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# MIX

## Microphone Technology 1992: Something Old, Something New

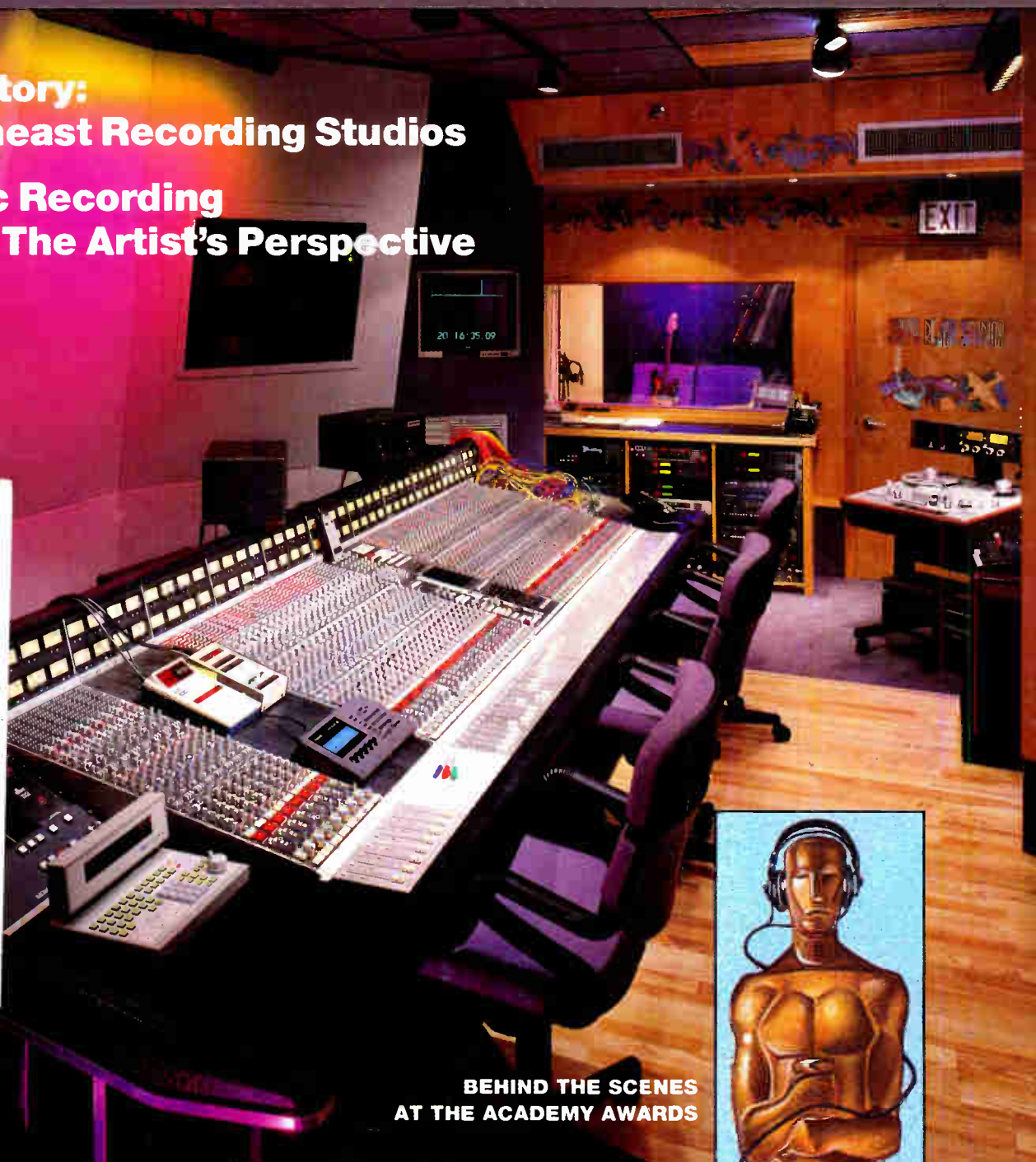
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- 1991- **TEC Award (Technical Excellence & Creativity): Model 300**



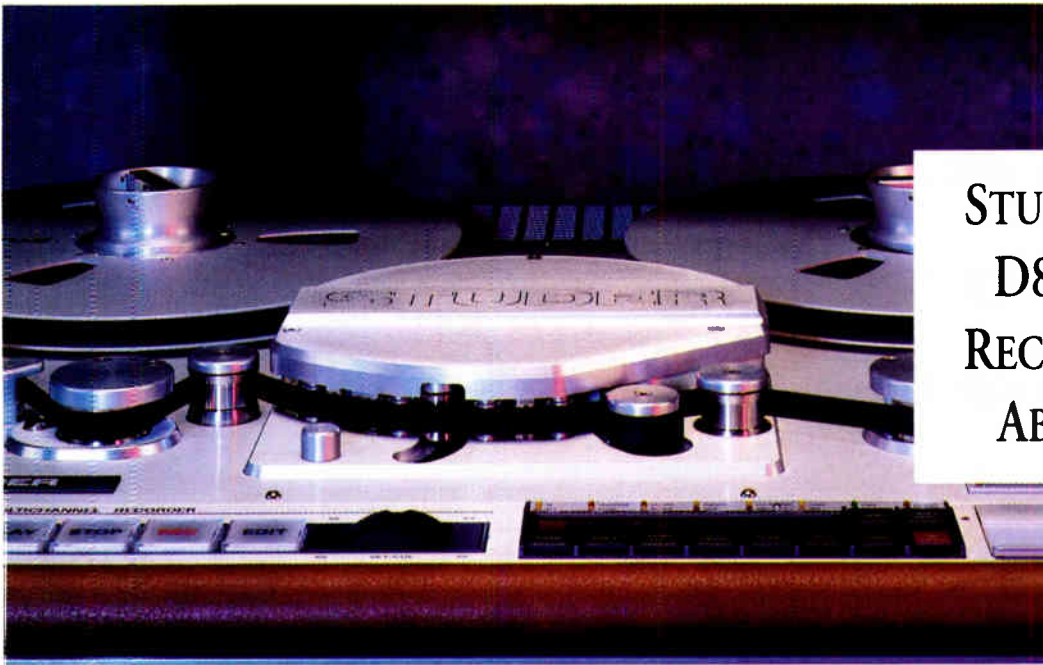
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# MIX

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JUNE 1992, VOLUME 16, NUMBER 6

## AUDIO

- 21 **The Fast Lane:** The Art of Noise  
*by Stephen St. Croix*
- 24 **Juxtapositions:** Digital Audio Meets Video  
*by Mel Lambert*
- 28 **Ch-Ch-Changes:**  
Music Recording  
from the Artist's  
Perspective  
*by the Mix Staff*
- 37 **The Byte Beat:**  
CD-ROM Update  
*by Paul Potyen*
- 44 **The Academy  
Awards  
Broadcast:**  
A Peek Behind the Scenes  
*by Amy Ziffer*
- 56 **Favorite Vocal Microphones in the Southeast**  
*by Dan Daley*
- 58 **Bill Porter: Miking the Classics**  
*by George Petersen*
- 60 **An Interview with Jörg Sennheiser**  
*by Stephen Paul*
- 66 **Studio View:** Workstations Landing on  
the Mezzanine Level *by Dan Daley*
- 112 **Producer's Desk:** Bill Laswell  
*by Bill Milkowski*



PAGE 28

## PRODUCTS

- 48 **Microphone Technology 1992:**  
Something Old, Something New  
*by George Petersen*
- 78 **Preview/Hot Off the Shelf**
- 83 **Auditions:** MIDI Machine Control with  
the Fostex G-16S and C-Lab Notator 3.1;  
Neumann KMS 150 Microphone; Digital Design  
BP12 Subwoofer *by George Petersen*
- 91 **Field Test:** AKG Tri-Power Microphones  
*by David (Rudy) Trubitt*

## TEC AWARDS NOMINATIONS

- 94 **1992 Technical Excellence  
& Creativity Awards Nominees**

## POST-PRODUCTION

- 120 **Post-Script:** Alan Howarth's New Electric  
Melody; Sound for *The Lawnmower Man*;  
Orlando's Emerging Post Industry; Mardi Gras  
in HDTV; SSL Scenaria; Postings *by Tom Kenny*



PAGE 48

## LIVE SOUND

- 14 **Insider Audio:** Bose Sound in Albertville  
*by Ken Pohlmann*
- 96 **SoundCheck/News Flashes**  
*by David (Rudy) Trubitt*
- 97 **Live Sounds:** The Bay Area Music Awards  
*by David (Rudy) Trubitt*
- 106 **The Memphis Horns'**  
**25th Anniversary Concert** *by Rick Clark*
- 110 **New Sound Reinforcement Products**



PAGE 96

## TAPE & DISC

- 131 **1991 RIAA Report:**  
A Tale of Two Industries *by Philip De Lancie*
- 132 **Tape & Disc News/Splices** *by Philip De Lancie*

## MUSIC

- 72 **Lunching with Bonzai:** Artie Shaw  
*by Mr. Bonzai*



PAGE 120

## DEPARTMENTS

- 8 **From the Editor**
- 10 **Current**
- 12 **Industry Notes**
- 136 **Coast to Coast** (Including Sessions/Studio News, N.Y. Metro Report, L.A. Grapevine, Nashville Skyline, New Orleans Gumbo, and Southeast Studio Spotlight)
- 168 **Ad Index & Reader Service Card**
- 169 **Classifieds**

**Cover:** South Beach Studios, a fully equipped recording and mixing facility located in the heart of Miami Beach's Art Deco district, opened in February 1992. The control room offers a 64-channel SSL 4072 E console with G modules, Genelec 1034A monitors and a full range of outboard gear. Two pre-production rooms, which contain the latest keyboards, modules, sequencers and sampling software, are wired direct to the control room.  
**Photo:** Mark Diamond and David Bell.



## DIRECTORY

- 143 **Southeast Recording Studios**

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20. Does it have a Digital Filter with +/- emphasis for permanently “EQing” samples?
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22. Is there realtime aural feedback when looping, and is it easy to do?
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26. Is there matrix modulation in the Patch Control page for flexible control routing?
27. Does it have Analog Feel to make certain Patches sound less “sterile?”
28. Does it have accurate Phase Lock or will it lose stereo imaging when active?
29. Does it have digital Compression and Expansion?
30. Does it have Wave Draw allowing you to actually redraw the waveform?
31. Does it have an Insert function for splicing data into the middle of other data?
32. Does it have an Area Erase function for erasing data but leaving the space (time)?
33. Does it have a sample Mix function with a delay parameter?
34. Does it receive Polyphonic aftertouch?
35. Are there different Velocity Curves available?
36. Is there an Index and Jump function for accessing any page in the sampler easily?
37. Are there “Select” windows for finding and assigning samples patches, etc. quickly?
38. Is there a Volume ID with view field or similar cataloging system?
39. Does it have a 48kHz sampling rate through the digital and analog ins?
40. Is there an “Auto-patch” feature which automatically makes full-blown patches from your samples in a matter of seconds?
41. Does it have resampling, including the ability to resample an entire Performance?
42. Does it have a pre-trigger parameter so as not to lose the attack of your samples?





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# FROM THE EDITOR

**S**tudio engineers are by and large an agreeable bunch. They generally are positive, productive, particular and tweaky. However, they frequently operate in a relatively narrow emotional frame. Calm, cool and collect the mics right after each session. Few elements of life break out the yahoo! side of a sound engineer...except maybe for those microphones.

Glowing praise and outright anger take over these otherwise mild manners when mics are discussed. Just a letter and a couple of numbers is enough to launch a tirade of unending love or eternal damnation.

Unlike almost all other categories of equipment, new microphones have never really grown up to replace the older generation. No mic seems to become obsolete or undesirable. Almost any old microphone has some application left in it. Most will bring at least a smile and a, "Sure, I'll use it."

How does one explain this reverence for the old war ponies? Maybe it's that old microphones possessed a personality, or at least they had a *sound*. Sure, they weren't perfect, like most other links of the audio chain were trying to be, but they had the right and the purpose to be different—to cradle the transduced signal in their ever-lovin' arms. They had a friendly quality, which came in very handy with in-your-face technology.

This month we take another look at microphones, old and new. Dan Daley surveys some of the engineers in the Southeast who are well-known for their vocal-recording track records. He digs up some of the reasons why vintage mics aren't just for the museum case.

But, make no mistake, there has been progress in microphone technology. George Petersen, our intrepid product explorer, goes in search of new approaches to mic design and comes up with a crop of serious contenders for the status of future classics. No lack of imagination in this department. The new models sport lower noise floors, more complex and controllable capsule configurations, even updated tube designs. They deserve a good long look and maybe even some excitement if the spirit moves.



Keep reading,

David Schwartz  
Editor-in-Chief

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# CURRENT

## **NAB '92: Technology Marches On**

Thousands of broadcast and production professionals from around the globe convened in Las Vegas from April 13-16 for the 1992 convention of the National Association of Broadcasters.

A revolutionary concept just a few years back, desktop video has taken the industry by storm. Not unlike the effect of MIDI on the audio industry, these PC-based video-manipulation systems have the potential to equal or even surpass the flexibility of hardware-based video processors—at a fraction of the price. While a new breed of technological upstarts hawked their PC-based video wares, major players in hardware systems—such as Grass Valley and BTS—also debuted new products in this genre at NAB.

To no one's surprise, advancements in digital technology dominated the audio side of NAB. Disk-based multitrack packages will become more commonplace, especially with the advent of low-cost-yet-high-performance systems such as Digidesign's Pro Tools, Doremi Labs' 8-channel system, Studer-Editech's Dyaxis II and the WaveFrame 401. Unveiled at NAB, the latter is a turnkey 8-track system, including computer, monitor, hard disks, digital I/O and SMPTE sync—priced under \$15,000.

Sony made the U.S. debut of its PCM-3324S, a DASH-format 24-track comparably priced to a high-end analog deck equipped with noise reduction. And Nagra (distributed in the U.S. by Phi-Tech of Oklahoma City, Okla.) is slated to begin deliveries this summer of the much-awaited Nagra-D, a 4-channel, 24-bit, portable sync recorder whose rotary-head design provides approximately one hour of recording time on a 7-inch reel of standard, 1/4-inch digital tape. With the in-

creasing requirements of 4-channel field recording for film, stereo television and HDTV, the Nagra-D is arriving right on time.

The analog market was not neglected. 3M introduced its newest series of mag films: Types 393 (3-mil) and 395 (5-mil) are high-output formulations offering +3dB MOL over any previous 3M full-coat products. With continual improvements in heads and electronics over the years, mag film remains a viable—and popular—post-production sound format, and with a massive installed user base of magnetic film dubbers worldwide, 3M may have hit a home run with these new formulations.

And speaking of dubbers, Magna-Tech Electronic and WaveFrame were showing the InterlockDisk recorder and player in a private suite to film companies. Set to roll out in September, it provides 8-channel, random-access, magneto-optical digital recording and playback, while maintaining conventional front-panel controls. It is said to be easily integratable, with true bi-phase compatibility.

By far the most significant product introduction at NAB was Solid State Logic's Scenaria. By combining 24 tracks of disk-based audio; a 38-channel, automated digital console; automated audio video routing; multimachine transport control; ScreenSound SoundNet-compatibility and VisionTrak™ random access video storage; Scenaria provides an all-encompassing, powerful integrated system for fast, flexible audio post-production. This multiuser-capable system provides instantaneous location of audio and video to any point in the soundtrack. Reconfirming a project to accommodate scene additions or deletions from a new EDL is reduced from a tedious, time-intensive task to a matter of a few key-

strokes. In removing the drudgery of audio post manipulations, Scenaria allows engineers to focus on creativity. Perhaps technology isn't so bad after all.

—George Petersen

## **TEC Awards Nominees Announced**

The Mix Foundation for Excellence in Audio and the publishers of *Mix* magazine have announced the nominees for the 1992 Technical Excellence & Creativity Awards, to be held in San Francisco on October 2, the second night of the AES convention. All nominees were selected by a panel of nearly 300 prominent audio professionals. Also, recording engineer Bob Clearmountain has been chosen to receive the prestigious Les Paul Award. For a complete list of nominees, turn to page 94.

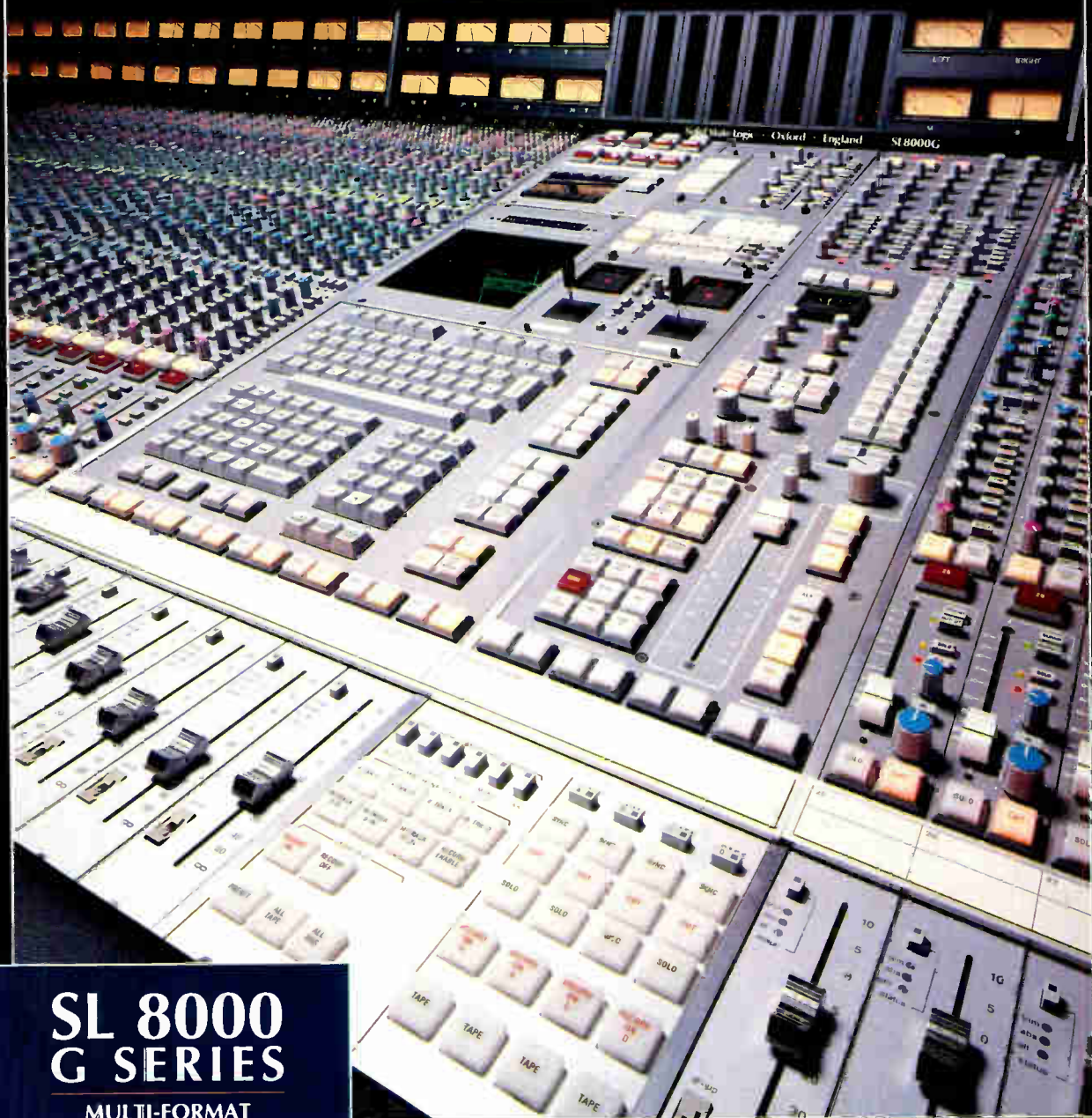
For more information regarding the TEC Awards, including ticket information, contact Karen Dunn at (510) 562-7519.

## **Corrections**

Things have been slightly out of control on the West Coast lately, and our May Northeast Studio Directory suffered as a result. **Marathon Recording** (NYC) has a Neve VR console with Flying Faders, an Otari MTR-90 MkIII and Tascam 822B cassette deck; and one of the engineer's names is Richard Horniblow. At **Soundmirror** (Boston), one engineer's name is Hank Koolstra, not Henk, and the facility has a Sony DTC700 DAT, Apogee AD500, B&K 4006, two Neumann TLM170s, and a Sanken CU41. The credits should read "mix-to-picture or sound with picture," and a comma was left out between the Yamaha AD2X and AEA MS decoder. The big live room at **Ambient Recording** (Stamford, Conn.) is 50 x 32 and 25,000 cubic feet; and the company has a Studer

—CONTINUED ON PAGE 12

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# INDUSTRY NOTES

QSC Audio Products (Costa Mesa, CA) created a new division, Sonetic Laboratories, which will manufacture a line of low-cost power amps. The phone number is (714) 645-2540... Audio-Technica of Stow, OH, promoted Jacquelyn Hebrock to director of product development for both the pro and consumer divisions. Taking over Hebrock's previous position as product manager is Kenneth Satz, who was promoted from product specialist... Studer International (Regensdorf, Switzerland) appointed Guy McNally as vice president for audio workstations... At presstime, Digidesign (Menlo Park, CA) planned on establishing a European headquarters in Paris by May. Doug Provisor, previously the vice president of sales, is managing director of Digidesign Europe. Paul Rice, vice president of marketing, is now also the vice president of domestic sales. M3 Sweatt was chosen as the director of sales for the Pacific Rim and South America... More international expansion news: Solid State Logic opened a new sales and service office, SSL Audio Technik GmbH, in Germany. The phone number is (49) (6151) 938686... Meyer Sound Labs of Berkeley, CA, chose Tom Divird as its new president and chief executive officer. Divird first worked for Meyer as a management consultant... Renkus-Heinz (Irvine, CA) named Jimmy Kawalek as the company's new product manager. More news from Renkus-Heinz: Silver Peak/PSI is now the exclusive sales representative for Colorado, Wyoming, Montana, New Mexico, Utah and most of Idaho. W.B. Pray Sales will handle the sales of Renkus-Heinz products in all of New England... QSC Audio Products, based in Costa Mesa, CA, hired Randall Curlee as the marketing manager for the pro power amplifier line... Mark Kennedy was made a sales engineer at Switchcraft's Minnesota sales office. That office covers the

Minnesota, North Dakota, South Dakota and northwestern Wisconsin territories... Celestion Professional Audio Division (Holliston, MA) appointed Greg Miller of Meyer and Ross as the audio company's representative in northern California and northern Nevada... Spectrum Signal Processing relocated its Canadian office to 8525 Baxter Pl., 100 Production Ct., Burnaby, British Columbia V5A 4V7... Lexicon (Waltham, MA) appointed Steven Strassberg Associates as the exclusive New York region direct-to-end-user rep for the Opus workstation... RPG Diffusor Systems and Hoffend & Sons are working together to manufacture, market and distribute the D'Antonio Performance Signature Series worldwide... Eastern Acoustic Works (Whitinsville, MA) chose several new distributors: Studer Revox Ltd. (Far East) will cover China and Southeast Asia, Mocom Communications Handelsges m.b.H. of Vienna will handle Austria, and Hermes International will distribute EAW products in Mexico... Clifton, NJ-based Castelluccio and Associates were named manufacturer's representatives for Bag End Loudspeaker Systems... Audio Animation (Knoxville, TN) signed Audio Techniques and Broadcast Services as retail-level dealers... Rental company The Toy Specialists (New York City) added John Kayne as the new technical manager... The Studio City, CA-based Musical Archives, Musical Archives Foundation (also known as the MAMA Foundation) appointed Ellen S. Cohn as general manager, Andrew Duncan as chief software engineer and Doug Evans as chief engineer... BASF gave its 1992 Inventor's Award to WEA Manufacturing Inc... Macworld Exposition/Canada will be held in Toronto from September 15-17 (note the change from the original dates of June 9-11). For additional information, contact Brukar International at (416) 620-1078. ■

—FROM PAGE 10, CURRENT

MkIII recorder, not MkII. The correct Fax number for Bearsville Studios (Bearsville, N.Y.) is (914) 679-4284. The MIDI equipment at Platinum Island (NYC) was listed under Mixing Consoles, and the consoles were left out. Platinum has an SSL 4056 E Series with G Series computer and "G&E" EQ with Total Recall; a 56-input Neve 8128 with Flying Faders; a Harrison 4032A; and 20 API mic pre's. Finally, Virtue Recording and Disc Mastering, celebrating 30 years in Philadelphia, has not moved; the address printed was a mailing address. The correct location is 1618 N. Broad, Philadelphia, PA 19121; the president is Frank Virtue and the studio manager is Maryann Lenciano, not Canciano. Our apologies to all.

## Performance Reader's Poll Awards

Performance magazine held its annual Summit this spring in San Diego. Showco (Dallas, TX) took top honors as sound company of the year. House mixer Dave Natale (Yes, Prince) and monitor engineer Curtis Campbell (Guns N' Roses) were also winners.

## Convention News

The Association of Professional Recording Services will host APRS 92 in London, June 3-5, at Olympia 2. Contact the APRS office for more information: phone (011) 734-756218.

StudioTech '92, a regional pro audio trade show co-sponsored by Mix, will be held at the Golden Gateway Holiday Inn in San Francisco, June 19-20. Contact Beverly Sommerfeld, (415) 433-7112.

PSN Publications will sponsor the first annual Music Tech Expo at the Ramada Hotel in New York City from June 13-14. For more information, call (212) 213-3444.

The National Association of Music Merchants will host its new-format summer educational/exhibit session in Atlantic City on June 20-21. For registration, call (800) 767-6266. ■

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by Ken C. Pohlmann

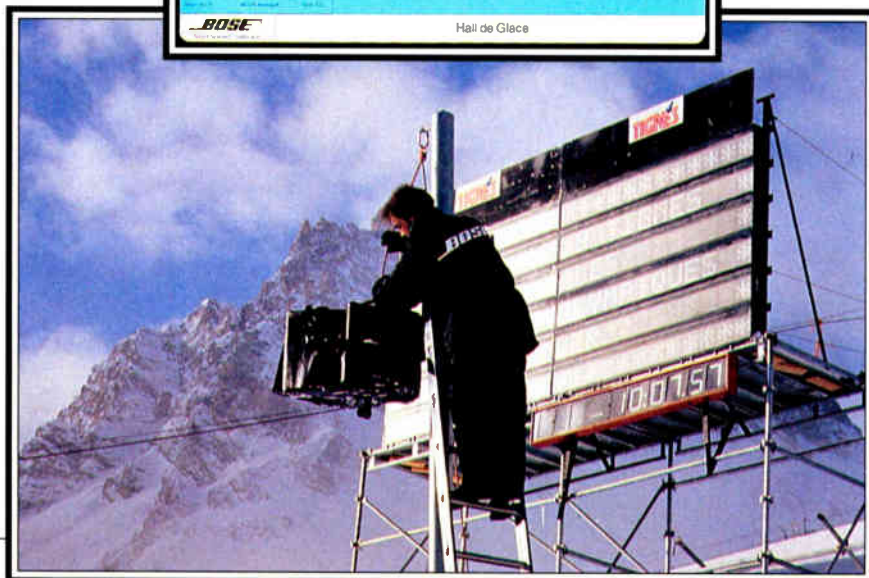
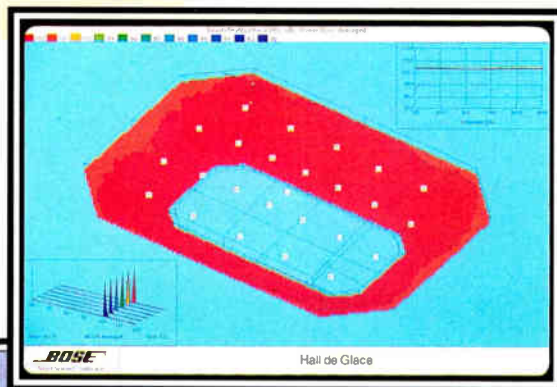
# A CAREER IN MODELING

## BOSE SOUND SYSTEMS IN ALBERTVILLE

Spanning the globe to bring you a constant variety of sport—the thrill of victory and the agony of defeat—I touched down in Geneva and hitched a ride to Albertville to sit in on the XVI Winter Olympic Games. Whereas the awardings of bronze, silver and gold medals were determined by differences of a hundredth of a second and the results were as unpredictable as the Alpine weather, success in another realm had been predicted months in advance, to within a  $\pm 1.5\text{dB}$  tolerance, back in the Macintosh environments of Bose Corporation.

Bose S.A.R.L. (Bose France) was the official supplier of sound systems to

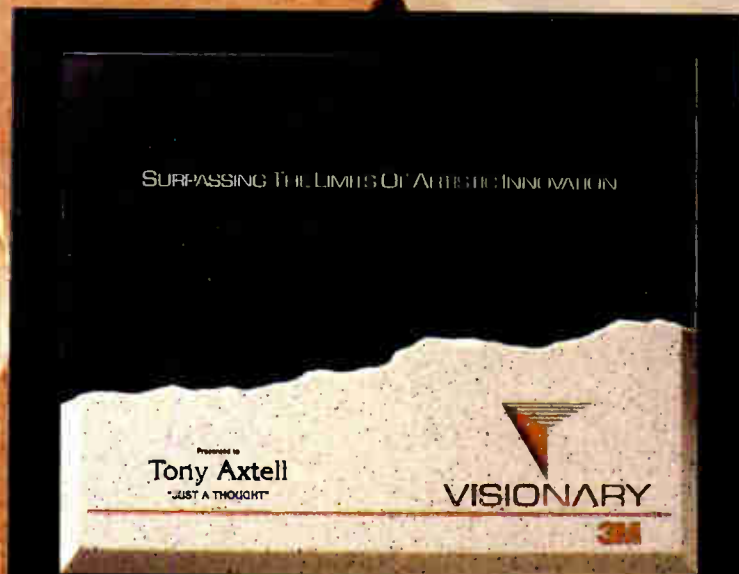
the Winter Games. (A sponsor contributes financial support to the Games, whereas a supplier's services are leased or purchased on the basis of merit.) As such, Bose provided separate sound reinforcement systems for all 13 Olympic venues. Because of the physical distances involved (sites up to 70 miles apart), the density of scheduling (up to 25 events a day, for 16 days) and unpredictability of weather conditions, Bose determined that a different sound system would be needed for each of the Olympic sites, each fully installed for opening day, with no shifting of equipment or reinstallation during the Games.



**Top photo:** Output from the Bose Modeler program, showing coverage predictions for the Ice Hall. **Bottom:** A systems installer hard at work on the ski slopes at Tignes.

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World Radio History

# Serious High Frequency Protection?



We use this illustration to shed some light on a superior design and introduce the new Tannoy CPA5 (ICT)<sup>TM</sup> loudspeaker - a small, contractor-specific loudspeaker from our new Contractor Series.

Designed and engineered with contractor requirements in mind, our new CPA5 offers controlled directivity and throw characteristics, uncommonly superior vocal articulation and strong vocal midrange presence from a loudspeaker promising failure-free operation from its HF unit. How? "Inductive Coupling Technology" (ICT)<sup>TM</sup> makes it so.

Simply stated, the CPA5's five inch ICT transducer has no high frequency voice coil or HF windings. Instead, a one inch Duralumin HF passive radiator sits in the same gap with, and is inductively energized by, the electro magnetic high frequency energy, generated as a by-product of the LF unit. The ICT transducer's crossover free architecture ensures linear, smooth, symmetrical off-axis dispersion out to 22kHz and true point-source, phase coherent sound.

The CPA5's ICT design offers exceptional performance with outstanding dynamic range and 90dB 1W 1M sensitivity. AT LAST you can have a dynamic, full bandwidth background music system which even at the lowest of volumes, remains highly intelligible with shimmering presence. And yes - they also sound great loud.



The CPA5's 100 Watt power handling and 110 dB output, provides clean, non-fatiguing sound at exceedingly high volumes - free from mid-range compression, and with remarkable bass response for such a small enclosure (8 1/2" high X 6" wide X 5" deep).

Its modern, rugged, molded polypropylene cabinet (available in two colors) and shielded components are "environmentally friendly" and impervious to most weather conditions. Equipped with 70 Volt transformer fittings for multi unit installations, the CPA5 mounts both vertically or horizontally, offers two grill faces, and an adjustable, rotating badge.

While its affordable CUB-5 hardware meets all safety standards, the CPA5 also retrofits most existing mounting hardware available today.

We think you will find the Tannoy CPA5's exceptional performance a uniquely flexible, cost-effective and reliable alternative to what you've been settling for in foreground/background music systems. We have the required projection and presence you've been looking for, at all volumes, and you'll never blow our HF unit. We may not glow in the dark.... WE DON'T HAVE TO. If you value exceptional high performance and trouble free, safe sound, step up to the TANNOY CPA5 (ICT)<sup>TM</sup>.

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Bose began working on the Albertville project more than two years ago, under the supervision of veteran wilderness installer Bruce Meyer. Interior systems posed typical problems, though the outdoor sites were considerably more challenging. In some cases, ski slope installation positions were relatively inaccessible; speakers were carried to their positions strapped on the backs of skiers. In other cases, figure skaters had to pinpoint speakers as a means of timing jumps, while freestyle skiers needed uniform music coverage across the length of the slope. Some indoor systems were required to overcome crowd noise levels anticipated to exceed 130 dB, and outdoor systems had to expect temperatures dipping below -30°F. When it was all over, the finished systems incorporated 150 microphones, 15 kilometers of cable, 310,000 watts of power and more than 1,000 loudspeakers.

The Bose speaker arsenal principally consists of the 802 Series II, with eight full-range drivers and active equalization, weighing 31 pounds; the Acoustimass Professional powered loudspeaker with 12-inch woofer, weighing 72 pounds; the 402 Series with four 4.5-inch full-range drivers and active equalization, weighing 15 pounds; the 302 Acoustimass bass system, weighing 115 pounds; the 102 Series 4.5-inch drivers with active equalization for distributed systems; and the Acoustic Wave Cannon, with its distinctive 12-foot resonance tube.

But even the highest-tech transducers perform poorly unless they are accurately deployed. The problem of designing these Olympic systems was largely solved by proprietary Bose S3 programs, including Modeler, SpeakerCAD, and RackMaker. SpeakerCAD models physical characteristics and rigging for speakers and arrays, and RackMaker uses equipment lists to optimize rack layouts.

Modeler, the acoustical predictive analysis program, is perhaps the most powerful tool of the trio. For example, it was Modeler that enabled engineers to solve the problem of providing coverage over the entire side of a mountain, achieving high intelligibility for spectators, yet maintaining relatively low background levels at broadcast stations. First devised in 1986 and extensively and continuously revised

# k.d. lang

## DEMANDS DOLBY SR



*Ben Mink, k.d. lang, Marc Ramaer, Greg Penny*

**D**olby SR reproduces a depth and clarity unlike any other medium. Instruments and vocals maintain their harmonic integrity.”

