers: FM Acoustics FM1000.
Monitor Speakers: Kinoshita/Hidley 2V 20Hz monitors.
Rates: Upon request.
Extras & Direction: First 20Hz monitor environment in the world. Must be heard to be appreciated.

[24+] MASTERLINK STUDIOS
 (A DIVISION OF AL JOLSON ENTERPRISES, INC.)
 31 Music Square W.
 Nashville, TN 37203
 (615) 242-1580
 Owner: Albert Jolson
 Studio Manager: Albert Jolson, Sean McMeheon
 Engineers: Sean McMeheon, Tony Gerber (MIDI programmer).
Dimensions: Room 1: studio 12 x 18, control room 10 x 12. Room 2: control room 10 x 12.
Mixing Consoles: Trident 24 36 x 24, Studer 169 8 x 4, Akai 12/12 12 x 12 (in MIDI room).
Audio Recorders: Tascam MS-16 16-track, Akai 12-12 12-track, Otari 5050 8-track, Studer A80 2-track, Studer A810 2-track w/center track time code, Studer B67 2-track, Nakamichi DMP-100 2-track A-D processor.
Cassette Recorders/Duplicators: Nakamichi MR-1 2-track.
Noise Reduction Equipment: (2) Dolby 361 w/Dolby SR and Type A cards.
Echo, Reverb, & Delay Systems: AMS AMX-16 digital reverb, (2) Lexicon PCM70 digital effects processor, Lexicon 200 digital reverb, Lexicon Super Prime Time digital delay, (2) Yamaha SPX90 digital effects processor, Roland DEP-5, Eventide 949 Harmonizer.
Other Outboard Equipment: Summit Audio tube leveling amplifier, Sontec parametric equalizer, API 5502 discrete EQ, Valley International PR-10 rack w/Kepex, Gain Brains, Commanders, (2) US Audio Gate quad and noise gates, Symetrix 522 stereo comp/limiter, Symetrix 501 compressor/limiter, Symetrix CL-150 compressor/limiter, Barcus-Berry BBE-202A, (2) Aphex Type B Aural Exciter.
Microphones: Neumann U87, Neumann KM84, Sony C-48, AKG 414, (2) Sennheiser MK40, (3) Sennheiser 421, (4) Countryman EM-101, Shure SM57, (3) Audio-Technica.
Monitor Amplifiers: (2) Crown Micro-Tech 1000, (2) Studer A-68, (6) Yamaha P2200.
Monitor Speakers: (2) Westlake BBSM-10, (2) B&W BM-100, (2) Yamaha NS-10, (2) E-V Sentry 100, (2) Auratone Sound Cubes.
Musical Instruments: Kawai grand piano w/MIDI controller, Roland MKB-1000 88-key MIDI controller, Emulator II+HD, Akai S900 w/audio input triggers, Roland D-550, Roland Super Jupiter w/programmer module, Yamaha TX816 rack w/8 modules, Oberheim Matrix 6-R, Moog Minimoog, Roland DDR-30 "digital drums" w/pads, Roland Octapad, Gretsch drum kit w/MIDI triggers, Roland GM-70 guitar-to-MIDI converter.
Other MIDI Equipment: Macintosh II w/color monitor and graphics, animation software, Macintosh Plus w/20 meg HD, JL Cooper MSB 16/20 MIDI switcher, Southworth Jambow IV SMPTE interface.
Video Equipment: (2) Sony SLHF-600 1/2" Super Beta, Minolta 1/2" VHS, Minolta K-800S AF color video camera.

[24+] FAITH PRODUCTIONS
also REMOTE RECORDING
Rt. 2, Box 1012
Cleveland, TN 37311
(615) 478-7251
Owner: Church of God
Studio Manager: Mike Baker

[24+] FANTA PROFESSIONAL SERVICES
also REMOTE RECORDING
1213 16th Ave. S.
Nashville, TN 37212
(615) 327-1731
Owner: John Rosen
Studio Manager: Robin Victor

[24+] FLAMINGO STUDIOS
2195 Lake Bradford Rd.
PO Box 2434
Tallahassee, FL 32316
(904) 576-4741
Owner: Charlie Roberts
Studio Manager: Dorene Giblin

[24+] FLOOD ZONE STUDIO
11 S. 18th St., PO Box 7105
Richmond, VA 23221
(804) 644-0935
Owner: Mason Wyatt, Bruce Olsen, Steve Payne
Studio Manager: M. Wyatt

[24+] GATLIN BROS. MUSIC RESOURCES, INC.
254 Cedarview Dr.
Antioch, TN 37013
(615) 834-9944
Owner: Gatlin Bros., Michael G. Smith
Studio Manager: M. Smith

[24+] GERMANTOWN RECORDING STUDIO
1209 4th Ave. N.
Nashville, TN 37208
(615) 244-8019
Owner: Michael Bridges
Studio Manager: Michael Bridges

[24+] GHL AUDIO ENGINEERING
also REMOTE RECORDING
2807 Azalea Pl.
Nashville, TN 37204
(615) 269-5183
Owner: Gary Hedden Ltd
Studio Manager: Jim Kaiser

[24+] GOLD MINE STUDIO
2020 Sunnyside Dr.
Brentwood, TN 37027
(615) 373-8840
Owner: Chris Christian
Studio Manager: Michael G. Koreiba

[24+] GRAND CENTRAL STUDIO
1708 Grand Ave.
Nashville, TN 37217
(615) 321-5140
Owner: Pat Patrick
Studio Manager: Kent Madison

[24+] GREAT CIRCLE SOUND
365 Great Circle Rd.
Nashville, TN 37228
(615) 742-6800
Owner: The Benson Co
Studio Manager: Bob Clark

[24+] HAYES RECORDING STUDIOS
2406 S. MacDill Ave.
Tampa, FL 33629
(813) 837-6384
Owner: Paul Hayes
Studio Manager: John Uhrig
Engineers: John Uhrig, Bob Bodell, independents welcome.
Dimensions: Studio 20 x 24 x 12, isolation rooms 8 x 9 and 8 x 10, control room 20 x 15 x 9
Mixing Consoles: Sphere A 32 x 16 custom.
Audio Recorders: Ampex MM-1200 24-track, Studer A80RC 2-track 1/2" and 1/4", (2) Ampex 440-B 2-track, Ampex 440-B full-track, Scully 280-B 2-track.
Cassette Recorders/Duplicators: Studer A710
Noise Reduction Equipment: dbx 24-channel.
Synchronization Systems: Audio Kinetics 3.10 controller and 4.10 brain (SMPT-E).



HAYES RECORDING STUDIOS
Tampa, FL

Echo, Reverb, & Delay Systems: Lexicon Model 200, BAE LP 140 plate, DeltaLab DL-2, Eventide H910, MXR II delay system, DeltaLab ADM2048 Super Time Line.
Other Outboard Equipment: (2) dbx 160 compressor, (2) Audioarts 4200 parametric, Orban 516EC de-esser, ADR Vocal Stresser, EXR 3 exciter, UREI 539 room EQs, (8) US Audio Gate, Symetrix SG200 noise gates, UREI 960 digital metronome, Technics SP-25 turntables, Countryman direct boxes, Symetrix TI-101 telephone interface, Spectra Sonics 601 limiters, Yamaha SPX90.
Microphones: Neumann U87, Neumann U48A (tube), AKG 414/P48, AKG 452EB, AKG 451E, AKG D202, Beyer M160N, E-V RE20, E-V RE16, E-V 666, Shure SM54, Shure SM58, Sennheiser MD-421, RCA 77DX, RCA 44DX, Sony C-37 (tube), Countryman 85, Wahrenbrock PZM.
Monitor Amplifiers: Crest P3500, Crest 2501S, McIntosh 2105 (phones)
Monitor Speakers: E-V Sentry III, E-V MDM4, Auratone 5C, E-V Sentry 1A.
Musical Instruments: Marshall and Wendall grand pianos, Hammond organ w/Leslie, Deagan electric chimes, Ludwig drums w/Zildjian cymbals, Scholz Rockman X-100B, Fender Twin guitar amps, various percussion, Emulator II+, Oberheim OB-8, RX11 drums.

Other MIDI Equipment: Macintosh Plus 1 MB computer w/Mark of the Unicorn, Southworth, Opcode and Digidesign hardware/software.
Rates: Available upon request. Flexible packages available.

[24+] HOLBROOK MEDIA PRODUCTIONS
also REMOTE RECORDING
2143 W. Main St.
Jeanerette, LA 70544
(318) 276-6267
Owner: Bob & Kim Holbrook
Studio Manager: Bob Holbrook

[24+] JAY HOWARD PRODUCTION AUDIO INC.
307 Atherton St.
Charlotte, NC
(704) 525-7864
Owner: Jay Howard
Studio Manager: JoAnn Jeffries

[24+] ISLAND RECORDING STUDIO
only REMOTE RECORDING
17501 Lakeshore Rd.
Lutz, FL 33549
(813) 962-2709
Owner: David Artis
Studio Manager: David Artis

[24+] KCAM-TV TELEVISION PRODUCTIONS
also REMOTE RECORDING
827 Meridian St.
Nashville, TN
(615) 226-9589
Studio Manager: Brenda Bridges

[24+] KIVA RECORDING STUDIO
904 Rayner
Memphis, TN 38114
(901) 278-1888
Owner: Gary Belz
Studio Manager: Keith Seppanen
Engineers: Keith Seppanen
Mixing Consoles: SSL 4000E 40 x 32 w/Total Recall, Harrison MR-3 28 x 24.

—CONTINUED ON NEXT PAGE

Art vs. Money.



"I've made huge compromises in my music before, and I was very unhappy with the outcome. Why even do it if it ends up sounding like someone else's?"

Music as a part-time endeavor can be beneficial

because it doesn't really require much personal sacrifice. But if you choose it full-time, you've automatically put yourself in the position of doing whatever it takes to make money. And you could still fail. If you fail doing something you love and believe in, at least you had the pleasure of satisfying yourself."

Howard Kleinfeld
Songwriter, sound producer, recording artist, all-around musician



"I have a certain pride in my playing. I've worked long and hard to perfect my sound. And when I'm asked to do a recording session or gig, I would hope I was chosen for those reasons."

However, now and then producers have quite a different idea of the way my part should be played. Of course, I must realize I was hired to do a job. After all, why should artistic compromises be any different than ones made in any other job? I decided long ago that feeding my ego was not worth denying the possibility of creating a comfortable existence for myself."

A.J. Altieri
Drummer, percussionist

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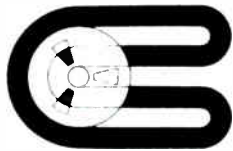
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criteria recording studios

CRITERIA RECORDING CO.
Miami, FL

[24+] CRITERIA RECORDING CO.
1755 NE 149th St.
Miami, FL 33181
(305) 947-5611
Owner: Mack Emerman
Studio Manager: Margie Curry
Dimensions: Room A: studio 46 x 67, control room 14 x 17
Room C: studio 25 x 32, control room 15 x 16. Room D: studio 14 x 22, control room 17 x 19. Room E: studio 50 x 50, control room 23 x 26
Mixing Consoles: (2) Solid State Logic 6000E 48 x 32, MCI 532C 32 x 32, (2) MCI 532B 32 x 32, MCI 556D 48 x 32
Audio Recorders: Mitsubishi X-800 32-track, (2) Otari MTR-90 24-track, (2) MCI JH-24 24-track, (2) Mitsubishi X-80 2-track, (2) MCI JH-110B 4-track, (3) MCI JH-110B 2-track
Cassette Recorders/Duplicators: (5) Yamaha K-1020, (5) Yamaha K-540
Noise Reduction Equipment: dbx 900 rack 8 units, (5) Dolby 24 units
Synchronization Systems: Audio Kinetics Q Lock 3.10, MCI JH-45
Echo, Reverb, & Delay Systems: (3) live stereo chambers, (4) Ecoplates, EMT 251, Lexicon 224XL, AMS RMX, AMS DMX 1580-S, (2) Yamaha REV7, (2) Lexicon PCM41, (6) Lexicon PCM42
Other Outboard Equipment: Focusrite EQ modules, Lexicon 480L, Eventide 2016, (4) Drawmer gate systems, (2) Yamaha SPX90, (2) Lexicon PCM70, Kepex II, (8) Pultec EQs, (3) UREI LA-2A tube limiters
Microphones: AKG C-24 tube stereo, (4) Neumann U47 tubes, (2) Neumann U47 FET, (8) AKG 414, (6) AKG 452 EB, (5) Beyer 260, (12) Schoeps Collette Series, various capsules, (4) Sennheiser MD-421, (2) Schoeps CMT-501 stereo, (10) Neumann U87, (8) Shure SM57, (2) Shure SM7
Monitor Amplifiers: (7) McIntosh amps, (2) UREI 6500, (2) APT-1 amps
Monitor Speakers: (2) Criteria custom tri-amped systems, (3) Criteria/ED Long custom monitors, (3) Yamaha NS-10, ADS 810
Musical Instruments: Set of Rogers drums, (2) Baldwin SD10X 9' concert grand pianos, Mason Hamlin 9' piano, (2) Fender Rhodes, (2) Hammond B-3 organs
Video Equipment: JVC CR8200 3/4" VCR
Other: (4) Magna-Tech 35/16 dual dubbers, Magna-Tech 3-track recorder, (2) film projectors (35/16mm)
Rates: By request

[24+] CROSSTOWN AUDIO
2135 Defoor Hills Rd. NW, Ste. I
Atlanta, GA 30318
(404) 352-4790
Owner: Brandon Wade, Jon Aaron
Studio Manager: Jon Aaron

[24+] DECIBELS UNLIMITED PRODUCTIONS
3342 T.C.U. Blvd.
Orlando, FL 32817
(305) 657-6481
Owner: Robert A. McBride

[24+] DELSHAY STUDIOS & RESORT COMPLEX
452 Granada Blvd.
Warm Mineral Springs, FL 34287
(813) 426-2063
Owner: David Lipuralo
Studio Manager: Ricardo-Rick-Mozo

[24+] JIM DEVITO'S RECORDING STUDIO
also REMOTE RECORDING
6249 AIAS
St. Augustine, FL 32084

178 MIX, MARCH 1988

Owner: Wayne Moss
Studio Manager: Wayne Moss

176 MIX, MARCH 1988

SOUTHEAST 24+ TRACK STUDIOS

(904) 471-0506
Owner: Jim DeVito
Studio Manager: Bill Parker

[24+] DIGITRACKS MIDI SEQUENCING
6219 SW 78 St.
South Miami, FL 33143
(305) 667-4373
Owner: Mark Hill
Studio Manager: Kay O'Neil

[24+] DOPPLER STUDIOS, INC.
1922 Piedmont Circle
Atlanta, GA 30324
(404) 873-6941
Owner: Pete Caldwell
Studio Manager: Pete Caldwell
Engineers: Bill Quinn, Joe Neil, Curt Bush, Granger Beem, Mitch Eaton, Steve Schwartzberg, Wayne Murray, Steve Simmons
Dimensions: Room 1: studio 35 x 50, control room 26 x 28
Room 2: studio 35 x 50, control room 26 x 28. Room 3: studio 25 x 35, control room 15 x 17. Room 4: studio 15 x 20, control room 10 x 15. Room 5: studio 12 x 15, control room 15 x 13.
Mixing Consoles: SSL 4000E 34 x 24, Sphere Eclipse C 40 x 24. Sphere A 28 x 24, Audionics 110-A 20 x 4, custom 8 x 8
Audio Recorders: (2) Otari MTR-90II 24-track, Otari MTR-90 24-track, 3M M-79 24-track, Otari MTR-10 4-track, (2) Ampex ATR-102 2-track, (9) Otari MTR-10 2-track
Cassette Recorders/Duplicators: Nakamichi MR-1, (11) Nakamichi MR-2
Noise Reduction Equipment: dbx
Synchronization Systems: (2) Softouch Systems
Echo, Reverb, & Delay Systems: (2) Lexicon 224XL, Lexicon PCM70, Eventide 969 Harmonizer, Lexicon Prime Time II, (2) Yamaha SPX90II, (2) EMT plates, Marshall Time Modulator, Eventide 1745M
Other Outboard Equipment: (7) dbx 165X limiter/compressors, ADR Vocal Stresser, Aphex compellor, (2) Allison Kepex II, (2) Allison Gain Brain II, (4) dbx 160 compressors, Orban parametric equalizer, Orban de-esser, UREI 1176LN compressor
Microphones: (8) Neumann U87, (2) Neumann U67, (2) Neumann KM84, (2) Neumann KM85, Neumann U64, (2) Studer SKM5, (4) AKG 414-EB, (2) AKG C452, (4) Sennheiser 441, (8) Sennheiser 421
Monitor Amplifiers: (2) UREI 6500, (8) Hafler P500
Monitor Speakers: (6) UREI 813B, (8) EAW MS-30, (2) Yamaha NS-10, (4) JBL 4311, (4) AR-18, (12) Auratone
Musical Instruments: Steinway B grand piano, Baldwin baby grand piano, Ludwig drums, Hammond B-3 organ, (3) Fender amps
Video Equipment: Sony BVH-1000A 1" Type C w/TBC, (3) Sony VO-5850 3/4" U-matic, Sony VO-5800 3/4" U-matic
Other: (2) Plycord active cue systems
Rates: Upon request