*Marc Ramaer, mixer/recording engineer*

**“Ingénue represents both a stylistic departure from, and a direct link to, our previous work.”**

*k.d. lang, Ben Mink*

**“The sound of Dolby SR on acoustic instruments is stunning. Silence has never been louder.”**

*Greg Penny, producer, engineer, songwriter*

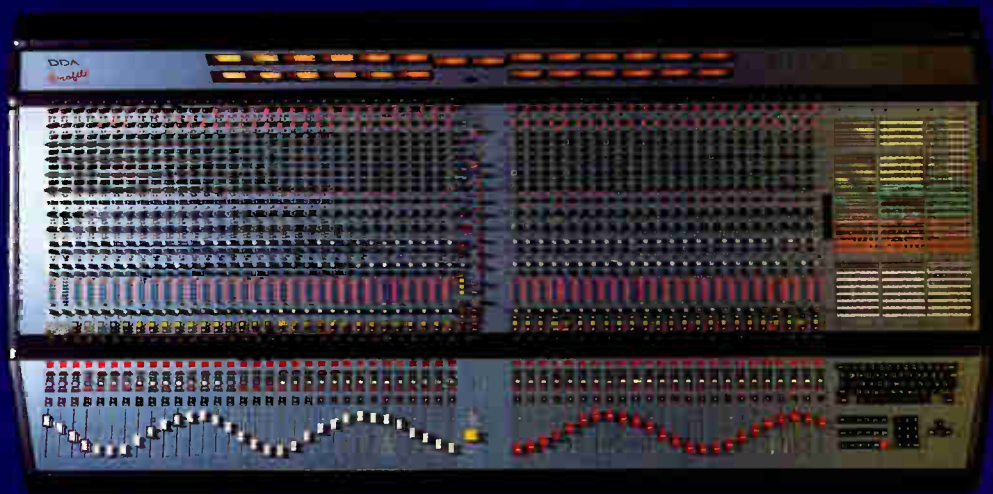
**“Whether it’s k.d.’s voice or the delicacy of acoustic instruments, Dolby SR recordings reproduce with an integrity that lets the listener hear it the way we did.”**

*Ben Mink, composer, arranger, producer, instrumentalist*



*“Ingénue” (Warner Bros.) recorded at Vancouver Studios, Vancouver, B.C. and mixed at Saylor Recording, Los Angeles, CA*

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# Profile



  
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thereafter, Modeler is a graphics-based program using the Macintosh to create three-dimensional room drawings and sound maps to predict a variety of acoustical characteristics. Installers can determine preferred configuration and location of speaker systems, including complex multichannel, multidelay systems in large venues.

Modeler can simulate the behavior of a sound system in any arbitrary acoustical environment. A Modeler session typically begins by creating the room model. Environments are graphically constructed as a series of adjacent planes, using a palette of tools. Up to 512 surfaces with up to 16 sides each can be individually specified, along with up to 25 doors and 25 windows of various designs. The graphical display of the room can be rotated to verify its completeness. The material composition of each room surface can be specified from a spreadsheet-style library of common materials, represented by their octave-Sabine absorption coefficients. Temperature and humidity can also be specified, as can the number of persons in the room. Moreover, customized libraries of materials may be developed. Obstructing surfaces such as balconies or overhangs may also be specified to account for acoustical shadowing.

Sound sources are drawn from a library of commercially available speakers and are modeled by six one-octave band dispersion balloons from 125 Hz to 4 kHz. Dispersion patterns can be viewed graphically as three-dimensional balloon plots or two-dimensional polar plots, and wire-frame models of the speakers are available for viewing. Speakers can be placed anywhere in the room, aimed in any direction or moved by dragging the mouse. Up to 100 loudspeakers can be modeled. A spreadsheet is used to edit loudspeaker coordinates—aiming angles, electrical power, equalization and time delay to individual speakers.

Once the room and speakers are in place, a large number of acoustical characteristics can be predicted. Octave-band Sabine reverberation times are calculated based on the room's surface area, volume and surface materials. Room volume can be specified manually or automatically estimated from the model. System performance can be evaluated at any point in the room, with a variety of data outputs. In

addition to qualitative coverage maps of a sound field, the program also provides statistical data. For example, an SPL histogram for 1kHz octave band coverage could be displayed, along with a mean value representing the average SPL of the coverage map and standard deviation representing the statistically significant variation from the average SPL. Coverage could also be examined as a waterfall plot, with up to six octave bands displayed, or as a superimposed two-dimensional plot. Sound pressure level for each of the octave bands in the coverage buffer could also be shown as a function of frequency, with standard deviation of each band superimposed to either side of the mean-SPL curve.

Multiple-octave direct field, discrete reflections and statistical reverberation time can all be predicted. The acoustical performance on any surface or group of surfaces can be mapped in a variety of ways, including direct, reflected and statistical sound levels in any octave band. A set of statistical coverage curves are automatically generated, as are ray-tracing diagrams, arrival times, frequency response curves, speech intelligibility, etc. Of course, the room model and loudspeaker types, placement and aiming can all be edited at any time, and all information is available on hard copy.

The Speech Transmission Index is evaluated by first calculating a ray-tracing history, then calculating STI for each listening position. Data can be displayed as Modulation Transfer Functions or time arrivals, as well as translations between the STI score and various measures of speech intelligibility. A view window lets the user select a percentage of S1ansi or ALcons. Problems could be diagnosed from the MTF graphs; for example, a deep notch in the MTF may indicate a degrading, late-arriving reflection at the listening position. This can be verified by examining the arrival times used to calculate the STI and potentially fixed by adding treatment to the offending wall and recomputing STI.

Using Modeler, Bose engineers developed accurate models of each indoor and outdoor Olympic venue, then designed appropriate sound systems, arriving at detailed installation plans months before on-site work began. Without software tools, their designs could only have been finalized with a good deal of on-site adjustment.

With Modeler, on-site changes were minimal, an important advantage given the logistics of moving equipment to the sites, immutably strict deadlines and the complexity of the systems.

The permanent installation in the Halle de Glace in Albertville (9,200 seats) contained 13 Bose 802s (one 802 aimed straight down and six stacked pairs aimed outward) and two Acoustic Wave Cannons in a central cluster 14 meters over the ice, with 31 802s in seven delay zones, in two concentric rings over the seating area. Power was provided by ten Carver 450-watt amplifiers (their light weight helped because the amps had to be mounted on catwalks with weight limitations). The venue had an RT60 of 2.6 seconds with an audience. The system achieved a nominal direct plus reflected sound level of 103 dB SPL on the ice, with 105 dB SPL at the low end, below 250 Hz. In practice, the system was run at about 90 dB SPL on the ice, with 100 dB SPL in the seating areas. STI in the ice rink ranged from 0.55 to 0.61, with ANSI of 86% to 90%.

The sound system at the bobsled and luge run in La Plagne (11,000 spectators) contained 33 Bose 402s and 30 Bose 102s. Nine Bose 1800-IVs powered the system. (The sound system's technology was eclipsed by that of the track itself, with its two-mile length cooled by 45 tons of ammonia in hundreds of miles of buried pipe.) STI ranged from 0.86 to 0.90, with ANSI of 100%.

Modeler has come a long way since Bose used it to model systems for the 1988 Calgary Games; computations that took two to three hours to complete on the Mac Plus now take minutes or seconds with newer Mac platforms. The current incarnation of Modeler, V.4.0, requires at least 4 MB of RAM, a math co-processor and System 6.03 or higher, running on a Mac II, SE or LC. With the increasing sophistication of acoustical software tools like Modeler, and the increasing sophistication of desktop computers (and their decreasing cost), highly predictable sound system performance will become standard practice, even in the most unpredictable of environments. ■

*Ken Pohlmann is working day and night on a software program to predict the coming of the Last Judgement Day, trying to get the bugs out before it's too late.*

recording any other type of noise, I might as well get into my beliefs about how it is different from any other type of *art*.

Producing music (as in the entire writing/scoring/performing/recording/producing/mixing production process) carries with it a kind of singular responsibility.

When people look at a painting, sculpture or even architecture, they look at something that is relieved of its position in the space-time continuum. For all the months or years of work that it represents, it now just sits there, static, outside of the flow of time. It is up to the viewer to provide the movement, the flow, the life. Only when viewed is the static art temporarily brought back into our flow of time. How thoroughly this takes place depends, of course, on the viewer *and* the skill with which the piece itself was rendered.

When the observer walks up to a painting in a museum or gallery, *he* controls what he looks at and for how long he does so. Since the artist is usually not physically there to grab him by the arm and say, "Come over here

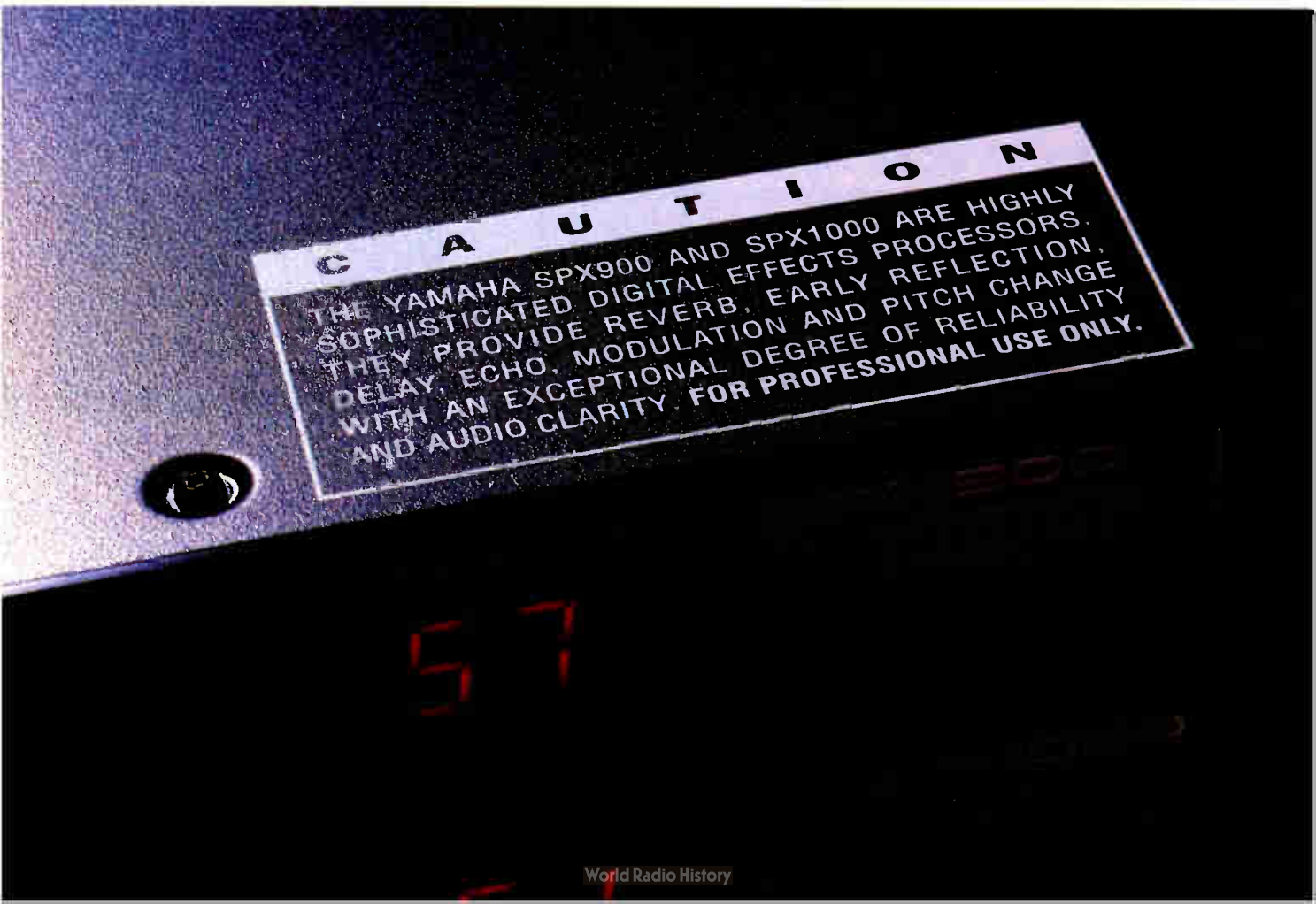
and look at this," the artist of course tries to control the observer by composing the painting so that it *pulls* the eye of the viewer in toward the center, to capture him and force him to donate enough *time* to the work that he will emotionally react. Hopefully he will be drawn to it so much that he decides he *likes* it. So the painting must sell itself, *every time the observer looks at it!*

The observer can walk by and look at the upper left corner, the center, or only the frame. He can (now this is where it gets important) look at any part for as long as he wants, as many times as he wants. He can spend an hour looking at details (learning *how* it was done), or three minutes looking at the integrated entire concept (learning *why* it was done). He can take as long as he wants to build his reaction to the piece of art. His choice. Again, hopefully guided by the artist.

Okay, now moving pictures. They tell stories, they virtually assault the senses. They simultaneously input both visual and audio data. The viewer (whom I will call the "victim" from now on) has essentially nothing to do; he is usually force fed. This "entertainment"

is passive. To make it worse, nobody even stands up to watch this stuff, and they certainly don't walk by and glance over for a flash overview. By the time the product begins to exist in their space-time continuum, the victim is *already sitting down*, waiting, popcorn or TV dinners at hand. In fact, the victim is yanked out of his own real-world time flow and taken along for a ride in the imaginary time flow of the film or show. The better this trip, the more extreme the escape, the more he likes the piece.

Because it is passive entertainment, it must tell a story, and that story must be very simple (remember, the victim can't stop and ask the projectionist to show that last part over again unless he is at home watching tape or disc). Even plots that are said to be complicated and convoluted are actually simple compared to the complexity of a good painting. Again, this is because the viewer only gets one shot at it, at an exposure rate chosen by the artist, *not* the viewer. Rarely does a victim state that he liked a film if he couldn't understand it (the exceptions here are film students and guys trying to impress first dates).



At the same time, moving pictures had better *hook*; they need to be fascinating, awe-inspiring, stimulating, beautiful, horrifying, disgusting, shocking, violent, explicit or some other extreme thing, or the victims will simply ooze out through the exits (or change channels). The arts can't be financed if the financiers turn away, you know.

Music... Music is not film. It is not painting. Like film, it moves through the lives of listeners at a rate determined by the artist. But unlike film, it is not passive, as the listener must actually *listen*. He must concentrate enough to build the images in his mind. He must recognize and relate to the instruments, the musical rules, the textures, the timing and all of the deviations that separate each piece from the one before it. For, unlike film or static art, he is *much* more likely to listen to several individual pieces in immediate succession. He will want a specific mixture of continuity and individuality. Quite a challenge, even down to album sequencing. Quite an art.

Music must be clear, *transparent*, so that the listener can choose how deeply he wishes to listen; on the fly,

in real time. A tune must be so transparent that it pleases the listener *each* time he hears it, even though sometimes he may be otherwise occupied and can only give it superficial attention, while other times he may be relying on it to set a mood, while still other times he may be concentrating solely on it.

When people hear your tune over the radio and decide to buy the album because of what they heard, they are trusting you to deliver (almost) the same quality on all the other tunes. One-time blind trust. Quite a responsibility.

Each song must set the stage, both emotionally and aurally (that is, the listener must sense a physical space, an existence, a *life*) before it can deliver its payload. There had better be some little secret in each song that emerges a bit more each time it is heard; a harmony, a beauty, a subtle complexity; a reward for repetitive listening. Songs, like film, must hook; but songs must do it a hundred times, film only once.

Average people today are not exposed to much fine art in the form of painting and sculpture in their daily lives. They *are* exposed to moving

pictures and music. While they obviously expect something from TV and movies, they expect something more from their music. They spend *much* more time with music. They use it to separate themselves socially. Surf dudes don't hang with metalheads. Hendrix freaks didn't give copies of *Are You Experienced?* to their parents. Parents might have *tried* once or twice to give those children Pat Boone, only to discover that America actually *is* multilingual. Don't mess with the other guy's ANTHEM!

Listeners use music to excite, move and soothe every day. I wonder how many first dates are *sans* music? I wonder how many children are conceived *sans* music?

Let's see now. How many of *your* childhood memories are linked to films or paintings? On the other hand, how many are linked to the radio and the songs that it gave you? See what I mean?

Music is a special kind of magic. It is *my* favorite kind. ■

*SSC's anthems are "The Wanderer," "Sleepwalk" and "Runaway." Nobody said he was a kid.*

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World Radio History

by Mark Lambert

# DIGITAL AUDIO MEETS VIDEO

## TIME CODE AND HOUSE SYNC REFERENCES

**D**uring the past several months, I've considered the various reasons for paying attention to the types of digital interface we might find on professional hardware, and techniques for synchronization of component audio systems in an all-digital facility. If faithful *Mix* readers have made it this far, then you have a better than average chance of survival in the world of digital.

To wrap up this series of columns, I'd like to consider the ways that the addition of video and video synchronization can affect life in the studio. Good engineering practice requires that for *all* audio-meets-video projects, you must use a common video synchronization source—a reliable, crystal-referenced house-sync signal—plus a highly accurate Digital Audio Reference Signal (as per AES11 and similar recommended practices).

However, what is not so apparent is that when we are working with both analog and digital video systems—the familiar U-Matic plus C-Format 1-inch VTRs, as well as the newer, more exotic D-1, D-2 and emergent D-3 VTRs—timing accuracy needs to become much more highly defined.

For reliable digital operations, both frequency *and* phase accuracy need to be maintained; in other words, our sampling rates must be equal (well, within a tight ppm tolerance), and each bit of information must begin coincidentally. In this way, digital bitstreams can be combined within digital mixers, processed through equalizers, limiters, compressors and other outboard hardware, and then recorded to tape, hard disk or optical media.

All of this data needs to be accurately *time*-referenced. Just as in the

analog domain, where we use time code to identify each frame of video and chase sync to a given location while maintaining subframe synchronism to the visuals, so workstations, DAT recorders and other systems need to tag and locate to the corresponding video frame.

But here comes the rub. Because of an accident of fate some 40-odd years ago, our industry inherited two frame rates for video. The monochrome 30 fps rate was joined by a color rate of 29.97 fps. The video industry then evolved two time code rates for video synchronization: 29.97 fps non-drop, which doesn't follow the clock on the wall (it leads at the rate of 1/1,001 times real-time), and 29.97 fps drop-frame, which compensates for the difference by adjusting its frame count to match time of day. So far so good.

At the CD sampling rate of 44.1 kHz, referenced to 30 fps video, we end up with 1,470 digital samples per video frame. (The same math for CD projects correctly referenced to 29.97 fps color time at 41.056 kHz sampling rates also results in 1,470 samples per video frame.) However, for digital video sampling rates of 48 kHz, which are invariably referenced to 29.97 fps video sync, we now have a bastard 1,601.6 samples per frame.

Various "leap-frame" schemes have been adopted to allow integer numbers of samples per video frame (such as varying the number of samples per frame in a sequence:  $[1,602 + 1,601 + 1,602 + 1,601 + 1,602] \div 5 = 1,601.6$ ). But that is just the beginning.

What happens if we need to update the audio and/or video data and perform an insert edit? An additional cir-



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# FUTURE DISC SYSTEMS

## JUXTAPOSITIONS

cuit needs to keep a precise count of the number of samples per frame, ensuring that the count over a reasonable amount of time comes out to be *precisely* 1,601.6 samples per frame.

Of even more dramatic importance is the issue of accurately tagging a digital bitstream that's been recorded to an MO drive within a workstation but which, after editing and processing, needs to be laid back to a digital VTR in frame synchronism with the visuals. To make life easier on ourselves, let's assume the workstation and its peripherals are going to be run at 44.1 kHz/30 fps, using a sample-rate converter for the final D-2 layback at 48 kHz.

We still need a reliable technique for tagging every audio sample to its corresponding video frame—that's 1,470 samples per frame. Why the need for such precision? Simply because when editing or combining digital bitstreams, we have to keep track of the position of each edit pointer (or whatever the workstation software is using to tag each event) to a resolution of a single sample. If we didn't, we could end up with too many or too few samples per second, both of which would lead to either a muted output or unpredictable distortion.

Several solutions have been suggested. The easiest is to simply rely on time code to provide rough markers every second, and then interpolate between them to offer, let's say, 100 subframe divisions. We can have the software monitor the timing accuracy and simply dump or repeat values if the edit either provides too much or too little data to fill up subframe divisions. Such a scheme could easily handle all but the most complex of timing calculations.

It's more complicated, however, when passing data from one platform or storage media to another and then re-establishing subframe synchronism with a video signal. It has been suggested that we need to evolve a more accurate timing reference for digitized audio, just as the familiar 80-bit SMPTE time code provides a unique address for each video frame. This standardized "Sample Address Code" would unambiguously allow each sample to be tagged and located, just as SMPTE time code identifies video frames.

The AES3-1992 Recommended Practice provides a way to uniquely tag

both a 32-bit time-of-day Sample Address Code *and* a 32-bit local Sample Address Code for the first sample of each Channel Status block. The time-of-day SAC can be used to label the actual recording time of the digital audio—and hence provide a unique, non-time-code-based reference to companion visuals—while the local SAC could provide a relative offset for edits or a simple recording index counter that tags the number of hours, minutes, seconds and digital frames relative to some fixed time point.

A unique H:M:S:F address can be established for the digital sample that corresponds to the start of each Channel Status Block (repeated every 192 digital samples per channel, or 4.35 ms). Then that reference point can be used to provide a sample-accurate address for each 16-, 20- or 24-bit digital word, given accurate sample-rate information. (It also ensures that each digital component honors Channel Status boundaries. Imagine the situation if a workstation combines several AES3-format digital bitstreams, but corrupts the vital sample rate, channel source/destination data and various other CS information.)

Timing information *must* be carried within a digital bitstream. Relying on outside synchronization schemes—particularly those based on time code sync, which is derived in turn from house sync—is simply asking for trouble during sweetening and mix-for-picture sessions.

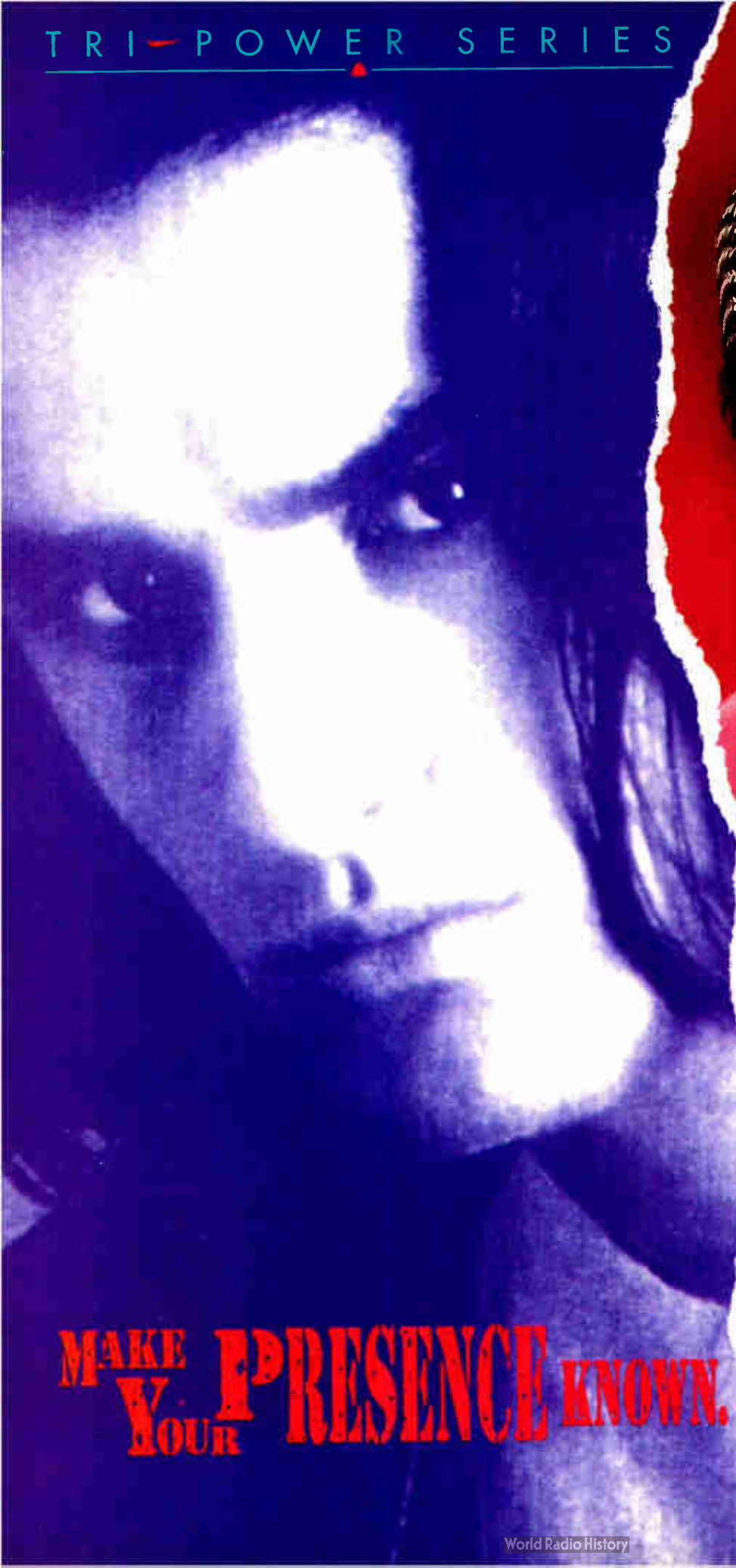
In next month's issue, we will be spotlighting "The Digital Studio," with feature articles describing real-world applications of digital workstations and editing systems, hands-on advice and guidance from professional users of all-digital facilities and more.

[Thanks to David Haynes, VP of Engineering at Studer-Editech; and Steve Lyman, Senior Technical Officer, Standards and Technical Development at Canadian Broadcasting Corporation, Montreal, and chairman of the AES Subworking Group on interface implementation, for their help on the preparation of this month's column.] ■

*Given the omnipotent one's whimsical sense of humor, Mel Lambert figures there's a race of beings somewhere who realize that two and two should equal four, but on feasts and holidays don't press the point.*



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# —CHANGES!

Maggie Roche put a piano part down afterward. But that whole track was cut live. It gives us that sense of togetherness.

"This album was a lot more involved than the other projects," Saliers continues. "We also did things like fly tape reel slaves over to Ireland, and the Irish musicians recorded on the slaves, and then we got the slaves back and picked and chose...there was a lot going on."

Does Saliers have any recording advice for other musicians? "Old equipment and old instruments," she replies. "Even a cheap, beat-up guitar that's had its guitar strings on for six months could sound better for a particular song than a brand-new, expensive guitar. It seems like every time we try something new—a new mic or amp, instead of an old Fender amp, say—it just doesn't sound as good."

So no MIDI or synth tracks coming up in the Indigo Girls' future? "Nooo. No machines, no synthesizers. We don't really have a taste for that."

—Terri Stone

## ART NEVILLE

### NEVILLE BROTHERS

Art Neville's first recording session was nearly 40 years ago, when his band the Hawketts went into New Orleans radio station WWLZ and recorded "Mardi Gras Mambø" with DJ-turned-producer "Jack the Cat" [Ken Elliott]. That recording in 1954—which eventually became a hit for Chess Records and is played every year at carnival time—took one day, one mic and a lot of youthful exuberance. Art and his musical siblings recently recorded their latest offering (aptly titled *Family Groove*) with producer Hawk Wolinski and engineer David Leonard at the New Orleans Recording Company, and that A&M project took 27 inputs for Art's and producer Wolinski's keyboards alone, plus seven weeks of professional recording studio time.

Looking back on his many years of recording, Art says, "It's a lot different now. In the past everything was cut right at the time. The musicians were playing all at one time. Now you can put things together in parts and still get the same, and even a better, effect. For some of the cuts on this new album we just played straight-on live, and we added things later—

like percussion and keyboards. You get so many sounds out of the keyboards now it's incredible, and you want to use all those sounds. You can layer things now, and it still sounds live. I do stuff now in my home studio, and you can't tell it's not live. I can take a sampled drum track and quantize it so you can't tell it's not a live drummer."

Art's home studio has two Atari computers, the Hybrid Arts Digital Master system and four keyboards. "My main keyboards are the Yamaha SY77 and the SY99," Art explains. "They have sequencers



inside. But I use two Atari computers for sequencing—one to run the sequences and one to run the Hybrid Arts Digital Master."

At least one part of Art's setup will always be vintage, however: his Hammond B-3. "You gotta have that B-3," he says. "It has a unique sound. Synthesizers can reproduce *some* of the sounds with something different about them, but there are things you can do with the drawbars on the Hammond that are just different: Nothing will ever take its place.

"I use a Dynacord [rotor simulator] on my B-3," he admits, in deference to modern technology. "It's a little black box, and you can't tell the difference. If

you didn't see it, you wouldn't know it wasn't a Leslie."

Neville is into the new recording technology "with all four feet," and he defends his use of samples and sequences when recording: "Computers are great—it's a tool, that's all it is—just as long as you don't let it be the whole deal. The computer's nothing without what we're doing."

—Jeff Forlenza



PHOTO: JAY BLAKESBERG

### ADRIAN BELEW

Adrian Belew's recording career started at the top: "The first [studio] record I was ever involved with was *Lodger*, with David Bowie and Brian Eno. Recording-wise, that record was advanced for its time." Working on his own music in the late '70s and early '80s found the ace guitarist in a considerably more humble setting, however. "When I started doing my own songs," he remembers, "my engineer, Richard Denhart—whom I still work with—and I put together a home studio. We had what we called a 7-track studio, because it was an 8-track Tascam, but one of the tracks never really worked properly. It was a fairly low-budget beginning, but Rich and I continued to learn things and move up into better and better studios to the point where we now have computer mixing and the latest digital technology; that's changed everything."

These days, Belew does most of his work at Royal Recorders in Lake Geneva, Wisc., including his stunning *Revolver*-esque new album, *Inner Revolution*, which may be his best yet. Belew played virtually all the instruments on the record, first demoing

parts in his home studio, then replacing them at Royal. "I started putting together my own home studio based around the Digidesign Pro Tools system," he says. "I demoed at home with it, and some of the tracks even ended up on the record, particularly a lot of the bass tracks. At this point, I use the home studio to sketch out the songs, but in the future I think it would be a combination of the two, because home studio technology has suddenly jumped in leaps and bounds. I foresee a time when I will be doing a lot of recording at home and a lot of finishing and mixing in Royal, or a studio of equal quality."

Belew's favorite recent studio innovation is computer mixing. "It's really good for a person like me," he explains, "because I like to try a lot of different things and sometimes I might find something by accident, so it allows me to keep those accidents, and it also allows me to hear the music in different ways."

—Bruce Pilato

### BRIAN ENO

"When I first became involved in music I couldn't play instruments," says Brian Eno, "but I could manipulate sound with technology—tape recorders in the first place, and then synthesizers and recording studios in general." From his beginnings with Roxy Music 20 years ago through a multitude of solo projects, collaborations, and production work with artists such as Bowie, Talking Heads and U2, Eno has often referred to himself as a non-musician. He works with music in a painterly style, creating sound collages. This

approach is more in evidence these days, because technology has made it easier for anyone—regardless of their "skill" (in the sense of ability with an instrument)—to construct songs or even symphonies.

"New technologies have made it much easier to cheat," Eno says. "Cheating is the name of the game in a lot of ways now, and is often the name given to new ways of doing things. So it's not really cheating, it's just that we have had a traditional picture of audience/artist, observer/creator, and the new technologies challenge this. They ask us in particular to acknowledge the possibility that someone who rearranges other people's materials is also an artist. I became a musician through cheating for 20 years. I can't play any musical instrument, but what I can do is work with many of the interesting new devices that enable people to put music together. It was called cheating when I started doing it. Now it's what everyone does. It's called 'using a recording studio.'"

The range of equipment and choices now available, however, is not what is most compelling to Eno. "So much time can be wasted investigating every instantly available sound and treatment that the really interesting possibilities of very limited options are forgotten," he says. "Having a limited palette is much more of a spur to creativity than having an endless choice of predetermined material. What has become interesting is the idea that artists are people who specialize in judgment rather than skill. And this, of course, reopens the question of who can use that job description.

"As more options have become available, and equipment more and more complex," Eno says, "the temptation can arise to forget the possibilities of simplicity. It's a question of balancing external influences and technologies with your own instincts and beliefs."

—Adam Beyla

### LARRY BLACKMON CAMEO

"We've always been motivated by sound," says Larry Blackmon, leader of perennial hitmakers Cameo, who are funking their way into the '90s with a powerful new album called *Emotional Violence*. "When we got together in Cameo years ago, we compared notes on the kind of things we liked and didn't like, and what we came up with



PHOTO: JAY BLAKESBERG

PHOTO: TRACY LANDWORTH



was a collective opinion about the kind of sound we wanted to have as a group. We were influenced by all sorts of people, from Jimi Hendrix to Crosby, Stills, Nash & Young to AC/DC to Parliament/Funkadelic

"When we went to record," Blackmon continues, "there were always things we were looking for that we wanted to bring out of ourselves

but we didn't necessarily have the technical know-how to execute. But the process of how we got the sound wasn't that important, because we were always able to communicate what we were looking for, and we were always willing to take the time to tweak the sound until we had it the way we wanted it.

"As we moved through the late '70s and early '80s," he recalls, "the new technology came on the scene, and it gave us more flexibility. We knew more about how things worked, and I think in general we felt that recording was a tool for us to use rather than it dictating to us or having an effect on the spontaneous creativity we've always depended on."

Blackmon produced *Emotional Violence* himself (mainly at Encore Studios in L.A.), working closely with engineer Barney Perkins. He says he played an active role in all stages of the recording process, but adds, "Through years of being in studios, I've found you can really get a studio psychosis. I used to be in there every minute. More and more, though, I've learned to just step outside and get some air during the times that don't affect me

directly. I still love the studio, but I've come to know what's best for me and the music. We've operated by instinct from 'day one,' and that's worked for us. Trends come and go, but we've managed to stick around."

—Blair Jackson



PHOTO: JAY BLAKESBERG

**HERBIE HANCOCK**

Herbie Hancock has been recording since the early '60s, so his claim that he has a lot more options in the studio now is a bit of an understatement.

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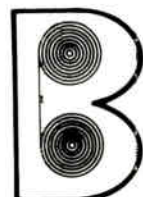


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Hancock is starting work on his first record in five years, and he intends to take advantage of several technological innovations in making it. "I'm going to have other musicians involved," he says. "It's a dance record that will be a combination of sequenced and live segments, using both electric and acoustic instruments. I'm excited about the kinds of sounds we're creating for the foundation of the music. We're taking great pains to really create the instruments rather than using factory sounds, which is what I've done in the past. I have a WaveFrame with 8-track hard disk-recording capability, an Akai S1000, Vision for sequencing, and a bunch of other keyboards. I'm also using a Synclavier, but I'm not using it for sampling." He plans to create digital and analog tracks using the WaveFrame, an Akai A-DAM 24-track and an Ampex MM1200.