[24+] DUFAY DIGITAL MUSIC
also REMOTE RECORDING
2610 Charter Court
Murfreesboro, TN 37130
(615) 898-1653
Owner: Dr. Frederick J. Bashour
Studio Manager: Mac Intosh

[24+] EBS, INC.
1125 Moore Duncan Hwy, PO Box 66
Moore, SC 29369
(803) 574-6104
Owner: Duane Evans, Joseph Evans
Studio Manager: Lyndon Vestal
Engineers: Duane Evans, Denver Wright, Babe Williamson, David Rochester
Dimensions: Studio 50 x 60, control room 24 x 20
Mixing Consoles: MCI JH-600 28 x 24
Audio Recorders: MCI JH-24 24-track, MCI JH-110B 2-track, Ampex 2-track, TEAC 3340 4-track, Recordex CS-4000, GT4-A duplicator 5 bays, 8-1
Cassette Recorders/Duplicators: Nakamichi MR-1, (2) TEAC cassettes
Echo, Reverb, & Delay Systems: Yamaha REV-1, Yamaha REV7, Lexicon PCM60, plate, Eventide H-949, Electra EP-500, DDL, Master Room stereo reverb, MXR digital time delay, Lexicon PCM41, Roland SDE-1000 DDLs
Other Outboard Equipment: dbx 165, dbx 160, Teletronix LA-3A, UREI 1176, Audioarts stereo parametric EQ, Aphex Type C

Dimensions: Studio 32 x 22, control room 17 x 20
Mixing Consoles: Trident Series 80 32 x 24

Aural Exciter, Furman QN-4, Soundcraftsmen SP-4002 signal processor
Microphones: Neumann U47, AKG 414, E-V RE20, AKG D202, Sennheiser MD-421, Neumann KM84, Shure SM57, Shure SM58, Shure SM53, E-V PL77
Monitor Amplifiers: (3) Crown DC-300A, (2) Crown D60
Monitor Speakers: UREI 839A, JBL 4331, JBL 4311, JBL 4301, Auratone cubes, Yamaha NS-10M
Musical Instruments: Vintage Mason and Hamlin grand, Hammond B-3000, Leslie 722, PolyMoog, MicroMoog, Yamaha DX7, Emulator II, Tama Techstar electronic drums, Fender Strat, Gibson Les Paul, Fender Precision, congas, assorted rhythm instruments
Video Equipment: Available at extra charge
Rates: \$80/hr, call for day and block out rates

[24+] ELEVEN-ELEVEN SOUND
1111 17th Ave. S.
Nashville, TN 37212
(615) 329-1111
Owner: Larry Butler
Studio Manager: John Abbott
Engineers: John Abbott, Rodney Good, independents
Dimensions: Studio 34 x 36, control room 12 x 14
Mixing Consoles: Neve V-series III 48 x 48
Audio Recorders: Mitsubishi 850 32-track (digital), Studer A80 24-track, Mitsubishi X-80A 2-track (digital), Studer A80 2-track, Studer B67 2-track, Studer A67 2-track
Echo, Reverb, & Delay Systems: Lexicon 224XL w/LARC, Lexicon 224, EMT 140, EMT 162
Other Outboard Equipment: GML moving fader automation, Lexicon Prime Time, TC Electronic 2290, Valley People 440 limiter/compressor, Harmonizer
Microphones: Neumann 249 tube, 67 tube, 47 FET, 87s, KM84s; AKG: 462, 414; Sennheiser 421, E-V, Sonys
Monitor Amplifiers: McIntosh 2500, BGW 600, BGW 250s, Crown 150 and 60s, Sony
Monitor Speakers: Sierra Audio w/oak dispersion horns, Yamaha NS-10M
Musical Instruments: Steinway 9' grand w/Forte Music MIDI, Yamaha DX7, Rhodes piano, Wurlitzer piano, Hammond B-3, congas
Rates: Available upon request

[24+] BERT ELLIOTT SOUND
also REMOTE RECORDING
2080 Peachtree Ind. Ct., Ste. 114
Atlanta, GA 30341
(404) 452-1140
Owner: Bert Elliott
Studio Manager: Margie Gorney

[24+] EMS RECORDING STUDIO
Rio Maravilla St., AP-13 Rio Hondo
Bayamon, PR 00619
(809) 784-5624
Owner: Eddie Fernandez
Studio Manager: Ronnie Torres
Engineers: Ronnie Torres, Ito Serrano, Eddie Fernandez
Dimensions: Studio 30 x 20, control room 15 x 15
Mixing Consoles: Trident Series 75 28 x 56
Audio Recorders: Otari MX-80 24-track (pre-wired 32), Otari MTR-12C 2-track, Ampex 4400C 2-track, Tascam 32B 2-track
Cassette Recorders/Duplicators: Tascam 144, Sony DAT
Noise Reduction Equipment: Dolby 162 stereo, Dolby 166, (2) Valley People 440
Synchronization Systems: (3) Lynx TimeLine, Foxtex
Echo, Reverb, & Delay Systems: Lexicon 200, Lexicon 460, Lexicon 70, Yamaha REV7, Yamaha SPX90, Lexicon PCM41, Roland 2000, Foxtex digital delay, DeltaLab Compu-effectron, Ibanez 2000
Other Outboard Equipment: Yamaha 3-band Professional Series EQ, (2) Foxtex EQ, Aphex Studio Dominator, Aphex compellor, Aphex Aural Exciter, GateX noise gate, mic preamp
Microphones: Neumann 87, Neumann 47, (2) AKG 414, (8) AKG S190, (3) Shure 57, (2) Sennheiser 421, Sennheiser 441, AKG D-12, (2) Shure 58
Monitor Amplifiers: Crown 1200 Micro-Tech stereo, Crown 150, (2) HH Electronic 400 watts each
Monitor Speakers: (2) JBL 4333, (2) Foxtex RM780, (2) Auratone 5C, (2) JBL LT1
Musical Instruments: Emulator II w/optical media hard disk, Roland MKS-20 digital piano, Yamaha DX7, Yamaha DX21, (5) Yamaha TX, Yamaha KX88, Roland D-50, Roland Juno 106, Roland Juno 1, Ensoniq ESQ-1, SP12, Yamaha PF15, Yamaha GS2, Korg DW-8000, Roland 727 Percussion, Simmons head, Roland digital drum w/pads
Other MIDI Equipment: Apple IIE w/Master Tracks and Polywriter programs, Macintosh 512K w/Master Tracks Pro
Video Equipment: JVC 8050 3/4" (2) TV color monitors
Rates: Call for rates on 24 tracks and video and audio sync
Extras & Direction: We are dedicated to jingle productions and albums as well. For local artists and Spanish singers in general. EMS offers the highest quality in compositions, arrangements and musicians, with vast experience in the music field

Owner: Dennis Baxter, Spencer Metzger
Studio Manager: Laura Connelly

S O U T H E A S T

LOCATION INDEX

STUDIOS

All studio information listed has been supplied to *Mix* by studios responding to questionnaires mailed in December 1987. People, equipment and locations change, so please verify critical information with the studios directly. *Mix* does not take responsibility for the accuracy of the information supplied to us by the studios.

ALABAMA		
8 Anniston		
8 Leatherwood Sound	198	
Auburn		
24 Rainbow River Studios	184	
Birmingham		
24 Boutwell Recording Studios, Inc.	175	
16 Kytchen Sync	192	
24 Polymusic Studios, Inc.	184	
24 Sound of Birmingham	186	
16 Studio One Sound	194	
Calera		
16 Sound Stage Music Co.	194	
Cleveland		
8 Triangle Media Productions	203	
Decatur		
16 Birdland Recording Studios, Inc.	189	
Dothan		
24 Studio Four	187	
12 T.C. Enterprises Studio	195	
16 Wildwood Recorders	195	
Fayette		
8 Flare Audio Recording	197	
Gadsden		
16 Grapevine Studios	191	
Greenville		
4 Ridge Recording Studios	200	
Hueytown		
12 Bates Brothers Recording	189	
Huntsville		
8 Ground Level Sound	197	
24 Sound Cell	186	
Jasper		
8 Front Row Productions, Inc.	197	
Lafayette		
16 Oak Bowery Recording	193	
Lexington		
8 Woodrich Recording Studio	203	
Mobile		
16 Dogwood Recording	190	
2 Nomad Productions	200	
16 Southern Sound Productions & Studios	194	
Montgomery		
16 Studio B	194	
Ozark		
16 L.A. East Recording Studios	192	
Sheffield		
24 Broadway Sound Studio, Inc.	175	
16 Cactus Recording Studio, Inc.	190	
Smith Station		
24 Studio "7" Recording Co.	187	
Tuscaloosa		
8 Druid City Sound	197	
8 Orange Street Recorders	200	
16 Underground Sound	195	
Tuskegee		
8 Sound Shack Recordings	202	
Tuskegee Institute		
4 Nan & Associates Inc. Studio	200	
FLORIDA		
Bartow		
16 Real To Reel Recording Studio	193	
Bradenton		
8 Tric Tracs	203	
Clearwater		
8 Pink Pelican Music Co.	200	
8 WKRL Radio	203	
Cocoa Beach		
8 Digitrax Productions, Inc.	197	
Deerfield Beach		
16 L-7 Studios	192	
24 Spectrum Recording Studio	187	
Delray Beach		
8 Lady Sabre's Dungeon	198	
16 Red D Productions	193	
Dover		
8 Debra J. Studios	197	
Edgewater		
24 Cont Studio	176	
8 Omni Recording	200	
Estero		
16 Important Recording Studio	191	
Fort Lauderdale		
24 New River Studio	183	
24 Soundshine Productions, Inc.	186	
24 Total Tape Company	188	
4 Video Ideas	203	
Ft. Myers		
8 Steve Rogers Productions	202	
Gainesville		
24 Mirror Image Recording	182	
Hialeah		
24 Sound International Corporation	186	
Hollywood		
16 Hollywood Sync	191	
8 Perspect Audio	200	
Jacksonville		
24 August Recording Studio	175	
8 Christian Recording	196	
16 Key Recording Studio	192	
16 Mangum/Alford Recording Studio	192	
8 Rick Painter Sound Studio	200	
16 Sage Productions	194	
24 The Warehouse Recording Studio	188	
Jacksonville Beach		
16 Izzit Reel Productions	191	
8 Studio Hell	203	
Jupiter		
16 Charisma Sound Productions, Inc.	190	
8 T&S Studio	202	
Kissimmee		
12 MIDI Sound Recording Center	192	
Lake Park		
8 Silhouette Studios	202	
Lutz		
24 Island Recording Studio	179	
Margate		
12 Bottom Line Studio	189	
Melbourne		
16 Hummingbird Recordings	191	
Miami		
24 Pat Appleton Studios, Inc.	174	
16 Computers & Music	190	
24 Criteria Recording Co.	178	
24 Digitracks MIDI Sequencing	178	
24 Limelite Video	180	
24 Miami Sound Studio	182	
8 Pinegrove Studio	193	
8 Prosound Labs, Inc.	200	
24 Rain Moon Studio	193	
24 SKD Inc. Recording Studio	185	
24 South Coast Recording Co.	187	
16 Tamiami Productions, Inc.	194	
16 Tropical Recording Studio	195	
Milton		
16 Audio Concepts Recording Company	189	
8 Audio Recording & Duplicating (+MIDI)	196	
Mount Dora		
16 Cloud Nine Recording	190	
Naples		
4 Reason's Edge Recording Studio	200	
New Smyrna Beach		
24 Crawford Productions	176	
North Miami		
24 Quadradial Cinema Corp.	184	
4 Real To Reel	200	
16 Sound Design	194	
16 Soundtrack, Inc.	194	
24 Studio Center Sound	187	
North Miami Beach		
24 Airwave Recording Company	174	
Ocoee		
24 Starke Lake Studios	187	
Orlando		
8 Bob Barnes Creative Services	196	
2 BGA Production Services	196	
24 Century III Teleproductions	176	
24 Decibels Unlimited Productions	178	
16 FMR - Magic Music	191	
24 Lone Pine Recording Studios	180	
24 Parc Studios	183	
8 Platinum Productions of Central Florida, Inc.	200	
4 Sound Stage	202	
8 X Communications Studio One	203	
Pensacola		
24 Soundtrek Recording Studio	186	
Pinellas Park		
8 FreeLance Productions	197	
Pompano Beach		
8 Hirdler Enterprises	198	
Port St. Lucie		
16 Mastercraft Recording	192	
St. Augustine		
24 Jim DeVito's Recording Studio	178	
St. Petersburg		
8 Hayes Recording	198	
8 Protolog Inc.	200	
8 The Time Machine Recording & Duplicating	202	
Sarasota		
24 Telstar	188	
Spring Hill		
16 Leavell Studio	192	
Sunrise		
24 Lambtron Inc. Recording Service	180	
8 Loconto Productions & Studios	198	
16 Sound Picture Recording	194	
Tallahassee		
24 Flamingo Studios	179	
8 The Mighty Mix	199	
16 Spectrum Studios	194	
4 WFSU-FM	203	
Tampa		
8 A/V Consultants	196	
8 Full Sky Recording & Production Studio	197	
24 Hayes Recording Studios	179	
8 Horizon Productions	198	
8 Just In Productions	198	
24 London Music, Inc.	180	
24 Morrisound Recording	182	
8 Musical Refuge Studios	199	
4 Nomadd IV	200	
16 Progressive Music Studios	193	
8 Ron Rose Productions, Inc.	193	
8 Senseless Productions	202	
Warm Mineral Springs		
24 Delshay Studios & Resort Complex	178	
West Palm Beach		
16 Steve Miles Audio Productions	193	
24 Saturn Sound Studios Inc.	184	
Winter Haven		
8 Happy Faces Productions	198	
GEORGIA		
Albany		
16 Boone Sound	189	
Alpharetta		
16 Witness Productions	195	
Americus		
8 Davis Productions	197	
Athens		
8 High Spirits Recording	198	
16 John Keane Studio	192	
Atlanta		
24 Arcadia Productions & Recording Studio	174	
8 Audio Craft	196	
16 Audio Works Production Services Inc.	189	
12 Black & Silver Studio	189	
24 CatsPaw Productions	176	
24 Cheshire Sound Studios	176	
24 Crawford Post Production, Inc.	176	
24 Creative Sound Concepts	176	
24 Crosstown Audio	178	
4 DCO Lab, Inc.	197	
24 Doppler Studios, Inc.	178	
8 Dub Studio Div. of Tech Sound Inc.	197	
4 Ebony Star/Briefcase of Talent	197	
24 Bert Elliott Sound	178	
24 Monett Media (Ambisonics)	199	
24 Musiplex	183	
24 New Age Sight & Sound	183	
24 O'Connell Productions, Inc.	183	
16 Oliverio Music, Inc.	193	
4 Project 70 Audio Services, Inc.	200	
24 Sam's Tape Truck	184	
24 Sound Lab, Inc.	186	
24 Soundscape Studios	186	
24 Southern Tracks Rec. Studio	187	
8 Stonesilk Audio	202	
8 The Sync Productions	202	
24 Twenty-Five Sixty Recording Studio	188	
Augusta		
24 Studio South	187	
Avondale Estates		
8 Synginner Sound	202	
Brunswick		
8 Forrest Anderson Recording Studio	197	
Carrollton		
16 Coley Recording Studio	190	
Chamblee		
16 Excot	190	
Columbus		
8 Mr. O Audio	199	
Covington		
24 The Peach	184	
8 Protracks	200	
Doraville		
24 Studio One	187	
Douglasville		
4 Bright Star Music	196	
Fort Oglethorpe		
16 The Sound Room, Inc.	194	
Gordon		
8 Trey Records	202	
Jonesboro		
8 Chile Studios	196	
La Grange		
8 The Balance Recording Company	196	
Lawrenceville		
16 Oracle Recording Studio	193	
Lithia Springs		
24 Transmedia Productions, Inc.	188	
Macon		
8 AC Productions	196	
16 Amazing Music	189	
4 McDonald Sound Studio	199	
2 Mercer University Educational Media Center	199	
8 Pyramid Sound Labs	200	
Marietta		
8 Davroy Studio	197	
16 Total Tracs, Inc.	195	
Milledgeville		
4 Cheapskateboard Productions	196	
Norcross		
4 East American Recordings (East American Entertainment)	197	
8 R.W. Studio	202	
Rome		
16 Willow Creek Recording Studios	195	
Savannah		
16 Twenty-Two International Recording	195	
Smyrna		
8 Atlantis Audio Innovations	196	
24 Perfection Sound	184	
24 Twelve Oaks Studio	188	
Snellville		
8 Sound Effects Studio	202	
Stockbridge		
16 Real To Reel Studio, Inc.	193	
Stone Mountain		
16 Penguin Studio	193	
Warner Robins		
8 D&J Studios	197	
Waycross		
16 Tracks Recording Studio	195	

Other Outboard Equipment: (2) Teletronics LA-2As, (2) Pultec EQs, (2) Focusrite EQs, (4) Kepex gates, Scamp mini rack EQ, (2) UREI 1176 limiters, Trident compressor/limiter, Drawmer DS-201 noise gate, dbx 165A compressor/limiter, dbx 166 stereo compressor, Tube Tech PE-1B, (2) ADR Vocal Stressors. Microphones: Complete selection of: Neumann, AKG, Shure, Sennheiser, E-V (3) U48, (2) U67, M50, M250, U47, SM2, KM54, KM84, M249, Altec 29B. Monitor Amplifiers: (3) Bryston 4B on main, Yamaha 2201 on alternates, BGW 250s on cue. Monitor Speakers: UREI 813, Yamaha NS-10, Fostex RM 780, JBL 4430 bi-radial. Musical Instruments: Bosendorfer grand piano, Hammond B-3 organ w/Leslie, Fender Rhodes, tack piano (upright), Yamaha DX1, Roland Octapad, Roland TR-808 drum machine, Fairlight CMI system II-X. Other MIDI Equipment: Akai S900 sampler, Yamaha OX1 sequencer, Yamaha MIDI rack (DX7s), Yamaha MJC8 MIDI patcher, Simmons SDS7 w/SDS6 sequencer, Oberheim Matrix 6R. Other: Fairlight CMI Series III. Rates: Upon request

[24+] CATSPA W PRODUCTIONS
3033A Maple Dr. NE
Atlanta, GA 30305
(404) 233-3173
Owner: CatsPaw Productions, Inc.
Studio Manager: Brad Jones

[24+] CENTURY III TELEPRODUCTIONS
5000 Eggleston Ave.
Orlando, FL 32804
(305) 297-1000
Owner: Ross Cibella
Studio Manager: Oliver Peters

[24+] CHANDLER AUDIO
also REMOTE RECORDING
1617 W. Midland Trail Rd.
PO Box 5629
Ashland, KY 41105
(606) 928-9507
Owner: Chandler Audio, Inc.
Studio Manager: Ed Lambert
Engineers: Dick Hawkins, Ed Lambert, Otis Dillon, Denny Chandler
Dimensions: Studio 22 x 24, control room 19 x 16.
Mixing Consoles: Harrison 3624 36 x 24 w/automation.
Audio Recorders: Studer A80 24-track, Ampex ATR-800 2-track.
Cassette Recorders/Duplicators: (2) Nakamichi BX-300
Synchronization Systems: Lynx TimeLine
Echo, Reverb, & Delay Systems: Klark-Teknik DN-780, (2) Yamaha REV7, Ibanez SDR-1000+, Lexicon PCM60, Yamaha SPX90II, Korg SDD-3000, Ursa Major Space Station, ADA STD-1, Lexicon Prime Time, Roland chorus/echo.
Other Outboard Equipment: Dyna-Mites, (2) UREI 1176, (4) Ashly comp/limiters, (2) dbx 160X comp/limiters, Aphex comp/ellor, Orban de-esser, Barcus-Berry BBE, White EQ, Gate noise gates, Aphex B.
Microphones: AKG: The Tube, 414s, Neumann U87, KM84s, Sennheiser 421, 441, Shure SM7, 54, 57, 58, 81, 330; E-V RE20, Crown PZMs; Beyer M300.
Monitor Amplifiers: Crown
Monitor Speakers: UREI 813B, JBL 4311, Yamaha NS-10, Auratones, E-V 100s.
Musical Instruments: Yamaha C-5 grand piano, Yamaha DX7, TX7, GS-2, Oberheim OB-8, Matrix 6, DPX-1, DMX, Roland MKS-20, MKS-30, MKS-70, D-50, 707, 727, 360 Systems digital keyboard, Linn 9000 w/Forat custom mods, Ensoniq ESQ/II, Akai S612, Sequential Prophet-5 w/MIDI, Rogers drum kit, Music Man electric bass, Musser vibes & orchestra bells.
Other MIDI Equipment: Digital Creations patch bay, IBM PC, Macintosh computer w/librarian software, Roland SBX-10 sync box.
Video Equipment: JVC 6250 3/4" U-Matic facilities available in-house and remote.
Rates: On request

[24+] CHESHIRE SOUND STUDIOS
2093 Faulkner Rd. NE
Atlanta, GA 30324
(404) 321-3886
Owner: T.G. Wright Jr.
Studio Manager: Wynette Smith

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

S O U T H E A S T 24+ TRACK STUDIOS



COMMERCIAL MUSIC RECORDING COMPLEX
Memphis, TN

[24+] COMMERCIAL MUSIC RECORDING COMPLEX
Memphis State University
Dept. of Music, MSU
Memphis, TN 38152
(901) 454-2559
Owner: Memphis State University
Studio Manager: Larry Lipman
Engineers: Larry Lipman, advanced students in audio degree program
Dimensions: Studio A: 60 x 60 x 20, studio B: 23 x 16 x 20, control room: 20 x 16 x 12, electronic music lab 16 x 10 x 12
Mixing Consoles: MCI JH-636 36 x 24
Audio Recorders: MCI JH-24 24-track, Otari 5050 MkIII-8 8-track, MCI JH-110B 2-track, Studer/Revov PR99, others
Echo, Reverb, & Delay Systems: Lexicon 224XL, Lexicon M97 Super Prime Time
Other Outboard Equipment: Aphex Type B Aural Exciter, H949 Harmonizer, dbx 160X, Valley People Dyna-Mite, Scamp, Yamaha SPX90
Microphones: Neumann U47, Neumann U87, Neumann KM84, AKG C414, AKG C452, Sennheiser MD-421, Shure SM81, Shure SM57, E-V RE20, E-V RE10, Crown PZM.
Monitor Amplifiers: BGW, AB Systems.
Monitor Speakers: UREI 813A, UREI 811A, Yamaha NS-10, JBL 4401, JBL 4412, Auratones.
Musical Instruments: Steinway grand piano, Baldwin grand piano, Yamaha DX7, Roland JX-10, Roland MC-500, Roland MPU 101, PAD 8 Octapad, Roland TR-707, TR-727, Akai S900, Akai ME-30P, Moog 3C, Apple Macintosh SE, full complement of studio, orchestral and percussion instrumentation available.
Video Equipment: Complete 1" and 3/4" Betacam video production/CMX post-production services available, funding has been requested to enable video production suite to be interfaced with recording studios.
Rates: The CMUS Complex is operated primarily as an instructional facility and was developed to handle the needs of the university's Commercial Music degree programs and High-water record company. Although normally unavailable for commercial use, studio rental is authorized under special circumstances. Availability and rates upon request

[24+] CONTI STUDIO
also REMOTE RECORDING
509 N. Ridgewood
Edgewater, FL 32032
(904) 427-2480
Owner: Conti Family
Studio Manager: Dick Conti

[24+] COTTON ROW RECORDING
1503 Madison Ave.
Memphis, TN 38104
(901) 276-8518
(901) 276-8520
Owner: Nikos Lyras, Ward Archer, Jr.
Studio Manager: Melane Hunolt
Engineers: Niko Lyras, Eric Patrick, Danny Jones, Doug Night-wine
Dimensions: Studio 32 x 22, control room 17 x 20
Mixing Consoles: Trident Series 80 32 x 24

Audio Recorders: Otari MTR-90 24-track, Otari MTR-10 2-track, TEAC A-3300 2-track
Cassette Recorders/Duplicators: Tascam 122, Tascam 112
Noise Reduction Equipment: dbx
Echo, Reverb, & Delay Systems: Lexicon 224, Lexicon PCM70, Lexicon PCM60, Yamaha SPX90, ART O 1A, Lexicon PCM41, DellaLab Effectron, DellaLab Effectron, Jr.
Other Outboard Equipment: dbx 106X, Audio Logic MT66 dual comp/gate, Dynamite Dual, Omni Craft 4 in 1, Aphex Type C Aural Exciter, Orban dual de-esser
Microphones: AKG C414EB, AKG C451E, AKG CK8, AKG 1000E, AKG D12E, AKG D200E, Neumann KM84, Crown PZM, Sennheiser MD-421, E-V RE20, Shure SM57
Monitor Amplifiers: Yamaha P201, BGW 250-B, Crown D150A.
Monitor Speakers: Tannoy FSM-U (modified by Steve Durr w/White room EQ), E-V Sentry Five, Yamaha NS-10M, Auratone 5c
Musical Instruments: Kawai grand piano, Hammond B-3 organ w/Leslie speaker, Yamaha RX15 drum machine, Fender Strat electric guitar, Schecter Strat electric guitar, Seymour Duncan amp.
Other MIDI Equipment: Linn sequencer, Akai S900 sampler, Akai MIDI patch bay, Roland D50, Yamaha DX7, Yamaha DX21, Korg Poly-800, Roland Juno 106, Emulator II

[24+] CRAWFORD POST PRODUCTION, INC.
535 Plasamur Dr.
Atlanta, GA 30324
(404) 876-7149
Owner: Jesse Crawford
Studio Manager: Mike Greene
Engineers: Steve Davis, Tom Race, Kathy Gray, Carl Maduri, Greg Crawford, Albert James
Dimensions: Room 1: studio 32 x 25 x 14, control room 34 x 27, Room 2: studio 6 x 8, control room 12 x 12, Room 3: studio 9 x 13, control room 21 x 23
Mixing Consoles: Studio 1: Neve 8128 40 x 32, Necam 96 automation, Studio 2: Trident Series 70 24 x 16, Studio 3: Sony/MCI JH-600 36 x 24, VCA automation
Audio Recorders: Studio 1: (2) Studer A80 MkIV 24-track, Ampex ATR-102 1/4", Otari MTR-12 center track 1/4", Ampex ATR-104 1/2" 4-track, Studer A80 1/2" 2-track, Studio 2: Otari MTR-90 II 24-track, Otari MTR-12 center track 1/4", Ampex ATR-102 2-track ATR-101 full-track, Studio 3: Otari MTR-90II 24-track, Otari MTR-12 center track 1/4", Ampex ATR-102 1/4" 2-track, ATR-101 1/4" full-track.
Cassette Recorders/Duplicators: Studio 1: Tascam Studio 2: Nakamichi MR-1, Studio 3: Nakamichi MR-1
Noise Reduction Equipment: Studios 1, 2 and 3: dbx Type 1.
Synchronization Systems: Adams-Smith 2600 Series, (5) synchronizers, code reader, code generator, character inserter, controlled by Alpha automation Boss computerized audio editor. (Same rig all three studios.)
Echo, Reverb, & Delay Systems: Studio 1: (2) Lexicon 224X, AMS RMX-16, (2) Lexicon 200, (2) Lexicon PCM70 reverbs, (2) Lexicon PCM42, Lexicon Super Prime Time DDLs, Eventide Harmonizer, Yamaha SPX90, PCM60 reverb, Studio 2: Lexicon 200 reverb, Yamaha SPX90, Studio 3: Lexicon PCM70 reverb, Lexicon PCM42 DDL, PCM60 reverb
Other Outboard Equipment: dbx, Neve, Aphex, ADR, Audioarts, UREI, Ursa Major, Klark-Teknik, Teletronix, Valley People.
Microphones: Neumann, AKG, Sennheiser, Beyer, Milab, Crown, Shure, Schoeps, Fostex, E-V, Sony
Monitor Amplifiers: Crest, Crown, Haller, AB System, BGW
Monitor Speakers: Custom Design, Yamaha NS-10M, Auratone, MDM-4
Musical Instruments: Yamaha C7, LinnDrum, Tama drums, Simmons Drums, Prophet T-8, Rhodes, Marshall amp, Synclavier: (32) polyphonic sampling voices, (8) stereo digital FM synthesis voices, 20 megabytes RAM, 160 megabyte hard disk, 100KHz stereo sample to disk.
Other MIDI Equipment: Synclavier MIDI interface.
Video Equipment: Studio 1: Sony BVU-800 3/4", Studio 2: Sony BVU-800 3/4", Studio 3: Sony BVU-800 3/4" On patch Ampex VPR-2B 1" C format video.
Other: (4) 1" on-line video edit suites w/ADO, Quantel production studio (Harry, Encore, Paintbox Mirage), (2) Abekas A-62, Abekas 53-D and A-42, Vidifont, Chyron, computer generated graphics, Ampex AVA I and AVA II paintbox, Bosch FGS-4000, Dubner CBGII, Wavefront 3-D modeling software, mechanical concepts motion control system, Sony DVR-1000.

[24+] CRAWFORD PRODUCTIONS
PO Box 1192
New Smyrna Beach, FL 32070
(904) 427-6626
Owner: Warren Crawford
Studio Manager: Rusty Crawford

[24+] CREATIVE SOUND CONCEPTS
495 Armour Cir. NE
Atlanta, GA 30324
(404) 873-6628
Owner: Dennis Baxter, Spencer Herzog
Studio Manager: Laura Connolly

Echo, Reverb, & Delay Systems: Lexicon 224XL, Quantec. (6) Yamaha REV7, (2) Publison Internal Machine, Lexicon Prime Time, (2) Eventide Harmonizer, (3) Roland SDE-3000, DeltaLab Effectron, ADR Scamp ADT, Marshall Time Modulator, (3) EMT, AMS RMX-16, AMS DMX-16, Bel BD-8, (3) live chambers. Other Outboard Equipment: (2) Fairchild limiters, (2) UA 176 limiters, UA 1176, (4) dbx 160, (6) dbx 165, Kepex, (3) Scamp Racks w/gates, compressors, de-essers, Dynamic noise filter, Auto Panner, (2) Valley Intelligent de-esser, Dr. Click Microphones: Neumann M249, U67, U87, KM84, KM86, B&K, Sanken, AKG: C-422 stereo, C-414, C-451, D-12; Crown PZM; E-V RE20, RE15, Sennheiser: MD-421, MD-441, Shure SM81, SM57, Beyer 201, also Sony and RCA Monitor Amplifiers: Crown, BGW Monitor Speakers: Audicon, JBL 4350, KEF, Yamaha NS-10M, Auratone Musical Instruments: (2) Fairlight Series III, Yamaha DX7, Yamaha TX-rack, (2) Roland Super Jupiters, Roland piano synthesizer, Minimoog w/MIDI, Moog Memorymoog, Steinway grand piano, Yamaha grand piano, Chickering grand piano, Fender Rhodes, Hohner clavinet, Hammond M-3 organ, (2) Gretsch drums Video Equipment: Complete 1" video tape, 16 and 35mm film production and editing Rates: Available on request Extras & Direction: ZZ Top, Joe Cocker, Emerson Lake & Palmer, Leon Russell, Isaac Hayes, Bar-Kays, Memphis Horns, Staple Singers, Bobby Blue Bland, Roy Orbison, Johnny Cash, Roy Clark, DeGarmo & Key, Mylon LeFevre, Phil Dnscoil, Glad, Blackwood Brothers, Jessie Dixon, Farrell & Farrell, Green on Red, Alex Chilton, The Rainmakers, The Beach Boys, J. Blackfoot, Coral Reefer Band, Joe Walsh, Al Green