"The WaveFrame also has a 32-channel virtual mixing board," Hancock adds, which, together with his 32-channel analog Neve 8068 console, gives him a lot of flexibility. "I can use the best of both worlds. For example, drums sound better when you record them analog. Then you can transfer

that information to digital."

Before Hancock became known for his electronic keyboard artistry, he was making sizzling acoustic piano tracks with his own bands as well as with the legendary Miles Davis. As an acoustic musician, he feels the advent of compact disc is a great boon to the industry, both sonically and economically. And the process of creating that CD-fidelity music in the studio has made an impact: "Some people will argue that point, but I like the fact that the sound is clean. You can hear certain things that you can't hear with analog recording because of the masking effect of analog. When you hear the playback, that itself can be a source of inspiration. If the content and the sonic quality are good, it can provide an emotional boost and help you to play better."

—Paul Potyten

**RANDY OWEN  
ALABAMA**

Alabama lead vocalist Randy Owen remembers the "good old days" of analog: "Teddy [Gentry, Alabama's bassist] and I actually worked the board back then. I'll never forget when we

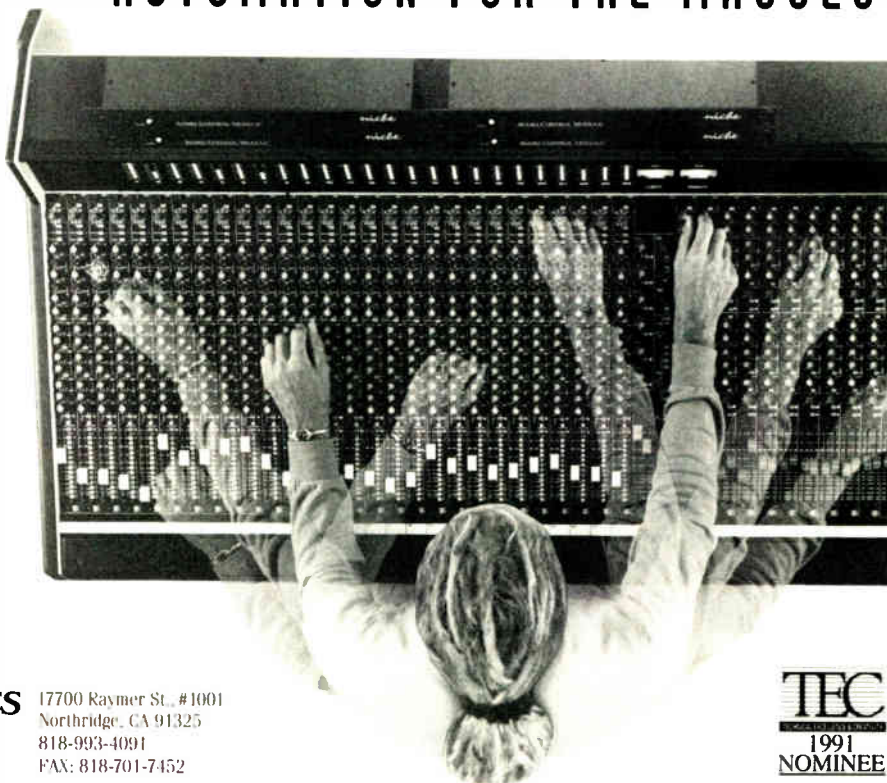
did 'Close Enough to Perfect.' I wanted to put a lot of reverb on the guitar lick on the first part of the song, so I just goosed it. Teddy and I mixed 'I Want to Come Over' on a board in Atlanta. He had one knob that turned to the right and another went up and down, and we were going up and down and mixing to the right. Of course, now with digital, you can put your hands on the board, but the computer takes care of it."

And while the digital low end is less appealing to his old-fashioned mentality, Owen concedes that working digitally makes his job as singer easier. "Sometimes when you're getting into a song, you forget about the 's' on the end of a word, or you forget to say 'and' or 'but,' which really makes all the difference in the world if you're going for the real sense of the song. You can leave the live vocal on there, and they'll fly the 's' in on the end of a word. It's really amazing that they can do that."

Owen is known for singing his vocals live with the tracks, and he says that modern technology opens up more possibilities: "In the early days, the headphones and the monitors just

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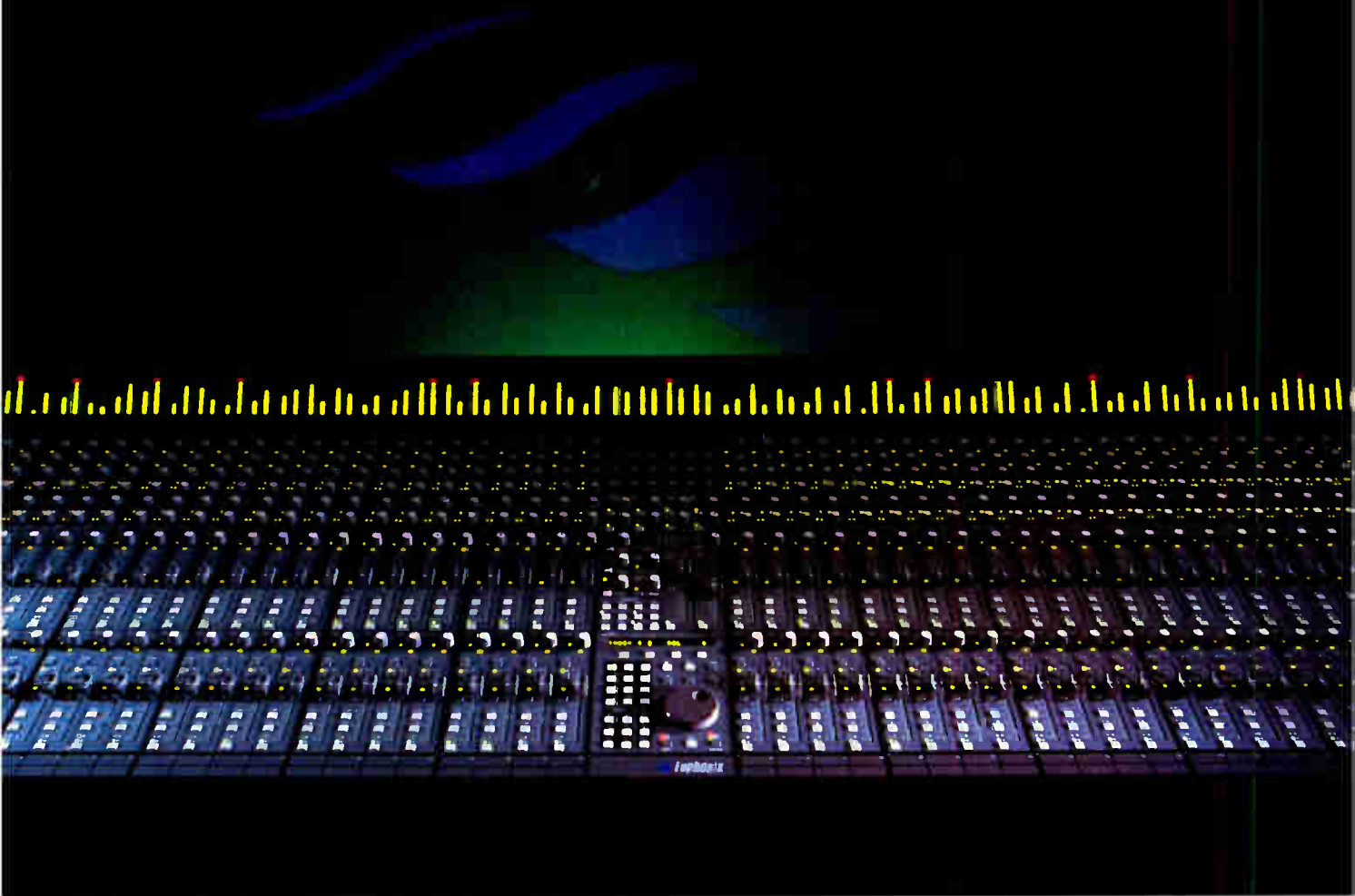
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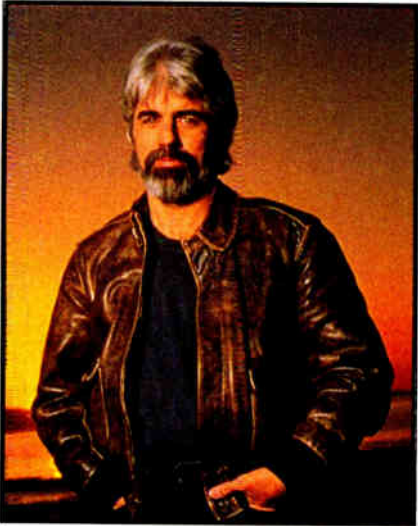
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—Robyn Flans



### MICHAEL MCDONALD

"The key to the computer is to use it more as an extra musician and not as a conductor," says Michael McDonald, whose upcoming recording project will marry the worlds of computer and live musicians. "There's nothing that annoys me more than hearing records that are just digital information, unless they're done so creatively. It's real hard to put that up against a record with a real B-3 or a real Leslie cabinet or real horns. Digital stuff is only reproducing so many harmonics. And I'm convinced the ear knows the difference, from the layman to the professional.

"With the Doobies," he continues, "no matter how much we rehearsed something out front, the minute we got in the studio, we ripped the thing apart and restructured it totally. That was really the moment that things started to come together. I think there's a way to achieve that now."

Even the demo standard in those days was different. He notes, "If you go in with [a demo] that's all state-of-the-art technology, you really have your work cut out for you. In the old days, we would work in home studios, but the sound quality was so dim that it started out sounding better in the [professional] studio from the get-go." He adds that having to beat a demo these days sometimes creates a challenge that pushes the art of recording to a

higher plane.

McDonald explains, "I was reluctant to go digital right off the bat. I had experiences with some of the digital machines that weren't good. We always went to both [analog and digital], and we couldn't use some of the [digital] masters because of motor transport problems, where the machine would get tape-heavy on one reel and start to slow down or speed up.

"I found that with synthesizers you always wanted your sound to be punchy and have a certain kind of dynamic range that was really more characteristic of the tape it was going on. Keyboard players especially have found ways with effects, like compression and certain kinds of reverb, to get those things more in-line before going to tape, so it's not so much an issue now whether it's analog or digital. Actually, where synths are concerned, digital is even punchier; it's able to handle certain things that analog tape tends to wash out."

—Robyn Flans

### MICHAEL TIMMINS COWBOY JUNKIES

The Cowboy Junkies' critically acclaimed new album, *Black Eyed Man*, represents a departure in recording technique for the Canadian country/folk/alternative band. "Before this record, we always chose to record live in the studio. So we always got everything completely together before we went in, in terms of arrangements and pre-production," says Michael Timmins, the band's chief songwriter, instrumentalist and, on this album, producer. "In the case of *Trinity Session* [the LP that broke the band in America], it was a few months before we went in, but then we did it all live. And for *Caution Horses* [the follow-up] we did our pre-production on the road with the seven-piece band we were out with, playing the songs onstage every night and tinkering with them that way. So then when we went to record, we'd be there around the microphone, playing the songs the way we'd been doing them every night.

"With *Black Eyed Man* we decided to break away from that and do a more conventional recording in terms of tracking and overdubbing," he continues, "but at the same time we didn't want to go into the studio and write the songs there. So what we did was set up a six-month schedule, and the last week of every month we booked the studio [Grant Street Studio in Hamilton,

Ontario], and for the three weeks before that, the four of us [his siblings Peter and Margo Timmins, and Alan Anton] would get together in our rehearsal studio, usually working on two songs at a time, getting the musical structures and grooves down so we knew them inside out. Then we'd go in and record those live, and the next day we'd bring in various musicians to do the overdubs, and we'd try different arrangements.

"So we'd leave the studio [each month] with two or three songs in rough mix form," he continues. "We'd listen to those, and then as we progressed with the album, we'd change the arrangements here and there. Doing it that way, we had to keep an eye on ourselves and not go overboard as far as putting on too much. But also, doing it over a longer period of time allowed us to have some perspective."

Timmins leaves the technical end to the engineers, noting that the band's requirements in that area are few: "We still basically just want to record the



PHOTO: RCA RECORDS

instruments as they sound in our rehearsal studio. We want to get the natural sound of them on tape and not add a lot."

And while he professes satisfaction with the way things went on *Black Eyed Man*, Timmins says that next time 'round the band will do things differently again. "I think next time we'll do it in two or three big segments instead of spreading it over six months," he notes. "By the time this [project] was done, we were pretty anxious for it to be over. Next time, we'll do most of the work up front and go in and record beds and overdubs, then maybe sit on it for a while and then mix—just for a change. We like to try different things."

—Blair Jackson

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# CD-ROM UPDATE

## MICROSOFT CD-ROM CONFERENCE AND EXPOSITION

**D**espite the fact that some industry pundits are noting the exponential growth of the CD-ROM industry, the fact remains that only about 3% of personal computers in use today are equipped with CD-ROM drives. (However, about 20% of *Mix* readers own CD-ROM drives, which brings up an interesting question: Are we out on a technological limb, or is everyone else stuck in the primordial ooze?) And so, seven years after software giant Microsoft Corporation presented its first Conference & Exposition on Multimedia and CD-ROM, major players once again flocked to the annual event last March at San Francisco's Moscone Convention Center, perhaps looking for the missing link that would launch this evolving industry into hyperdrive.

While the answers to the unfulfilled needs of the industry remained elusive as the dust settled in the wake of the 120 exhibitors, 1,800 conferees and 4,500 additional exhibit attendees, some intriguing announcements, products and technology demonstrations were in evidence.

### Sony CD-ROM XA Player

Sony generated a considerable stir with its announcement of a prototype CD-ROM XA player. The portable unit includes a CD-ROM drive, 16-bit PC-compatible microprocessor with MS-DOS operating system in ROM, LCD panel, speaker, QWERTY keyboard and a cursor pad. Planned for introduction in the U.S. later this year at around \$1,000, the player—nicknamed “Bookman”—measures a compact 7 x 2 x 6 inches, and weighs about two pounds. The rechargeable NiCad battery provides about two hours of life. The drive conforms to Red Book audio CD, Yellow Book CD-ROM and CD-ROM XA standards. (The major advantage of CD-ROM XA is its implementa-



tion of compressed audio, which can be played back in sync with compressed video information on the disc.) Users can listen to audio through the built-in mono speaker or via headphones or powered speakers plugged into the stereo minijack.

The player's display capabilities are also PC-compatible. Monochrome images can be shown on a 320 x 200-pixel LCD screen; color images can also be displayed on a television via the system's NTSC-compatible video-out port, which makes it an attractive solution for multimedia presentations.

### IMA Recommends Digital Audio Formats

The Digital Audio Technical Working Group of the Interactive Multimedia Association has been working to promote cross-platform digital audio interchange in conjunction with the IMA's effort to encourage multimedia application development. The 28-member group, which includes representatives from Apple, Compaq, Dolby, Intel, Microsoft, Sony and others, used the CD-ROM conference to announce its recommendations for standardized audio interchange formats.

*Is Sony's CD-ROM player the solution that will cause a revolution in this new industry?*

The proposal described four basic formats and sampling rates: 8kHz mono; 11.025kHz m/s; 22.05kHz m/s; and 44.1kHz m/s. If approved by a majority of the DATWG membership, the proposal was to be submitted to the IMA Steering Committee for approval as an IMA-supported standard.

DATWG has been analyzing various types of Adaptive Delta Pulse Code Modulation compression algorithms as well. Evaluation was expected to be completed by the end of March, and the Digital Audio Format Proposal would be amended to include the recommended ADPCM algorithms.

The IMA also announced that Intel Corporation is making its RTV video compression algorithm available for licensing. The IMA's Digital Video Focus Group is considering several other digital video algorithms in addition to RTV, including MPEG. The organization is committed to setting standards for video compression formats, as well as synchronization solutions for the multimedia industry. For more information, contact 800 K Street NW, Suite 240, Washington, DC 20001; (202) 408-1000.

### CD-ROM Drives Get Faster

They're still pokey puppies compared to your conventional hard drive, but CD-ROM drive designs continue to improve, and several companies were showing their latest. Pioneer brought out its DRM-604X CD-ROM Minichanger, based on its successful DRM-600. The new unit, like its predecessor, uses a removable magazine that can hold up to six discs. However, the 604X offers an improved average access time of less than 350 ms and increased transfer rate. Disc change time has been reduced from seven to five seconds. Device drivers are available to support the Minichanger under DOS, OS/2, Macintosh and UNIX.

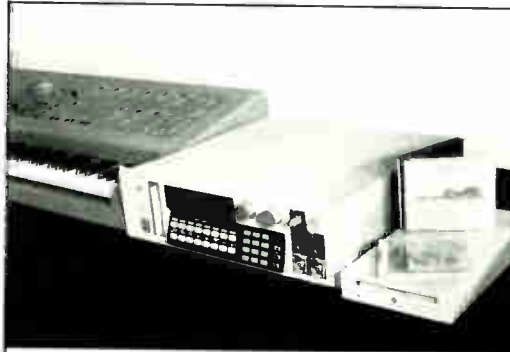
Sony also demonstrated CD-ROM drives with improved performance. The company's CDU-561 drive spins discs at twice the conventional speed to achieve a sustained data transfer rate double that of its current models, and access time is below 300 milliseconds. It also offers the unique ability to transfer digital audio information directly over the SCSI bus. The digital audio data can then be manipulated by DSP cards (see MediaVision products.

—CONTINUED ON PAGE 11

## OMI's Denny Jaeger Master Violin Library on CD-ROM

Founded in 1985, Los Gatos, Calif.-based Optical Media International has been a true pioneer in the use of CD-ROM technology and audio. Since developing the first CD-ROM designed for use with samplers, the company has continued to publish discs for all major samplers in use today. In addition, OMI developed and introduced the first integrated PC-based CD-ROM Write Once recording system, and its CD Express bureau offers complete CD pre-mastering, mastering and duplication services.

OMI's Reflective Arts CD Publish-



ing Group has published more than three-dozen sound sample titles to date for use with Akai, E-mu, Ensoniq, Roland, Sound Designer and SampleCell systems. Catalogs cover a wide range of sounds, from conventional and ethnic instruments to natural and sci-fi effects. The latest title—the Denny Jaeger Master Violin Library—is a three-CD set for the Akai S1000/1100 and the E-mu EIII. It was two years in the making, at a cost of \$400,000. (Less comprehensive, single-CD versions are also available for the Ensoniq EPS-16 PLUS and Digidesign SampleCell. Custom packages are offered on magneto-optical cartridges as well.)

I was able to check out the Master Violin Library for both the EIII and the Akai S1100, and before I launch into the technical details, let me simply state that it sounds great. (It is, however, *not* less filling; these samples take up lots of sampler

memory. More about that later.) OMI designed a proprietary hardware/software system to transfer the original high-quality recordings into the various sampler formats. A fastidious attention to detail, both in the original recording and in OMI's production, makes this library useful in a wide variety of string section contexts. For example, the attack portion of each note is a completely unique performance, and attack dynamics range from *mp* to *ff*, providing a great deal of control and flexibility. For each dynamic, the full range of notes—from G3 to A#6 (and beyond, in some cases)—were sampled in increments of half-steps. The user is also offered a choice of wide or tight tuning of the string section. Control of vibrato is achieved without the use of wave

modulation. You can customize the way you want to control the vibrato by using key velocity, pitch wheels or a footpedal. The result is very natural.

The first and second discs in the series contain a variety of loud and soft violin attacks and sustains in stereo, mono and compressed versions. The third disc contains tremolos, trills and pizzicatos. Here again, attention to detail is re-

markable. In the 89 banks on this disc, you are given almost every imaginable choice of half-step and whole-step trills and trills with different attacks, all in 44.1kHz stereo, many also in 44.1kHz mono and compressed 31kHz stereo.

I went through the files on the EIII, playing from the keyboard as well as triggering from a sequencer in a variety of musical contexts. Whether the passage called for a lush, slow pad, a busy staccato run, or a creepy, suspenseful passage, I was always able to find a satisfying set of samples to fit the bill. Even if a single file doesn't provide the right kind of expression, files can be combined, layered and controlled in any number of ways to create the desired effect.

Weighing in at 1,356 MB, the library for the EIII is somewhat larger than for the S1100, which comprises 1,050 MB of 44kHz stereo, mono

—CONTINUED ON PAGE 12

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—FROM PAGE 38, CD-ROM

below), allowing developers of advanced multimedia applications to take advantage of high-quality audio features. The new half-height, internal device will be available to OEMs, VARs and systems integrators this summer.

**Optical Archiving Systems**

Both Sony and Philips rolled out their latest versions of recordable CD and CD-ROM subsystems. This technology not only has obvious applications for mastering labs; it also can provide an economical method for archiving audio data on a stable medium for recording facilities that create large amounts of digital audio. It provides convenient random access to such archived data via a CD-ROM drive.

An alternate rewritable optical technology, O-ROM, was being touted at the Verbatim booth. The 122MB, 3.5-inch O-ROM disc operates in the same drive as 3.5-inch rewritable optical discs, which are gaining in popularity in the computer field. However, the data on an O-ROM disk is molded

into the surface of the disc and can't be altered. Based in Charlotte, N.C., Verbatim offers a complete array of rewritable optical discs for virtually every existing rewritable optical drive.

**New Products from MediaVision**

With their incorporation of audio on a system level, Macintosh computers have historically had an advantage



over IBM PC-compatibles in sound applications. MediaVision (Fremont, Calif.) is a company dedicated to addressing the growing need for audio capabilities on the PC. Several new audio enhancement products were

demonstrated at the show. The Pro AudioSpectrum-16 is a card that offers 16-bit, 44.1kHz stereo recording and playback for \$349. Other features include MIDI and SCSI ports, a 20-voice FM synthesizer based on the Yamaha YMF262 technology and a stereo amplifier. It comes bundled with a stereo waveform editor, MIDI sequencer, text-to-speech synthesizer and more.

The company also showed Audio Port, a compact unit that plugs into the parallel port of any PC and allows recording and playback of 8-bit audio for \$199. Designed for portability, Audio Port runs on batteries or AC power and includes a built-in speaker, as well as a jack for external speakers.

Finally, MediaVision's CDPC is described as a fully integrated multimedia component system featuring a CD-ROM drive; 16-bit, 44.1kHz, stereo digital audio recording and playback; FM synthesis; MIDI; a 100W stereo amplifier and speakers. The MPC-compatible device is designed for delivering multimedia presentations and audio files and is priced at \$1,295.

**Q/A:**

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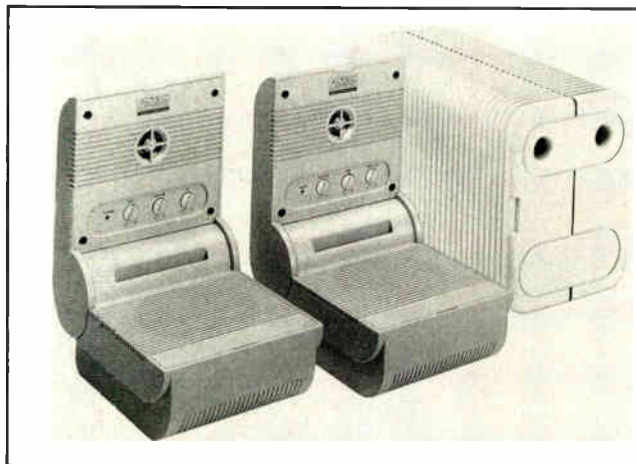
It appears to be an impressive set of products. Keep an eye on these people.

#### In Other News...

Which manufacturers participate in events like this, you might ask? Roland has made an obvious commitment to multimedia with its support of the General MIDI Standard, and with relevant MIDI products like the Sound Canvas and CM-500 module. And Roland's jumbo-size booth at the show provided further evidence of that commitment. While a substantial portion of the Roland space was devoted to MIDI

equipment, demonstrations of its Roland Sound Space system and its new DM-80 Multitrack Disc Recorder also generated considerable interest... Altec Lansing (Milford, PA) made an appearance at the Expo with a speaker system designed specifically with the PC user in mind. The ACS-200 system consists of two self-powered, electronically controlled, 4-inch, shielded woofers and 1/2-inch, ferrofluid-cooled dome tweeters that plug into a PC audio or video card; a DSP circuit;

and separate bass, treble, balance, volume, subwoofer, DSP and A/B mixing controls. The ACS-300 system also includes a separate powered subwoofer, which can be placed anywhere in the room... Finally, a group of manufacturers and developers of DSP devices, boards, software and systems used the Exposition to announce their



Altec Lansing's ACS 300 computer speaker system.

own Conference and Exposition on DSP Applications and Technology. It's scheduled for October 14-16, 1992, at the San Jose Convention Center. For more information, contact Margaret Pederson at Reed Exhibition Companies, (203) 352-8367. ■

*Paul Potyen is a Mix associate editor with more than 15 years of experience in professional audio on both sides of the Atlantic...no, wait, that's another bio.*

—FROM PAGE 38, VIOLIN LIBRARY

and compressed 31kHz stereo files. (The mono and the compressed stereo files are available for those who experience sampler memory limitations.) I wanted to do an A/B comparison of the files on the two systems but was seriously impaired by the 1 MB of RAM in my S1100. OMI recommends at least 8 MB of RAM for nominal use. Most file sizes fall in the range of 2 MB to 8 MB, but many exceed 16 MB. Memory upgrade boards for the Akai are available from OMI, or directly from PS Systems of San Diego, Calif. Also available from OMI is an audio demo disc for the Denny Jaeger Master Violin Library. It's very well-produced

and informative. If you're on the fence, consider this: the CD-ROM set is priced at \$1,200; the demo CD is \$10.

It's obvious that much time was spent digitally touching up samples to make them consistent across the keyboard in every file. Volumes, tunings, loops and timbres are all the most consistent I've ever heard in a sampled string section. A real string section is capable of producing an incredibly wide range of useful musical colors, and capturing that variety of expression on CD-ROM is a very ambitious undertaking. At risk of ultraviolet radiation, I take my hat off to Denny Jaeger and OMI.

—Paul Potyen

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# THE ACADEMY AWARDS BROADCAST

**"The Academy Awards** show is as much chaos as you can possibly throw at an individual from all directions, going out live to a viewing audience of one billion people. It's the greatest show on earth. The first time I did it, I was soaring for a week-and-a-half. When you nail the Academy Awards, you know you've done something."

were shaking violently. Lee has been nominated for several Oscars himself. In fact, he is one of those rare people who meets with success in film, television and music, having been nominated for—and won—Oscars, Emmys and Grammys for his work on *The Right Stuff*; the broadcast of the New York City Marathon, and sessions with John Lennon, to name just a few.



PHOTO: ED FREEMAN

That's the respect with which Lee DeCarlo, music mixer for the 1992 show and three previous ones, still regards the Academy Awards, even though he's a seasoned veteran. He spent five years as chief engineer of Record Plant, and after 23 years in this industry, you might think nothing would get him nervous, but you'd be wrong. The first year he did the Awards, he didn't even realize how rattled he was until, at the ten-second-to-air mark, he looked down at his hands and saw they

He is responsible for all aspects of the Oscars' orchestral mix, generating feeds for the house mixer and production mixer, who generates the broadcast signal. Lee's principal accomplice behind the console is "invaluable" ABC Television engineer and co-mixer Zoli Osaze, who has worked on 11 Academy Awards broadcasts, mixing many of them himself. Zoli also began his career in music, taking a job with ABC Records in 1973

and moving to the television division when the label was sold to MCA.

Preparation begins about a month before the awards, with Lee watching and lis-



PHOTO: TERRY STARK

**Left: Gary Ladinsky and Lee DeCarlo; above, "Dances with Oscars"; at right, Cindy Crawford and paparazzi; below, Terry Stark and Jack Crymes aboard the Design FX truck.**

tening to last year's show. The "formal" preparation, however, begins with a meeting of all technical staff two weeks before the March 30 air date.

*March 16, 10:00 a.m.* Several hundred people crowd Stage 57 on the ABC Television lot in Hollywood, which happens to be the set of America's Funniest Home Videos. ("Appropriate," Lee jokes.) These folks constitute the complete technical staff for the Academy Awards, from set designers to stage hands. The meeting comes

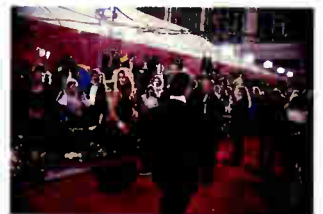


PHOTO: TERRY STARK

to order. Director Jeff Margolis and producer Gil Cates have everyone introduce themselves: it's the first opportunity for some to meet the team. A short rundown of the script follows. It takes about an hour. Roy Christo-



PHOTO: TERRY STARK

pher, the set decorator, has a model of the set, complete with props. Before leaving, everyone is given a massive set of paperwork the size of a Gutenberg Bible; in fact, it will be their bible for the next two weeks.

Lee works within a budget, and the money allocated has to cover everything from paying the orchestra to tape costs. Design FX has been contracted to provide remote truck services at the venue, the Dorothy Chandler Pavilion in downtown Los Angeles.

The orchestra will not only play at the Awards, but will also prerecord every number nominated in the Best Original Song category, which are performed in their entirety during the ceremony. Studio time for prerecords at Ocean Way in Hollywood was booked way back in November.

This year, the song "When You're Alone," from the movie *Hook* is being prerecorded because it is sung by a six-year-old, and there is concern about her ability to perform it live on key. Another number, "Belle," from *Beauty and the Beast*, includes 16 separate solos by minor singers and players. None of them can use a handheld mic, because they are also dancing, and 16 open lavalier mics running around onstage is out of the question. Only the leads, Paige O'Hara and Richard White, will sing live.

Even though these are



ILLUSTRATION: JIM PEARSON

the only two numbers for which prerecorded performances are planned, Lee records and mixes four of the five, knowing anything can happen. The Academy Awards intimidates people. He's seen big names back out as the big day approaches.

"One year the director insisted everything would be live," he recalls, "but several talents wanted to go with prerecords. It was just luck that I had run a 2-track at the rehearsal sessions, and that's what went out on air. Since then, I've learned to prerecord everything."

The fifth song, Bryan Adams' "(Everything I Do) I Do It for You," is being handled by Greene Crowe production mixer Paul Sandweiss with supervision by Bob Clearmountain. It requires a completely different set and its own console.

*March 24, 10:56 a.m. It's four minutes to downbeat on the day of the first read-through. Roughly 50 musicians, hundreds of instruments and several thousand feet of cable sprawl in seeming disarray across the whole of Ocean Way Studio One. The air conditioning must be working overtime to keep the studio from going supernova just from body heat alone. It's at moments like this that Lee's unfailing good humor keeps the situation from degenerating into complete disorder. I approach him to ask where I should sit, expecting a bar-*

*ried brush-off. "Amy," he says instead, gesturing toward the harpist. "I'd like you to meet Dorothy."*

Someone is stressed: In the control room a telltale blue bottle of Milk of Magnesia sits on the producer's desk, but nobody claims it. Lee and Zoli have been there since 8:30; the two assistants, Steve Holroyd and Mark Guilbeault, since 9:00. Setup took the entire previous day.

A great deal of thought went into the arrangement of the players, because the sound from the prerecords must match the sound from the pit of the Dorothy Chandler Pavilion. This is especially critical because "Belle" segues directly into "Be Our Guest," also from *Beauty and the Beast*. The orchestra will have to pick up where the prerecord leaves off, and gross incongruities would be immediately obvious.

The read-through takes ten hours. Musical director and conductor Bill Conti and the orchestra look for bad notes and make sure the arrangements work. Lee's style is to concentrate as much on people as the music. As Angela Lansbury and Jerry Orbach arrive, he tells an assistant, "If you ever see a star coming in, run out to meet them and make them feel important." He makes sure they have a cup of coffee and that everyone is introduced, because he

BY AMY  
ZIFFER

# A PEEK BEHIND THE SCENES

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knows the talent is the *raison d'être* for the show. Their comfort will translate into a better performance and a better time for all.

*March 25-26. Prerecords and mixing.*

The prerecords go down to analog 24-track running at 15 ips, +3 dB, non-Dolby. They are mixed down to a 1/4-inch 2-track and 1/2-inch 4-track, also running at 15 ips, +3 dB. "You don't want to get fancy when it comes to television," Lee says. "No elevated levels beyond the norm, nothing unusual."

The 2-track contains two versions, one with no vocals and one with all vocals. It's primarily for rehearsal purposes. The 4-track will go out for broadcast from the Greene/Crowe truck. In addition to a left and right stereo mix of the orchestra, it contains the lead and background vocals, each on their own track. The lead vocal will be omitted from playback during broadcast because the two leads sing live, but they could be used as a backup in case of emergency.

While mixdown is being done at Ocean Way, Design FX crew members Mark Eshelman and Bruce Maddox are at Dorothy Chandler setting up the pit. Lee has graphed out the musicians' positions to scale on a pit plan, calculating the number of square feet allocated to each one. Despite holding half as many people in the house, the Dorothy Chandler orchestra pit is downright spacious compared to the Shrine Auditorium, where the show has been held in previous years.

Players are positioned so that mic leakage helps, rather than hinders, the overall sound, an important consideration since most of the mics are condensers. For example, violin or viola mics might pick up enough of the drums to eliminate the need for overheads.

Despite the need to match the live sound to the prerecords, the mic lists for the Ocean Way sessions and the pit are not identical. "It would hurt you if they were identical," Lee insists. "Some mics are just much better in a studio situation." Ambience is a far more crucial factor than whether the floor tom is miked with a U87 or a 452. The goal is to make the mix on tape and the mix in the venue as good as possible while still being compatible.

No sooner are the prerecords mixed than it's off to the venue for a 7:00 p.m. soundcheck. For the next two days, Lee and Zoli are on-site from 8:00 a.m. to midnight—rehearsing, working out bugs and fine-tuning the sound.

*March 30, 1:36 p.m. Full dress rehearsal, with stand-in presenters and dancers. Crowds of gawkers are jostling for position near the arrivals area. It's only with the help of Terry Stark, Design FX's remote recording division director, that I pass muster and am given credentials. The sound truck is located next to Paul Newman's and Elizabeth Taylor's trailers, which causes me to speculate on the street value of the backstage pass I'm wearing. Lee says \$500, easy.*

For the last four days, Lee and Zoli have been supplementing the script with notes of their own, describing in plain terms what will happen and

when. They note the type of underscoring, tympani rolls, brass hits and so forth, with some dialog lines for guidance. These notes are computer-output and inserted in the three-ring bible with the scripted ones. During rehearsal and again during the show, Zoli calls out these notes to Lee. With roughly 240 different pieces of music, it's too much for him to memorize. And at this point, production or direction might still be dropping things from the script.