[24+] ASSOCIATED SOUND PRODUCTS INC.
also REMOTE RECORDING
3900 Tarheel Dr., Ste. 103
Raleigh, NC 27609
(919) 878-0044
Owner: David Emory, Steve Foley
Studio Manager: Robert Clarke

[24+] AUDIO CREATIONS RECORDING STUDIO
also REMOTE RECORDING
4815 Clarks River Rd.
Paducah, KY 42003
(502) 898-6746
Owner: Ralph G. Rowton Jr., George Cumbee
Studio Manager: George Cumbee

[24+] AUDIO, INCORPORATED
1917 Cleveland Ave.
Charlotte, NC 28203
(704) 376-3818
Owner: Frank & Sandi Rogers
Studio Manager: Frank & Sandi Rogers

[24+] AUDIO MEDIA RECORDERS
808 19th Ave. S.
Nashville, TN 37203
(615) 320-5985
Owner: C.E. Jackson, Jr.
Studio Manager: Bob Wright
Engineers: Hollis Halford, Bob Wright, Michael Griffith, Ron Stuvie
Dimensions: Room 1 studio 28 x 25, control room 16 x 22
Room 2: studio 14 x 13, control room 16 x 13
Mixing Consoles: Trident 80B (58-in on remix) 30 x 24, Harrison MR2 28 x 24
Audio Recorders: Studer A800 MkIII 24-track, Studer A80 MkIV 24-track, Sony 3202 2-track, Studer A67 2-track, Ampex 440B 2-track, Studer 810, Mitsubishi X-850 32-track
Cassette Recorders/Duplicators: (2) Aiwa ADS-20 Echo, Reverb, & Delay Systems: (3) EMT stereo tube plates, Lexicon 224XL, Lexicon Super Prime Time, DeltaLab 102
Other Outboard Equipment: LA-2A, LA-3A, dbx 160, dbx 165, UREI 1176LN, Pultec EQs, Sontec, API, Kepex II
Microphones: Neumann U47 tube, Neumann U47FET, Neumann U87, Neumann U67, Neumann KM84, Neumann U249, Neumann M49, AKG 414EB, AKG 451, AKG 452, Shure 57, Sennheiser 421, E-V RE20, Sanken CU-41, Telefunken 250, (3) Neumann KM84, Neumann U249, SM57, 421, Monitor Amplifiers: McIntosh, Phase Linear, BGW, Crown, UREI Monitor Speakers: (2) Westlake TM-1, Yamaha NS-10, JBL 4310, Fostex 780, Westlake BBSM-6, EAW
Musical Instruments: New England Digital Synclavier 32-voice polyphonic, PPG Wave 2.3, Oscar, Yamaha 9' grand, Wuritzer electric piano, ARP Axie, ARP string ensemble, ARP Omni, clavinet, various percussion.
Video Equipment: Post-scoring available w/Synclavier music system
Rates: Available upon request

[24+] AUGUST RECORDING STUDIO
also REMOTE RECORDING
1428 Marcheck St.
Jacksonville, FL 32211
(904) 743-7131
Owner: Wayne Fanning
Studio Manager: Wayne Fanning

[24+] BENNETT HOUSE STUDIOS, THE
134 4th Ave. North
Franklin, TN 37064
(615) 790-8696
Owner: Bob Montgomery
Studio Manager: Gene Eichelberger, Liz Jones
Engineers: Gene Eichelberger, Mike Clute, Clarke Schleicher, J.T. Cantwell, freelancers welcome.
Dimensions: Room 1 studio 44 x 18, control room 20 x 26
Room 2 studio 9 x 12, control room 20 x 26
Mixing Consoles: Trident A Range 28 x 24, Trident Bud Wyatt Series 80.
Audio Recorders: (2) MCI transformerless 24-track, (2) Studer B67 2-track, Ampex ATR-100 2-track 1/2", (2) Studer 800 24-track, Sony PCM-F1 2-track digital
Cassette Recorders/Duplicators: Sony, (3) Sharp, Studer Synchronization Systems: (3) Lynx SMPTE lock-up available
Echo, Reverb, & Delay Systems: EMT 250, (2) Lawson plates, Lexicon 200, Yamaha REV7, AMS DDL, Eventide 949, Lexicon 224X w/LARC
Other Outboard Equipment: Various gates, EQs, delays, CD players
Microphones: Neumann M249 tube, Neumann 87, Neumann 414, Neumann 421, Neumann 224, AKG Tube, Sanken, etc
Monitor Amplifiers: Yamaha
Monitor Speakers: JBL 4411s, John Meyer monitors, Yamaha NS-10, E-V Sentry 100, Braun 3-way, Auratones
Musical Instruments: New England polyphonic Synclavier, Baldwin 7' grand piano, Eddy Reynolds Rhodes
Video Equipment: Sony 5850 3/4" VTR w/sync
Rates: Call for rates
Extras & Direction: The Bennett House Studios offer a unique recording experience designed for creature comfort. In addition to having two top-quality studios both with 48-track capabilities, there is a fully furnished three-bedroom, two-story historic home that we offer clients to stay in during master projects. Our beautiful home provides a spacious, creative atmosphere with high ceilings and many rooms. The location is most desirable since we are away from the hustle and bustle of Nashville, yet right in the heart of the small but convenient city of Franklin. We also serve a hot home-cooked meal daily (except weekends) for four people, or more at your request for a slight charge. There is also our staff, who will help make your stay a memorable one, if not just productive and enjoyable

[24+] BIAS RECORDING COMPANY, INC.
also REMOTE RECORDING
5400 Carolina Pl.
Springfield, VA 22151
(703) 941-3333
Owner: Bill McElroy, Bob Dawson
Studio Manager: Gloria Dawson, Mary Beth Aungier
Engineers: Bob Dawson, Bill McElroy, Jim Robeson, D. "Dusty" Gernigani, Rob Schnapf
Dimensions: Room 1 studio 16 x 25, 20 x 30, control room 12 x 16
Room 2: studio 16 x 25, control room 12 x 6
Mixing Consoles: API 4032 40 x 32, MasterMix Audiokinetics automation, API modified 2488 24 x 8 w/Allison Fader
Audio Recorders: Ampex MM-1200 24-track (Studio A), Ampex MM-1200 24-track (Studio B), (7) Studer B67 2-track, Studer A67 2-track, Ampex 440-B 4-track
Cassette Recorders/Duplicators: (2) Technics M-280, (4) Nakamichi MR-1
Echo, Reverb, & Delay Systems: (2) Lexicon Model 200, Lexicon 224, (2) EMT 162, Lexicon PCM70, Lexicon PCM60, Lexicon Prime Time, (2) Eventide Harmonizer, AKG BX20E
Other Outboard Equipment: UREI 1178 stereo, UREI 1176LN, digital metronome, Sony PCM-F1 digital audio processor, Sony Super Beta Hi-Fi, Sony Beta Max, Nakamichi DMP-100 digital mastering processor
Microphones: Neumann, Sony, AKG, Shure
Monitor Amplifiers: Bryston (Studio A), Crown (Studio B)
Monitor Speakers: Auratone & Sierra/Hidley (Studios A & B)
Musical Instruments: Yamaha C-5 grand piano, Hammond C-3 w/Leslie, Fender Rhodes, Hohner clavinet, Slingerland drums, Fibes drums, Fender Precision bass, Fender Twin Reverb, blond Fender Pro, (2) tweed Fender Deluxe, tweed Fender Vibrolux, Oberheim DX drum machine, Yamaha DX7, Marshall 50W head, Marshall 4 x 10 cabinet
Rates: Studio A \$100/hr., Studio B \$70/hr.; bulk rate available.

[24+] BIG MAMA RECORDING STUDIO
& TELEPRODUCTIONS
also REMOTE RECORDING
400 Ensley Dr.
Knoxville, TN 37920
(615) 577-5597
Owner: Norbert Stovall
Studio Manager: Allen Wright



BOUTWELL RECORDING STUDIOS, INC.
Birmingham, AL

[24+] BOUTWELL RECORDING STUDIOS, INC.
also REMOTE RECORDING
720 South 23rd St.
Birmingham, AL 35233
(205) 251-8889
Owner: Corporation
Studio Manager: Nancy Boutwell Cotton
Engineers: Tony Wachter, Mark Harrelson, Charles Harnach
Mixing Consoles: Sony MXP-3036 36 x 24 automated, Soundcraft 800 18 x 16, (2) Soundcraft 200 16 x 8
Audio Recorders: MCI JH-16/24 24-track, Otari MX-70 16-track, Otari MX-5050 8-track, Otari MTR-10TC 2-track, (3) MCI JH-110 2-track, (3) Ampex ATR-700 2-track
Cassette Recorders/Duplicators: Telex 300 open reel duplicator 1 x 5, various cassette decks by Yamaha, Technics, Sony, Aiwa.
Synchronization Systems: Cipher Digital Softouch for scoring & sweetening, Southworth Jambbox.
Echo, Reverb, & Delay Systems: Lexicon PCM60 w/REV3 conversion, Lexicon PCM70 w/REV3 conversion Yamaha SPX-90, (2) Yamaha SPX90II, Lawson stereo plate AKG BX-20, DeltaLab Effectron digital delay, ART 1500, ADA 1500, Ross digital delay
Other Outboard Equipment: Limiters & compressors by UREI, dbx, Ashly, Valley Audio, (2) Valley Audio auto gates
Microphones: Neumann U87, AKG 414EB, Sennheiser MD-421, Sennheiser MD-441, E-V RE20, E-V RE15, C-452s, MC-740, M420, M201s, PSMs, SM81s
Monitor Amplifiers: Crown, Yamaha, Peavey, Symetrix
Monitor Speakers: (2) JBL 4333, (4) Yamaha NS-10, (4) JBL 4311, (10) Auratone
Musical Instruments: Kurzweil 250 w/Macintosh sequencing, Yamaha DX7, Akai AX-60, Prophet-5, Yamaha RX11 drum machine, Oberheim drum machine, Yamaha grand piano, Simmons SDS-5 drums, Pearl drum set, Fender bass guitar, Fender and Peavey assorted amplifiers, Hammond organ, Rolo toms
Other MIDI Equipment: (2) Akai S900 samplers, Akai S612 sampler, Southworth 4x Jambbox
Video Equipment: JVC CR 850 U, Sony 2860, Sony video monitors
Other: Sony ADS 3000 automation package w/hard & floppy disc storage
Rates: On request

[24+] BROADWAY SOUND STUDIO, INC.
1307 Broadway St.
Sheffield, AL 35660
(205) 381-1833
Owner: David Johnson
Studio Manager: Butch Johnson

[24+] THE CASTLE RECORDING STUDIO, INC.
1393 Old Hillsboro Rd.
Franklin, TN 37064
(615) 791-0810
Owner: Joseph Nuyens
Studio Manager: Jozef Nuyens
Engineers: Mark Richardson, Mark Nevers, Byron House
Dimensions: Size of castle
Mixing Consoles: Solid State Logic 4000E w/Total Recall, Computer 48 x 32, Yamaha 16-track
Audio Recorders: Mitsubishi X-850 32-track digital w/APG filters, Mitsubishi X-86 2-track digital w/APG filters, (2) Studer A80 24-track analog, Studer A80 2-track 1/2" analog, (2) Studer B67 2-track 1/4" analog
Cassette Recorders/Duplicators: Studer, (5) Sony
Echo, Reverb, & Delay Systems: AMS-RMX16 digital reverb, AMS DMX delay/sampler, Lexicon 480L, PCM42, Lexicon 224XL, Yamaha D1500, EMT-250, Lexicon 224, (3) Lexicon PCM70, (2) Ecoplate II, Yamaha SPX90, Lexicon Super Prime Time, Lexicon Prime Time.

—CONTINUED ON NEXT PAGE

S O U T H E A S T

24+ TRACK

STUDIOS

[24+] **ACORN SOUND RECORDERS, INC.**
329 Rockland Rd.
Hendersonville, TN 37075
(615) 824-4924
Owner: Oak Ridge Boys
Studio Manager: Jimmy Tarbutton

[24+] **AIRWAVE RECORDING COMPANY**
1830 NE 153 St
North Miami Beach, FL 33162
(305) 949-WAVE
Owner: Robert W. Walker
Studio Manager: Jamie L. Keck
Engineers: John St. John, Scott Tanner, Robert W. Walker
Dimensions: Studio 25 x 40, control room 18 x 18
Mixing Consoles: MCI 536 36 x 24 w/automation
Audio Recorders: MCI JH-24 24-track, (2) MCI JH-110 2-track,
(3) Otari MX-5050 2-track, Scully 2-track, Sony F-1 2-track Beta
digital
Cassette Recorders/Duplicators: TEAC Z-5000, Technics RS-
B78R
Noise Reduction Equipment: Dolby A, Dolby SR, dbx
Echo, Reverb, & Delay Systems: AKG R20, Ecoplate II, (2)
Yamaha SPX90II
Other Outboard Equipment: Orban parametric EQ, Orban dy-
namic sibilance control, (2) Eventide 910 Harmonizers, Compex
limiter, (2) dbx 160 limiters, (2) dbx 166 compressor/limiters, (2)
UREI 1176 limiters, (8) Kex noise gates, (2) Lexicon Prime
Time, (2) Lexicon PCM42
Microphones: AKG 414, Neumann U87, Neumann U47, Senn-
heiser 421, Sennheiser 441, Crown PZM, AKG D12, Sony
ECM50PS, Sony C-38B
Monitor Amplifiers: Hafler P500, BGW, Crown
Monitor Speakers: JBL 4343, Tannoy NFM8, Auratone
Musical Instruments: Yamaha DX7, Yamaha DX5, Yamaha TX7
rack, Oberheim DX Stretch, Yamaha RX5, Yamaha QX7, Yama-
ha QX1, ARP 2600, Roland Jupiter 8, Kurzweil K-250 w/sound
blocks A, B, C, D
Other: Edit/dub suite w/Hill 12 x 4 x 2 multitrack
Rates: \$85/hr., subject to change without notice
Extras & Direction: Credits include Miami Sound Machine,
Secret Society, Mike Ballard, Bernard Hepburn, Nikki Wolf,
Deak Joachim, Wild Touch, Luis Diaz, Eli Wallach, Raul Aguilar,
Dimension Music Library, Dimension Holographic Sound Li-
brary, extensive local, regional and national commercial produc-
tion. Simon & Schuster.



ALLEN-MARTIN PRODUCTIONS
Louisville, KY

[24+] **ALLEN-MARTIN PRODUCTIONS**
also **REMOTE RECORDING**
9701 Taylorsville Rd.
Louisville, KY 40299

(502) 267-9658
Studio Manager: Vince Emmett, Tim Haertel
Extras & Direction: Synclavier studio: full Synclavier system with
single instrument booth linked to main 24-track studio with 30 x
40 x 20 room. We also offer full array of reverbs, plates, digital-
to-live echo chambers, extensive mic collection with several
vintage mics, and audio-to-video sync (multi-cam remote capa-
bilities and 30 x 30 cyclorama with two editing suites). Our
production team is experienced in all phases of product man-
agement, from pre-pro through finished product. Staff specialist
can assist in album production (musicians on staff), pressing
and duplication, music video productions, film scoring, post
scoring and mixing, film and video sweetening. Staff script and
song writers. Jingle division clients include: Coca-Cola Inc.,
AMC, Nationwide Insurance, Chevron, Valvoline, Hyatt Interna-
tional, GE, Budget Rent-a-Car, Exxon, Standard Publishing,
McDonald's, Wendy's, Kentucky Fried Chicken, and indepen-
dent labels. This comprehensive facility, located on a private
Kentucky estate, offers a warm, creative atmosphere. Our
award-winning staff of 14 is here to complete any facet of your
project with a professional attitude and all the extras you need:
complete kitchen, large conference room, 15 minutes from
major airport, limo service available.

Alpha Audio



ALPHA AUDIO
Richmond, VA

[24+] **ALPHA AUDIO**
also **REMOTE RECORDING**
2049 W. Broad St.
Richmond, VA 23220
(804) 358-3852
Owner: Alpha Recording Corporation
Studio Manager: Mary Anne Turner

[24+] **PAT APPLESON STUDIOS, INC.**
also **REMOTE RECORDING**
1000 NW 159 Dr.
Miami, FL 33169
(305) 625-4435
Owner: Pat Appleson Studios, Inc.
Studio Manager: Fran Firman

[24+] **ARCADIA PRODUCTIONS & RECORDING STUDIO**
425 Windsor Pkwy.
Atlanta, GA 30342
(404) 255-3284
Owner: Sammy Knox
Studio Manager: Steven North
Engineers: Sammy Knox, Steven North, Laura Thorburn, Axel
Black
Dimensions: Studio 24 x 16, control room 22 x 16
Mixing Consoles: D&R Holland Series 2000 60 x 30



ARCADIA
Production &
Recording Studio

ARCADIA PRODUCTIONS & RECORDING STUDIO
Atlanta, GA

Audio Recorders: Otari MX-80 24-track, Tascam 48 8-track,
Otari MX-5050 2-track, Sony PCM-601 ESD 2-track digital
Cassette Recorders/Duplicators: Yamaha K-1020 2-track,
Nakamichi
Noise Reduction Equipment: (2) Tascam DX-40 dbx
Synchronization Systems: Synchronous Technologies SMPLE
system, Synhance MTS1
Echo, Reverb, & Delay Systems: Lexicon PCM70, (3) Roland
SPV-2000, DeltaLab CE-1700 CompuEffectron, DeltaLab ADM
1024 Effectron II
Other Outboard Equipment: Aphex Type C Aural Exciter, (2) dbx
165, (2) dbx 166, (4) D&R Holland gates, (3) D&R Holland
parametric EQ, D&R Holland disc amp
Microphones: (2) AKG 414, (2) Neumann U87, (2) Sennheiser
441, (8) Shure SM57, (2) Shure SM58, (2) Beyer CK-704a
Monitor Amplifiers: (2) Adcom GFA-555, Soundcraftsmen RA-
5502, (2) Carver 1500
Monitor Speakers: Tannoy SRM-10B, Yamaha NS-10M, Visonik
Little David 6000, Hartman SUTS-SAT custom designed control
monitors
Musical Instruments: (2) Emulator Emax, (2) Roland D-50, Akai
S900, Emulator SP12, Oberheim Matrix 6-R, Casio CZ-101,
Ensoniq ESQ-1, Yamaha TX802, (2) Fender deluxe reverbs
(1963), (2) Fender Strats w/EMG, Fender D-bass w/EMG, Sim-
mons drum pads, Simmons TMI
Other MIDI Equipment: IBM PCXT 20 meg hard drive, Voyetra
sequencer plus MkII 1.1, Voyetra Patchmaster, ProLib patch
library
Rates: \$25 to \$65/hr



ARDENT RECORDINGS INC.
Memphis, TN

[24+] **ARDENT RECORDINGS INC.**
2000 Madison Ave.
Memphis, TN 38104
(901) 725-0855
Owner: John Fry
Studio Manager: Carol Tabor
Engineers: Joe Hardy, Tom Laune, John Hampton, Robert "TD"
Jackson
Dimensions: Room 1: studio 25 x 40, control 16 x 25. Room 2:
studio 24 x 17, control 25 x 20. Room 3: studio 25 x 35, control
18 x 25
Mixing Consoles: Solid State Logic 6000E 40 x 32, Mitsubishi
Westar 44 x 24, MCI 542 42 x 32
Audio Recorders: Mitsubishi X-850 digital 32-track, Mitsubishi
X-800 digital 32-track, Otari MTR-90 24-track, (2) MCI JH-24
24-track, (4) Mitsubishi X-86 digital 2-track, (2) MCI JH-110
2-track

4000 SERIES IN-LINE

Beyond Comparison



D&R USA
1720 Chip N Dale Dr.
Arlington, TX 76012
(817) 548-1677

D&R Electronica b.v.
Rijnkade 15B,
1382 GS Weesp,
Holland

☐ **Dual Function Inline I/O Modules** double the input and patching capacity (4000-32 = 64 inputs in mixdown).

☐ **Total Modular Design** incorporating F.S.S. (Floating Subgroup System), allows routing of any input or group to any track without patching, permitting unlimited flexibility and expandability.

☐ **Discrete MIC Preamps, Proprietary IC Compensation, and Minimum Audiopath** yield outstanding signal to noise ratio, headroom, and transparency.

☐ **Automation Ready Design** allows for D&R's "Score Automation" or the new low-cost "C-Mix" automation system.



Dealer Inquiries Welcome



Woodstock			Asheville			Studios			24 Westpark Sound		
8	EZ Recording and Productions	197	4	Mountain Bear Productions and Broadcast Recording	199	TENNESSEE			24	Woodland Sound Studios, Inc	188
8	VMR Studios	203	4	Whitewater Recording	203	Antioch			8	Sevierville	
KENTUCKY			Bailey			24	Gatlin Bros. Music Resources, Inc	179	8	Audio Zone Productions	196
24	Ashland		24	Mega Sound Studios, Inc	181	Bells			8	Seymour	
8	Bowling Green		8	Belmont		16	Five Square Recording	190	8	Underground Recording	203
8	High St. Studio	198	8	DM & DM Studio Inc	197	Bolivar			VIRGIN ISLANDS		
24	Corbin		16	BTM Studios	190	16	A.S.I. Studios, Inc	189	24	St. Thomas	
24	Revelation Recording	184	16	Carrboro		24	Gold Mine Studio	179	24	Turtle Point Rec	188
16	Crestwood		16	Griffin Music Design	191	Brentwood			VIRGINIA		
16	Sound On Sound	194	8	Chapel Hill		8	LP Productions	198	8	Aldie	
8	Cynthiana		8	Fisher Studios	197	24	Pyramid Recording	184	8	Mo Hunch	199
8	Left Field Records	198	24	Charlotte		24	Faith Productions	179	4	Alexandria	
16	Elizabethtown		24	Audio, Incorporated	175	24	Majestic Sound Studio	180	4	Dave's Price Audio Productions	197
16	Alpha Recording Co., Inc.	189	16	Jay Howard Production Audio Inc.	179	Cleveland			4	Linden Inc	198
16	Erlanger		16	Lamon Sound Studios Inc	192	24	Franklin		2	Arlington	
16	Group Effort Sound Studio	191	8	Mastersound, Inc	198	24	Bennett House Studios	175	2	Arshow, Inc	196
8	Georgetown		24	Reflection Studios	184	24	The Castle Rec. Studio	175	16	Inner Ear Recording Studios	191
8	Mays Kentucky Demo Service	199	8	Sing-A-Song Recording Studios	202	Heiskell			8	Gerald Lewis Recording	178
24	Hidrick		24	Studioeast	188	8	Mike Bills Productions	196	8	Music & Sound Production Services	199
24	Lundy Recording & Cassette Dup	180	16	Z/bopi/AV	195	Hendersonville			2	Venus Video and Sound Arts	203
8	Jamestown		8	Denver		24	Acorn Sound Recorders, Inc	174	16	Bristol	
8	R.A.M.S. Studio (Recording and Music Services)	200	8	EG Studio	197	24	Sounding Board	186	16	Classic Recording Studio	190
16	Junction City		8	Mirror Image Recording Studio	199	Hermitage			8	Burke	
16	Acvid Studio	189	4	WLM Recording	203	8	Phil Arnold Sound Services	196	8	Sync Records	202
12	Lexington		4	Greensboro		8	Jack O'Diamonds Recording Studio	198	8	Chantilly	
12	Advent Productions	189	8	Acoustic Creations	196	8	Seven Points Recording Studio	202	8	Goldreef Studio	197
4	Grosvenor Bang!	197	4	Charisma Studios	196	16	Johnson City		4	Charlottesville	
8	House of Commons Communications	198	24	Process Recording Studios, Inc	184	16	Soundtrax Recording Inc.	194	4	Blue Bucky Music Co	196
16	Sun-Ray/Sky-Vue	194	4	Red Road Productions	200	Knoxville			8	Global Village Recording Studio	197
8	Tapeworm Productions	202	16	Sound Lab Recording Studio, Inc	194	24	Big Mama Recording Studio & Teleproductions	175	24	Chesapeake	
24	Louisville		16	Greenville		8	Madison		24	SP Sound Productions	187
24	Allen-Martin Productions	174	16	Audio Arts Recording Studios and Productions	189	8	Brantley Sound Assoc., Inc	196	16	Woodhouse Recording	195
16	Artists' Recording Service	189	8	Electronic Music & Recording	197	24	Cinderella Sound Studio	176	16	Danville	
16	Derbytown Sound Studios	190	16	High Point		8	Memphis		16	Dan-Sing Recording Studio	190
8	Nebo		16	B & B Productions	189	8	Stonebridge Recording	202	16	Fairfax	
8	Trusty Tuneshop Recording Studio	203	16	Kinston		12	Ardent Recordings Inc	174	16	Emery Recording	190
16	Nicholasville		16	Audiocraft - Sound Hut Studios	189	12	The Altic	189	24	Masterworks Studios	181
16	Splice of Life Recording Studio	194	16	Lenoir		24	Commercial Music Recording Complex	176	16	Falls Church	
24	Paducah		16	Dream Maker Studios	190	16	Cotton Row Recording	176	16	Gypsy Studio	191
24	Audio Creations Recording Studio	175	16	Middlesex		16	Easley Recording	190	24	Reelpeople Recording Services & Consultants	184
4	Lost River Recording Studio	198	16	Raleigh		24	Galaxy Sound Recording Studios	197	16	Fredericksburg	
8	Pikeville		24	Associated Sound Products Inc	175	8	Kiva Recording Studio	179	16	Wally Cleaver's Recording	190
8	Simple Dreams Recording	202	8	Crutch Recorders	197	24	Media General Broadcast Services-Studio Five	181	16	EvanSound Productions (ESP)	190
12	Wayland		4	Dove Sounds	197	24	Memphis Sound Productions	181	16	Galax	
12	Lee's Studio	192	16	Jag Studio, Ltd	191	16	Mileage Recording Studio	192	16	Heritage Records & Recording Studio	191
8	Winchester		8	Lentz & Associates, Inc	198	16	Onyx Sound Recording Studio	183	4	Hampton	
8	RCM Sound Studio	200	8	Mobile Sound Service	199	16	The Power House	193	4	Hampton University Dept. of Music	198
12	Woodburn		8	Southern City Studio	202	8	River City Sound Productions	200	16	Live Note Studio	192
12	Mid-South Recording	192	8	Reidsville		8	The Production Lab	200	16	Harrisonburg	
LOUISIANA			8	Miller Recording Studio	199	16	Sounds Unreel Studios	186	16	Alive Recordings	189
8	Baton Rouge		8	Rocky Point		12	Sound Traxx	194	8	Leesburg	
8	Leggett Recording Studio	198	8	Twin Oaks Studio	203	12	Sun Studio	194	8	Sound Plus	202
8	Chalmette		16	Sanford		8	USC Sound Enterprises	203	24	Louisa	
4	H&G Recorded Productions	198	16	Beechtree Recording Studio	189	8	Wilkinson Sound Studios	203	24	Virginia Arts Production Studios	188
4	Servant Studio	202	8	Southern Pines		8	Mountain City		8	Manassas	
8	Church Point		8	Offbeat Studio	200	8	Mountain Ear Productions	199	8	Sounds Reasonable!	202
8	Sound Center Recorders	202	24	Statesville		8	Murfreesboro		16	Marion	
24	Crowley		24	Perfect Pitch Recording & Production Co	184	24	Dulay Digital Music	178	16	CRS Recording Studio	190
24	Master-Trak Sound Recorders (Studio A & Studio B)	180	4	Weaverville (Asheville)		24	RIM Sound Studio	184	4	Merrifield	
4	Houma		4	Comedy Now/Mountain Bear Productions	197	4	Nashville		4	The Sound Category	202
4	Sac-Au-Lait Music Inc	202	16	Wendell		4	Archer Productions, Inc	196	4	Newport News	
24	Jeanerette		16	Eagle Rock Recording Inc	190	16	Audio Media Recorders	175	4	Digital Graphics & Audiovisuals	197
24	Holbrook Media Productions	179	16	Winston-Salem		24	Audio Vision, Inc	189	16	Norton	
8	Kinder		8	Grant Blair Productions	196	16	Carnegie Hall Recording Studio	190	16	Homestead Recordings, Inc	191
8	Marrero		8	Martin Audio	198	16	Eleven-Eleven Sound	178	8	Powhatan	
8	Protech Productions Recording Studio	200	12	PUERTO RICO		16	Fair Warning Recording Studio	190	8	Design Recording	197
16	New Orleans		24	Bayamon		24	Fanta Professional Services	179	24	Richmond	
16	Loyola University Recording Studio	192	24	EMS Recording Studio	178	24	Germantown Recording Studio	179	24	Alpha Audio	174
8	Niteshade Studio	200	16	Bayanion		24	GHL Audio Engineering	179	4	Audioimage Recording	196
24	Pace Recording Service	183	12	Puerto Nuevo		8	G.I.D. Studio	197	4	Av-Tek Productions	196
8	Rum Productions	202	12	Rio Piedras		24	Golden Angel Music	197	24	Flood Zone Studio	179
24	South Lake Recording Studio	187	24	Melody Recording Studio	181	24	Grand Central Studio	179	24	Radio Active Audio	184
24	Ultrasonic Studios Inc	188	SOUTH CAROLINA			24	Great Circle Sound	179	4	WTPE-Radio/Tape Productions	203
16	West Monroe		4	Cayce		8	Horizon Recording Studio	198	16	Roanoke	
16	J.Y. Recording	192	4	Wooten Custom Audio Productions	203	8	Huntwick Music Group	198	16	Threshold Recording	195
MISSISSIPPI			8	Charleston		24	KCAM-TV Television Productions	179	24	Springfield	
16	Canton		8	The Ad Shop	196	16	Bob Krusen's Studio	192	24	Bias Recording Company, Inc	175
8	Hattiesburg		16	IVS Media Productions	191	8	Lakeside Productions	198	4	Staunton	
8	Mariah Recording	198	24	On Line Audio	183	24	Leche Recording Workshop	180	4	Barr-Note	196
8	The Music Room	199	8	Steve Russell Audio	202	8	MasterLink Studios, (a division of Al Jolson Enterprises, Inc.)	180	16	Virginia Beach	
8	Jackson		8	Columbia		24	Mastermix	181	16	AtlantiCoast Recording	189
8	Makin' Trax Productions	198	8	Mulex	199	8	Mission Control Productions	199	24	Earworks, Inc	197
24	Terminal Recording Studios	188	8	Greenville		24	Music City Music Hall	182	24	Master Sound Recording Studio	180
4	Trest Audio/Video Productions	202	8	Custom Recording and Sound, Inc	197	24	Music Mill	182	16	Mirror Music Recording	193
24	Meridian		24	Mark Five/Sandcastle	180	24	Nashville Teleproductions/Oak Valley Sound	183	8	Starsounds Music Productions	202
24	Olive Branch		16	Mauldin		16	Omnisound Recording Studios	183	8	Woodbridge	
8	Roadhouse Recording	184	16	Studio 105	194	16	Premier Studio	193	8	Amberwood Recording Studio	196
8	Pass Christian		16	McBee		8	Reel Sounds	200	8	Yorktown	
8	Jingle Works Recording Studio	198	16	Silver Star Recording Studio	194	24	The Reflections	184	8	Wistana Studio, Inc	203
24	Ridgeland		24	Moore		16	Scruggs Sound Studio, Inc	185	WEST VIRGINIA		
24	Parallax Recording Studio	183	24	EBS, Inc	178	16	Shook Shack	194	8	Elkins	
8	Starkville		8	North Myrtle Beach		8	Sixteenth Avenue Sound	185	8	Black Dog Studio	196
8	Miller Recording	199	8	Atlantic Audio/Video	196	8	Song Pro	202	2	Follansbee	
4	Garden Sound Studio	197	16	Rock Hill		24	Sound Emporium	186	2	Low Casino Recording	196
8	Vicksburg		16	South Sounds Recording Studio	194	24	Sound Stage Studio	186	8	Oak Hill	
8	Underground Music Recording Studio	203	8	Sun Sound Studios	202	24	Soundshop Recording Studios	186	8	Media Productions/Resistor Records	199
NORTH CAROLINA			8	Seneca		24	Stargem Recording Studio	187	16	Parkersburg	
4	Andrews		8	Steve Campbell's Soundcrafters	196	24	Studio 19	187	16	Sweetsong Productions/Music Factory	194
4	Zao Music	203	24	West Columbia		12	Synco Sound Recording	188	16	Ridgeley	
			24	Strawberry Skvs Recording		12	Top Tracks Recording Studio	195	16	Flight One Studio	190
						24	Treasure Isle Recorders	188	8	St. Albans	
									8	Accurate Recording	196
									24	Wheeling	
									24	W.J.S. Recording	

LOCATION INDEX

STUDIOS

All studio information listed has been supplied to *Mix* by studios responding to questionnaires mailed in December 1987. People, equipment and locations change, so please verify critical information with the studios directly. *Mix* does not take responsibility for the accuracy of the information supplied to us by the studios.