"The show is so fast, it's just crazy," Lee says, shaking his head. "You never get to rehearse the whole thing. Even the dress rehearsal is a stop-and-go

—CONTINUED ON PAGE 142

## MIXING THE SOUND AT THE ACADEMY AWARDS

The Design FX truck has a 44-input API console with Penn Stevens input modules and 550 EQs. Both the big monitors and the close-fields are by KRK. All the mics on the orchestra (roughly 45 in all) are fed into the truck and mixed by Lee down to two channels. He sends the P.A. mixer the following stereo pairs: brass, rhythm, woods, strings, vocals, and an overall mix.

The overall mix is also sent to the Greene/Crowe broadcast truck, where it's combined with the podium mic signal, live applause picked up in the house, and a supplemental applause and laugh track. The prerecords originate here, as well.

Audio is integrated with video and most graphics on site, then sent to the ABC Television facility in Hollywood by Pacific Bell, using either microwave transmission or coaxial cable. There, the signal is "integrated"; i.e., commercials are added. ABC uplinks to an AT&T Telstar 301 satellite on which the network owns transponders. The signal is then backhauled to ABC New York, where it goes through their normal network distribution channels (involving another uplink to a second Telstar 301 for downlink by ABC's affiliates).

For the first time at an Academy Awards broadcast, Pacific Bell also made available a digital feed down fiber optic cable. ABC chose to

broadcast the analog signal, recording the digital signal for future analysis to determine if it warrants the upgrades it would require at their facilities.

At any time, Lee has the option of monitoring his mix, the output of the Greene/Crowe truck, or the return from network.

Lee's cue mix arrangement is somewhat of a Rube Goldberg affair. He doesn't want the mix minus orchestra running into the console and then into the cue bus, because it opens the door to blunders and the danger of crosstalk. Instead, it's running through an 1176, and the music mix is running through another. The limiters' two output knobs, acting as attenuators, give him complete control over both balance and overall volume. The cue system is switched to mono mode.

"If you have a lot of transients," Lee says, "the limiters will pump. They are in the signal chain, and there's nothing I can do about it. So the goal is to get them engaged and make them stay where they are." He puts a pair of Pultec EQP-1 equalizers across the stereo mix and boosts around 30 Hz and 12 kHz. Since the microwave transmission lines are relatively narrow band, very little of those emphasized frequencies ever make it to TV. "The only thing it does is make the limiters work. Then within that limiting, I fine-tune my mix," Lee adds. He also uses the EQP-1s to brighten the midrange as needed when the wash of applause dulls the apparent sound of the music mix.

—Amy Ziffer

# MICROPHONE TECHNOLOGY

## Something Old, Something New

**W**hen it comes to microphones, audio engineers are among the most cantankerous, ultra-conservative creatures on this—or any other—planet. Break open the mic locker, and the hands always reach for those same old standbys, time and time again.

Of course there's nothing wrong with those reliable old standards in microphones. In fact, after all these years, it's interesting that models such as the Shure SM57/SM58, Sennheiser MD-421/MD-441, Neumann U87/U89, Electro-Voice RE20, AKG C-451/C-414 and many other studio mics remain in

production and are consistent strong sellers at audio dealers everywhere. On the used market, vintage tube types from AKG, Neumann and Telefunken are treated with all the reverence of a Picasso coming up for auction at Sotheby's.

While advances in other areas of pro audio—especially recorders, consoles, signal processing and monitors—grab all the headlines, microphone technology has also improved over the years, albeit with a lot less in the razzle-dazzle department. Such improvements have been applied not only to new designs, but to established models as well. Introduced six years ago, AKG's C-414 ULS (Ultra Linear Series) took a major step forward by reducing the mic's noise floor to -14

dBa. Similarly, Neumann's U87A yields a signal-to-noise figure that is 6 dB better than its predecessor.

To be sure, these are exciting times in the field of microphone technology, as manufacturers seem more willing than ever to try new approaches, techniques and materials. For example, the use of neodymium—originally pioneered for use in the magnet structures of dynamic microphones—has since been expanded into high-frequency compression driver designs. Hypercardioid designs are beginning to dominate the field of handheld vocal mics, while in the studio, what's old is new again, as numerous companies—such as AKG and Groove Tube—currently offer mics with vacuum-tube electronics. Another popular trend is stereo mics, with a bevy of models suitable for almost any studio, broadcast or location recording

**by George Petersen**

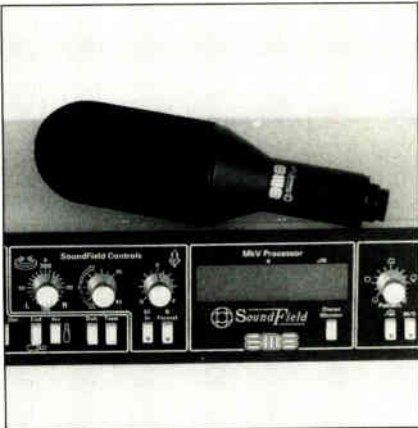
application.

The following is a selection of microphone products released over the past couple of years. Each, for one reason or another, has caught this author's attention as an example of how new technologies have been incorporated into the realm of microphone manufacturing. Listed alphabetically, each takes a distinctly different approach to this fusion of art and science.



#### AKG Blue Line

A flexible, modular microphone series with a wide range of available capsules, AKG's Blue Line features simple, rugged bayonet couplings—no more capsule cross threading! Internally, the electronics incorporate High Density Surface Mounted Device (HDSMD) technology, which improves reliability while eliminating the need for output transformers. Performance specs exceed those of AKG's popular 451 line.



#### AMS Soundfield Mk V

The Mk V is the fifth generation Soundfield microphone, incorporating four tetrahedrally mounted capsules with

an electronics package offering remote control of azimuth, elevation and dominance. Outputs can be conventional stereo or B-format Ambisonic, with the latter allowing the flexibility of mic parameter control in post-production.



#### Audio-Technica AT4033

Audio-Technica's first large-diaphragm condenser mic, the AT4033 combines transformerless, low-noise, symmetrical electronics with a gold vapor-sputtered, 2-micron-thick diaphragm and internal baffle plate that increases the signal-to-noise ratio of the microphone system. This cardioid mic also features switchable attenuation and LF rolloff; the shock-mount is standard.



#### Audix D-Series

Made in the USA, the Audix D-Series is a line of dynamic mics designed specifically for reproducing drums, brass and other high-SPL instruments. This hypercardioid series also eliminates the transformers (that are common to nearly all moving-coil microphones) and uses a lightweight diaphragm,

which provides an extremely high output that's on par with neodymium capsules. The compact, 4-inch body simplifies placement in tight quarters.

#### Beyer MC833

This stereo condenser mic contains three cardioid capsules (one front-facing and two side-facing), providing a choice of mono, XY or encoded-MS



stereo outputs. In MS mode, the two outer capsules are summed to form a figure-8 pattern (and combined with the front-facing capsule); in XY, the pickup pattern of the outer capsules can be continuously varied over a range of 60° to 180°



#### Brüel & Kjaer Acoustic Pressure Equalizer

This simple push-on, spherical attachment acts as a passive, spectral, directional equalizer that changes the characteristics of B&K's superb 4006 and 4003 omnidirectional condenser mics. The net result is increased directionality (reach) at higher frequencies, while



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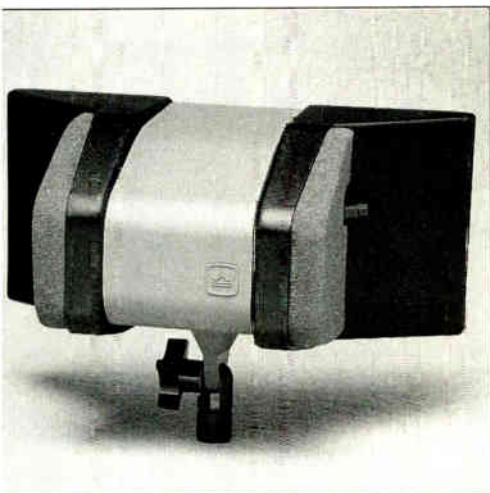
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#### **Electro-Voice RE27N/D**

EV updates the classic RE20 dynamic mic with a high-output, neodymium-magnet capsule and three frequency-tailoring switches, while retaining the RE20's Variable-D™ design that reduces the unwanted proximity effect when the mic is used for close vocal miking.

#### **Gefell UM70S**

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pattern mic features a hand-assembled M7 condenser capsule (similar to that used in the classic Neumann U47) with a modern, switching power supply driving a FET-input stage and a hybrid amplifier.

#### Neumann TLM50

An updated version of the vintage M50, Neumann's TLM50 mounts a 12mm condenser capsule in a 40mm sphere, acting as an omnidirectional pressure transducer below 1 kHz and

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**Schoeps Stereo Mic**

side of a 200mm (8-inch) sphere. The mic has a stereo, 5-pin XLR output and can be mounted on a stand or suspended overhead. A front-facing LED facilitates placement and orientation.

**Sennheiser BF530**

Designed for handheld vocal applications, the BF530 is a dynamic mic with



a supercardioid pickup pattern. An adjustable basket slides to change the mic capsule-to-sound-inlet distance, allowing custom control of the proximity effect to suit a vocalist's style.

**Shure VP88**

Shure took a conventional approach to MS miking (front-firing cardioid and transverse figure-8 capsules), built them into a sturdy, compact body and added



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vidual capsules for later manipulation in post-production.

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Thirty-five years ago, Sony introduced the C-37A, its first tube mic. Now Sony has re-entered the high-end tube mic market with the C-800 and C-800G, which combine condenser capsules with modern vacuum tube electronics. The G Version solves heat build-up problems by incorporating a Peltier cooling device, which flows a DC current across a junction of dissimilar metals to dissipate heat at the source. ■



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# FAVORITE VOCAL MICROPHONES

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**E**ngineers and microphones can form bonds not unlike a boy and his dog, and while a microphone won't fetch the evening paper, it also doesn't require walks on cold rainy nights. Here's a glimpse into the thoughts of some Southeast engineers regarding their personal microphone preferences for recording vocals. The participants generally fell into two categories: those with a decided liking for one or two particular mics; and the eclectics, who play no favorites and show a predilection for microphone "shoot-outs" to determine the best mic for the job.

## The M-S Approach

Carl Tatz, engineer and owner of Nashville's Recording Arts studio, has taken the Sheffield Labs microphone as his latest favorite. "It sounds incredibly open and airy, with a lot of presence and no harshness on most singers," he says, noting that it's also Amy Grant's favorite mic. "It gives you a real 'jump-out-of-the-radio' sound."

In the technique department, Tatz likes to use an M-S stereo approach sometimes. "You can actually fine-tune it by splitting the phase between channels," he explains. "A stereo lead vocal isn't for everyone. It's time-consuming and eats up track real estate, especially if you're comping tracks. But the result can be very satisfying, and it gives you more control in the mix than any other technique I know. When you sit in front of the speakers, you don't know exactly where the vocal is coming from. It's mysterious, but at the same

by **D a n D a l e y**

photo illustration by **Paul Morrell**

*Pictured at right are a few of the mics cited by the engineers in this article (clockwise from upper left): Brüel & Kjaer 4011, AKG C-414, Neumann M49, Neumann U47, Electro-Voice RE20, Neumann TLM170.*







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time it's very natural-sounding. Although you do have to monitor the phase with your ears or with a meter."

## Shortest Distance Between Two Points

Atlanta-based engineer Thom Kidd, whose resume shows a decided R&B tint with acts like Johnny Gill, Bobby Brown and Keith Sweat, says he has three fave vocal mics. AKG's "The Tube," remake of the classic C-12, is his main choice. "I prefer it over the U87," he says. "It gives me lots of warmth and a certain type of presence I can't get out of anything else." Kidd also uses it as a reference mic, as his starting point in choosing an artist's definitive vocal transducer. He usually sets it on a standard cardioid pattern, about eight inches away from the singer.

His next choice is a Neumann TLM170, which he says has a particular kind of brightness that makes backgrounds stand out better in a mix. "I don't use a pop filter, and I try to keep

## Bill Porter: Miking the Classics

Hardly a newcomer to audio engineering, Bill Porter has engineered over 7,000 recording sessions, including 50 Top 10 hits. Tune your radio dial to any oldies station and you're sure to hear something that Porter worked on: classics such as "Are You Lonesome Tonight" and "Return to Sender" by Elvis Presley, "Pretty Woman" and "Only the Lonely" by Roy Orbison, the Everly Brother's "Cathy's Clown," Al Hirt's "Java," as well as 300 other charting records that had that magic Porter touch.

Currently, Porter is the president of Louisville, Ky.-based Allen-Martin Productions, an audio and video production complex equipped with two video edit bays, video insert stage with cyclorama, large audio room with a 30 x 40-foot studio and a Synclavier production suite. Located on a private estate, Allen-Martin hosts a variety of sessions ranging from audio-for-video scoring/mixing, commercial and

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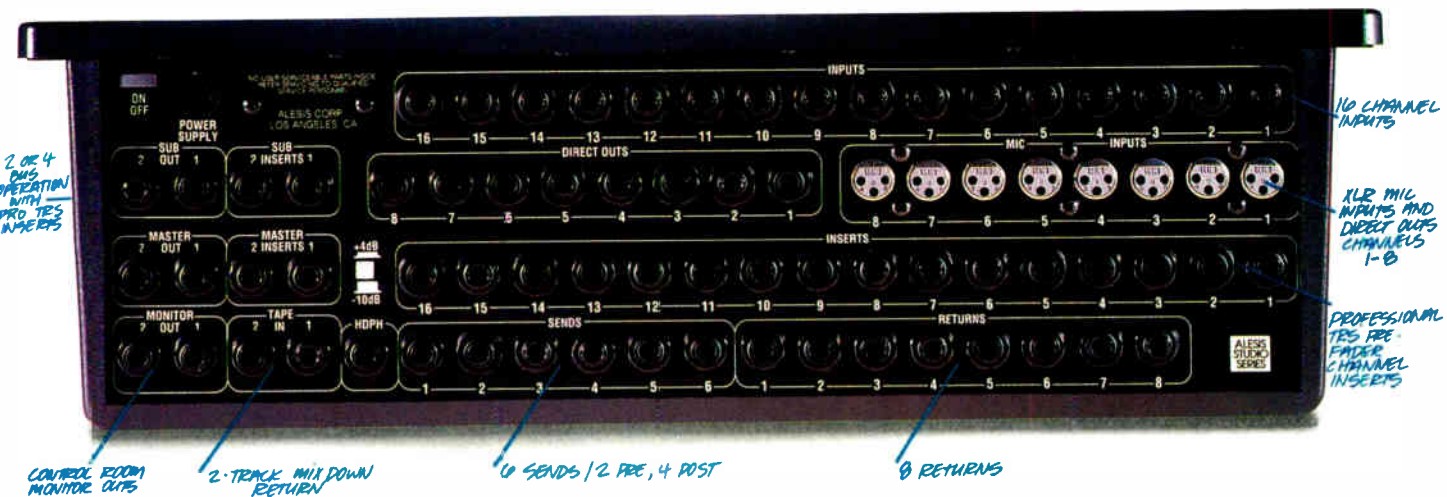
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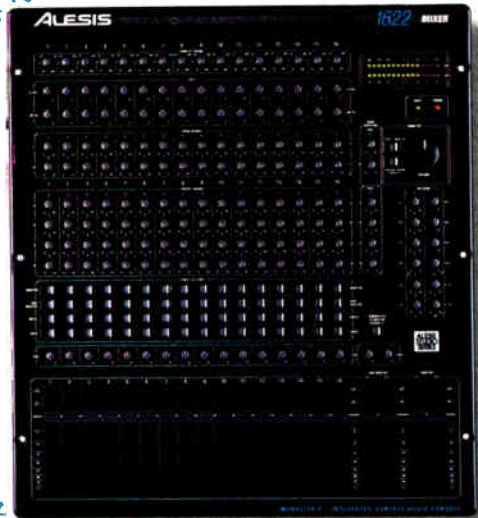
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And they're true pre-fader inserts so you can change levels without disturbing critical effects settings. Master outputs are switchable +4 or -10 to drive pro or semi-pro mixdown decks, and channels 1 through 8 feature XLR mic inputs and direct outs. There's even a headphone output for convenience.

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\*Keyboard Magazine July '90



everyone a couple of feet from it," he says. "It's a very sensitive microphone." He also keeps it out of the console as much as possible. "I want to avoid EQ at the input stage," he notes. "Besides not coloring the sound, it's the shortest distance between two points."

For harsh vocal sounds, Kidd will go to the old standby Electro-Voice RE20. The mic that has worked for voice-overs and kick drums for years also works wonders on raspy voices, according to Kidd. "Your first thought is to jam an equalizer in there and cut 3 dB at 2 kHz," he says. "The RE20 sort of does that for you." Kidd also occa-

sionally uses the M-S technique for backgrounds.

One last overall tip: "I've noticed that whenever I run into a singer who's consistently singing flat," he explains, "I raise the mic up another two or three inches. It usually seems to help with their pitch."

### Vocal Session King

Laughingly calling himself the "vocal session king of Atlanta," engineer Jim Zumpano has been called in for the vocal sessions of a number of artists, including Jermaine Jackson and Whitney Houston. His personal prefer-

## Neumann's Future as a Sennheiser Company

For many engineers, the Neumann name has been associated over the years with the best sound among vocal microphones. Recently, after more than 50 years as a private company, Neumann GmbH of Berlin was purchased by the European manufacturing giant Sennheiser GmbH, which produces a wide variety of broadcast and studio gear, respected worldwide.

Sennheiser was founded in 1945 as an outgrowth of the work Fritz Sennheiser had been doing as a university professor involved in acoustics and vocal encoding research. After the war, he and six associates from the university decided to channel their work with acoustics, electronics and test equipment into a peacetime venture. Their first product was a millivolt meter.

Shortly after that, someone brought them a dynamic microphone and asked if they could duplicate it. They did, but they also made a second one, greatly improved with their own ideas about acoustics and electronics. Here began a long and happy relationship between Sennheiser and the microphone world.

A short time ago *Mix* had the pleasure to speak with Jörg Sennheiser, son of the founder, whose design involvement with the company has included research with Sennheiser's Professor Hibbing on the push-pull capsule used in its series of low-I.M.-distortion small microphones.

*Concerning the design philosophies of Neumann and Sennheiser, and the overlaps such as the shotgun mics and smaller KM series, how will the competition between them be handled?*

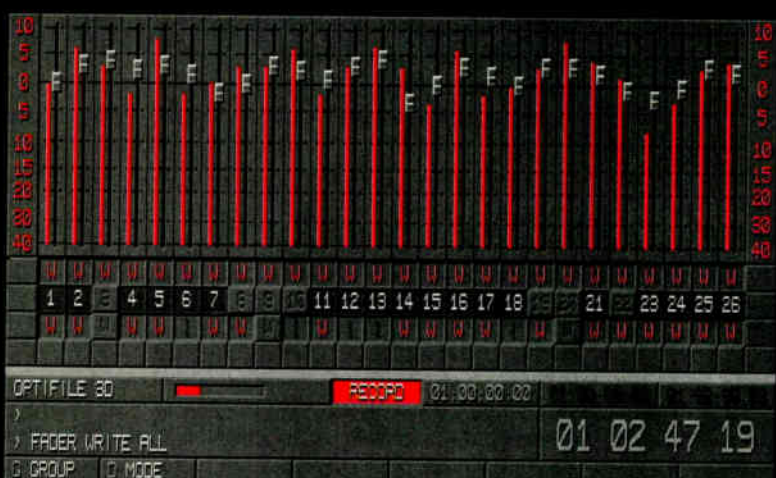
There is some competition between us, we realize, although most of our microphones are

—CONTINUED ON PAGE 64

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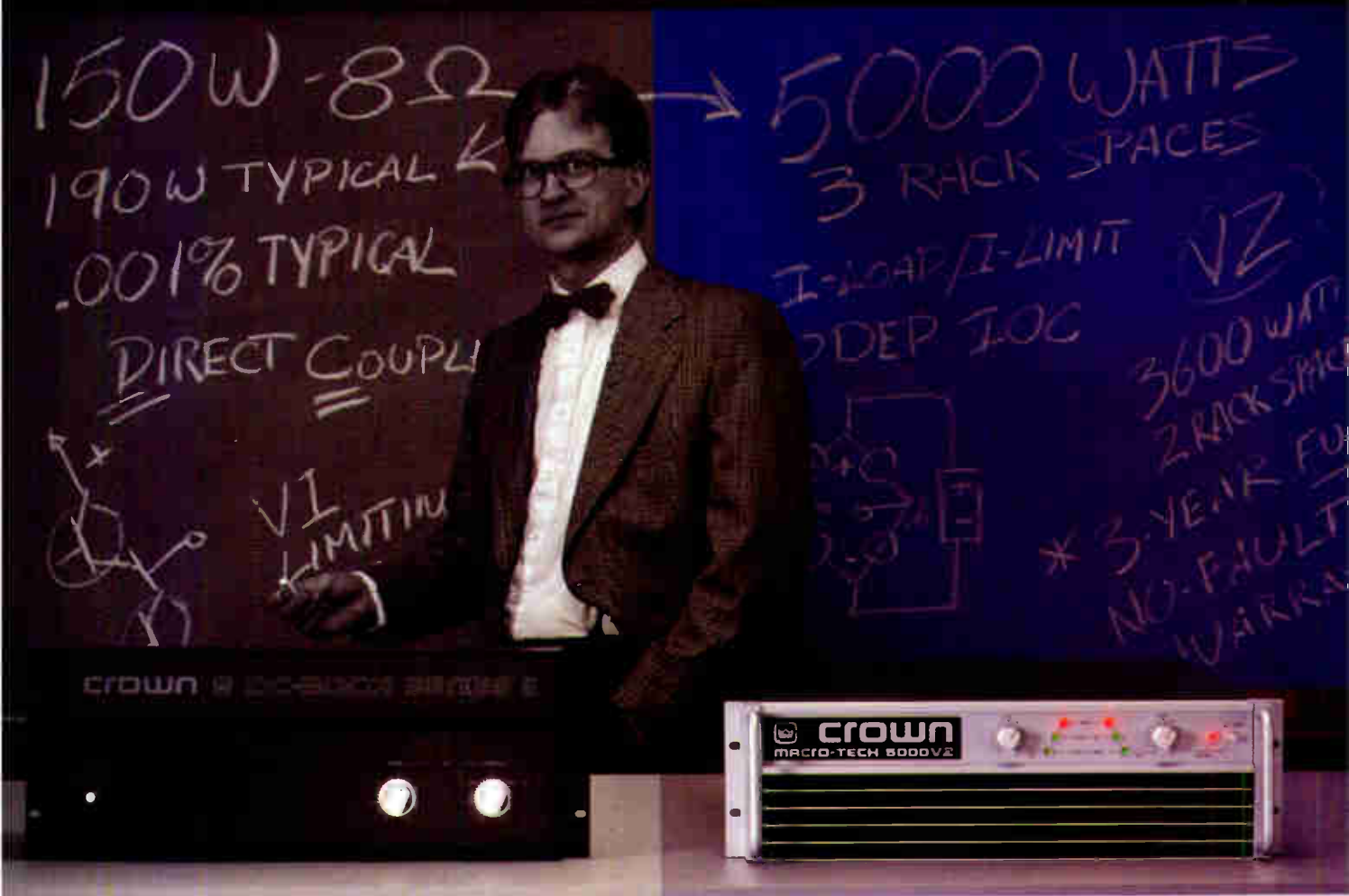
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ence is the venerable Neumann tube U47. "It's got warmth and a brilliant top end, and it works well with just about everyone," he says. "You can scream on it or do a ballad on it, and it reacts the same." Zumpano tends to use ring-type, nylon screen filters instead of the glove-fitting, foam pop windscreens, and likes to set up in the main room for vocals as opposed to iso booths.

"I like to run it through a nice preamp like the Massenburg and a very warm compressor, usually the Neve 33609, and I let it do the work," he explains. "It's a beautiful combination with that mic; together they have more presence than anything else I can think of. I run it straight to tape, no

—FROM PAGE 58, BILL PORTER

jingle production, spoken word and album sessions.

"Basically, I have three vocal mics that I like to use: the Telefunken U47, Telefunken Elam 251 and the AKG C-60," Porter explains. "All the times I worked with Elvis, we used a U47. I used the C-60 on Orbison's voice on 'Pretty Woman.' When we set up Fred Foster's Studio [a Nashville facility where all the Monument Records work was done] we didn't have any U47s around. There were some U67s, but I didn't like the sound of them, so I experimented and chose the C-60 for his voice. It was a good microphone for that day and time.

"I never deviated much from those three mics on vocals," Porter says. "One of them would work pretty well on just about anybody, although sometimes I'd use an RCA 77-DX ribbon mic on a voice that was piercing."

But, according to Porter, getting a great vocal sound requires not only the right mic, but also a trick or two. "In most pictures you see, a vertical mic—such as a U47, 251 or U67—is always placed at right angles, perpendicular to the floor," he explains. "I was always of the school of tilting the microphone about 30 degrees away from the artist. The presence will improve tremendously, without equalization. I don't know what it is, but it makes a big difference."

—George Petersen

buses. I don't like to ride the gain while I'm tracking vocals." For backgrounds, he sets the pattern for omnidirectional and keeps it about eye-level with the group. "Singers tend to look up a bit as they sing," he says. "Unless they haven't learned the words yet."

#### Original C-12

Another AKG C-12 proponent is Neal H. Pogue, who's worked with Bobby Brown, Dennis Austin and The Jets, among others. However, Pogue prefers the original C-12s over "The Tube" reissue, asserting that the original has a special quality of clarity that he hasn't found elsewhere. "It's a great all-around microphone for leads and backgrounds," he explains. He'll use a cardioid for leads and up to two-singer groups, and after that he'll switch to an omni. But he's one of the few who seem to prefer to run it through the console rather than direct to tape. "I'm an SSL man, and I like their onboard EQ," he says, although he acknowledges occasionally experimenting with a Focusrite preamp.

Pogue says that while the C-12 is always a first choice, he uses a Neumann U47 as a back-up for female voices that don't mix well with the C-12 and a U67 for male voices that the C-12 doesn't translate. "The 47 works best on higher-frequency voices, and the 67 is good if a man's voice falls somewhere in between high and heavy," he says. "The important thing for me is not having to use much—if any—EQ."

#### Won't Get Fooled Again

Producer/engineer Scott Hendricks, who's worked with Hank Williams Jr., Alan Jackson, Steve Wariner and Restless Heart, speaks for all those who have a preference for no preference at all. "I've been fooled too many times," he says. "As soon as I think I've found a favorite, I find something better." Hendricks's m.o. is to line up mics in a shoot-out, looking for the one that fits a given vocalist better than the others. A typical lineup for him includes a C-12, U47, U67, U89 and a Sheffield Labs. He has the same feelings when it comes to preamps, alternating between a Trident A-Range, an API and a Massenburg.

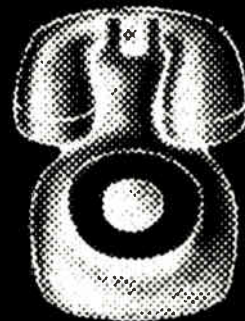
He'll add compression and keep his hands off the faders, looking for the natural dynamics as much as possible. "Otherwise I don't have any particular technique for vocals," he says. "I let the song and the singer determine how it goes to tape."

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## Shelly's Mic

Another Nashville engineer with multiple preferences is Chuck Ainlay, who has worked the board for a wide variety of acts, including Dire Straits, Lyle Lovett and Steve Earle. If pressed, though, he chooses a vintage

Telefunken 251 owned by Shelly Yakus and rented out through Underground Sound. "It's an amazing microphone; it has a top-end that's really opened up," he notes. While Ainlay tends to go for mic shoot-outs for artists he's working with for the first time, the Telefunken

tends to get used more often than not. Other choices include the C-12 and the U47, and he likes to experiment with various microphone/preamp combinations.

Country records tend to take a lot less time to come together than their

—FROM PAGE 60, NEUMANN AS SENNHEISER

quite different and each has its place. Engineers who are used to their favorite microphone will continue to make the best recordings with that microphone, and we don't wish to change that. The microphones that don't seem to be asked for much anymore will naturally fade away. Eventually, Sennheiser will make a determination as to which company will produce what solutions for the future.

*There is a vintage microphone market today, dating back to very early Neumann designs and those of its predecessors, where some mics are selling at over a thousand percent more than their original price. These have unique sounds, though perhaps designers would consider them as leaving a lot to be desired by today's design standards. What will the situation be as*

*far as support for these older models, inasmuch as Neumann has continued to support the more popular of these models and one can still get a capsule for, say, a U47? Is this going to change?*

It is somewhat outside normal thinking for me to understand the positive effect of these vintage microphones, and I would really like to have objective parameters as far as what is really going on. Probably there will be a point of no return, as far as restoring and replacing these microphones, though there are some admirable efforts going on outside the company to keep these "classics" in service.

*Why would an engineer choose a "classic" if the best of the contemporary microphones are superior by today's measured design parameters?*

As far as I can see, if a good sound engineer can use a specific micro-

phone with a certain frequency response and polar pattern, and make a great recording, then that engineer is operating as an artist. To know what the advantages and disadvantages of that specific microphone are and to work effectively with it is really beyond the normal recording business.

*Do you see designers and engineers continuing to revere the designs of old?* I think that designers are going to start leaving the past, where the mixer and engineer are performing artists—and their microphone is their "violin," so to speak—and provide transducers that will be very sophisticated, but very reproducible. The sound engineer will learn to use several transducers to pick up a sound rather than a single one, which is uncontrolled in some parameter.

—from a conversation with Stephen Paul

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World Radio History

pop counterparts do. But, as Ainslay points out, since the vocal is much more out in front than on pop records, it gets more time than other instruments for sound development. "The vocal is the key on country records," he says, "so it never gets less than it needs in terms of getting the sound right."

#### Guess on Mics

John Guess has engineered for Vince Gill, Reba McEntire, Rod Stewart and Donna Summer, and he likes to use the AKG Tube for vocals in a number of genres. "It's a warm microphone," he says. "Not great on everyone, but close. If I need a brighter mic for a darker voice, I'll go with a Neumann TLM. It's brighter but still warm-sounding." There are other exceptions: Vince Gill usually sings through a Neumann tube 51; Reba McEntire works through a Neumann M49.

"Reba has an incredibly powerful voice, and it can overpower a lot of microphones," Guess notes. "I back her off a bit from the mic. Vince, on the other hand, has to move in closer than most, but he's sung so many times in the studio that he really knows how to work a microphone." For new artists,

**"THE ONE THING I WANT TO AVOID IS GETTING TOO TECHNICAL ON VOCALS. I'LL SET UP FOUR TO FIVE MICROPHONES AND JUST KEEP TRYING THEM. IF I NOTICE THE SINGER STARTING TO GET NERVOUS OR TIRED, I'LL MAKE A JUDGMENT CALL."**

**—CESAR SOGBE**

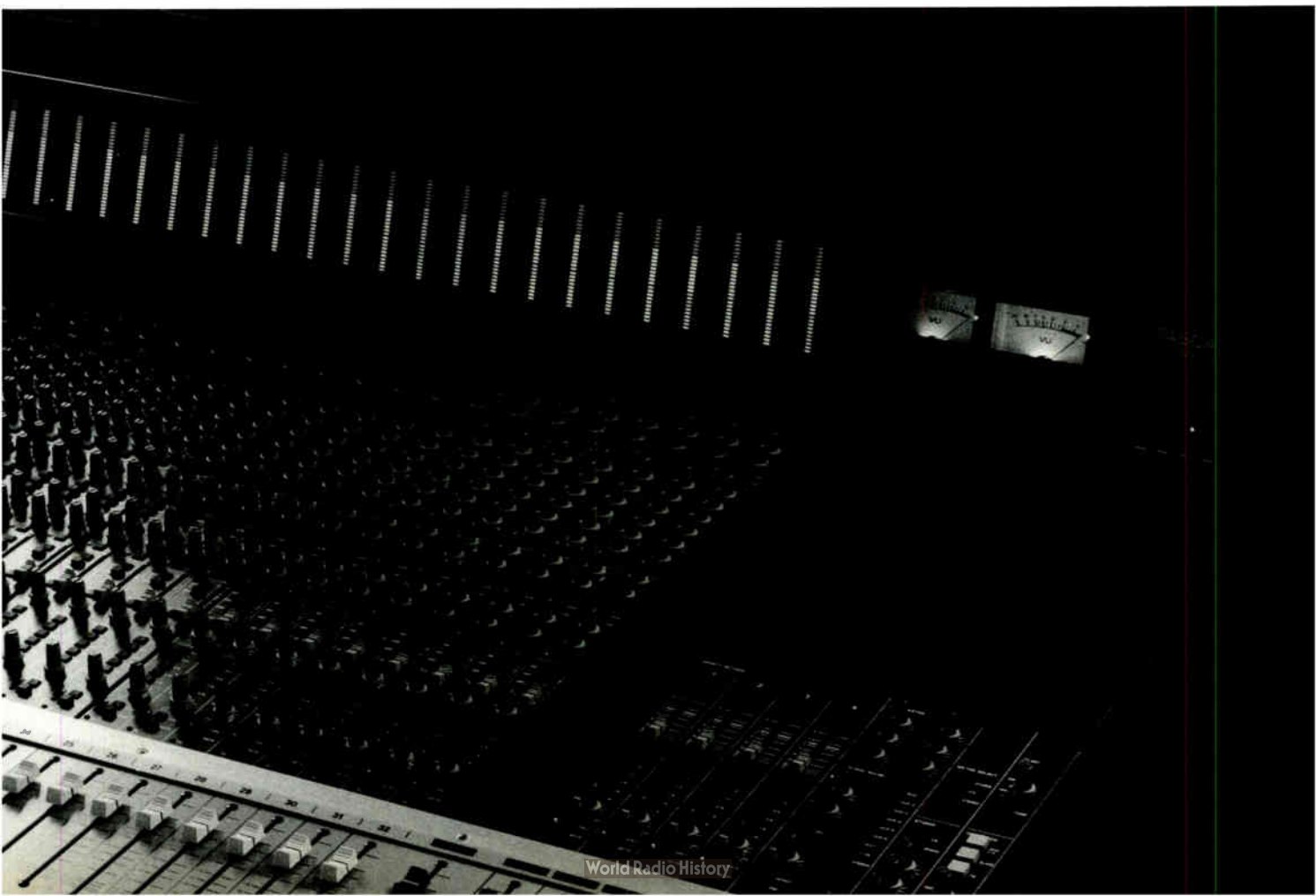
Guess also resorts to the shoot-out, recording two at a time for comparisons. He occasionally uses two mics for a lead vocal as well, setting one slightly higher and directly behind the vocalist and then putting some light EQ on one of the mics.

#### Try and Try Again

Chief engineer at the newly opened South Beach Studios in Miami Beach, Fla., is Cesar Sogbe, who's engineered for Martika, Kid Creole and The Cocanuts, and Xpose. With a political candidate's deftness, Sogbe says he likes them all, from AKG 414s to Shure 57s, although he does express a preference for the B&K 4011 and a Neumann FET 47 for starters.

"The one thing I want to avoid is getting too technical on vocals as I do on the rest of the session," Sogbe explains. "I'll set up four to five microphones and just keep trying them. If I notice the singer starting to get nervous or tired, I'll make a judgment call. Sometimes an engineer can get too carried away with vocal miking; the choice and placement can get in the way as much as help sometimes. The bottom line is to build a creative environment for the singer." ■

*Mix East Coast editor Dan Daley's first microphone was a pay-phone mouth-piece transducer taped to a music stand, actually used at many high school dances. In 1972, 20-20k Hz was just not a factor.*





Three different approaches to digital workstation technology (clockwise from lower left): Roland DM-80, Digidesign Pro Tools and Akai's DD1000. All are shown with optional hardware controllers.



# WORKSTATIONS ON THE MEZZANINE LEVEL

**D**igital audio workstations have become a commonplace sight in every audio-for-video post facility, and smaller versions are proliferating in major music recording studios for editing and assembly functions. In fact, if you believe the trade magazines, you might think that the entire world has em-

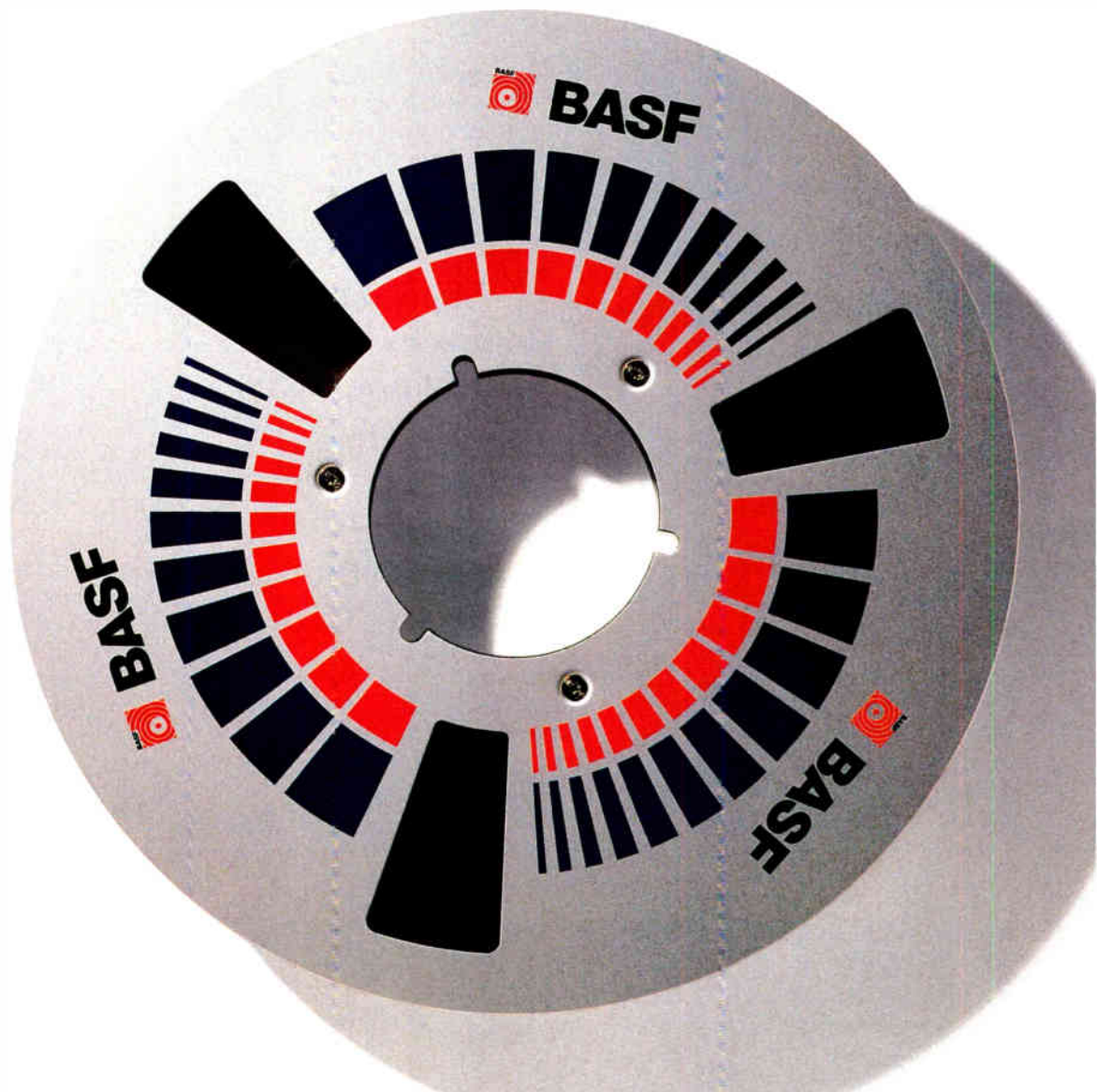
braced bits.

However, while the upper-level facilities have become digital veterans, a second tier of studios exists for whom digital means mainly a DAT deck and a CD player for sound effects libraries. The second tier is big; it dwarfs the first tier.

by Dan Daley

ILLUSTRATION: TANA POWELL

# 1



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**World Radio History**

Many music studios are realizing that adding digital post-production capability will be critical to their survival in coming years. Thanks to digital technology, audio and video are rapidly approaching a common domain, and corporate/industrial audio's star is waxing.

The studios are not the only ones aware of this fact. DAW manufacturers have been gearing up for this day for some time. But some manufacturers are finding that marketing to the second tier is a very different proposition.

"The first difficulty is finding out who's in the second tier," acknowledges Ron Franklin, digital sales manager for Akai, which manufactures the \$14,500 DD1000 4-track optical disk recorder. "Then comes the harder part of educating them. The first tier was very savvy in terms of technology like time code and hard disk recording. They were more apt to embrace digital than someone for whom a razor blade is the pinnacle of technology. With the second tier, you not only have to show them the technical side, but also explain how their investment is going to pay off. That means telling

them how to identify and pursue the new markets that best exploit the technology, like post-production."

### New Anxieties

Franklin says that time code familiarity is lacking in many music facilities, with MIDI Time Code and drum machine pulse sync constituting the state of their art. "You have to explain that time code is the basis for the product and the con-

## Many music studios are realizing that adding digital post-production capability will be critical to their survival.

cept," he says. "Then you add the distinction between hardware synchronizers and hard disk systems with sync built in. It's something they've seen and heard a lot about, but they often feel pushed into it because a competing studio is entering the field."

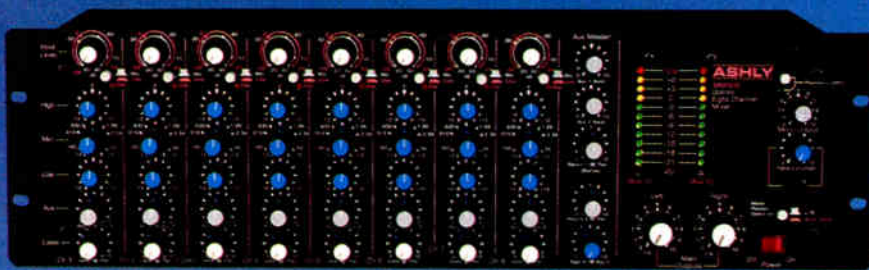
Bob Todrank, national sales and

marketing manager for Roland's pro audio/video group, says that the second tier is precisely the audience his company's recent entry—the \$9,995 DM-80 8-track hard disk recorder—is intended for. "We feel that the second tier of studios is bigger in size than the first tier," he says. "And while the first tier is a legitimate marketplace for a number of manufacturers, it's a finite market. A large number of facilities already have multiple systems."

Roland plans to generate buyer interest by illustrating the comparatively low-price possibilities of virtual digital audio. "There's a need to teach potential users what can be accomplished on these systems," Todrank says. "The market is educating itself to a degree out of necessity. They have to find new ways to make money. A lot of them don't have a choice—digital is the buzzword of the '90s."

But Todrank also points out that manufacturers will have more to do than simply sell the systems. "The needs of this market are distinct from those of the upper-level facilities," he says. "They require a higher level of support, advice and technical assistance after the sale."

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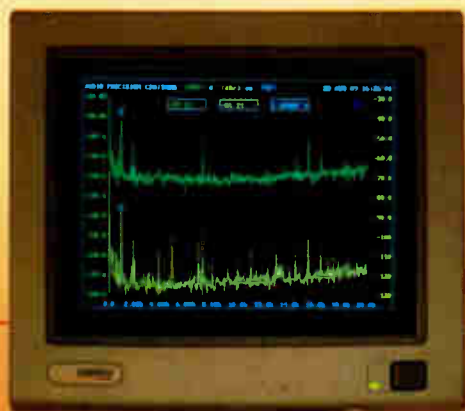
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Doug Ordon is director of post-production product sales for Siemens' AMS, which makes the AudioFile system that retails for around \$100,000. Ordon feels that DAW manufacturers may not have to change their practices and approaches much at all. He lays it out simply: "The reality is that the second tier needs to address post. The bottom line is that our product has always made its users money."

### Changing to the Fast Lane

Ordon maintains that neither marketing nor products have to change; he says that the next level of facilities must bring itself up to speed in a technological environment that already exists. "I'm not saying we won't cater to them," he adds. "But if you want to race at Daytona, you have to buy the appropriate car. The same goes for post-production."

Digidesign has targeted this market from its inception. Their Sound Tools 2-track system anticipated the coming of the second tier while it provided low-cost adjunct, and in some cases primary, workstation capability to larger facilities.


"The key issue for those studios was the power/performance-to-price ratio," says Paul Rice, marketing VP for Digidesign. "They could compete with larger DAW systems without incurring large lease payments or committing a lot of resources and still get the same profit potential." The new Pro Tools 4-track system costs just under \$15,000, including Mac and hard drive. It can be expanded up to 16 tracks with a \$3,500 accelerator/expander card and 4-track additions at \$4,000 each. While Rice acknowledges that digital can be intimidating to the second tier in some instances, he says that sticker shock is not one of the problems he encounters.

Digidesign has increased the number of demos it holds around the country and has run an intensive dealer training program. The company also opened a training center in Los Angeles. "The second tier of studios, particularly the mid-sized commercial rooms, are becoming the utility infielders of the industry," Rice says. "With systems like these, they can do post one day and a record the next." ■

*Dan Daley is Mix's East Coast editor, which entitles him to a free meal at any Waffle House along I-95.*



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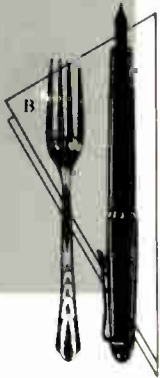
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by Mr. Bonzai

# ARTIE SHAW

## ART RULES



Artie Shaw was 28 years old, playing a gig in St. Louis, when he learned that his B-side of a forgotten tune from a Broadway flop had rocketed to Number One. Cole Porter's "Begin The Beguine" was one of dozens of hits for Shaw, whose exquisite clarinet dominated the charts between 1936 and 1952.

At the age of 44, he abruptly gave it all up to concentrate on his work as an author. Now, after nearly four decades in the vault, *The Last Recordings* have just been released. Shaw himself bankrolled the original sessions and supervised this new collection of "Rare and Unreleased" explorations. Shaw is invariably associated with the heyday of the big band era, but these recordings are quite different. Performing with a small combo, he takes his best shot at classics such as "My Funny Valentine," "Too Marvelous For Words," and takes his last shot at his own "Mysterioso" and "When the Quail Come Back to San Quentin."

The story goes that Shaw can be a curmudgeon, a cantankerous soul who has no time for fools. As a surprise, I decided to arrive for the interview with Mrs. Bonzai and see what happened. Shaw came out of his front door, snarling "Bonzai, is that you?" Then he stopped and said, "Oh, who's your little friend?"

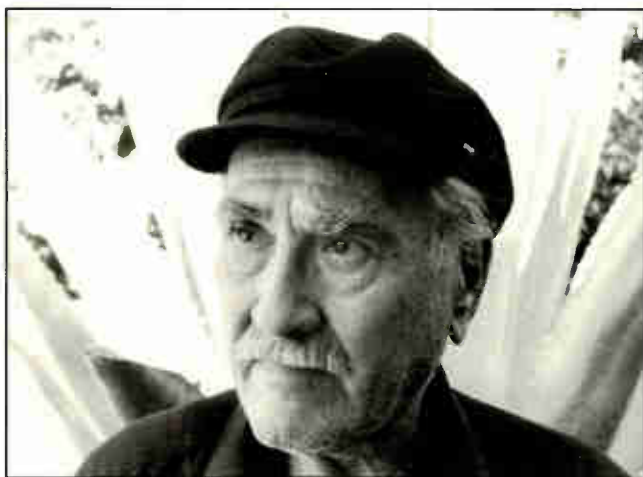


He invited us in, and we spent the next two hours with a jazzy conversationalist, a philosopher, a musician, a writer, a one-of-a-kind. At 82, Artie Shaw is a kick in the pants, alive and well, a salty dog with a tale to tell.

**Bonzai:** I was speaking with an old friend of yours, Laura Huxley, and she said this collection reminded her of chamber music.

**Shaw:** Well, it is chamber music. Trouble is, we use a word, "jazz," which is a completely screwed-up word. Why not just call it music. They call rap "music"—now that's crazy. That's oxymoronic, if I ever heard it, and I mean oxymoronic *and* moronic. It's madness. People need categories to decipher the bewildering world they live in. It only makes it more bewildering with all these categories.

PHOTO: MR. BONZAI



**Bonzai:** You've broken the rules all along, haven't you?

**Shaw:** I don't know what the rules are. I'm trying hard not to find out. Someone once said that there are only three rules for writing a great novel, but nobody knows them.

**Bonzai:** Historians say you were a bridge between swing music and bebop.

**Shaw:** Swing music, bop—what does it mean? I know that Beethoven was the bridge between classical music and impressionist music, but all this nomenclature is a mess. If you talk about music, you should talk about people. If I say Chopin, you know what I'm talking about. If I say piano music, whose? It's like saying you like poetry—whose?

The word "definition" is based on the word "finite." When you define something, it's finished. So, you say I'm a bridge—anyone who does something worthwhile is a bridge. Louis Armstrong was a bridge between ragtime and what we now call jazz. I was a bridge between the guy before me and the guy after me.

I learned to play music, and I found out it was an enormous subject. I decided that I would never play a 9-to-5 kind of music. I would play music as it appealed to me. Unfortunately, I was cast in something called "entertainment," where people are taught to cheer and holler instead of shutting up and listening.

**Bonzai:** But listening to your big band hits, it's hard not to jump up and get excited.

**Shaw:** Why don't they jump up and down for a fine Beethoven movement? Because they are trained not to. I used to ask Woody Herman why he didn't tell the audience to stop hollering. If the audience is cheering and hollering they don't hear it at all. I said, "Woody, why don't you tell 'em to shut up?" He said, "You can't do that." I said, "Why not? I do it all the time."

**Bonzai:** The story goes that you lost the sponsor for your radio show because you referred to the jitterbug audience as a bunch of morons.

**Shaw:** Well, that's old history. Somebody asked me about the audience just after I'd had somebody almost kick my horn through my mouth. So I called them a pack of morons, which they were. You can dance to a minuet, but you don't kick Mozart in the teeth.

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I used to play six and seven shows a day, and if you changed one note, the manager would come screaming back and say, "Don't do that! These kids will stay in here all day!" He wanted that turnover. It was murderous. Can you imagine doing that seven days a week for months at a time?

**Bonzai:** What about about the end of your career and this new CD collection of your last recordings? You held onto the tapes for almost 40 years.

**Shaw:** I made these recordings myself

because nobody else wanted them. I had the group, and I knew we were playing damn good music. We were playing until four in the morning at The Embers [in Manhattan], and then we'd go into the studio at 711 Fifth Avenue, where NBC used to be. I rented the studio and brought the guys in. We started recording at five and went until we were exhausted—that's why they're so relaxed.

When we were done with the sessions, I offered them to the record companies, but nobody wanted them. So I put 'em away. Forty years later, I

## The Artie Shaw Sessions

by Van Webster

The sessions to prepare the *Last Recordings* masters began with a thorough review of the source tapes. While Artie was evaluating performances and selecting takes, I was looking for the versions in the best technical condition. For this project we were fortunate to have the original session tapes, often with the prime and backup machine versions from which to choose.

The majority of the 53 10.5-inch reels of 1/4-inch master tape were recorded in mono at Fine Sound Inc. in New York during the winter of 1953, with additional recording by Joe Val at Radio Recorders in Hollywood during the spring and summer of 1954. The acetate-based tape was recorded mono full-track and had generally survived pretty well. Some edge wrinkling was apparent, especially on reels that had been poorly wound, and old splices had to be cleaned and retaped.

I was impressed by the quality of the original recordings. Although mono, there is a spaciousness about the sound and a clarity to the instruments. I have since used tracks from this project as examples for my UCLA Extension students on how to create front-to-back depth. It was my goal to stay as faithful as possible to the character of the music and the quality of the original work. Because of the fragile nature of older acetate tapes, a Studer B67 1/4-inch deck was used for play-

back because of its gentle tape handling. I had some concerns about playing a tape recorded on a constant-torque machine back on a constant-tension machine, but I experienced no adverse pitch or high-frequency shift.

Initial record levels were conservative, with average levels falling -3 to -5 dB below 186 nW reference level. The result was a tape with exceptional headroom but noticeable tape hiss. The signal was processed by a Burwen DNF 1000 dynamic noise filter to reduce but not eliminate the tape hiss, making the results more compatible with listeners' expectations of CDs. A very slight high-frequency boost and a touch of mechanical reverb were added to make up for any loss of ambience with the Burwen filter.

Where in-music editing was required, backup 1/4-inch copies were made on 3M 996 tape at +6 level, and edits were performed on the backups. Artie was especially concerned about the sequencing of the songs, being sensitive to mood, content and musical key. Several sequences were tried until the final choice was made. All of the sequence editing was done digitally using the Sony I610 processor and ECo EMME video editor.

As we worked over a two-year period on this project, it was fascinating to watch this artist relive the joys and frustrations of sessions nearly 40 years old. During the playback of an unedited tape, Artie felt himself struggling all over again with a particularly difficult song. Finally he said to his recorded self, "Why don't you just play the melody?"

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and behold...If Van Gogh had lived long enough, he would have been a multimillionaire. He just died too soon. Luckily, I stayed alive long enough to see these released.

**Bonzai:** In recording today, most groups lay down basic tracks with the kick drum and bass locked together. It's almost a studio rule. Your approach seems different.

**Shaw:** Sometimes the drums get in the way. I always felt that the rhythm should be implicit. People have said that my band didn't need drums. Of course, the drums are an accent, but they shouldn't have to keep the time. If you depend on the drummer to do that, you'll be lagging behind, and he'll be pushing you. The drummer is there to accent—to give a different kind of thought, a click, a bang, to drop a bomb now and then. But the drummer shouldn't dictate tempo. When I conduct, I set the tempo, and the beat will be the same at the end of five minutes or ten hours—unless I get too tired or my arm falls off.

**Bonzai:** What's the story with the Artie Shaw Orchestra that is now touring?

**Shaw:** I put it together, and I got a guy named Dick Johnson to lead it and play clarinet. He plays my notes. He's not me and I'm not him, but he's good. So Mozart wrote a concerto and somebody else plays it: It's not Mozart, but it could still be good.

I've got a poster downstairs for a concert that had three clarinet and string quintets—Mozart, Brahms and Artie Shaw. I think it's a funny combination. [Laughs] Wait a hundred years and maybe it won't be so funny. They're now playing my concerto all over the world—it's becoming part of the literature.

I do lectures entitled "Three Chords for Beauty's Sake and One to Pay the Rent." If you can't pay the rent, you're out on the street scuffling, and you can't do anything. How are you going to pay your musicians? My band is out on the road, playing fifty weeks a year, and to stay alive that band would have to make a million dollars a year. That's not just music—that's commerce, baby.

I used to work with a fourteen-piece band. And what you accomplish is paid for by the audience: They are a necessary evil. I'm not knocking audiences, but they are an evil. If they weren't there, you could do whatever you wanted to. Glenn Gould discovered that and went into a studio. I dis-

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too hung up on the goddamn clarinet." He said, "Well, that's what we play, isn't it?" I just said, "No, I try to play music." It was a new thought to him. But he kept playing the same tunes. He was playing "Stealin' Apples" the last year he lived. That's pretty crazy. I could not handle that kind of life. I would have been a lunatic by now, or dead.

**Bonzai:** Did you have a teacher?  
**Shaw:** No, I studied with the guy next to me. As long as he knew more, I stayed there. When I knew more, I'd leave and find somebody else. Finally, I ran out of guys.

**Bonzai:** Tell me about Billie Holiday.  
**Shaw:** She was a good singer: End of story. People have made a myth of this, because she died of an overdose. We look for melodrama.

**Bonzai:** But your hiring her was against the grain.

**Shaw:** It was very *outré* at the time. I hired her because she was good, the same reason I hired black players for my band. I'm colorblind when it comes to that kind of thing. My ears can't see color. I had met Billie in Harlem when she was 17. I was 19, and I told her someday I would have a band and she would sing in it. "Yeah, yeah," she said, "that'll be the day." So one day many years later, I was up in Boston with my band, and I couldn't find a decent singer. I went down to Harlem and found Billie, and she was working with me the next day.

She was as good as you get, but she had trouble with the black-white problems. We'd go out on the road and she couldn't stay in the same hotel. We would do tricks sometimes: The guys would carry her bags, and we'd put a lipstick dot on her forehead and call her the "Maharani" so she could get into the hotel. We did all kinds of crazy things, but most of the time she had to get a room in "Niggertown," as they called it then. And she'd come to work all flustered and miserable. Things got to be too tough.

You know, the movie about her life really falsified the facts. They made it appear that she didn't work, the band couldn't get jobs. That film was a total travesty. I was the bridge on which she crossed from cult singer to a nationally known performer.

**Bonzai:** Back to these last recordings, made in the middle of the night after playing at the club. Did you guys drink?  
**Shaw:** No good players drink. Some have, but it will finally interfere with

covered it when I made these recordings away from an audience. They were where I thought they should be; they're pure.

**Bonzai:** You mentioned in the liner notes that you were sometimes playing in almost a subtone mode—can you explain that for me?

**Shaw:** It's a difficult thing to describe. For one thing, the control is very difficult. A clarinet reed has to vibrate. You can play so soft that the reed almost doesn't vibrate. With a subtone, you're playing so softly that you have to get right into the microphone, and you are playing way below ordinary hearing. It's different from a normal clarinet sound.

Playing with a small group, I could overshadow a piano, a guitar, a bass. I had to play very softly to get that chamber sound. Chamber music is designed to play in a chamber, rather than in a big hall. It takes a lot of control to do it in a jazz context. Drums, you can use brushes. With guitar and piano, it's easier. With the clarinet it's very difficult to do. You almost never hear it done, because most people fill their horn. I was trying to get right on the edge. In some cases, as in "Yesterdays," "Funny Valentine," "Bewitched," I was playing so quietly that you can hear the keys clicking. Very intimate. I don't mind if you hear the keys click.

**Bonzai:** So you're pleased with the way this collection turned out.

**Shaw:** Oh, yeah. If I didn't like them, you wouldn't hear them. I have a lot of stuff you will never hear, at least not while I'm alive.

**Bonzai:** These recordings documented the end of a career?

**Shaw:** I didn't know they were the end of a career. Once I stopped, it was the end. But I didn't know it while I was doing them. Although, when we did the sessions in Hollywood, I was pretty sure it was the end.

**Bonzai:** What did you learn from Benny Goodman?

**Shaw:** Invariably, people associate the two of us. We both played the same instrument, but we didn't play the same things. I knew Benny well: We used to play together on radio programs; we both came out of that same milieu.

I had lunch with Benny once, and all he wanted to talk about was clarinet players. I wanted to talk about something else. Finally, I said, "Benny, you're

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your playing. People used to offer me a drink when I was working, and I'd say, "I got enough trouble doing this sober." It's hard work, and your coordination has got to be perfect. You are playing on the edge of your consciousness. If you are playing honestly, you are at the edge of your ability, and you are pushing at that, trying to go further.

**Bonzai:** Didn't you once say that this kind of musical honesty is a curse?

**Shaw:** It is a curse in a way. On the other hand, when you do hit something it's ecstasy. It's better than sex—or at least on a par with a good bowel movement.

**Bonzai:** John Hammond said these records were probably among the best jazz clarinet records ever made.

**Shaw:** Well, I was surprised that John would say that, because he was a big Benny Goodman guy—got him to go into Carnegie Hall—Benny even married John's sister. I guess these records are about as good as you can do on the clarinet. I haven't heard anything better. But you can't talk about "best." It's a silly word. I've heard guys move faster, but I don't consider it a foot race. I'm not interested in how many notes you can get into a bar. I want to know what the notes are. And you've got to have your own thumbprint, otherwise you're a clone.

**Bonzai:** Did you do everything you could possibly do?

**Shaw:** No, I did everything I could up to then. If I could have lived that life and gone on, I would be playing quite differently today. But I've never looked back with regret. My career was taking too much of an emotional toll. They were begging me to play things I didn't want to play—over and over—like a monkey on a string. I have a low threshold for boredom. Some people thrive on it.

It's really a matter of "entertainer" versus "artist." I'm not saying that one is better than the other. An entertainer can be very serious, but the motivations are basically different. The entertainer is out to please people. The more people he pleases, the happier he is. The artist does what he has to do. He hopes people will be pleased and pay him so he can make a living. If not, he still has to do it. ■

*Mr. Bonzai once played the old "licorice stick" and then stomped at The Savoy, but he eventually lost his wallet on the A train.*



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# NEW PRODUCTS

## SPL VITALIZER

From Germany's Sound Performance Laboratory comes the Vitalizer (distributed by Sascom Marketing Group, Pickering, Ontario, Canada), a 2-channel "Psycho Acoustic Equalizer" unit that combines dynamic equalization, phase shift manipulation and harmonic enrichment. The single-rackspace unit provides independent controls for process depth, sub-bass boost and sweepable harmonics enhancement, along with stereo-width contouring. The sub-bass control provides a choice of "tight" or "soft" bass sounds; a "Process Solo" button allows the engineer to hear only the portion of the sound that is being added to the signal. Applications include recording, mixing, mastering, duplication, broadcast, post-production and sound reinforcement.

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## AKAI ME80P MIDI PATCH BAY

ME80P from Akai Professional (Fort Worth, TX) is a programmable 8-in, 10-out MIDI patch bay with storage of 128 setups, merging functions and filtering of MIDI data such as notes, program change, bend, pressure, sys ex and other MIDI messages. The one-rack-space unit is \$399.95.

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## SPECK EQ16

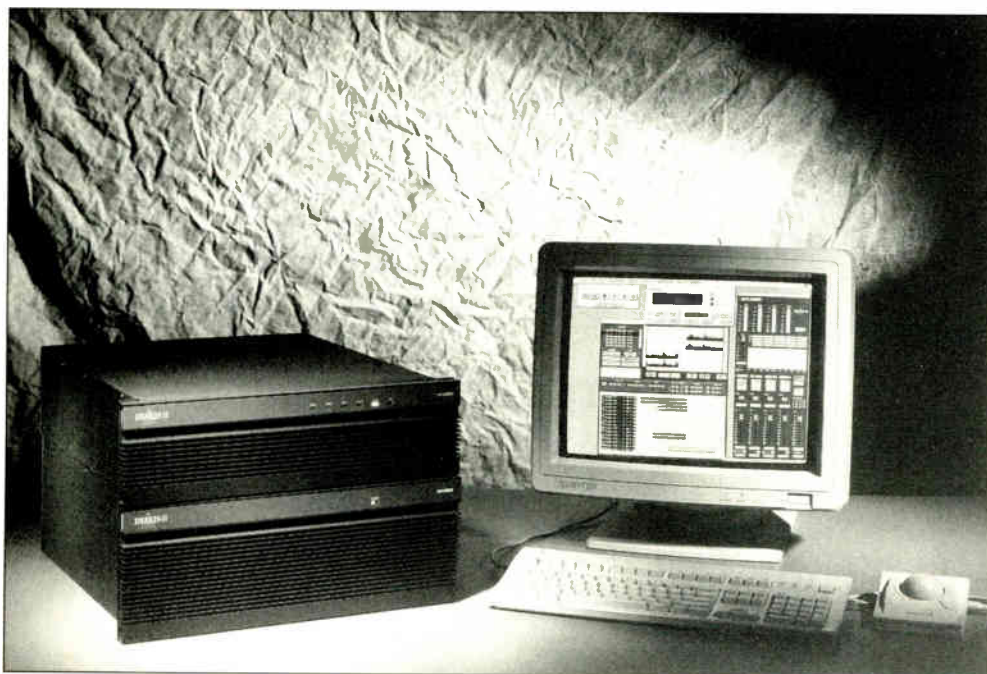
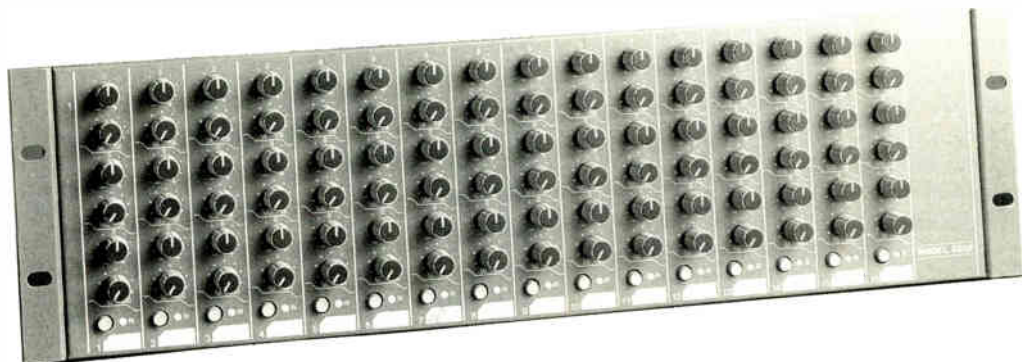
New from Speck Electronics (Fallbrook, CA) is the EQ16 Series, providing 16 fully sweepable 3-band equalizers in a three-rackspace chassis. Bandwidth is said to exceed 200 kHz, and the overlapping bands adjust from 50 to 15k Hz. Three models are available: 16 mono EQs, \$1,495; 8 mono/8 stereo EQs, \$1,895; and a 16 stereo EQ version priced at \$2,175.

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## STUDER EXPANDS DYAXIS

Studer (Nashville, TN) has expanded its Editech line of disk-based audio systems with the Dyaxis Lite and Dyaxis II models. Dyaxis Lite is a cost-effective system that provides computer-based editing with the ease of a dedicated hardware controller equipped with familiar tape transport-type buttons and jog/shuttle wheel. The Lite can be expanded with additional hard disk or optical drives and can be upgraded into a larger, more powerful Dyaxis I system. The top-of-the-line Dyaxis II is a modular 8-track/4-channel system, where six processors can be combined for up to 48 tracks of simultaneous playback. Features include real-time crossfades, nondestructive punch-in/out, real-time digital mixing, 5-band parametric EQ, internal time code sync, multiformat digital I/O and the ability to record the output of the on-screen mixer directly back to disk.

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### TIME DESIGNS MIDINOME

Midinome from Time Designs (San Jose, CA) is a programmable unit that converts incoming MIDI data into a visual metronome. An internal clock also allows Midinome to be used as a stand-alone, 40-240bpm metronome. Features include 13 bright LEDs that can easily be seen from across the studio and a MIDI thru output for linking multiple units or using the unit in-line with a large MIDI setup. Price is \$249.

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### ZOOM 9000

A palm-sized package priced at \$399 and offering 21 programmable effects is the Model 9000 Advanced Guitar Effects Processor from Zoom (South San Francisco, CA). Effects (compression, distortion, EQ, modulation, reverb, delay, amp simulation, etc.) are 16-bit, and any five can be used simultaneously, with 20 factory presets and 20 user memories. Features include battery/AC operation, large, liquid-crystal status display, built-in tuner and a foot controller.

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### FRESH PRODUCTION MUSIC

Fresh, The Production Music Library (Hanover, NH), has 11 CDs of music for broadcast or corporate use. Offering more than 110 full themes, with alternative mixes and 30/60-second edits, the collection is available on an annual blanket license agreement, and users will receive eight additional CDs at no charge during the year. The CDs are color-coded by music style, and, for easy auditioning, each CD includes a short preview of each theme on the head of the disc. Call (800) 545-0688 for a demo.

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### TASCAM M1516

Tascam's (Montebello, CA) M1516 is a 4-bus mixer using a dual-bus design to double the number of available channel inputs. The unit can simultaneously receive eight tape returns, 16 XLR mic/line inputs, 16 additional line 1/4-inch inputs, and two stereo and two mono effects returns. Also featured: 3-band EQ with sweep mids, four aux sends and eight direct outs for connecting a multitrack. The M1516 is \$1,849; the M1508 8-channel version is \$1,149.

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### AMPEX CALIBRATION TAPES

Ampex Recording Media (Redwood City, CA) has reintroduced its line of analog audio calibration tapes, in 1/4-, 1/2-, 1- and 2-inch widths. Twenty-eight tapes are offered to meet IEC, ALS and NAB equalization standards, at varying speeds from 3.75 to 30 ips.

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### AUDIX MM-5 MONITORS

The MM-5s from Audix (Tualatin, OR) are compact, two-way studio monitors that are less than nine inches high, with a frequency response spec of 50-18k Hz ( $\pm 3$ dB). The speakers feature a 5-inch polypropylene woofer with rubber surround, 3/4-inch dome tweeter, gold terminal connectors, removable grilles and a maximum power handling of 100 watts.

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**SONY PCM-3324S**

Sony of Montvale, NJ, announces the PCM-3324S, a 24-track digital recorder that is comparably priced to a high-end analog machine with noise reduction. The new PCM-3324S uses the same transport as the PCM-3348 48-track recorder, so acceleration in fast-forward and rewind is five times faster than its predecessor, the PCM-3324A. The PCM-3324S employs a modular design, so users can start out with a basic PCM-3324S machine and add options—such as chase sync, stereo sampling, RAM-based sound memory and MADI output. One unique feature of the PCM-3324S is its ability to prestripe tapes with a control signal and SMPTE time code at four times normal speed. Audio improvements include 1-bit, sigma-delta, 64x oversampled A/D converters and 18-bit, 8x oversampled DACs on the outputs.

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**LA AUDIO CLASSIC COMPRESSOR**

From LA Audio (Hitchin, Hertfordshire, UK) and distributed in the U.S. by Promusica Sales (Keene, NH) is the Classic Compressor, a high-performance, dual-channel compressor/limiter with balanced XLR inputs/outputs, 1/4-inch sidechain connections and illuminated VU meters. The stereo-linkable, two-rack-space unit features two compressor/limiters with independent controls for input, output, attack, release and ratio controls.