ALABAMA		
Anniston		
8 Leatherwood Sound	198	
Auburn		
24 Rainbow River Studios	184	
Birmingham		
24 Boutwell Recording Studios, Inc.	175	
16 Kytchen Sync	192	
24 Polymusic Studios, Inc.	184	
24 Sound of Birmingham	186	
16 Studio One Sound	194	
Calera		
16 Sound Stage Music Co.	194	
Cleveland		
8 Triangle Media Productions	203	
Decatur		
16 Birdland Recording Studios, Inc.	189	
Dothan		
24 Studio Four	187	
12 T.C. Enterprises Studio	195	
16 Wildwood Recorders	195	
Fayette		
8 Flare Audio Recording	197	
Gadsden		
16 Grapevine Studios	191	
Greenville		
4 Ridge Recording Studios	200	
Hueytown		
12 Bates Brothers Recording	189	
Huntsville		
8 Ground Level Sound	197	
24 Sound Cell	186	
Jasper		
8 Front Row Productions, Inc.	197	
Lafayette		
16 Oak Bowery Recording	193	
Lexington		
8 Woodrich Recording Studio	203	
Mobile		
16 Dogwood Recording	190	
2 Normad Productions	200	
16 Southern Sound Productions & Studios	194	
Montgomery		
16 Studio B	194	
Ozark		
16 L.A. East Recording Studios	192	
Sheffield		
24 Broadway Sound Studio, Inc.	175	
16 Cactus Recording Studio, Inc.	190	
Smith Station		
24 Studio "77" Recording Co.	187	
Tuscaloosa		
8 Druid City Sound	197	
4 Orange Street Recorders	200	
16 Underground Sound	195	
Tuskegee		
8 Sound Shack Recordings	202	
Tuskegee Institute		
4 Nan & Associates Inc. Studio	200	
FLORIDA		
Bartow		
16 Real To Reel Recording Studio	193	
Bradenton		
8 Tric Tracs	203	
Clearwater		
8 Pink Pelican Music Co.	200	
8 WKRL Radio	203	
Cocoa Beach		
8 Digitrax Productions, Inc.	197	
Deerfield Beach		
16 L-7 Studios	192	
24 Spectrum Recording Studio	187	
Delray Beach		
8 Lady Sabre's Dungeon	198	
16 Red D Productions	193	
Dover		
8 Debra J. Studios	197	
Edgewater		
24 Conti Studio	176	
8 Omni Recording	200	
Estero		
16 Important Recording Studio	191	
Fort Lauderdale		
24 New River Studio	183	
24 Soundshine Productions, Inc.	186	
24 Total Tape Company	188	
4 Video Ideas	203	
Ft. Myers		
8 Steve Rogers Productions	202	
Gainesville		
24 Mirror Image Recording	182	
Hialeah		
24 Sound International Corporation	186	
Hollywood		
16 Hollywood Sync	191	
8 Perspect Audio	200	
Jacksonville		
24 August Recording Studio	175	
8 Christian Recording	196	
16 Key Recording Studio	192	
16 Mangum/Alford Recording Studio	192	
8 Rick Painter Sound Studio	200	
16 Sage Productions	194	
24 The Warehouse Recording Studio	188	
Jacksonville Beach		
16 Izzit Reel Productions	191	
8 Studio Heil	203	
Jupiter		
16 Charisma Sound Productions, Inc.	190	
8 T&S Studio	202	
Kissimmee		
12 MIDI Sound Recording Center	192	
Lake Park		
8 Silhouette Studios	202	
Lutz		
24 Island Recording Studio	179	
Margate		
12 Bottom Line Studio	189	
Melbourne		
16 Hummingbird Recordings	191	
Miami		
24 Pat Appleton Studios, Inc.	174	
16 Computers & Music	190	
24 Criteria Recording Co.	178	
24 Digitracks MIDI Sequencing	178	
24 Lumelite Video	180	
24 Miami Sound Studio	182	
16 Pinegrove Studio	193	
8 Prosound Labs, Inc.	200	
24 Rain Moon Studio	193	
24 SKD Inc. Recording Studio	185	
24 South Coast Recording Co.	187	
16 Tamiami Productions, Inc.	194	
16 Tropical Recording Studio	195	
Milton		
16 Audio Concepts Recording Company	189	
8 Audio Recording & Duplicating (+MIDI)	196	
Mount Dora		
16 Cloud Nine Recording	190	
Naples		
4 Reason's Edge Recording Studio	200	
New Smyrna Beach		
24 Crawford Productions	176	
North Miami		
24 Quadradial Cinema Corp	184	
4 Real To Reel	200	
16 Sound Design	194	
16 Soundtrack, Inc.	194	
24 Studio Center Sound	187	
North Miami Beach		
24 Airwave Recording Company	174	
Ocoee		
24 Starke Lake Studios	187	
Orlando		
8 Bob Barnes Creative Services	196	
2 BGA Production Services	196	
24 Century III Teleproductions	176	
24 Decibels Unlimited Productions	178	
16 FMR - Magic Music	191	
24 Lone Pine Recording Studios	180	
24 Parc Studios	183	
8 Platinum Productions of Central Florida, Inc.	200	
4 Sound Stage	202	
8 X Communications Studio One	203	
Pensacola		
24 Soundtrek Recording Studio	186	
Pinellas Park		
8 Freelance Productions	197	
Pompano Beach		
8 Hirdler Enterprises	198	
Port St. Lucie		
16 Mastercraft Recording	192	
St. Augustine		
24 Jim DeVito's Recording Studio	178	
St. Petersburg		
8 Hayes Recording	198	
8 Protolog Inc.	200	
8 The Time Machine Recording & Duplicating	202	
Sarasota		
24 Telstar	188	
Spring Hill		
16 Leavell Studio	192	
Sunrise		
24 Lambtron Inc. Recording Service	180	
8 Locontio Productions & Studios	198	
16 Sound Picture Recording	194	
Tallahassee		
24 Flamingo Studios	179	
8 The Mighty Mix	199	
16 Spectrum Studios	194	
4 WFSU-FM	203	
Tampa		
8 A/V Consultants	196	
8 Full Sky Recording & Production Studio	197	
24 Hayes Recording Studios	179	
8 Horizon Productions	198	
8 Just in Productions	198	
24 London Music, Inc.	180	
24 Morrisound Recording	182	
8 Musical Refuge Studios	199	
4 Nomadd IV	200	
16 Progressive Music Studios	193	
16 Ron Rose Productions, Inc.	193	
8 Senseless Productions	202	
Warm Mineral Springs		
24 Delshay Studios & Resort Complex	178	
West Palm Beach		
16 Steve Miles Audio Productions	193	
24 Saturn Sound Studios Inc.	184	
Winter Haven		
8 Happy Faces Productions	198	
GEORGIA		
Albany		
16 Boone Sound	189	
Alpharetta		
16 Witness Productions	195	
Americus		
8 Davis Productions	197	
Athens		
8 High Spirits Recording	198	
16 John Keane Studio	192	
Atlanta		
24 Arcadia Productions & Recording Studio	174	
8 Audio Craft	196	
16 Audio Works Production Services Inc.	189	
12 Black & Silver Studio	189	
24 CatsPaw Productions	176	
24 Cheshire Sound Studios	176	
24 Crawford Post Production, Inc.	176	
24 Creative Sound Concepts	176	
24 Crosstown Audio	178	
4 DCO Lab, Inc.	197	
24 Doppler Studios, Inc.	178	
8 Dub Studio Div. of Tech Sound Inc.	197	
4 Ebony Star/Briefcase of Talent	197	
24 Bert Elliott Sound	178	
2 Monett Media (Ambisonics)	199	
24 Musiplex	183	
24 New Age Sight & Sound	183	
24 O'Connell Productions, Inc.	183	
16 Oliverio Music, Inc.	193	
4 Project 70 Audio Services, Inc.	200	
24 Sam's Tape Truck	184	
24 Sound Lab, Inc.	186	
24 Soundscape Studios	186	
24 Southern Tracks Rec	187	
8 Stonesilk Audio	202	
8 The Sync Productions	202	
24 Twenty-Five Sixty Recording Studio	188	
Augusta		
24 Studio South	187	
Avondale Estates		
8 Synginner Sound	202	
Brunswick		
8 Forrest Anderson Recording Studio	197	
Carrollton		
16 Coley Recording Studio	190	
Chamblee		
16 Exocet	190	
Columbus		
8 Mr. O Audio	199	
Covington		
24 The Peach	184	
8 Protracks	200	
Doraville		
24 Studio One	187	
Douglasville		
4 Bright Star Music	196	
Fort Oglethorpe		
16 The Sound Room, Inc.	194	
Gordon		
8 Trey Records	202	
Jonesboro		
8 Chile Studios	196	
La Grange		
8 The Balance Recording Company	196	
Lawrenceville		
16 Oracle Recording Studio	193	
Lithia Springs		
24 Transmedia Productions, Inc.	188	
Macon		
8 AC Productions	196	
16 Amazing Music	189	
4 McDonald Sound Studio	199	
2 Mercer University Educational Media Center	199	
8 Pyramid Sound Labs	200	
Marietta		
8 Davroy Studio	197	
16 Total Tracs, Inc.	195	
Milledgeville		
4 Cheapskateboard Productions	196	
Norcross		
4 East American Recordings (East American Entertainment)	197	
8 R.W. Studio	202	
Rome		
16 Willow Creek Recording Studios	195	
Savannah		
16 Twenty-Two International Recording	195	
Smyrna		
8 Atlantis Audio Innovations	196	
24 Perfection Sound	184	
24 Twelve Oaks Studio	188	
Snellville		
8 Sound Effects Studio	202	
Stockbridge		
16 Real To Reel Studio, Inc.	193	
Stone Mountain		
16 Penguin Studio	193	
Warner Robins		
8 D&J Studios	197	
Waycross		
16 Tracks Recording Studio	195	



Randy Kling waited until he was sure. Waited until the exact equipment was designed and manufactured—the board to his parameters. He has finally assembled all the pieces for the ideal digital mastering situation. Now he is absolutely sure. After mastering 200 gold and platinum

records on the analog counterparts of his new digital pieces, he deserves to feel sure. And nowhere in the world can the same combination be found. Now he invites the music industry to finish their masterpieces on his master pieces.

"As a member of the design team that created the Neve DTC, it is fitting that Randy Kling be among the first digital mastering engineers to experience digital audio in a way only possible with the NEVE DIGITAL TRANSFER CONSOLE. The union of our creativities is what makes masterpieces possible."

Tony Langley
VP of Sales,
Neve



"Randy at Disc Mastering Inc. received the first Studer digital recorder delivered in the U.S. The D820X DASH format (Digital Audio Stationary Head) joins our long line of analog multitrack recorders, and snares with them a 40-year history of Studer performance and innovation."

Studer Revox America, Inc.

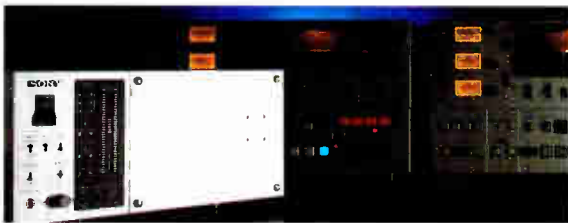
"Since the analog days of the 60's, Randy has depended on Tannoy reference studio monitors for the truth, the whole truth, and nothing but the truth. For the 80's and the demanding age of digital, now more than ever, Tannoy."

Bill Calma
Marketing Manager
Tannoy North America, Inc.



"It is befitting that Ampex, the first magnetic tape manufacturer to develop and market a digital audio tape, should be the tape of choice for the first all digital mastering studio. We at Ampex congratulate Randy Kling and are proud to be a part of his state-of-the-art digital mastering system."

Warren K. Simmons
Senior Product Manager
Professional Audio Tape
Magnetic Tape Division
Ampex Corp.



"Sony Professional Audio is proud to be associated with Randy—by supplying digital audio equipment to create even better masterpieces, and to proceed with him into the future of this new and exciting technology."

Graeme Goodall
Sony Professional Audio Division
Music City U.S.A.



"We salute Randy Kling for being amongst the first major mastering studios to make such a complete commitment to Monster-Cable wire technology with the re-wiring of Disc Mastering. Randy's commitment to re-wiring is of such a magnitude that he has taken the time to wire through walls, fabricate his own custom Monster-Cable interconnects, and completely interface digital consoles, digital recorders, cutting lathes, electronics, and monitor speakers exclusively with Monster-Cable M Series. Financial and time commitments of this magnitude are not easy to make, and demonstrate to his customers his desire to master the best sounding recordings possible for the greater enjoyment of all music lovers."

Noel Lee, Head Monster
Monster-Cable Products, Inc.

DISC MASTERING

SOUTHEAST STUDIOS

Information in the following directory section is based on questionnaires mailed earlier this year and was supplied by those facilities listed. *Mix* claims no responsibility for the accuracy of this information. Personnel, equipment, locations and rates may change, so please verify critical information with the companies directly.



At left is Ronnie Milsap's Ground Star Laboratory in Nashville. Used almost exclusively for Milsap projects, the studio features a Neve 8128 console with 56 inputs and two Otari DTR-900 32-track digital recorders that can be locked together via an Adams-Smith 2600 synchronization system. Other goodies include a Studer A800 Mk III analog 24-track, JVC BP900 digital 2-track, Ampex ATR-100 half-inch stereo 2-track and Studer A820 half-inch analog 2-track. Photo: Randy Gardner

CONTENTS

171	LOCATION INDEX
174	24+ TRACK STUDIOS
189	12 & 16 TRACK STUDIOS
196	8, 4 & 2 TRACK STUDIOS

Mix listings procedure: Every month, *Mix* mails questionnaires to recording studios and/or other vital facilities and services for the recording, sound and video production industries. Basic listings (name, address, contact) are provided free of charge. Extended listings (equipment, credits, specialization), and photographs or company logos may be included at a nominal charge. If you would like to be listed in a *Mix* Directory, write or call the *Mix* Directories Department, 6400 Hollis Street #12, Emeryville, CA 94608, (415) 653-3307.

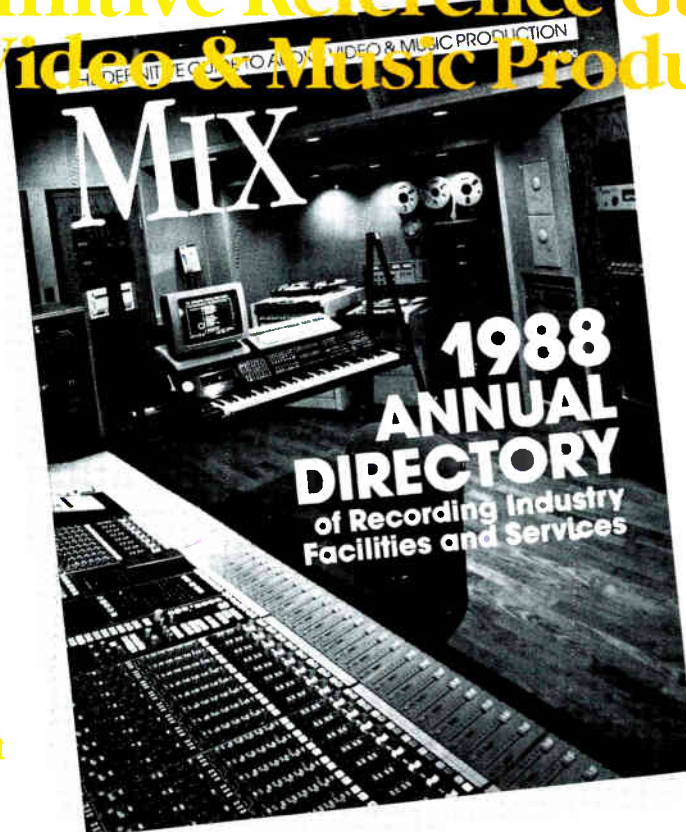
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many emphasis here is on mix sessions.