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# PRODUCT CRITIQUES AND COMMENTS

# M

## IDI Machine Control with the Fostex G-16S and C-Lab Notator 3.1

Tape-to-MIDI sync is nothing new. These days, anybody with an inexpensive sync box can lock their MIDI tracks to any multitrack. It's a simple, no-hassle process: run the tape, and the sequencer chases to follow tape position. It couldn't be simpler...or could it?

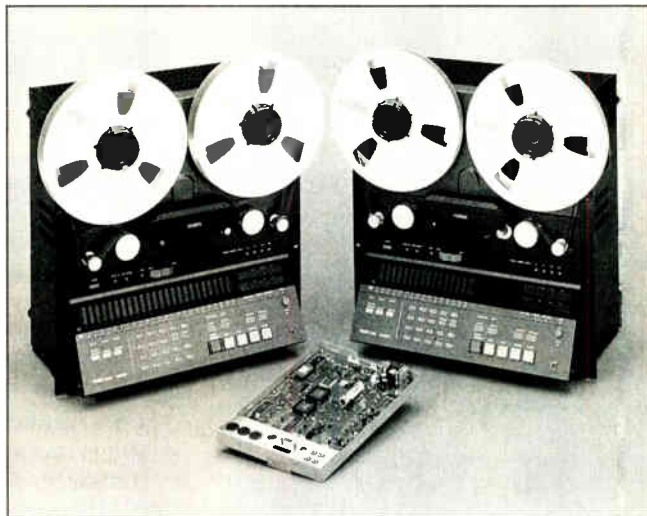
With the adoption of the MIDI Machine Control protocol a few months ago, tape sync reached new levels of ease and user-friendliness. Under MMC, a sequencer can become a powerful session controller, governing every aspect of multitrack operation. Looping, RTZ, automated punch in/out, and the usual play/record/rewind/ff/stop controls can all be controlled via your sequencer or computer keyboard, with the multitrack obeying every whim of the sequencer.

Today, a number of software companies are shipping (or have announced plans to ship) products that incorporate MIDI Machine Control. For the Atari ST platform, these include C-Lab, Dr. T's and Steinberg/Jones; Mac-oriented companies include Mark of the Unicorn and Opcode. So far the only recorder manufacturers delivering MMC-compatible systems are Fostex and Tascam, although other companies will probably follow suit in the months and years to come.

We checked out a Fostex G-16S (\$8,995) and C-Lab Notator 3.1 (\$699) combination, one of the first MMC packages to become commercially available. Besides an Atari ST host computer, this MMC system also requires C-Lab's Unitor SMPTE-to-MIDI adapter (\$495), which plugs into the ST's cartridge port, and a Fostex 8330 synchronizer/generator/reader/SMPTE-MTC converter card (\$1,000) for the G-16. Operation with the Fostex

G-24S 24-track is identical. In addition to MMC capability, the 8330 allows G Series decks to chase-lock to any time code source. Notator 3.1 also supports MMC control of the Fostex R-8 and a number of Tascam models.

The setup procedure is straightforward: Unitor plugs directly into the ST cartridge port—no external powering is needed—and Notator's dongle (software key) is inserted into the port at Unitor's base. Unitor provides 1/4-inch jacks for SMPTE in and SMPTE out, as



well as two MIDI in jacks and two additional MIDI out ports. The ST, of course, has a built-in MIDI interface with MIDI in and thru/out jacks.

The G-16S has Dolby S noise reduction, defeatable on channel 16. Loop out jacks (paralleled to the channel 16 outputs) are provided for routing time code to various destinations, along with a time code output trimpot, MIDI in/out/thru ports and jacks for sending time code to/from internal or external

**Above: Fostex G-24S, G-16S and 8330 internal sync card.**

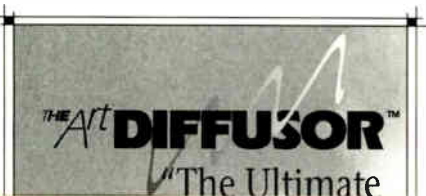
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## AUDITIONS

synchronizers. On the front panel, LEDs indicate status of incoming/outgoing time code and lock/chase modes.

## Neumann KMS 150



## AUDITIONS

PAF pickups. And these days, \$3,000 to \$5,000 (and up) seems to be the entry ticket for a pro multikeyboard rig. Yet, professional vocalists still seem resigned to use any \$150 mic in live situations.

Enter Neumann's KMS150, a high-performance, handheld vocal mic, retailing at \$1,495. Part of the FET 100 Series, the KMS150 is a hypercardioid condenser mic featuring transformerless electronics and a number of features for tailoring the mic response to a vocalist's personal sound. The mic is also available as the essentially identical KMS140, but with a cardioid capsule. Speaking of capsules, the units easily unscrew for field replacement without tools.

Recessed controls are provided for highpass filter and -10dB attenuation switches. With the latter engaged, the mic's maximum SPL handling is a resounding 148 dB—a lot for any mic, much less a vocal condenser. Designed to counteract the proximity effect caused by close vocals, the highpass filter begins rolling off LF material at about 600 Hz, a bit too

radical for my tastes. A much more useful feature is a small ring that attaches to the capsule tip and adjusts (or removes) to provide subtle HIF shaping.

In performance with a number of vocalists, the KMS150 was universally well-liked. The actual sound is relatively uncolored. The mic doesn't seem to add any particular "sound" of its own, and the words "clarity" and "naturalness" came up most often when discussing the mic with vocalists who tried it. The polar pattern of the hypercardioid capsule is extremely tight.

While the mic excelled at feedback rejection, the tightness of the frontal pickup required some concentration in technique by the vocalists in order to maintain a consistent level during performance. With some performers, this presented no problems whatsoever; however, some vocalists—particularly those who move around a lot when the mic is stand-mounted—would probably be better off with the wider cardioid pattern of the KMS140.

At \$1,500 each (including stand-clip and wooden case), the KMS150 is clearly not the mic for everybody, and

it's a safe bet that the mics will not be seen (or heard) in many thrash-rock clubs. But for the vocalist seeking a personal performance instrument, the KMS150 may be that next logical step beyond the usual \$150 varieties.

Neumann USA, 6 Vista Drive, Old Lyme, CT 06371; (203) 434-5220.

## Digital Designs BP12 Subwoofer

About two years ago, I checked out Digital Designs's DD161s, a compact set of highly accurate studio monitors for near-field listening. I found them to be sonically believable, affordable and a trustworthy reference. Not bad at all.

Since that time, Digital Designs has upgraded the monitors with 15-gauge, oxygen-free, copper internal wiring; an improved woofer with a larger voice coil; 40% higher power handling and increased voice-coil ventilation.

Now, Digital Designs has unveiled the BP12, a companion subwoofer that can be used with the DD161s, the slightly smaller DD6As or just about any other 4- or 8-ohm compact studio monitor on the market. Digital Designs could have taken the easy way out, dropping some generic, off-the-shelf

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World Radio History

## AUDITIONS

woofer into a cabinet, but designer Jess Langford took several years to bring his approach to studio subwoofers to market.

There's one rule about transducer design: You don't get anything for nothing. Little boxes don't deliver big bass, and the same can be said for low-frequency transducers. The BP12 uses a heavy-duty, 12-inch woofer in a 16 x 16 x 24-inch, heavily braced cabinet weighing 70 pounds. And there's nothing ordinary about the cabinet, which employs a dual-chamber (sealed-rear, vented-front) enclosure, providing a natural 12dB/octave crossover. The enclosure itself becomes the crossover—*ergo*, the bandpass name, which was shortened to BP. The internal crossovers are basically highpass filters that tailor the LF of the satellite monitor speakers to seamlessly blend with the BP12.

Another advantage of the enclosure design is the fact that all sound emanates from a single port. As the woofer is protectively located *inside* the cabinet, the chance of the dreaded

foot-through-cone syndrome is nonexistent.

The custom woofer has a lightweight cone coupled to a long magnet gap and short voice coils, which virtually eliminates the possibility of over-excursion damage caused when the voice coil leaves the gap. In the case of this single woofer, the cone is driven by *two* voice coils wrapped around a single former, with one input channel driving each voice coil—no trace of the traditional mono summing schemes that are typically used in conventional single-box subwoofers.

Hookup is a breeze. The BP12's rear panel includes six inset cups with five-way binding posts (L/R amp inputs, L/R satellite outputs at 8 ohms, and L/R satellite inputs at 4 ohms). My main complaint concerns the size of the inset cups. They are so small that they make the concept of finger-tightening a near impossibility. Fortunately, connecting subwoofer wires is not a daily studio operation, and if all else fails, you can always hook these up using banana plugs.

In repeated studio listening tests, the BP12 performed admirably, providing tight, nicely balanced bass when

used with compact studio monitors from a variety of manufacturers—JBL, Tannoy, TOA, Digital Designs and others. The output was consistently well-defined—never tubby or boomy, and the output was a mere 5 dB down at 32 Hz, which would even be an impressive spec from a 15-inch woofer system. Left to fend for itself for a couple hours while driving a 30Hz sine wave (with a 100-watt input), the system came through unscathed.

At \$855 (for the 4- or 8-ohm output version), or \$900 for a model with outputs for both 4- and 8-ohm satellites, the Digital Designs's BP12 is not inexpensive. But it is a precision, high-quality solution to the monitoring needs of many studios, both large and small. Also available are versions without crossovers (for electronic crossover applications) and mono versions for stereo bass applications.

Digital Designs, 100 N. Quapah, Suite K, Oklahoma City, OK 73107; (405) 946-4500. ■

*George Petersen lives with his wife and two musical dogs in a 100-year-old Victorian house on an island in San Francisco Bay.*



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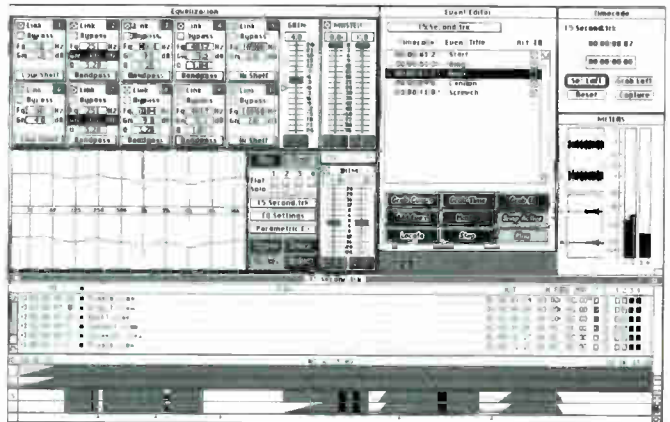
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by David (Rudy) Trubitt

# AKG TRI-POWER MICROPHONES



a bit more comfortable to hold, and yes, they also fit into standard mic-stand clips.

Let's get specific, starting with the vocal mics. The four models span two capsule designs. The low end of the line includes the D3700 and 3700S (which adds a recessed but accessible on/off switch). Priced at \$189 and \$199, these models are designed for a musician on a budget. The D3800 (\$279) and D3900 (\$319) use the high-end capsule, and the D3900 includes two very recessed microswitches for low-cut and high-boost contouring.

The four vocal models have a heavy-duty, steel windscreen assembly, which can be easily removed by pressing on it while turning—in the same manner as a child-proof cap. Once the screen is removed, the two-layer, foam windscreen can be plucked out for cleaning. The exposed capsule is protected by a resilient

**W**hat do you want from a live sound microphone? If you answered good sound and pattern control, durability, low handling noise and a weird-yet-cool shape (preferably in black with a green stripe), have I got some mics for you! But seriously, when AKG announced the Tri-Power Series at the NAMM show earlier this year, the event represented the company's first new line of mics in years. The series consists of four vocal and three instrument mics designed with the demands of live sound—and studio instrument reproduction—in mind. All mics use neodymium iron boron (Nd/FcB) rare-earth magnets for high output and have black, triangulated body shapes so they won't roll off the table when you put them down. This unconventional shape also makes the vocal mics



plastic cage, not unlike a roll-cage on a Jeep. A quick twist here frees the capsule. The D3900 and D3800 use a shock-mounted, moving-magnet system to reduce handling and cable noise. According to AKG, the MMS system floats the transducer's magnet

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## FIELD TEST

assembly from a suspension tuned to match the mass/suspension compliance of the diaphragm itself.

The result is that physical shocks to the microphone body cause the magnet assembly to move the same direction and distance as the diaphragm, effectively cancelling the noise. For comparison, I bullied the MMS-equipped D3800 and the more conventional D3700. The difference between the two is immediately obvious. The D3800 is much less susceptible to handling noise, with the greatest attenuation in the low and low-mid region. AKG claims MMS provides a 10dB improvement over conventional designs, and while I didn't run any scientific tests to validate that spec, it's a noticeable improvement.

## Opinions from Other Ears

**Deanne Franklin:** "On the vocal mic, I didn't use the low-end rolloff because it starts too high. I liked the high-boost—it gave a lot of cut and presence, and I could pull out the frequencies that I didn't like. I took out 2.5 kHz in the house, and 1.6, 2 and 2.5 kHz in the monitor mix. It had great vocal presence without feedback. Gary [Sister Double Happiness's singer] said the vocals sounded great—he had a good time. Also, many of the smaller capsule/windscreen mics don't have enough space to keep the capsule from getting saturated with spit. Then, the vocal tone gets worse and worse throughout the night. That didn't happen tonight.

"As far as the drum mics are concerned, we didn't need the switch to roll off any more of the bottom end from those microphones. I had to add a lot more bottom to them. I didn't have to add the high-end that I normally do on these drums. They cut through very nicely—I even rolled out some at 2.5 kHz. I'd like to try those instrument mics on congas—they might sound real good."

**Chris Katbman:** "I could hear a lot of warmth off the vocal mic that I

The instrument mics also use two different capsule designs. The D3400 (\$219) and D3500 (\$239) use the same capsule and are identical, except for a recessed low-cut switch on the D3500. The D3600 (\$379), which was unavailable for testing, has an interesting twist: It's a cardioid mic with greatly reduced proximity effect, achieved by using a dual-diaphragm design. The forward element covers frequencies above 500 Hz, while the rear-facing element picks up the lows. Both are coupled to a phase-corrected, inductive-capacitive crossover network, a technique previously used on AKG's D200 Series.

The instrument mics all include integral stand-mounts, which pivot out from the mic's body. These built-in stand adapters have a couple of advantages, since the mics are on the chubby side (about the size of a small

would not hear off a Shure mic. It had the breathy 100, 200 and 300 Hz, and it was stable. The other vocal mics we used were okay, but they didn't make my ears perk up like the lead vocal [D3900] did.

"The drum mics sounded pretty neutral to me: It did not sound that different from the Beta 57. I feel that if I bought a whole set of those mics, I could take them into any situation and make the drums sound like I wanted them to, but without sounding artificial. They were workable, colorless, good mics."

**Devon Rietveld (studio engineer):** "One of the things we wanted on this date was to get a real live, jazz feel. Immediately, these mics worked for me. I found them to be crisp, punchy, clean and natural. I did add a little top, but the bottom end was fine. Remember that the room we were in supported the bottom end on the drums, and that we were using them in combination with overheads and room mics.

"I'd say they were more similar to a 421 than a 57. I would definitely try them on a heavy guitar amp, like a Marshall that was up really loud, and stick the mic off the amp a few feet. It sounds like they can take a lot of level, so I'd also try putting it right up on the cabinet. I'd probably try them on a lot of things that I'd use dynamic microphones on." ■



potato) and won't fit standard clips. Also, the pivoting assembly floats in an isolating elastomer cushion, reducing mechanically induced noise.

I had the opportunity to audition the mics at a gig in San Francisco's Kennel Club, whose house system includes a Soundcraft 200 console, EAW KF-850s and QSC amps. Three guitar-oriented rock bands were on the bill, including headliner Sister Double Happiness (who had just won a Bammie award for best club band—see this month's "Live Sounds"). We used the two high-end vocal mics (D3800 and D3900) and the two single-transducer instrument mics (D3400 and D3500). Two independent engineers were on the show: Sister Double Happiness's Deanne Franklin (see March '92) and Chris Kathman, who also regularly works at San Francisco's Warfield Theater.

The D3800 and D3900 have the same broad (about three-octave) +6dB peak centered at 5 kHz. With the D3900's high-boost switch on, the peak jumps to about +10 dB. Using the high-boost switch and carving at the 2-3kHz range at the board produced good results. The low-cut switch is down -3 dB at around 300 Hz. By 100 Hz, it's down -12 dB. To our ears, this left the mic thin-sounding, so we left the low-cut switch flat. All the evening's lead singers sounded good on the D3900—bright and crisp without being harsh or overly sibilant. The 3800 was used for backing vocals, but none of the band's other front-line players did a lot of singing. When they did, it also sounded fine. The pickup pattern of the D3800/3900 is hypercardioid. Overall, feedback performance was excellent: Stage level was high, and even with a half-dozen wedges and sidefills, feedback simply wasn't an issue.

The instrument mics were used on toms and even ride cymbal for the first two acts, who had smaller drumkits. The mic's low-end response peaks at around 200 Hz and is down to -10 dB at 80 Hz. The low-cut switch again seemed to be too drastic. It was left flat on the D3500, and some low-end boost added to both mics at the board. With EQ, these micssounded very good on toms. They also worked fine for ride-cymbal bell tones, although I wouldn't expect them to do as well on a thinner cymbal. Mic adjectives like punchy, natural, neutral and clear describe these mics.

The mics worked well enough in

live performance, so I was curious to see how they'd function in a studio environment. So, the next stop was San Francisco's Brilliant Studios for a live jazz recording session. The artists were Jim and Morning Nichols, engineered by Devon Rietveld and produced by Allyn Rosenberg. Again the D3400 and D3500 found their way onto the first and second rack toms. These particular drums were pitched higher than the previously tested kit, and the AKGs were also mixed in with a pair of overhead mics and a second pair of distant room mics. Perhaps for both reasons, the mics needed no additional low-end EQ, although modest boosts at 2.5 and 8 kHz were used. The mics sounded fine and were used on all the session's basic tracks.

Finally, I tried the D3400 on trum-

---

*Mic  
adjectives  
like punchy, natural,  
neutral and clear describe  
these mics.*

---

pet, guitar amp and steel-string guitar. The trumpet was a big winner, jumping out nicely with extra punch and sparkle. The guitar amp also did well, although the difference between the D3400 and an SM57 was not as apparent on this particular amp. The D3400 also sounded good on steel-string acoustic guitar, although the mic's 200Hz hump tended to over-emphasize the guitar's own resonance at those frequencies (nothing a little EQ couldn't fix). Another solution was to use the D3500 and engage the low-cut switch. With some below-200Hz boost, I was able to get a bright (but not brittle) guitar tone. It might not be the warmest mic for a solo guitar, but it should be excellent for cutting an acoustic above a full band.

Overall the mics performed very well. My only complaint is that the low-cut switch on the vocal mic seems a little drastic. But, that's what I thought about the switch on the D3500 until I tried it on guitar. In my opinion, AKG's got a winner. I suspect that the Tri-Power line will eventually become as well-used as the company's other fine instruments. ■

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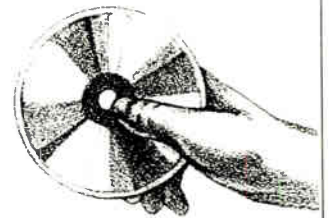
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Digitech VHM5 Vocalist  
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Summit DCL-200 Tube Compressor  
Sony DPS-R7 Digital Reverb

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World Radio History

by David (Rudy) Trubitt

# SOUND CHECK

## Copperfield Tour Notes

"We usually work in 2,500- to 5,000-seat theaters, because magic needs to be close," says T-Bone McCauley, who is providing sound equipment for magician David Copperfield's tour. McCauley toured with the act for five years but has passed the mixing reins for this stint to Glenn T. Labay.

"I load in at 8 a.m. about every day of the week," says Labay, house mixer and sole sound crew member. "It's just me and a new

local guy to train each day." They keep a busy schedule—the week I spoke with them, *Performance* magazine cited the tour as being the third highest gross of the week nationally, doing more shows that week than the other top seven acts combined.

While illusion brings in the crowd, the nearly two-hour performance contains an hour-and-a-half of music. Material is drawn from the classics, soundtracks and pop records. Much editing is needed to fit the music to the pace of the onstage action. The tour had been using two open-reel machines, but the editing was time-consuming. "Last year," McCauley explains, "we were working with an orchestral soundtrack for David's train disappearance and levitation illusion. That music was so interwoven that it was almost impossible to edit. We needed all sorts of crossfades and time and pitch shifts. We were able to get it done eventually [using a multi-track], but I probably spent a couple of hundred hours on it."

The tour faced a similar challenge recently, but didn't want to repeat the experience. "I purchased the Akai [DD1000 magneto-optical digital audio recorder]," McCauley says. "We use it extensively for editing. And, because it's capable of 4-track playback, we can have music playing for an illusion and crossfade manually to another stereo music track without stopping the first one, depending on what's happening onstage."

"It's done nothing but save me time," Labay adds. "We take an hour between shows, and now David can say, 'I want to change this part,' and I can run up [to the Akai] and bang the change out. I'm looping and crossfading and

—CONTINUED ON PAGE 100



**Copperfield's  
soundman  
Glenn T. Labay  
and the Akai  
DD1000 digital  
recorder.**

# Bay Area Music Awards

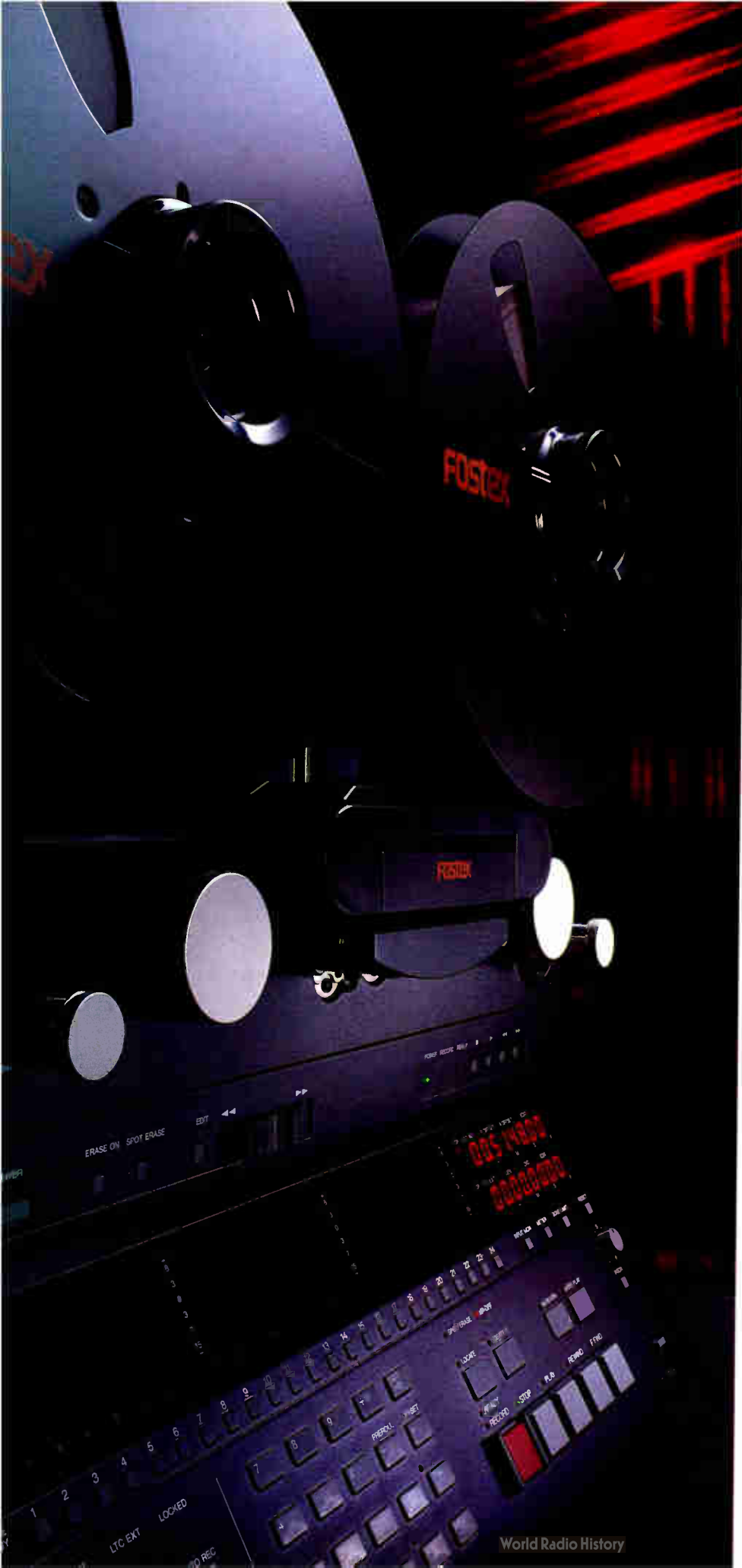


**Top left: Huey Lewis and Steve Miller.**  
**Top right: Sister Double Happiness onstage.**

Venue: **San Francisco Civic Center, March 7, 1992.** Rental Company: **Sound On Stage.** FOH Mixers: **Jim Moran, Chris Becker.** Monitor Mixer: **Dave Mazzini.** System Engineer: **Chris Lovitt.** Crew Chief/Stage Manager: **Jerry Pfeffer.**

Musical awards shows present a unique challenge. Enough acts to fill a weekend festival must be hustled on and off stage in the course of a single evening. A case in point? The Bammies, an annual event recognizing San Francisco Bay Area musical talent, presented by the regional music paper *BAM*. Over the course of the evening, 16 acts took the stage, punctuated by the presentation of more than 20 awards before a sell-out audience of 6,000. This year's performers included Santana, a new version of Jefferson Starship, Damn Yankees, Huey Lewis & the News and many others. The evening was dedicated to the memory of promoter Bill Graham.

Sound for the event is regularly provided by Sound On Stage (Brisbane, CA). The company's owner, Jerry Pfeffer, acts as stage manager each year. "We've gotten a formula down for the most part," he says. "Over the years we've had guys in charge that have tried to be superman and say 'yes' to everything. We've realized that won't work. Everybody has to cooperate and fit into a 'Bammies' framework. In other words, there's one set of equipment for everybody to perform on. One year the Tubes decided they had to have their drum kit, and there was a 45-minute changeover between acts. Now we have seven or eight minutes between acts.



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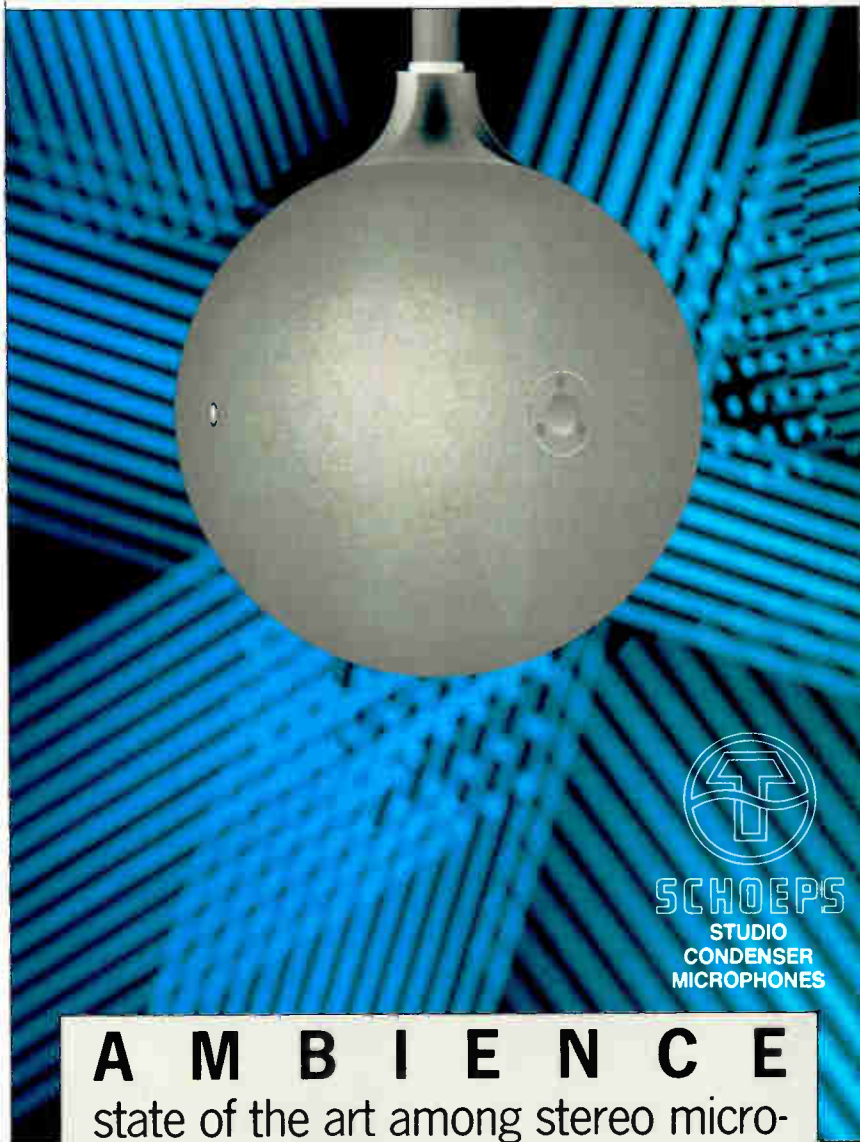
"We try not to patch anything," Pfeffer continues. "It's dark up there, you're under pressure, and you can get the wrong cable patched in. We move mics around between acts. We have two separate drum kits, and we just switch a multipin connector. So drum mics always come up in the same inputs, and all the gates and channel assignments stay the same."

SOS provided custom 842 cabinets, a two-box system. Six stacks were flown on each side of the stage with an additional stack for balcony wrap. Two Meyer dual 18-inch subwoofers were used on each side of the stage. Crest 6001 and 4001 amplifiers powered the rig. Twelve monitor mixes cover the stage, fed by a Ramsa console. "The monitor job is pretty tough," notes Pfeffer. "By the time you get an act started, it's over. [Monitor engineer] Dave Mazzini is a veteran of two or three of these shows. Again, we have a formula: Each act soundchecks, and we take a lot of notes. Between acts, Dave's job is just to get all the knobs back to where we were at soundcheck—he doesn't have to go up onstage to move things around."

Two Gamble consoles sit at the FOH position. An EX-56 is used for the main acts, while an older desk takes the podium mics, house band and audio-for-video feeds—all the things that don't change from band to band. The second console is brought into two submasters on the main board. Running the band mix was freelance engineer Jim Moran, who has a long relationship with Huey Lewis & the News. Chris Becker mixed the podium and host mics, while system engineer Chris Lovitt stood by to assist, field calls from the stage and keep an ear to the system as a whole. All the bands have the option of providing their own engineer, but most rely on Moran.

The event was broadcast

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live over local FM station KFOG, with on-air needs overseen by technical director Bill Ruck. In addition, the Phil Edwards remote truck received a third split from the stage and did a radio mix, which was used for a delayed TV broadcast. Pro Media (El Sobrante, CA) provided a Soundcraft console and other equipment for the broadcast room.

"The room is kind of tricky, especially for RF," Moran says. "I wasn't happy with any of the wireless mics' performances in the building. [It's in the middle of the city.] Acoustically, it's a little boomy. The toughest thing was getting vocals out for Damn Yankees. Ted Nugent wanted his guitar to be the loudest. I told him after the soundcheck that everything was buried under the guitar and fighting each other, and he said, 'It sounds like you got it!' I thought we were a little weak on the low end. Normally, I'd do a show [in that venue] with deck P.A., too, but for sight lines and logistics, we couldn't use them."

Of course, no show like this would be complete without at least one technical gremlin. After dinner, the sound crew returned to the stage to find all of the instrument amps buzzing loudly around 2 kHz. "We went to all the trucks, thinking it was side bands from their communications," Moran says.

"Bill Ruck from KFOG finally pinned it down," adds Pfeffer. "The stage curtain was covered with twinkle lights. We'd never checked the system with the curtain down, the lights on and the stage amps up. That took us right up to five minutes before show time. I knew we'd find the source, because we'd been there three days without a problem. If not, we'd have figured it out as soon as the curtain had gone up!

"It's probably the toughest show I do all year," Pfeffer concludes. "Normally, the hardest part of any show is the setup. We take the hardest part of every show and do it all night!" ☺

*David (Rudy) Trubitt's real middle name is Sylvan.*

—FROM PAGE 96, SOUND/CHECK

doing all kinds of great stuff with it. We have a sampling keyboard with three samples left in it—I've put nearly all the samples into the DD1000. The ones left need the pitch wheel to achieve certain effects, which we can't do with the Akai." Another limitation of the Akai is its inability to pause on the fly, but a number of indexed cues can be quickly accessed from the unit's front panel. Upcoming software features will include time compression and expansion, which will simplify the common requests to add or shave a few seconds off parts of the show's music bed.

Other tour equipment includes Apogee A5s and A10 bass cabinets, with A1s for onstage monitoring, all powered by Crest amps. A Yamaha PM1800, SPX900 and Klark-Teknik EQ round out the FOH roster. Copperfield is miked with a Countryman Isomax and a Samson wireless.

### Concert Sound Engineering Program

Orange Coast College is offering the Concert Sound Engineering program, a unique SR certificate course. The school, located in Costa Mesa, Calif., is part of the California State community college system. Despite regular rate hikes due to shrinking state educational expenditures, community college tuition is still quite a bargain compared to private programs.

The Orange Coast program is headed by engineer, writer and teacher Jim Paul. The first semester's core class is an introduction to sound reinforcement engineering. It is a lecture class that starts by providing a theoretical background in electroacoustics and then studies the basic building blocks of a sound system. Along with the lecture class, first-semester students get hands-on experience in a lab environment, where local bands are used as guinea pigs. "This is a place where they can make all their mistakes," Paul says, "because there's no audience." Beginners also gain experience by crewing shows run by more advanced

students.

The second semester follows the same lecture/lab model but covers more advanced topics. Students learn how to read and understand equipment specs and gauge their relevance to the real world. In the lab, students work as mix and monitor engineers for on-campus concerts, rotating between jobs from show to show, with one student designated mix engineer, one monitor engineer and one stage manager. Each is assigned their own crew, and each takes full responsibility for their portion of the gig. The program's main venue is the campus quad, the site of at least one rock or jazz concert each month. A smaller indoor venue provides the first-semester students similar hands-on opportunities.

Third-semester students repeat the advanced class, but with a greater emphasis on higher-level independent work. "By the time students graduate," says Paul, "they have filled just about every position in putting on a show—from unloading the truck to being the promoter, who is ultimately responsible to the band and the audience."

In order to graduate from the certificate program, students must complete the following related coursework: one semester of music fundamentals (music for non-music majors), a one-semester MIDI class, one beginning and one advanced recording class, and either a jazz or rock music history class.

Plans for a formal job placement program are in the works, and toward that end Paul has spoken with many sound companies, soliciting feedback as to what training they look for in new hires. This information will be used to tailor the material covered in the program. "My goal is absolutely clear," Paul concludes. "I want my students to graduate and be hired by clubs and local, regional and national sound reinforcement companies."

### Tour Updates

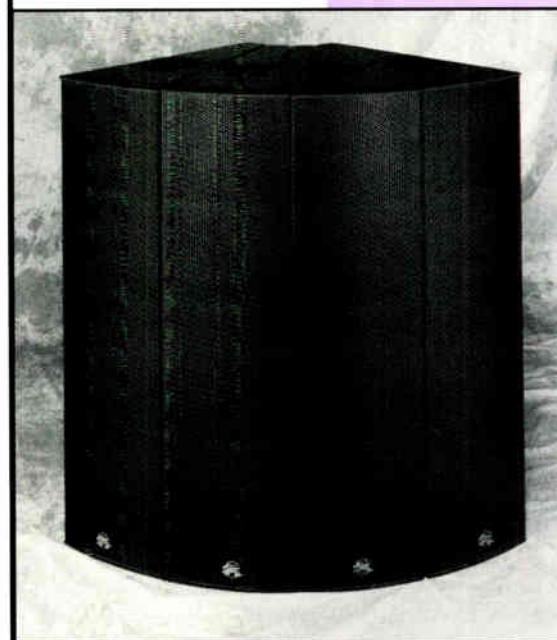
Audio Analysts (Colorado Springs) has Van Halen out on a new arena



leg of their tour. John Mellencamp was in Europe through mid-April, and AA also has a system out with the World Figure Skating Champions. The company is also looking forward to a summer install at Kingswood Music Theater in Toronto. AA's speaker and amps are out with both the Hank Williams Jr. and Winans tours. And the summer? "I can't really say it'll be excellent for everyone, but it'll be good," says Analyst's Trish Heczko. "It may be another year before we see a blockbuster summer."

Clair Brothers (Lititz, PA) has a full roster, both stateside and overseas. Starting domestically, U2's Zoo TV tour is on the road (more on that next month), while Bob Dylan is back out after a fall run, with stops in Australia in March and San Francisco in May. The Steve Miller Band is out on a spring tour, as are .38 Special and Kenny Rogers. Richard Marx is hitting smaller halls here and in Canada. Roxette continues in Europe, South America and Mexico. Prince visits Australia and Japan in the spring, Amy Grant is in Europe, the band Europe is in Europe, Karyn White is in rehearsals for a Japan stint, Joe Cocker is playing arenas in Europe and Mr. Big is also there. Clair will also provide sound for the Freddie Mercury tribute and AIDS awareness show at Wembley Stadium. Finally, Elton John started a long tour in Europe in May. Clair's Greg Hall sees a busy summer ahead, helped along by pent-up demand from would-be concertgoers who've been sitting on their wallets up until now. "I think people can *not* be entertained for only so long," Hall quips.

Maryland Sound Industries (Baltimore) is nearing completion of Gloria Estefan's long tour. The final show will be a hometown gig in Miami. Also out with MSI is Neil Diamond, Nitzer Ebb, Anne Murray, and MTV's "120 Minutes" tour, including Big Audio Dynamite



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II, Public Image Limited and Blind Melon. The company is also readying another leg with Michael Bolton, scheduled for July. In Europe, the company is out with Frankie Valli and recently finished a stint with Little Village, otherwise known as John Hiatt, Ry Cooder, Nick Lowe and Jim Keltner, whose most recent date was in Paris.

Sound Image (San Marcos, CA) is out with Barbara Mandrell on a year-long

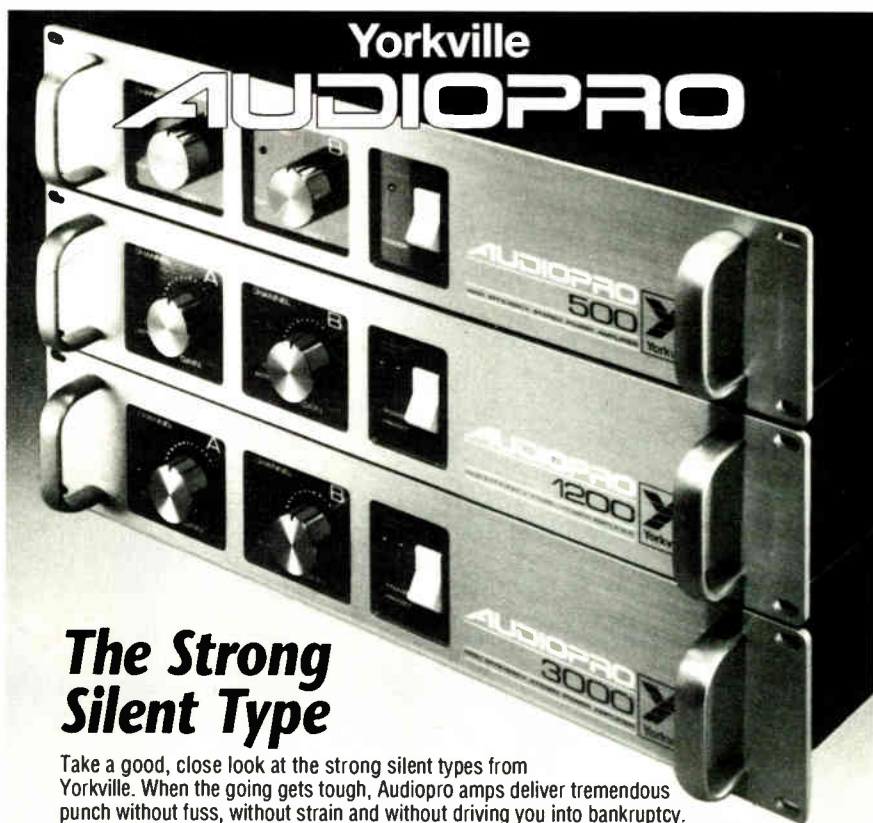
contract. Another Sound Image system is on its way out with Jimmy Buffett, whose schedule this season is even busier than usual. On the local front, the company does good business with Humphrey's By The Sea, a 40- to 50-date season of high-profile jazz acts. Other local work includes one-offs and fair dates. Sound Image also loaded up a truck and sent it to Memphis for the 25th Anniversary of the Memphis Horns (see page 106). The company's GM, Michael

Adams, notes the continuing downward pressure on rental pricing. "We've turned down tours that were offered to us at 1980 rates," he says. However, Adams expects this year's season will be at least as profitable as those past, hopefully better.

### The Soffit Solution

Calvary Chapel, of Downey, Calif., recently added a 3,000-seat, 180-degree sanctuary to its existing 150,000-square-foot facility. The church's sound staff, in conjunction with Primesound, (Bellflower, CA), designed and installed a system suitable for voice and high-fidelity music reproduction. "The challenge was getting sound all the way around the stage," says Primesound's Kenny Lee. Their solution centered around custom-built loudspeaker enclosures, which were suspended from the ceiling following the circumference of the semicircular stage. An interesting twist was the construction of a soffit-style enclosure surrounding the eight main speaker boxes, which are arrayed as alternating left/right pairs. Each main cabinet is front-loaded with one McCauley 18-inch woofer, two PAS 10-inch midranges and two 1-inch 60°x90° JBL horns. An additional eight passive two-way boxes are mounted toward the rear of the room to improve intelligibility. AB International amplifiers power all cabinets.

"We do a lot of concerts," says senior soundman and house mixer Ron Cox. "Rather than have a lot of monitor cables running all over the place, we designed seven plug-in boxes in the stage floor. Each box has six mic inputs, a bi-amp and passive monitor output. Backstage, you can assign the output of the monitor amps to any stage box and any monitor mix to any monitor amp via patch bays." Another happy by-product of the sound team's involvement in the room's construction was the selection of the FOH position, which holds a used Hill 42x8x2 console. "The mixing station is right in the auditorium where the people sit," Cox says. "It's the perfect mixing location."



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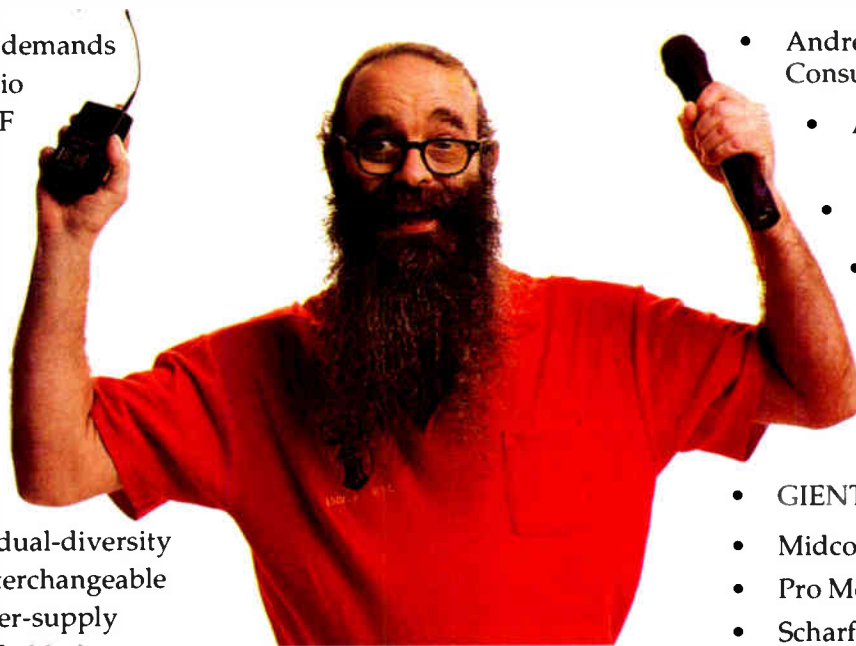
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## NEWS FLASHES

Gand Music and Sound (Northfield, IL) has taken delivery of 13 Samson Concert Series diversity wireless mic systems. They went out immediately with a Kinney Shoe industrial for five weeks. That show was held near Chicago's O'Hare Airport, "but the Samson's have been working fine," says Gary Gand... HTS Audio (Issaquah, WA) recently took delivery of a Biamp Columbia 32x8x2 console from Petosa Music of Seattle. The new board joins the company's most recent major purchase—Carver PM1200 and PM600 amplifiers for both their house and monitor needs... Meyer Sound has sold several SIM II systems, including units to Andrews Audio Consultants (New York, NY), Pro Media (El Sobrante, CA), Walt Disney World (Orlando, FL) and Masque Sound and Recording (Moonachie, NJ). Foreign sales in-

clude Acoustic Technical Labs (Kofu, Japan) and Autograph Sound and Recording (London)... Milam Audio (Pekin, IL) installed 16 Tannoy CPA 12 loudspeakers and two CPA 15.2 subwoofers in the Central Assembly of God Church in Springfield, MO. The system provides sound reinforcement for speech, choir and prerecorded playback... Mr. Cat Productions (Long Beach, CA) has been selected for the second year to supply sound and lights for the '92 AIDS quilt ceremony and walk in Long Beach. The company will be using six Stewart Electronics 15-pound PA-1200 dual-mono power amps and two HDA 4s as distribution amps. The amps were donated for the four-day event... Finnish audio distributor MS-Audiotron (Helsinki) has been awarded contracts to supply and install all of the audio systems for the new National Opera House under construction in that city. The contracts include house sound, paging and background music, and tape recorders, including a digital

multitrack for the facility's studio... Ram Sound (Mary Ester, FL) has purchased two DDA consoles for its primary sound system. A Q-Series 40-input house board and S-Series 32-input monitor desk will be used by the company, which has also been using a 20-box Klipsch KP-600 loudspeaker system... RAT Sound Systems (Sun Valley, CA) is out again with Pearl Jam for a spring club and theater tour. The company is providing a Ramsa WR-S852 40-input console and 20-box, 20,000-watt Crest-powered system... Rosner Custom Sound (Long Island City, NY) installed four Audio-Technica ATW-T31 wireless hand-held mics and two ATW-T31 wireless systems at the Regency Hotel Ballroom in New York City... Synergetic Audio Concepts has announced the 1992 schedule for its three-day sound engineering seminars, held on the company farm in Norman, IN. Dates are June 18-20, July 16-18, August 20-22, September 17-19 and October 15-17. For information call (812) 995-8212. ☺

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by Rick Clark

# THE MEMPHIS HORNS

## THEIR 25TH ANNIVERSARY SHOW

**Right from the top: Interior of the Pyramid during sound-check. Andrew Love (left) and Wayne Jackson (right) of the Memphis Horns. Robert Cray closed out the show.**

Little did anyone know in the fall of 1991 that a simple idea for a private dinner party commemorating the Memphis Horns' 25 years together would snowball into a huge 16-act event for 15,000 people at the Pyramid in Memphis, Tenn. It was Jim Jaworowicz, a board member of The Blues Foundation, who proposed to Wayne Jackson and Andrew Love of the Memphis Horns the idea of making the celebration a benefit to raise money for the creation of a world-class blues museum on Beale Street.

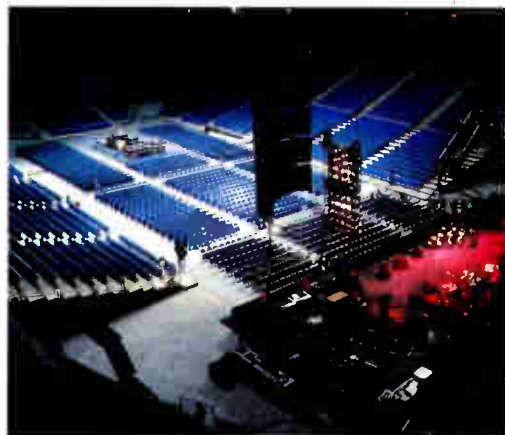
Among the acts who donated their talent were Boz Scaggs, the Robert Cray Band, Carla and Rufus Thomas, Ann Peebles, the Kentucky Headhunters, Otis Clay, Willie Cobbs, James Harmon, Johnny Rivers, Toy Caldwell, Tora Tora and the Doobie Brothers. The Pyramid, a large multipurpose venue located by the Mississippi River, was the site of the event.

San Marcos, Calif.-based sound company Sound Image was asked to handle the event, which took

place in March. "When all this began to take shape, we asked to have the best sound system we could get," says Wayne Jackson. "We suggested Dave Shadoan and Sound Image, because we knew how good they were. We called Dave, and he agreed to come and bring a \$1 million sound system for free. That was the most magnificent gesture of this event. We paid his road people and trucked the equipment and that's all. Sound Image bent over backwards for the city of Memphis and the Memphis Horns."

To deliver the sound, 40 of Sound Image's custom-designed cabinets were hung, each containing two active five-way systems. An additional pair of 4-inch x 18-inch subwoofers for each side were set up on the floor, along with three full-range, floor fill enclosures per side. The five-way cabinets contained Fostex tweeters, JBL 2-inch compression drivers, and 12-inch, 15-inch and 18-inch loudspeakers made by a variety of manufacturers. The electronic crossovers, custom-configured to work with the Sound Image speaker system, were from Brooke-Siren Systems. Twenty three-way monitors (designed by Sound Image's Michael Adams) were run to meet the needs of the large groups of players and their set changes.

For consoles, Sound Image brought a Ramsa S840 and a Yamaha PM3000 with 40 inputs. The PM3000 was laid out as the primary show board, with its output matrices driving all the different parts of the loudspeaker systems. The Ramsa provided extra flexibility with more inputs and a second snake. All in all, there



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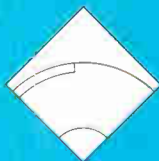
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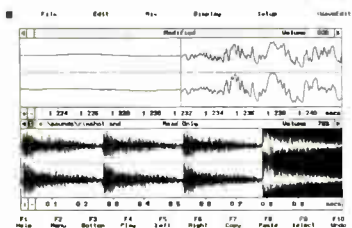
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were 84 lines coming out to the house, assigned to different sub-groups. The monitor setup involved two slaved Ramsa WR-S840 40 x 18 boards, running 16 mixes on stage. The system was powered by the QSC Model 3800.

Sound Image employed independent mixer David Scheirman (whose credits include Buffett, Ronstadt and ELO) to handle the house sound. Concerning mixing logistics of the show and the room's sonic characteristics, Scheirman says, "I walked the entire facility. Because of the pyramid shape of the building, there is a spot approximately in the middle where there is a tremendous amount of bass buildup. You look at the geometry of the room and you can anticipate where there will be some standing waves. That's something you can't fix with EQ; you can only fix it with architecture. This room will be a problem if a show is run too loud. The key to good sound in a facility like this is to feather your mix up to what the room will sustain in terms of a full frequency ambience in the audience area. If you ever try to blast past that, you overload the room environment. Then it only gets more painful.

"The rig's trim height is pretty low," Scheirman continues, "because we wanted as much on-axis directivity as possible for the seats that are filled with people. In an extremely reverberant venue like this, especially one containing a large volume of air, you have to be careful about how you aim your mid- and high-frequency devices. If you are not pointing them at people who are listening, then you are pointing them at reflective surfaces, making things more boomy. This particular building is so difficult acoustically. It feels like a seven-second RT 60. A second-and-a-half would be ideal for a venue having pop or rock concerts. We managed to keep the average level of the show reasonable [in terms of] the band onstage, the monitor system and the house mix. Our excitement was created

by using the very low frequencies from the subwoofers, rather than just blasting away at the crowd with all frequencies. That way we had some headroom to work with the articulation of the upper frequencies. Considering how rough this room is, it turned out very well. Fifteen-thousand bodies certainly helped the sound."

Due to many legal and political wrangles, the Pyramid has been operating in an unfinished state, which made staging the event problematic. Like many of the sound mixers who have worked the Pyramid, Scheirman has some strong suggestions. "It would be nice to see the owners of this building raise the funds to finish out the room, because it needs insulation badly. If the acoustics don't improve, this will become known as a facility that has bad sound, and a lot of the big acts will shy away from performing here. If it does get improved, it could be a desirable venue on any concert tour, because it can offer 22,000 seats."

Considering the conditions under which Sound Image worked, Shadoan, Scheirman and everyone else involved did a miraculous job, prompting the Pyramid's general manager Russell Simons to call it "the best sounding show in the Pyramid to date." The upbeat atmosphere of the soundcheck and the operation of the show was something to behold. Many people gave freely out of their love of R&B and blues-influenced music. Sound Image co-owner Dave Shadoan was ecstatic to work the show. "When I hear Johnny Rivers singing 'Poor Side Of Town,' or the Memphis Horns playing 'Soul Man,' my eyes just well up. That is what this thing is all about," Shadoan enthuses. "When you see a show like this, you are watching guys who could play with anybody, anywhere, anytime. They don't need a chart. They just hammer it. I get goose bumps just listening to this stuff." ☺

*Memphian Rick Clark knows where to find plastic chattering Elvis teeth near Graceland.*



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Clair Brothers (Lititz, PA) has unveiled the P-4, an arrayable, three-way, full-range speaker for portable systems and permanent installations. The front baffle is just over 13 inches wide, and the back panel is barely wide enough to accommodate an EP-8 connector, yet this 48.5-inch tall by 27-inch deep cabinet houses dual 12-inch woofers, 12-inch cone midrange, 2-inch compression driver and 60°x40° constant-directivity horn. The design facilitates tightly wrapped arrays, reducing the comb-filtering and phase-cancellation problems that can occur with standard arrays. Construction is 13-ply Baltic birch with black-epoxy mastic finish.

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**RENKUS-HEINZ TSC**

The TSC Series from Renkus-Heinz (Irvine, CA) includes three models for concert systems and fixed installs. The long-throw C-2 is a three-way, full-range box with dual 15-inch woofers and horn-loaded 10-inch cone mid with a coaxially mounted HF section (two 1-inch compression drivers on a single, constant-beamwidth horn). The C-2's trapezoidal cabinet (48.75x23.75x31.5-inch) delivers a maximum SPL of 133 dB. A TSC controller provides crossover, alignment, loudness compensation and overload protection. The C-2 Sub is a dual-18 sub cabinet; also available is the C-3, a medium-throw, smaller version of the C-2, with 12-inch woofers and the same MF/HF arrangement.

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**WHITE DSP 5000**

From White Instruments (Austin, TX) is the DSP 5000, a programmable unit combining crossover (filters are two-, three- or four-way, 6/12/18/24 dB per octave, with Bessel, Butterworth or Linkwitz-Riley response); delay (adjustable in 20.8µs increments, with up to 680ms on each output); and parametric EQ (with adjustable Q, and high/lowpass and shelving filters). Ten user memories are included, and the unit can be remotely controlled via MIDI or PA-422.

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**JBL SR4704 WEDGE**

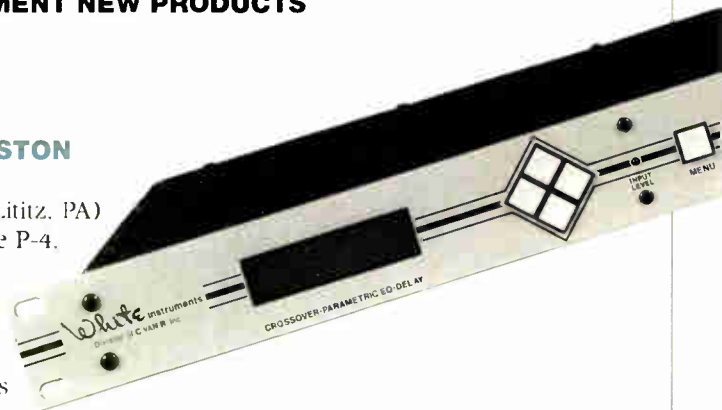
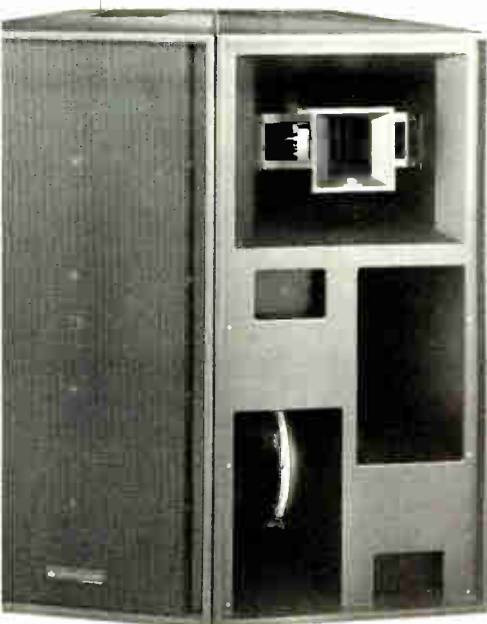
JBL (Northridge, CA) has expanded its SR loudspeaker line with the SR4704, a two-way floor monitor. The unit features a 15-inch 2226H VGC woofer crossed over to a 2426H 1-inch compression driver, mounted on a 2370 90°x40° flat-front, Bi-radial horn. Bi-amplified operation is also possible.

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**ASHLY GQX EQUALIZERS**

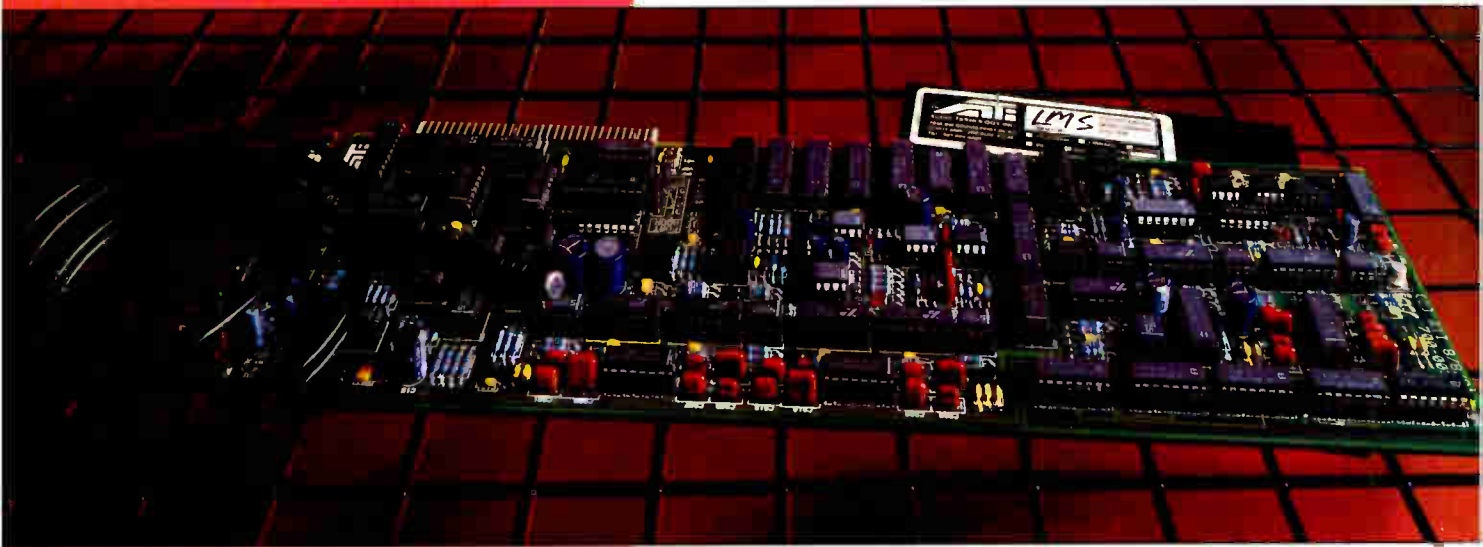
Ashly Audio (Rochester, NY) has re-engineered its line of graphic equalizers, now labeled the GQX Series. Available in dual-15, dual-31 and 31-band models, all feature constant-Q designs with Wein Bridge filters, 1/4-inch, XLR and barrier-strip connectors, and silent in/out switching. The 31-band versions also include selectable ±6dB or ±15dB range, tunable low-cut filter and ten-segment LED level meter. All are covered by a five-year warranty.

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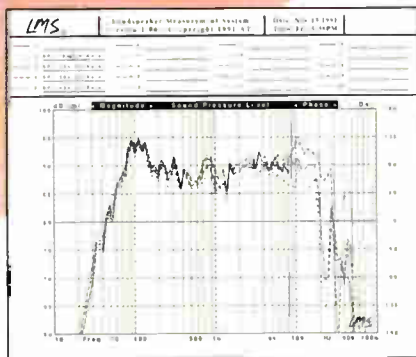
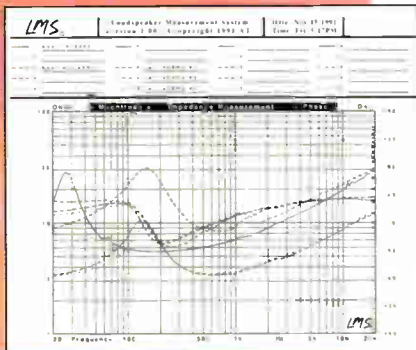


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# BILL LASWELL

## INTERNATIONAL ENIGMA

**W**hether or not a particular project finds a home doesn't concern Bill Laswell. He's more interested in documenting than marketing. And now that he has acquired a 5,000-square-foot space in the Greenpoint section of Brooklyn, he is constantly documenting sounds.

Friends drop by from out of town with only a few hours to kill. He rolls the tape and they jam. A fairly common practice, but Laswell's friends happen to be Bootsy Collins, Herbie Hancock, Ronald Shannon Jackson, George Clinton... just get it on tape, capture the energy and worry about the business details later, that's Laswell's philosophy.

Laswell leaped into the public eye as a producer in 1983 with the release of Herbie Hancock's *Future Shock*, which contained the monster instrumental hit "Rock-It." The success of that high-tech-funk single kept the phone ringing for several years, leading to such high-profile projects as Laurie Anderson's *Mr. Heartbreak*, Mick Jagger's *She's The Boss*, and albums for Public Image, Motorhead, Iggy Pop, Sly & Robbie and many others.

These days, Laswell seems less interested in high-tech and more intrigued by ethnic music, particularly

by Bill Milkowski



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the cross-fertilization that occurs when East meets West. Accompanied by a small crew of engineers and an Akai 12-track recorder, he flies to remote locations ranging from Gambia and India to Morocco and all of Asia. His interests feed into his own music-making with his band Last Exit, a raucous, improvisational ensemble featuring guitarist Sonny Sharrock, drummer Ronald Shannon Jackson and saxophonist Peter Brotzman.

Laswell is an instigator with good intentions, a catalyst with good taste. He brings people together, sometimes from widely disparate backgrounds, throws them in a room and rolls the tape. The results vary, but sometimes there is magic, as happened on a recent session with bassist Jonas Hellborg, drummer Tony Williams and the David Soldier String Quartet for Hellborg's album *The Word*. It was released on Laswell's new Axiom Records label, a highly ambitious and typically eclectic undertaking for the enigmatic bassist/producer.

**Mix:** What is the thrust of Axiom Records?

**Laswell:** It's a continuation of my work through the years [in the mid-'80s he formed OAO Records, an alternative music label distributed by Celluloid Records], but now it has another name. We recently put out a nice quartet record of Sonny Sharrock with Pharoah Sanders, Elvin Jones and Charnett Moffett. And there's a record we did of a Turkish sax player called Telif Az Khan. There's also a record by Material that is a bunch of different things taped together. It's with Sly and Robbie, Herbie Hancock, Bernie Worrell, the Jungle Brothers, Shabba Ranks, Garry Shider, Michael Hampton, Bootsy, Fred Wesley and Maceo, Henry Threadgill...It's a juxtaposition of styles passing in and out of itself, a real collaboration, featuring different characters at different times. All of that's part of the concept of this label.

**Mix:** So you've expanded. Ten years ago, the community was pretty much confined to Downtown New York. Now it's international.

**Laswell:** Well, there never really was a community in New York for me. People call what I was involved in "Downtown music." All that means is that people don't have enough money to get a better place to live. When

people start to make money, they get out of there, and then what they're doing is no longer considered Downtown. I associate Downtown with people who aren't making money, and I don't have any affinity with not making money or being Downtown. I did a few records because I was getting started, and that's where I lived because I had no

## Laswell's Power Pack

Over in one corner of the 5,000-square-foot space, Laswell has a 24-channel Neve console, 24-track Studer recorder, Perreux, Bryston, and Hafler power amps, UREI 813C monitors, two Akai S1000 samplers, Sony PCM-2500 DAT machine, Roland R-8 drum machine, Roland S-550 digital sampler, Aphex Systems Impulse drum triggering system, J.L. Cooper PPS-100 MIDI/SMPTE synchronizer, Roland SBX-80 sync box, Akai MIDI Production Center (MPC-60), Dolby 365, Kustom 8 mixer, Aphex Expressor, MXR digital delay, Audioarts 4100 parametric equalizer preamp, Roland SDE-2500 MIDI digital delay, Drawmer DS-201 dual noise gate, dbx 166 noise reduction, dbx 160X compressor, dbx 120XDS Subharmonic Synthesizer, Korg SDD-2000 digital delay, Eventide H910 Harmonizer, Yamaha SPX90II, Yamaha REV7, AMS RMX 16 digital reverb, Roland SDC-350 vocoder, Carver C9 Sonic Hologram Generator and 200- and 300-watt Marshall guitar amplifiers.

money. But you have to go on. I wanted to continue expanding internationally.

**Mix:** I remember that when I talked to you in 1986 you were thinking about going to Japan and interacting with the musicians.

**Laswell:** I was just getting started then. I ended up going back and forth to Japan a lot—I made about 30 trips. From there I went into Southeast Asia, to Thailand and Korea. I was especially intrigued by Okinawan pop music, which has some great guitar stuff. The *Neo Geo* project I did with Ryuichi

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Mix 6/92

Sakamoto was the beginning of that phase.

**Mix:** Do you feel the musical climate has changed at all since the Reagan years, or that people at record companies are opening up now to more challenging music?

**Laswell:** I don't think people at record companies would know challenging music if it was right in their face. I've been hearing challenging music since I started listening. I've heard it in the streets, in the Middle East, in Africa, in India, in Asia. I've seen kids who will go from listening to hip hop to skateboard thrash to hardcore music. That's a fusion that's inevitable, and it's totally inspiring.

At the same time, there are people who actually play with a natural gift, who have a natural voice and a vision. There are still a very few people who have a vision, like Ornette Coleman. But I think as far as record companies and times changing since the Reagan era...that's all bullshit. It's been here the whole time.

**Mix:** What are you excited about?

**Laswell:** Everything. Absolutely everything. In Paris, there are a lot of young kids growing up in mixed neighborhoods—people from Africa, Martinique, the Middle East—all living together. All these different cultures are clashing. It's producing kids who have all this different music in them. Like the way we would grow up with country & western, jazz and blues, they're growing up with rock music, hip hop, Moroccan music, whatever. There's this group I found called FFF, a French group. The singer is from Toga, the drummer's from Martinique, the rest are French. The music is a mix of their different cultures—jazz, reggae, Caribbean—and yet they're totally devoted to James Brown and P-Funk. For the session we brought in T-Bone from Trouble Funk and Gary Mudbone Cooper from P-Funk, the percussionist Ayib Deng from Gambia and all these guys. I guess in the end it'll be some new take on funk.

**Mix:** Have you been doing some field recording projects?

**Laswell:** We just did this thing in India with [virtuoso violinist] Shankar, which we recorded with eight or nine pieces in Madras, his hometown. We found a studio there for \$200 a day, and we made it work. The recording really sounds great, which proves that you



don't need a super high-tech studio to make your records sound good. It was a regular 24-track recording studio, and it did take a certain amount of manipulation of whatever equipment was available. But Oz Fritz, my engineer, made it work. I also did recordings in Morocco and West Africa with an Akai digital 12-track. Billy Youdelman, who is a master of field recording, engineered those sessions, and it sounds better than a studio. There's one from Gambia that's recorded in a yard, and it really sounds like something special. I'm also going to Brazil to do a remake of the soundtrack of *Black Orpheus* with this group Olo Dum. I have to do all kinds of research, because I haven't followed Brazilian music too closely. But I'm not going to approach it academically. I'm just going to go there and meet everybody and listen to how they play.

**Mix:** So your ears are your main weapon.

**Laswell:** Yeah, don't let judgment get in the way of what you can hear.

**Mix:** You mentioned this scene happening in Paris. Are there also pockets of creativity in the States now?

**Laswell:** Oh, yeah, all over the Midwest. For example, in Cincinnati and Dayton, Ohio, there are bands that are totally into skateboards and heavy metal on one side and hardcore hip hop on the other. That's a marriage of styles that's inevitable. And it's not for the marketplace. It's coming out of a natural process—the environment is creating these situations.

**Mix:** You've met some of these kids?

**Laswell:** Yeah, absolutely. There's a crowd of people surrounding the Jungle Brothers, for instance, who use my studio a lot. They're all from different backgrounds, and I've turned them onto hardcore bands like Torture Garden and Napalm Death. At the same time, I'm turning them onto groups like Can and Magma. And again, they're appreciating it naturally.

**Mix:** People don't often get a chance to approach music that innocently, because it's always so prepackaged and hyped.