Just looking at the new room here, it's hard to tell that this is a full-service post facility. Other rooms I've visited around Los Angeles have a "post" look to them: cart machines everywhere, inadequate monitoring, and an entirely different vibe. Given that our new room, Studio "A," serves a dual purpose of music sessions and post-production, we have designed the look of it to appeal to *both* markets. With the SSL computer automation and Total Recall system we can change from one kind of session to another in under 20 minutes. Using the SL 6000's flexible 6-bus mix matrix—basically set up as three stereo pairs—and the machine-control capability of the SSL Studio Computer, we can turn around for a video layback session, for example, in less than a minute.

We have also hot-rodded the SSL Events Controller to trigger digital samplers, including an Akai S900 and Publison Infernal Machine, as well as conventional NAB cart machines—sometimes a client like NBC will bring us prerecorded sound effects on NAB cartridge. In addition to providing mag-style slipping of tracks, digital samplers also enable the play time of a sample to be altered without changing the pitch, which can be very useful for shortening or lengthening a music bed for a 15- or 30-second commercial.

We also have an Apple Macintosh Plus personal computer with custom software that lets us store a large library of digital sound effects on hard disk for uploading into an E-mu Systems Emulator II, or one of our other digital samplers, to be fired by the SSL Events Controller.

Every post house faces a profusion of problems each day; sometimes it seems like *all* you are dealing with are problems. You have to handle so many transfers that an audio-for-video house gets used to putting out small fires all day long—the time code track is bad, the sync is off and so on. The record world, on the other hand, deals with a different set of problems.

From working with record clients we know how to come up with just about any sound texture—mainly as a result of having the time to experiment in the studio. We find that our post clients can benefit from that knowledge but, because of the time pressures involved, cannot normally afford to experiment with sounds. We can

—CONTINUED ON PAGE 204

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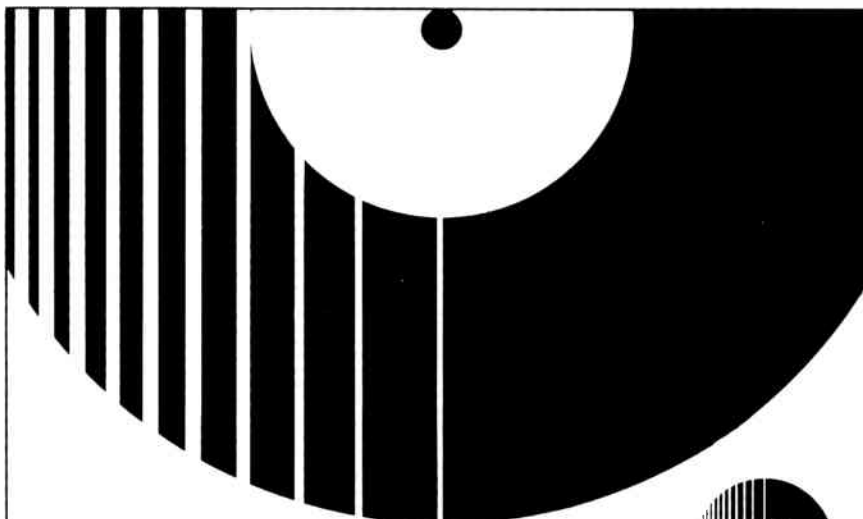
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POST · SCRIPT

tems that allow centralized control of all the tape transports—such as the Solid State Logic SL 6000 console that we have here at Post Logic—you don't need separate remote controls, and direct access to the machines in the control room. Instead, they can all be put off in a soundproofed area. That way, the console seems to "float" in the room, which is good ergonomically and aesthetically.

While planning Post Logic, I decided that I only wanted a remix facility; I didn't want to tie up a lot of my money in a large recording space. I'd rather

let other people pay for all that real estate, because a large room can never bring you the same return on your investment. Despite the fact that recording areas cost the same to develop as a control room—about \$110 per square foot—they just don't generate the same level of revenue.

As a producer myself, I like to travel all over town to track in some very interesting spaces, but without the headaches of having to operate one myself. We do have two small voice-over and overdub booths that can be used to track virtually everything—on a recent session we even tracked drums in a corridor—although our pri-

Selecting a Console for Record Sessions and Post-Production

"The basic reason for choosing a 40-channel Solid State Logic SL 6000 for audio post," Post Logic owner Miles Christensen says, "is that it provides so much more efficiency for the mix engineer. It saves time on a session because all of the audio machines' safe/ready mode or input/replay switching functions are controlled directly by the SSL's Studio Computer system from the console. Literally everything the mixer needs is within arm's reach.

"The SSL is so fast to operate that you can set up an effect, try it out and be ready to roll in seconds. The master synchronizer will handle a maximum of five audio or video transports, the first three of which can function as a master transport—we have it set up so that the one-inch videotape, 3/4-inch U-Matic and primary multi-track can serve as the time code master. But we can also repatch any other transport to function as a master if we need to work in a different way.

"Although we may not have all five machines running simultaneously, the ability to quickly bring an additional transport on-line—maybe an additional slave 4-track—one can save time on a busy sweetening

session. The lockup time is very fast: under two seconds at 15 ips.

"Of course, you can buy a console, add some machine remotes, synchronizers and so on, and maybe get the same result. But you cannot be as efficient at the job of mixing, just because of having to take care of the running and interfacing of all that hardware.

"No client wants to see all of that clutter and wiring in the control room. The clean lines, efficiency and ease of operation of the SSL impress even the most non-technical producers.

"The Events Controller is invaluable for letting us sample an effect or music cue that is slightly off sync, or which needs to be duplicated or slid to another point in the soundtrack. It allows us to quickly sample the sound into an E-mu Systems Emulator, Akai S900 or Publison Infernal Machine and then trigger it to be relaid at a different time code location."

"And because the sampling and triggering can be controlled by the same time code track," adds Post Logic chief engineer Tom Davis, "we only have to enter an offset into the Events Controller to move the sample forwards or backwards from its original position. In the past, we would have had to first sample the sound—which can be a complex and time consuming procedure—and then work out where in the track we wanted to place it. Now we simply dial in a time code offset, and the SSL board handles the entire process for us."

by Miles Christensen

BREAKING INTO AUDIO-FOR-VIDEO

A CASE STUDY

Having owned a recording studio since I was 19, I came to the conclusion very early that it would be extremely difficult to recoup the \$1 million-plus investment necessary to build a state-of-the-art room against the kind of hourly rates being charged these days at major-market studios in Los Angeles, New York, Chicago and Nashville.

I soon discovered that, because of my connections around Hollywood, I could work on music videos and promos; however I still wanted to continue with rock and roll sessions. At the same time, we could also take on audio-for-video projects, and bring a good pair of ears to sweetening and post-production. In fact, my goal was to do record sessions at night, and audio-for-video post and sweetening during the day.

Because I could bring my wide experience of music sessions to the

world of stereo post-production—what I considered my “magic ingredient”—I found that breaking into the sweetening and post market wasn’t too difficult. If you have a good facility and good staff in a town like Los Angeles, where there is a bustling post market, you can make a respectable living.

The key to success, however, is to have a firm commitment to audio quality and something *new* to offer; network and independent clients really get a kick out of innovative techniques. There’s no excuse for not dazzling the client with some really neat tricks, such as time compression or expansion to make the audio soundtrack fit a stronger or longer time slot.

Having a separate machine room for all the video and audio machines is common practice in video houses, but not so common in rock and roll studios. With the advent of integrated sys-



**Post Logic
co-owner
Miles Christensen**

Here's the setup.

The simplicity of the diagram below belies the many capabilities of the DMP7 at work in an automated multi-track mixdown/processing system.

Dry tracks from the multi-track recorder are fed into the DMP7. A SMPTE track is fed into the SMPTE/MIDI converter. The MIDI timing track controls the MIDI sequencer/recorder.

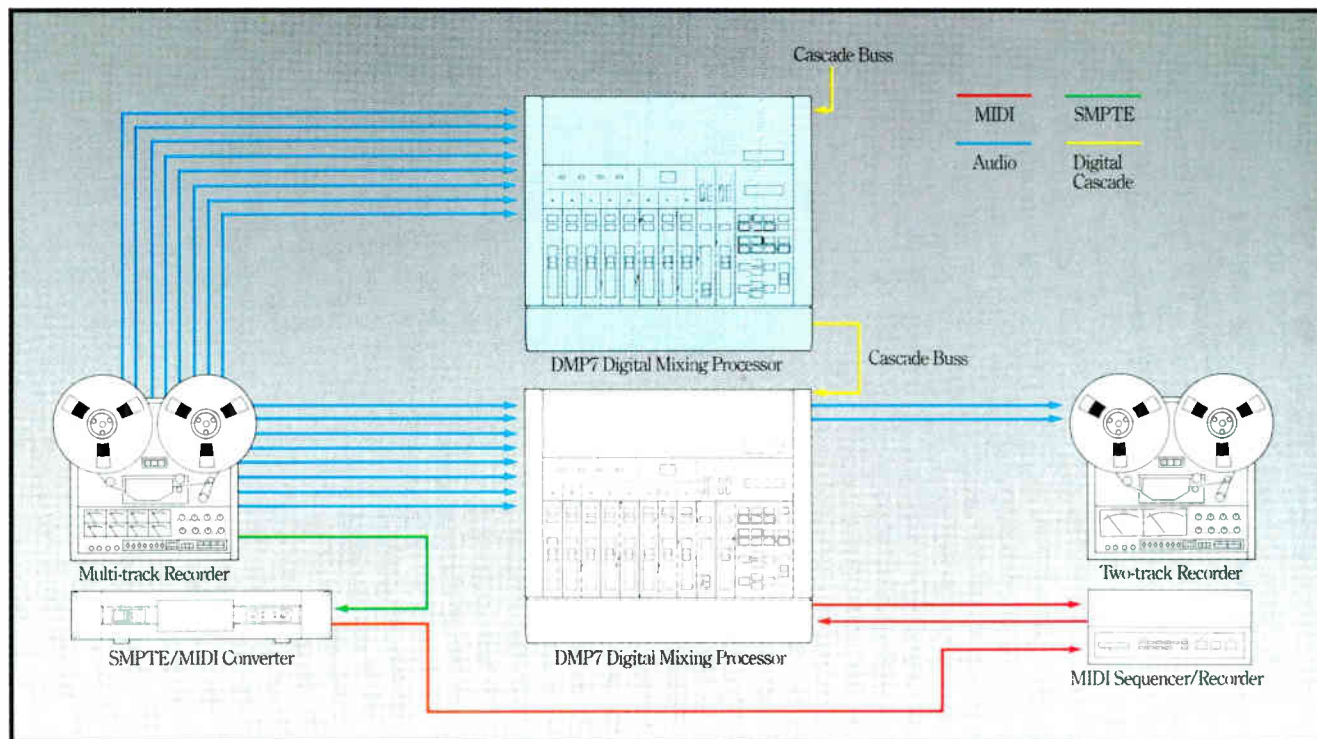
The MIDI control information for the DMP7 can now be recorded in sync with the music. The DMP7 then automatically mixes everything down into a two-track master or

demo. Until now, this level of mixed automation was only possible with more expensive consoles.

The DMP7 doesn't just do the final mixing, but the final processing as well, to each individual track. With reverbs, flanging, delay, and stereo panning. Or whatever sweetening you

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add eggs and milk). The new tape, developed for both music and spoken word applications, features the same electroacoustic properties as its fore-runner PE 619, while utilizing the identical binding materials as the higher grade PE 649 series tapes. PE 619 pancakes are offered in 8,200 and 12,300-foot lengths for C-60 cassettes, and 11,500 and 15,000-foot lengths for C-90s.

Ampex Corporation's Magnetic Tape Division has expanded its line of 467 U-Matic Digital Audio Cassettes with the addition of an 80-minute play length, which joins the company's DA-30, DA-609 and DA-75. And BASF has introduced what it calls "the most precise and expensive cassette in the world," a reference cassette for azimuth standard use. The milled, metal alloy cassette housing, manufactured in West Germany, is machined to tolerances of 5/1000th of a millimeter, allowing an "exact" measurement standard for azimuth and head alignment.

A newcomer on the duplication scene, U.S. Tape Corp., has moved from Pasadena to North Hollywood. U.S. Tape, a custom duplicator and distributor of audio cassettes, was formed in July of 1987 through acquisition of the liquidated assets of a bankrupt cassette distributor. The company sells blank cassettes, loads tape into shells and runs duplication facilities.

A new product for duplicators has

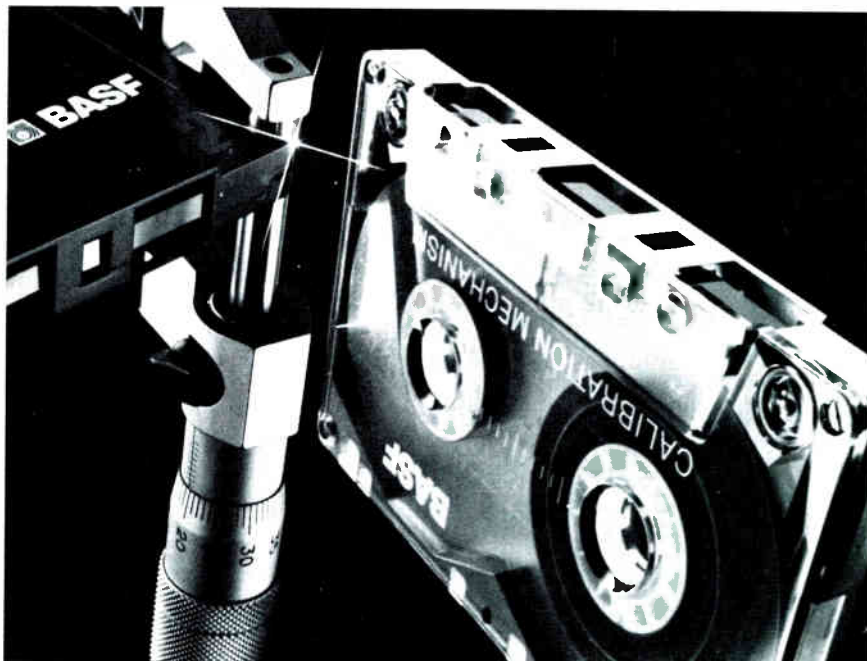
been developed by Concept Edsign in Burlington, NC. The Cassette Multi-Stacker works in conjunction with existing loaders in the Concept Design line, including the 790, MK2000, 750, 760, 770, and 780. The MultiStacker reduces operator handling, and prevents jamming because cassettes remain upright throughout their journey from loading to stacking tray.

* * *

In a self-described effort to "clear up the confusion raging over preparation and handling of master tapes for vinyl disc, CD and cassette," Discmakers of Philadelphia, PA has published a 16-page booklet entitled *Guide to Master Tape Preparation*. Discmakers hopes that by clearly describing the steps and potential traps involved in pressing and duplication, the guide will help clients get the best possible sound on their products. The guide is available at no charge by calling (800) 468-9353. Discmakers has also opened a full service graphic arts and design department offering complete album cassette and CD packaging design, as well as custom full-color posters. ■

Phil De Lancie is one of our resident voices on topics relating to record mastering and manufacturing, tape duplication, CD replication, storage and formats. He's also a mastering engineer at Fantasy Recording Studios in Berkeley.

BASF reference cassette for azimuth standard



without music information tracks. Combined inspection and automatic loading/unloading time takes approximately two seconds per CD. SICK may be reached in St. Paul, Minnesota.

Along the same lines, Musitech of High Wycombe, England is offering a Universal Optical Disc Tester. The unit may be used in either the manual mode, with a digital display of a selected measured parameter, or in automatic mode, in which a printed copy of the measured parameter is provided. A measuring cycle, checking the full disc from a 25-mm radius, is completed within 30 seconds. Measured parameters include birefringence, reflectivity, transmissivity, flatness and wedge angle.

Musitech also offers, in conjunction with Advent Engineering of England, a fully integrated, modular optical disc manufacturing system. Each line, linked together with an automation system from Advent, has an approximate capacity of 2 million discs per year on a three-shift production basis. Molding, sputter aluminum coating, lacquer spin coating and printing are included along with environmental and quality control units. The complete system is designed to operate in 30 square meters of manufacturing space.

In other CD production news, Den-

ton Vacuum of Cherry Hill, NJ has announced placement of its DiscLine-500 Compact Disc Metalizer at the Discovery Systems plant in Dublin, Ohio. Both center and peripheral masking are accomplished inside the unit, eliminating the need for robots to manipulate masks. Discovery has the DiscLine-500 in use in both CD-Audio and CD-ROM production.

* * *

Tape manufacturers and distributors have been busy over the past few months, with several introducing additions to their product lines. Sunkyoung, the Korean firm which claims a 20%

market share in the U.S. professional duplicating tape industry, has come out with what it calls "pure chrome," a chromium dioxide formulation which bears the designation "UCR." UCR is presently available in 10,500-foot pancakes from Sunkyoung's U.S. distribution centers. Sunkyoung has also installed a "Technical Center" at its U.S. headquarters in Carson, CA where it will monitor its incoming product for consistency and quality, conduct R&D on product improvements and work with clients on tape-related problems.

Agfa-Gevaert has added to its line as well with the recent introduction of a new PE 619i "pancake product" (just



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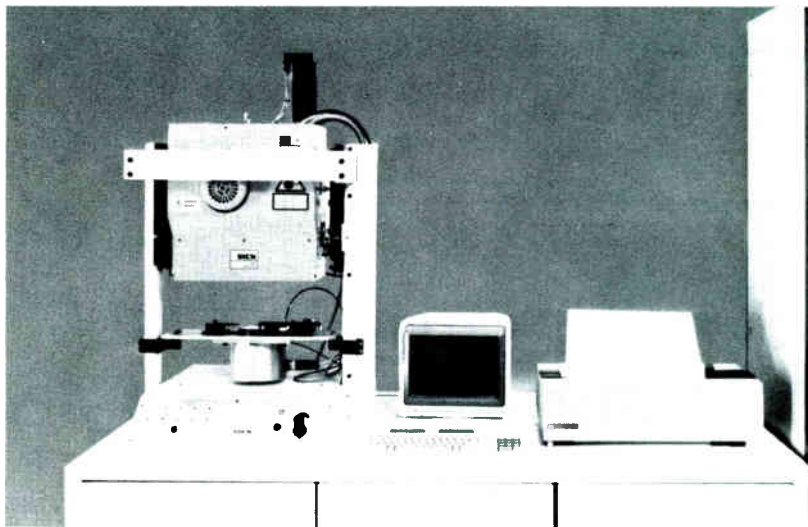
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With SICK's CD inspection system, discs are evaluated for all typical defects, such as inclusions and bubbles, metalizing defects and damage.

AFTER · MIX

System, which provides a method of measuring the quality and fitness of each stamper before it is used on the line. The SP-2 would normally be used in the electroforming cleanroom. As each new stamper is finished, it may be placed in the unit and examined for conformity to Philips/Sony CD specifications. The system consists of two major components: the stamper player and a computer to run the error analysis software (IBM or compatible with 640 kB RAM and 20 MB hard drive is recommended). The error analysis program computes and logs three types of error data: Block Error Rate (BLER), Burst Errors, and Uncorrectable Errors. One second and ten second error averages are displayed in real time on the monitor. The user may also specify start and stop locations for analyzing specific portions of a stamper. Outputs on the stamper player will also allow hookup of auxiliary gear for monitoring reflectivity, eccentricity, symmetry, crosstalk, flatness, jitter, and tracking signal magnitude and noise.



SICK Optik-Elektronik CD inspection system

Meanwhile, SICK Optik-Elektronik has developed an in-line compact disc inspection system for in-plant quality control. The system consists of the SC 60 Laser Scanner, two receiver systems and defect evaluation electronics for disc sorting and defect mapping. Discs are evaluated for all typical defects such as inclusions and bubbles, metalizing defects and damage. After inspec-

tion, a disc decision signal is provided to the disc handling system for routing of the disc downstream. Using the multiple language, menu-driven software, the CD manufacturer may set defect thresholds and defect priorities for the handling system according to desired quality requirements. For example, the system can ignore non-critical defects or defects occurring in areas of the CD

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by Philip De Lancie

GRP TAKES DAT PLUNGE

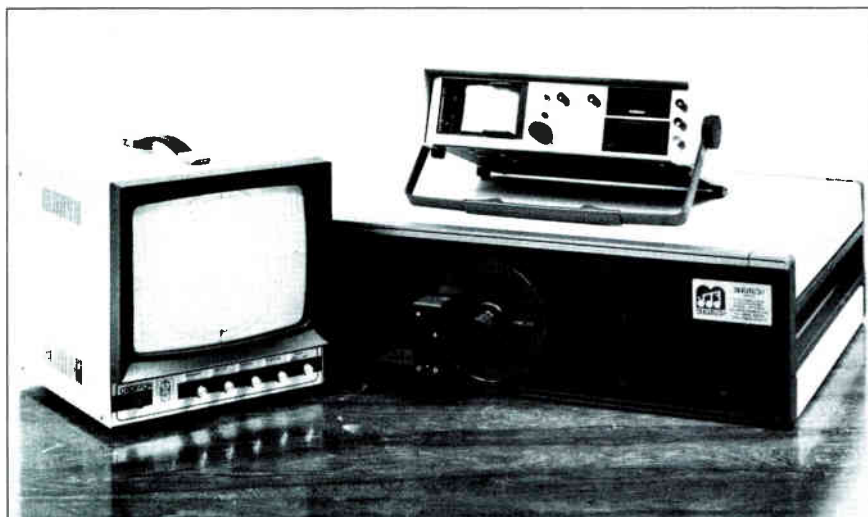
In a move said to be the first of its kind by a U.S. record company, independent contemporary jazz label GRP Records has announced plans to release product in the DAT format. The DAT rollout will begin in Europe with the release of six titles from the company's existing catalog as well as a special DAT sampler. Seven European markets (West Germany, Austria, Sweden, Norway, Denmark, Finland and France) were chosen for the initial phase of DAT introduction. All these nations have blank tape levies, and the label believes that a strong introduction of the new format will be made by the hardware manufacturers, thus creating a strong market for prerecorded DAT product. GRP's DAT distribution in Europe will be carried out directly through a wholly owned subsidiary, GRP Ltd. in Zurich, Switzerland.

The second phase of GRP's DAT startup, planned for mid-April, will cover the remaining European countries as well as the U.S. domestic market.

The company will bypass existing distribution channels, creating instead a new network of independent representatives which will contact audio retail accounts exclusively. GRP's best-selling titles have been chosen for the new release, including works by company co-founder Dave Grusin, Lee Ritenour, Chick Corea, the Duke Ellington Orchestra, and Diane Schuur. With all the controversy surrounding DAT, GRP's move is likely to earn the ire of those industry interests lined up behind the Recording Industry Association of America (RIAA) in its fight for the copy-coding of music product, but it may help break the current impasse that has delayed U.S. marketing of DAT hardware.

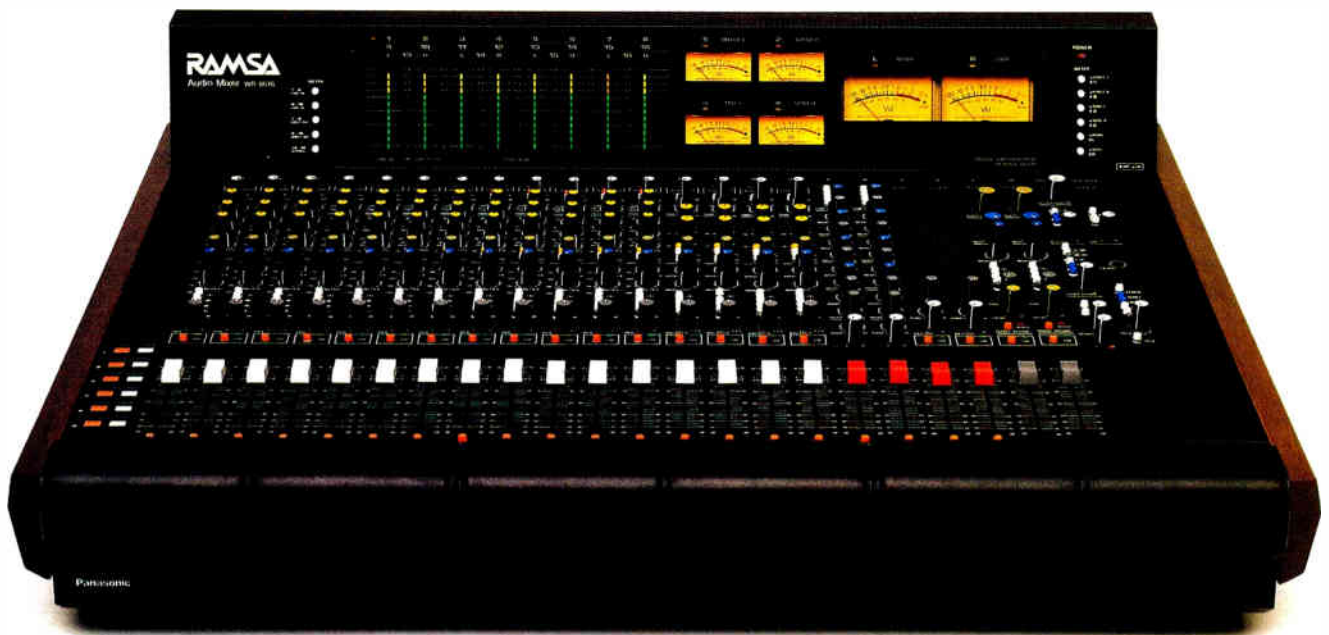
* * *

Several new products have been introduced recently to aid in quality assurance in the CD production chain. From Digital Intelligence Systems Corporation (DISC) of Santa Ana, CA comes the SP-2 CD Stamper Analysis



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of an engineer," says Delfeayo.

"They just centered the band in the room, and used the tall baffles to isolate the bass and the drums, but tried to keep it so that people could still see each other," says Siegel, whose previous credits include David Sanborn's *As We Speak*, Weather Report's *Sportin' Life* and Wayne Shorter's *Atlantis*. "One problem was that I had the musicians too far apart," says Delfeayo, "so that when you have leakage, the distance is so great that it kind of washes out the sound of the other instruments. The drum leakage into the bass microphone—they're so far apart that there's like a half-second delay. So if I put too much bass in, the drums come back a lot. That's why it doesn't sound like I wanted it to sound."

Branford really wanted a big room for the session. "Those are the rooms where the instruments sound the best. They have the room to travel," he says. "In small rooms they wind up separating everybody, putting the drummer in a booth, putting baffles over the

piano, over the drums. Every instrument sounds separate. For pop music it works OK because you're dealing with electric signals most of the time. But with acoustic music it sounds dreadful."

The drums were behind baffles, but because the ceiling is so high there was enough room for Tony Williams' sound to travel upwards so he would have a live room sound. The baffles were wood at the bottom, plexiglass at the top, split halfway, and were about eight feet high. "Delfeayo got this idea because he saw a picture of Miles playing behind a major 11-foot plexiglass baffle in the *Kind of Blue* session, and said, 'I wonder what this does to the sound?' It gives Miles the live room sound like he had, and it also alleviates the detrimental leakage," says Branford.

Leakage is always a problem, especially when the drummer is as potent a stick-wielder as Williams. But there's something about really knowing how to play that makes recording a drummer like Williams easy. "The tom mics were pretty much right on the first time around," says engineer Siegel. "I

think we used [Sennheiser] 421s. The main concern was getting the proper isolation, because the room is pretty live and it's very large. Normally in a large room, as long as you get some distance between everybody you're okay, but it's got wood floors.

"We used a lot of [Neumann] TLM170s. They wanted to use as many as possible for everything, so I'm pretty sure we used them for drum overheads. It's similar to the U87, but it's supposedly more transparent. They had used those on another project, and loved them on everything, so it's likely we used those on drum overhead, kick drum, a pair of them on acoustic piano, on the sax, and even one on the acoustic bass, although I think we ended up with a [Neumann] FET 47 on the bass."

"The main problem with records today is the bass direct," says producer Delfeayo, who says bass is his favorite instrument to record. He wrote a special note for the back cover explaining that the acoustic bass on the record was *not* recorded direct. "Bass players like to use the bass direct because it doesn't show off all their flaws as much, because you can just turn it up and not have to worry about leakage," he says. "But it's the most dreaded sound. It makes me cringe in fear. So let bass players know that there's still hope to capture the real bass sound without using that pickup. I just used a Neumann U67 by the F hole, and an AKG 451 in the bridge. The 451 generally gives a lot of attack, and the 67 gives the bass sound, the resonance."

"Engineers are so used to jazz producers coming in and barking out orders and not knowing what they're talking about," says Branford, "that you tell them something and they say 'Yeah, right,' and they do what they want to do anyway. There was an instance when Delfeayo told them to raise the overhead mics and move the mics away from Tony's drumset. Not have them directly on the drums like you do on rock records. Rock and roll engineers are used to setting the levels for one song, and then those levels basically remain through the whole record. But with *Renaissance* we were dealing with acoustic music, loud songs and soft songs." ■

Robin Tolleson freelances for Mix, downbeat, Musician and is associate editor for Drums & Drumming.

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phones in some of the studios. "They weigh me down too much, and put too much pressure on my ears," he says. "I like to use the smaller Walkman-type phones, but they just don't have the power that most cue systems put out. I wanted something to cut the power down. So I took apart one of the cue boxes from a friend's studio, analyzed the circuit and copied it into a miniature box. All it has is left and right volume controls, a stereo/mono switch and a mini jack for my small headphones. I made a cable with a mini jack on one end and a standard 3-conductor jack on the other. I plug that into the cue system and then I just clip my little box on my belt. It's really nothing but a copy of the standard box. It works OK, except on some of my synth patches the low frequencies don't always come through as well as I'd like. It also works well when I'm working with a string section and I want to hear a live sound as well as the mix."

Conni Ellisor, a contractor and leader of the A Strings (a recording string section in Nashville) says her members bring their own headphones to sessions. "I find that [having your own phones] eliminates one of the unknown factors," she notes. "You have so many things to deal with: the studios' cue system, the way the engineer works and differences in the kinds of tracks you're working with. It's like listening to the same monitoring system if you're an engineer. Most of us prefer Sennheisers. They seem to have

the best bass response.

"I prefer to have the engineer run the cue system in split mono mode with strings on one side and the track, particularly the rhythm and pitch instruments, on the other. Then we have the left earpiece off so we can hear the sound of our own instruments. Not all contractors agree about this, but I think it's important to have vocals in the mix, because a vocalist can shift the pitch center and I need to be aware of that. I like to monitor the strings, not only so I can hear my section, but because in most studios you don't have a sense of the room when you're recording, and you can get that through the cue system. And I like to hear the strings without any echo. We very much need to have our own individual control over the cue mix because different people in the section need to hear different things.

"I believe that the job of my section is to play as one instrument, as a keyboard would. So you can see that it's very important for each of us to have control over what we're hearing on the cue system. We tune from the cellos, who get their pitch from the bass, so we ask for more cellos and violas in our mix for that reason."

The lowly animal is stirring. ■

Paul Potyén is associate editor of Mix, and co-leads the progressive Latin band, Canoneo, which is currently working on their third album. He also composes, arranges and produces music for commercial and industrial applications in his spare time, if any. He is not related to Paul Motian.

SOUND · ON · STAGE

—FROM PAGE 124, TOURING LIFE

quality from awful to hilarious (like the food). I believe this was a first among touring crews.

The Biloxi Shrimp Incident. After a series of disastrous meals in Biloxi, Mississippi, a local contact with a shrimp boat was hired to provide us with a fresh shrimp dinner. (What *else* would Jimmy Buffett's crew want?) The shrimp was delivered to the venue in time for dinner, as promised. A crew member who shall remain nameless (Ross Ritto) hooked his foot on a cable while carrying the shrimp, and fell. Not just fell, but had his feet fly out from under him. The shrimp flew

all over the amp racks, Ross' clothes had to be burned, and most of the audience was subjected to the smell of fish throughout the night.

CONCLUSION

I wish that everyone involved in professional audio sales and/or marketing could spend a summer on the road. The insights and knowledge gained are invaluable. Daily finesse under ridiculous conditions is the norm, rather than the exception on a tour. Thanks to Ross Ritto and the Jimmy Buffett gang for allowing a salesman to look at touring. Also, thanks to QSC Audio for giving me the time to go out and remember why we are in the business. ■

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