**Laswell:** Well, that's business. It's the equipment business, the magazine business, the record business. But we're talking about what's on the fringe. What you just mentioned is on the inside.

**Mix:** What do you require of a studio? And what are your visions for the one you have?

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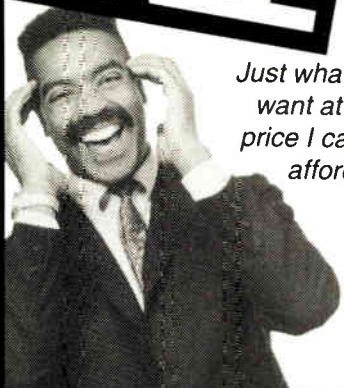
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**Laswell:** What we have is just a work-space. And that's probably what it's gonna continue to be. It's not really set up for mixing. There's no automation, so we end up doing most of our mixing at Platinum Island in Manhattan. But the console here sounds great. It's an old Neve. And there's a good 24-track Studer tape machine. It all works okay.

**Mix:** So you're not one of those people who needs to have an SSL or Neve board.

**Laswell:** Those who do just like to talk. I prefer to work. I only need a place to put some stuff, to try to get things happening. Mainly to get sounds on tape. And we have a facility now to do that.

**Mix:** So you haven't worked at the Power Station for a while?

**Laswell:** I haven't worked there in maybe two or three years. I usually get stuck in a place for a year or two. In the early '80s I was stuck at RPM a lot, then I got into working at Power Station and a place called Quadrasonic, and Electric Lady a little bit. A lot of small studios, too. I always preferred to do the live stuff in small places.

**Mix:** What does your room sound like?

**Laswell:** It doesn't sound bad. All the drums and everything on this FFF record were done there. It's all about how you use a room. People have these misconceptions...get a giant room, get a big drum sound. A lot of the biggest-sounding drums have been recorded in tiny rooms. It's really about cranking the mic and recording ambience.

**Mix:** Like how you got that huge drum sound on the Public Image project by recording the drums in an elevator shaft at Power Station.

**Laswell:** Yeah, stuff like that. That's obviously a very small room, but it's a huge sound. I think we can gradually make this space into a lot of different-sounding rooms. It just involves learning about the space.

**Mix:** I didn't notice much Sonex or baffling.

**Laswell:** There isn't, but I can create all these houses and enclosures with foam rubber. I take a Marshall amp and completely cover it in foam rubber. We got the idea from Sorcerer [Sound]. Al Fierstein bought all this foam rubber on Canal Street, and he could actually record a live band with drums and all the amps right in the room, with very little leakage from the drums. It's great

when you're cutting basics. That way you don't have to separate the drummer in a booth, because the room sounds good live.

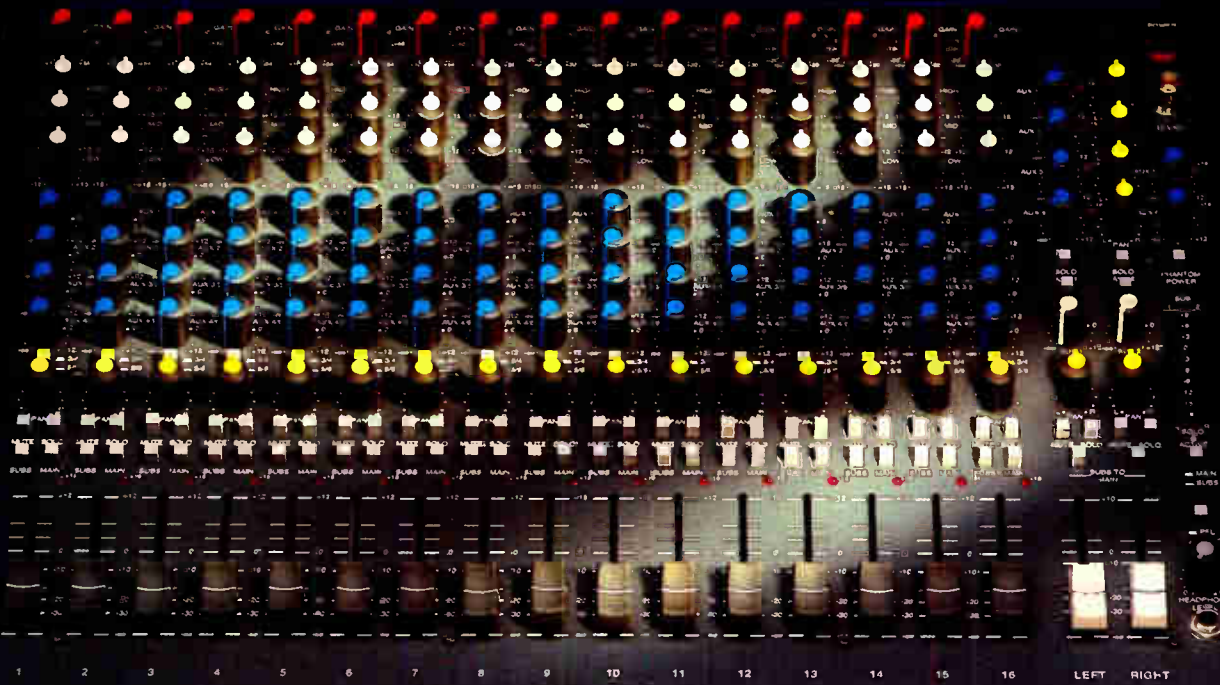
**Mix:** Over the last ten years, have you developed technical chops in the studio in terms of, say, miking techniques?

**Laswell:** I usually have an idea of what I want to do sonically. I have preferences in terms of all the instruments, but I'm open to somebody making it sound better than I could've imagined. And that happens a lot, because I'm working with the right people and giving them enough freedom to be creative. You could have anybody in

*"I don't think record companies would know challenging music if it was in their face. I've heard challenging music in the streets, in the Middle East, in Africa, in India, in Asia. I've seen kids who go from listening to hip hop to skateboard thrash to hardcore. It's totally inspiring."*

there putting the stuff up and doing what you're saying. People ought to have the space to be creative. I keep the projects I'm doing very open. I get everything on tape a certain way; it's not really based on any repetitive techniques—just the way it sounds. I know what the instruments sound like, I know that if you put them through this effect or EQ them a certain way, it'll sound that way every time. And I plot it sometimes because it's fast, and I know it might relate to a certain project. So as far as repeating techniques, that does happen on occasion. But sometimes it's an accident that makes things sound better, or a mistake occurs and it comes out better than you could've imagined. ■

*Bill Milkowski is a frequent contributor to Mix, based out of Brooklyn, N.Y.*



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Just as we went to press, SSL unveiled Scenaria, a complete audio post-production system combining a 38-channel automated digital mixing console; 24-track disc recorder/editor; VisionTrak™ random-

access video storage; multitrack audio editor; integrated multimachine control/synchronization; and full compatibility with ScreenSound and SoundNet multi-user networking. For the first time, recording, editing, signal processing and mixing can be carried out to picture in a single system, entirely in the digital domain, and the incorporation of random-access video into the Scenaria system allows the immediate conforming of audio and picture to a new EDL.

The console features moving faders and total automation of EQ, filters, dynamics, panning and eight aux sends. Audio processing takes place in a remote rack, and multiple consoles can share access to a single processor. Storage functions include non-destructive editing, track slipping, time compression/expansion, and access to central audio libraries through SoundNet. We'll provide an in-depth look at the Scenaria in next month's issue of *Mix*.

—George Petersen

## Sound for "The Lawnmower Man"

Whatever you think of the New Line Cinema release *The Lawnmower Man*—and it has received very mixed reviews—it has an incredible soundtrack. Sound literally comes at you from everywhere, equaling without overruling the virtual reality-based visuals.

"The cool thing about

**Top, sound designer Frank Serafine at the custom Otari 54-P in his new studio. Bottom, Jobe and Angelo prepare to enter Cyberland.**



PHOTO: LAURENT BASSETT

## Mardi Gras Mambo, Done in HDTV

Parades, colorful beads, Indians in elaborate headdresses, rollicking music, second-line strutting—it's Mardi Gras in New Orleans.

This year, Nippon Hoso Kyoka Broadcasting Co., Japan's public television network and High Defini-

—CONTINUED ON PAGE 123

**HDTV producer Michael Murphy**



PHOTO: MARTA



PHOTO: SUZANNE TENNER

having my own club stage is that I can break all the rules," says sound designer and audio post-production supervisor Frank Serafine. "I've never

done it traditionally. I've never cut a piece of mag in my life. I turn people's heads—you're not supposed to do that. I can dialog everywhere, put 'em in the surrounds. No restrictions. When the director hired me, I didn't even have the dub stage finished, but we shook down the room on *The Lawnmower Man*, and we shook it real hard."

Serafine's new studio in Venice, Calif., was completed last fall with the arrival of a custom Otari 54-P console. He began work on *The Lawnmower Man* in September 1991 and wrapped it up with the final mix near the end of January. With only one month in post-production, time was tight. To edit effects, Serafine hooked

—CONTINUED ON PAGE 124

## Alan Howarth's New Electric Melody

Timing is everything. And connections help, too. At the same time that Alan Howarth was outgrowing his personal project studio in Glendale, Calif., a friend introduced him to Tom Kobayashi, vice president in charge of post-production sound at LucasArts Entertainment. Kobayashi invited him up to visit Skywalker Ranch in Marin County, and two years later Howarth and his company, Electric Melody, are upstairs neighbors of Skywalker Sound South, based in the Lantana Center in Santa Monica.

"I saw the Lantana Center as a golden opportunity for me,"

Howarth says. "Beacuse of Skywalker, Digital Magic and all the production rental space available throughout the rest of the complex, I thought, 'This is where I want to be for

the '90s. This is definitely a happening place.'

"I have 2,200 square feet on the first floor, right above Machine Room 1 at Skywalker Sound,"

—CONTINUED ON PAGE 124

PHOTO: ED FREEMAN



## Orlando's Emerging Post Industry

Orlando has been in the press quite a bit recently. *American Cinematographer* and *Post* magazines, among others, have dubbed it "Hollywood

East," owing to the increasing number of films and television series being shot in the area. But while the State of Florida is quickly becoming a production center second only to California, everyone is quick to point out that Orlando is still in a start-up phase and is in need of support services.

Much of the hype is just that—hype. And much of it can be traced to the 1989 opening of the Post

Group on the Disney/MGM lot and Century III at Universal Studios Florida. Two major audio/television/feature film

years.' Plus, the hype surrounding the opening of the theme parks overshadowed the fact

### Century III at Universal Studios Florida

production companies moved in, and the rest of the world expected explosive growth.

"Those expectations were unfounded," says Ross Cibella, president of Century III. "No one here ever said that the growth would be explosive. We said, 'We're going to build an industry here, and it's going to take



that there was a real industry here. People thought there were 50 movies and 20 television series being shot here at all times. It takes awhile for this kind of industry to grow."

"This hype about Hollywood East is great for business and tourism," adds Mitch Brill, sales and marketing director of The Post Group, "but the professionals down here

—CONTINUED ON PAGE 126

PHOTO: MICHAEL WILSON



**Above, Gary Platt of Full Sail Center for the Recording Arts. Right, the Post Group at Disney/MGM Studios.**





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—FROM PAGE 120, MARDI GRAS HDTV  
tion Television pioneer, sought to capture Mardi Gras in all its glory via HDTV for broadcast on Japanese TV.

Michael Murphy Productions of New Orleans was chosen to capture the sights and sounds. Murphy is a New Orleans native who began producing local music shows for NPR in 1988. NHK commissioned him to shoot 16 acts at Jazzfest 1990, which wound up being an eight-hour program. Since then, an estimated 30 million Japanese viewers have watched the Jazzfest specials each year, according to Eiichi Nonaka, NHK's chief producer in New York.

For the musical portion of the Mardi Gras program, Japanese audiences will be treated to a live gig by The Meters from the New Orleans Entertainment Hall. Two Sony 300 high-definition cameras cover the show: one from the back of the room, directly in front of the stage, and one at the foot of the stage on a hand-pushed dolly. Capturing those sends was video engineer Geoff Howe, aboard the NHK remote truck viewing HDTV monitors.

The audio engineering tag team of Keith Keller and Mike Montero was stationed next to the NHK truck, with a sightline of the stage via an open loading dock.

"This is actually an interesting way to record," Keller explains. "In addition to using standard close-miking techniques, we're using an Ambisonics system, which is a British surround sound system designed by Dr. Geoffrey Barton and Dr. Michael Gerzon. It's built around the Calrec Soundfield microphone, a microphone with four cardioid capsules in a tetrahedron pattern. Because of the tetrahedron you can discern any pattern from any angle—both forward and rearward. [The Soundfield mic is now owned by AMS Industries, a division of Siemens Audio—Eds.]

"We're printing the [Ambisonics] surround sound system onto some of the tracks," Keller continues, "and using an MS microphone on close-ups. So we have both a distant ambient [feed] and a close-up ambient [feed] at all times. I monitor the Calrec mix. The guys in the [video] truck monitor the MS mix. At the same time, Tom Murphy takes another MS mic around with a

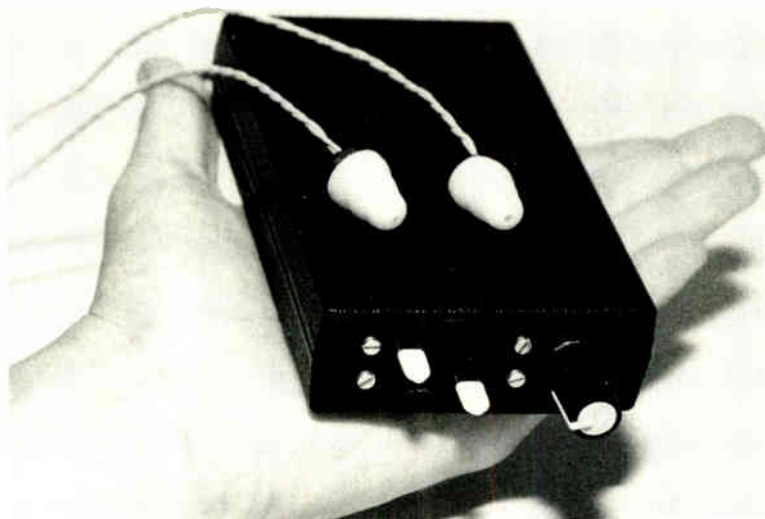
portable DAT and a headset—just getting 'wild sounds' all the time."

While Meterman Leo Nocentelli sizzles a guitar solo on top of George Porter's fat, funky bass lines, Keller explains more of his setup. "Cabling is Mogami. We're running eight mic lines straight into Neve 1073 preamps," he notes, "and those are running straight into the compressors, and then the outputs of the compressors are running into Mackie 1604 mixers. We're using the Mackies as summing amplifiers and for effects sends and returns. We're getting most of the ambience out of

the stereo microphone techniques with the Calrec. I have a bunch of Lexicon gear—a 224 on the vocals, an LXP-15 on the snare—but everything else we're doing with stereo microphones.

"What you want to do is capture a stereo picture of the stage and a stereo picture of the audience with the minimum amount of bleed from the image-smearing stacks of speakers," Keller continues. "With any stage, you have this triangle—formed by the monitors, wedges and sidefills—out in front with about 30 or 50 dB down of information that

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—FROM PAGE 123. *MARDI GRAS HDTV*

isn't going through the P.A. So anyplace in that area you put a stereo mic, you get this relatively pristine stereo picture of both the stage and the audience. And then you can dial in as much stereo ambience as you care to, all from that one microphone."

Keller uses JVC 900 time code DAT machines. "We're running two DATs," he says, "and only converting [the signal] once and then slaving the second DAT machine through the digital port to the first DAT machine." All the while, the video truck was sending Keller time code: 30-frame, non-drop.

"Because it's HDTV, all post is done in Tokyo," producer Murphy explains. "Normally, I'll send them all the master tapes from the cameras. Then they'll go into post-production. I also send over the audio masters—usually the 24-track recording—along with the DAT recording. And they'll sweeten any type of audio they need from the 24-track.

"The final editing session takes place less than four weeks after the finished film shoot," Murphy continues. "When they go into the editing sessions, they'll often spend 12 to 14 hours a day editing and sleep in the editing room."

Intensity, music and little time for sleep—that's how you do the Mardi Gras mambo in HDTV.

—Jeff Forlenza

—FROM PAGE 121. *THE LAWNMOWER MAN*

up two E-mu EIII's—650MB rewrite optical drives on each—to Vision, a sequencing program for the Mac.

"We would build an entire scene with the two EIII's and Vision and then dump to 24-track with Dolby SR for the final print master," Serafine says. "I've looked at a lot of the systems, including the Synclavier, SSL and Studer Dyaxis. We used those at times, but [Vision and the EIII's] are faster than any editing system I've seen that's dedicated to its own hard disk."

All effects, dialog and music were created at Serafine's place; only Foley came from the outside, handled masterfully by "the oldest Foley walker in the business," John Post. Picture was delivered on 3/4-inch videotape, with time code on channel 2 and address track, and

audio on channel 1. Close to 90% of the sounds came from Serafine's personal library, all recorded digitally. The rest came from the Sound Ideas, Omni FX and Northstar libraries.

Dialog was cut on the SSL ScreenSound and Studer Dyaxis systems, and as much as 70% of the film was looped. "In ADR, the director and producer rewrote all these lines," Serafine says, "so when [an actor] turned their head, they would edit in new lines to contour to the new story. ADR became very important in making the story work."

The looping in *CyberLand*, when the actors are inside the virtual reality environment, was perhaps the most interesting challenge. "We would process their voices through the HD3000 Harmonizer while they were watching picture," Serafine says. "We put it in their phones, and it was like magic to them. When you play the dry track back, it's completely out of sync. But if they had done it dry, we wouldn't have had as much control in making it work. By doing everything with processed voice, they created more emotion and effect."

The voicings and ambiences consistently match the action, but it's the effects that stand out. The lawnmower motors come from the production track, boosted by blade sounds from the Northstar library and a manual mower running up and down the halls of Serafine's studio. When the lawnmower destroys an office, you hear cloth rips, punching bags and cables whirring around—followed by a watermelon splat and bone crunching as the evil science director is flung against a tree.

That scene also contained what came to be called the Particization Sequence, where the hero, Jobe, transforms the villains telekinetically into a bubbly, disconnected molecular mass. "That sound was a combination of a french fry greaser, pool balls bumping together, and then wire spins as the molecules are swept away," Serafine says. "And, of course, we had the actor scream, processed with the HD3000 using the 'Bizzaremonizer' setting. Then the mixers [Randy Honaker and Dennis Patterson] spun him around the room with the left-center-right-surround joystick we have on the Otari console. All of this mega-

processing with heavy-duty surround at the same time."

Not all effects, however, are so in-your-face. When Jobe is trapped inside the computer near the end, trying to get out, the basic sound element is the redial function from a typical telephone. And when he's floating, flying and falling within VR, the most important sound effects work subliminally.

"I'm intrigued by mystical things like Indian mythology, and so is the director," Serafine says. "When Jobe experiences virtual reality, [the director] would insert one frame of an Egyptian mandala, or a Tibetan mandala, and fire all these sacred geometry patterns at you. I wanted to incorporate some sort of vocal effect into these sequences, so I would have the director recite Shakespeare and Edgar Allen Poe and things from the back of the *SMPTE Journal* and read those into my Emulator. Then I would process it, speed it up, and that would be the subliminal element underlying the sacred geometry. If you listen to it on the board and solo those stems, it sounds like biblical tongues or something. It's exactly what's going on in the film—the cyberChrist. We called it sacred jabber, and I put it everywhere.

"We call this the Miracle Movie, because what we were able to do under the budget constraints was remarkable," Serafine says in summation. "This was a \$7 million movie; *TRON* was a \$25 million movie ten years ago! [Serafine first locked up 24-track on *TRON*; Honaker built the custom console.] I wanted to show the industry on this movie that we could make a high-end-sounding movie out of a B-movie budget. And you can't tell the difference." ♣

—FROM PAGE 121. *ELECTRIC MELODY*

Howarth explains. "So I'm tielined between their stages and my facility. Then we're right across the street from a video facility, with telecine, 1-inch, D-2 and D-1. But the facilities don't compete; it's more of a symbiosis, with each doing something the others don't."

Any association with Skywalker—trading off jobs and stages and that sort of thing—is informal. Howarth leases the space from Lantana Center, and he owns all of his



equipment.

John Storyk designed Electric Melody, working in what was essentially empty warehouse space. Originally, Howarth made plans for two big sound design rooms and one edit suite in 1,200 square feet. After talking with Storyk about the types of projects and expected growth areas, the plans mushroomed to three edit suites, a prelay room and a deluxe sound design/mix area, with an iso booth for acoustic embellishments—in 2,200 square feet.

Howarth didn't plan on a mix space at first, but clients who weren't doing big-feature theatrical mixing wanted somewhere other than Skywalker for mixdowns of commercials, documentaries and shorts. So he installed a 60-channel Neve V3, short-loaded with 48 modules and equipped with a remote patch bay. He also added the "P" panel, recently designed to handle multichannel mixes, film-style. A Mitsubishi 32-track digital machine, some analog 24-tracks with SR, and various 4-tracks and DATs fill out the complement.

The edit suites house CAD Maxcon rack-mount consoles; the prelay room is outfitted with a 28 x 24 Soundcraft 2400 with automation. Three New England Digital PostPros, a Synclavier 9600 and a Synclavier 3200 are currently in use all the time, and Howarth says he could use a few more now that he's expanded into full theatrical packages.

"The previous Electric Melody was an individual artist's studio," Howarth says. "The draw was to come out to my home because I was there. But I was always an accessory to a larger editorial group. At certain points, those editorial groups added an individual to provide the same services that I did. So those kinds of jobs weren't coming to me as often.

"I saw the need to expand my facility to accommodate the entire feature," he continues. "My services are sound design and composition, but now it's about being able to handle the ADR and Foley and supervising the mix—getting all the post-production done for the producer. Producers are very much attracted to the one-stop shopping idea. Or at least one phone call to make."

Projects came to Howarth even

—CONTINUED ON PAGE 126

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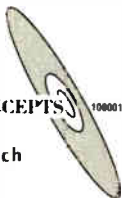
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—FROM PAGE 125, ELECTRIC MELODY

before the facility was complete. He recently completed sound design for three pavilions at the World Expo, in association with a company called Iwerks, competitor to IMAX. "It was interesting," he says, "because they came for 6-channel, digital, left-center-right, split-surround, subwoofer audio. These theme park projects are the only ones setting up more than the normal 4-channel mixes." He also contracted for his first feature in the new facility, *Fortress* from Hollywood Pictures, and he handles sound for the television show *Dinosaurs*.

Things are looking good, so good that Howarth hired an operations manager, Steve Williams, and beefed up the staff to eight. "It's a huge commitment," Howarth says of the new facility. "I've gone from one room off the garage to five rooms hired out. But I'm a hands-on guy. I love to touch everything." ☺

—FROM PAGE 121, ORLANDO

are a little uncomfortable with it because it just doesn't ring true. We've made tremendous leaps and bounds over the last few years, and all the elements that created the California market also exist here. But we should be careful to point out that we're starting up here. It's pioneering."

Regardless of the hype, the fact is that there are talented technical/creative people in Orlando to accompany world-class facilities. Soundelux, a top L.A. editorial house, recently opened offices in conjunction with Kneupper & Miceli, and the Yellow Pages listing for recording services now fills a page. Producers come to shoot in the area, make use of the sound design, ADR and other services offered, then return home to mix and finish.

"There are video, film and audio facilities in Orlando that can handle any type of production," says Jack Sherdel, who left Century III after a year to open Digitec Audio Post-Production. "Digitec is not Todd-AO. If someone came to me and said they wanted to produce the soundtrack for the next *Terminator* movie, we certainly could edit and do the sound design and Foley work for it. But there's nothing in Orlando that comes close to a Buena Vista

Sound or Skywalker-type of mix stage. People post where they live. That's my feeling."

Or as Brill puts it, "People like to follow their negative home." And that is a major weakness of the Orlando market: no film lab. Sure, all studios will expedite an overnight service to Miami, but many outside producers remain apprehensive.

According to Cibella, once a lab comes to town, more feature films might stay for the mix, but whoever opens the lab must think of it as a long-term investment. "If you say, 'I'm going to open a lab and make money hand over fist because they need a lab,' it won't fly," Cibella says. "You need 40,000 feet of film a day going through the lab, and on a good day in Orlando we have that. But on a bad day we only have 20,000 feet."

"I think that in order for people to stay in Orlando and finish, they need to have a home base here," says Gary Platt, vice president of Full Sail Center for the Recording Arts, one of the country's leading recording schools. "Walter von Huene is here from L.A. producing a lot of the *Swamp Thing* shows at Century III. He's working a lot with Kim Dawson, one of the producers of the *Ninja Turtles*. But if you're not a part of the community, all you ever see is the amusement parks.

"It comes down to Hollywood investing in the area," Platt continues. "There is some good talent in the area, and it takes a bit of going out on a limb to tap into that and grow with it."

Everything is in place for big-time growth in the Orlando sound community. The schools exist to bring in the second level of technicians and creative types. People have moved in from major markets. Top facilities have attracted top talent. And Florida Governor Lawton Chiles has projected a goal of \$1 billion in revenues by 2000 from television and film production, up from \$275 million in 1991.

Growth is slow, but it is still growth. "Soundelux moving in showed that a legitimate feature film sound production house was willing to put an office here," says Rob Hill, senior audio mixer at The Post Group. "That lends legitimacy to the sound community here and is hopefully an indication of things to come." ☺

# Network



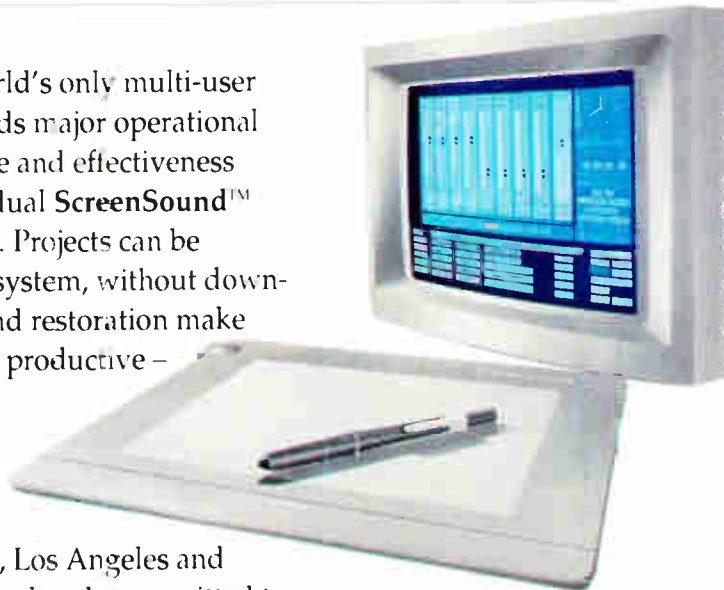
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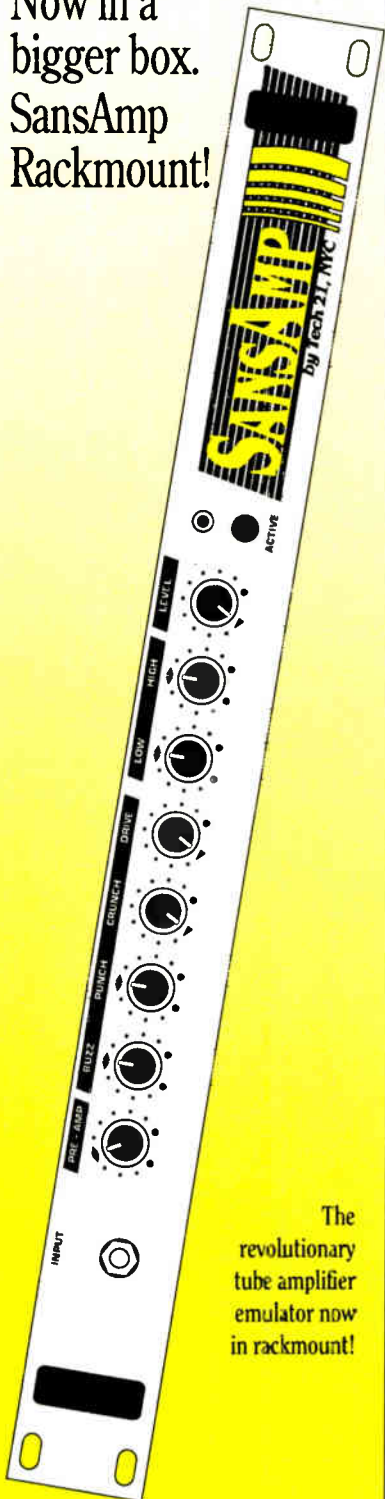
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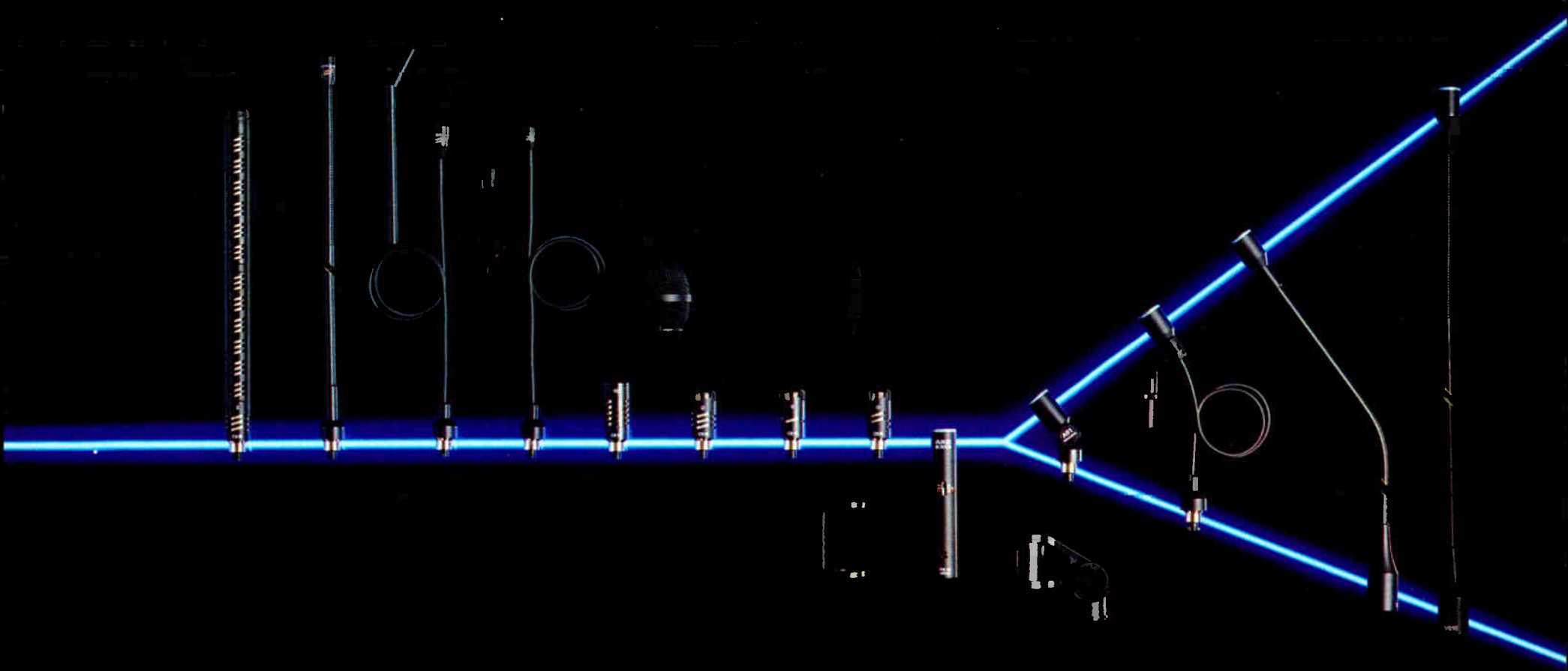
## POSTINGS

Photomag, the NYC audio facility, recently posted the documentary *Freedom to Hate*, narrated by Dan Rather and produced by Ray Fox. Tim McCarthy edited and mixed the show, making use of the AMS AudioFile to replace English translations with the original Russian dialog... **Twickenham SoundStation**, the new film sound post company operating out of Twickenham Studios, claims the first all-digital-sound film out of the UK, called *Wild West*. Production sound mixer Chris Munro gathered location sound on the new Fostex PD2 portable DAT in combination with a Sony TCD10 Pro. Gerry Humphreys, head of sound at Twickenham, edited and laid tracks on the 16-channel DAR SoundStation, outfitted with WordFit automatic dialog replacement... Harry Snodgrass, sound designer with **Visiontrax** (on the Twentieth Century Fox lot), has been using Digidesign's Pro Tools in designing the voice of the alien for this summer's *Alien III*... **Sound Trax Studios**, Burbank, completed sound work on four new television shows: *Homefront*, *Final Shot*, *Dat-O* (a movie of the week) and *The Allison Gertz Story* (a movie of the week)... Engineer Tony Campana of Yessian Music (Farmington Hills, MI) recently used Sound Tools to create Arabic and French versions of the ecological film *I Need the Earth and the Earth Needs Me*, a joint production of General Motors and the Environmental Protection Agency

(two ecological giants?)... Recent activity at Howard Schwartz Recording (NYC) included promo spots for CBS coverage of the Winter Olympics and a National Geographic Explorer special called *Tides of War*, which required extensive use of samplers in creating 55 minutes of effects and music. Also, Lorna Levine has been named operations manager, and the company picked up a second SSL ScreenSound system (with SoundNet networking software) and another Sony time code DAT machine, bringing their total to four, the most in the country according to Sony... At Videomix (NYC), recent projects ranged from dolphin sounds for a nature series (sampled on DAT, then dumped to an E11D) to post on an Elvis Costello music video (ambient sounds added to augment the Dublin townhouse visuals)... Two new faces at **Inter-sound of Hollywood**: Fred Diether has been hired as chief technical engineer, and Serge Perron is now chief remix engineer... **Equipment Updates!** Peter Buffett's **Independent Sound of Milwaukee** added a NEID PostPro and moved to the city's historic East Town... **SMP Audio Post** came online in San Francisco, offering Pro Tools editing to complement the D-2 VTR... **Clack Studios** (NYC) added two SSL ScreenSound systems to handle the increase in television... In **Your Ear Music and Recording Services** (Richmond, VA) recently installed a 16-track NEID PostPro/Direct-to-Disk system in the new Studio B... **Todd-AO** brought in ATC SCM300 monitors, supplied in a special LCR configuration. ☺



**PostAudio Inc. opened recently in Eden Prairie, Minn., a suburb of the Twin Cities, under the guidance of president and chief engineer Fred Street (pictured). It houses the first SSL ScreenSound system in the upper Midwest, according to Street, and is located on the premises of Heuton Dailey Monson, a digital video facility.**



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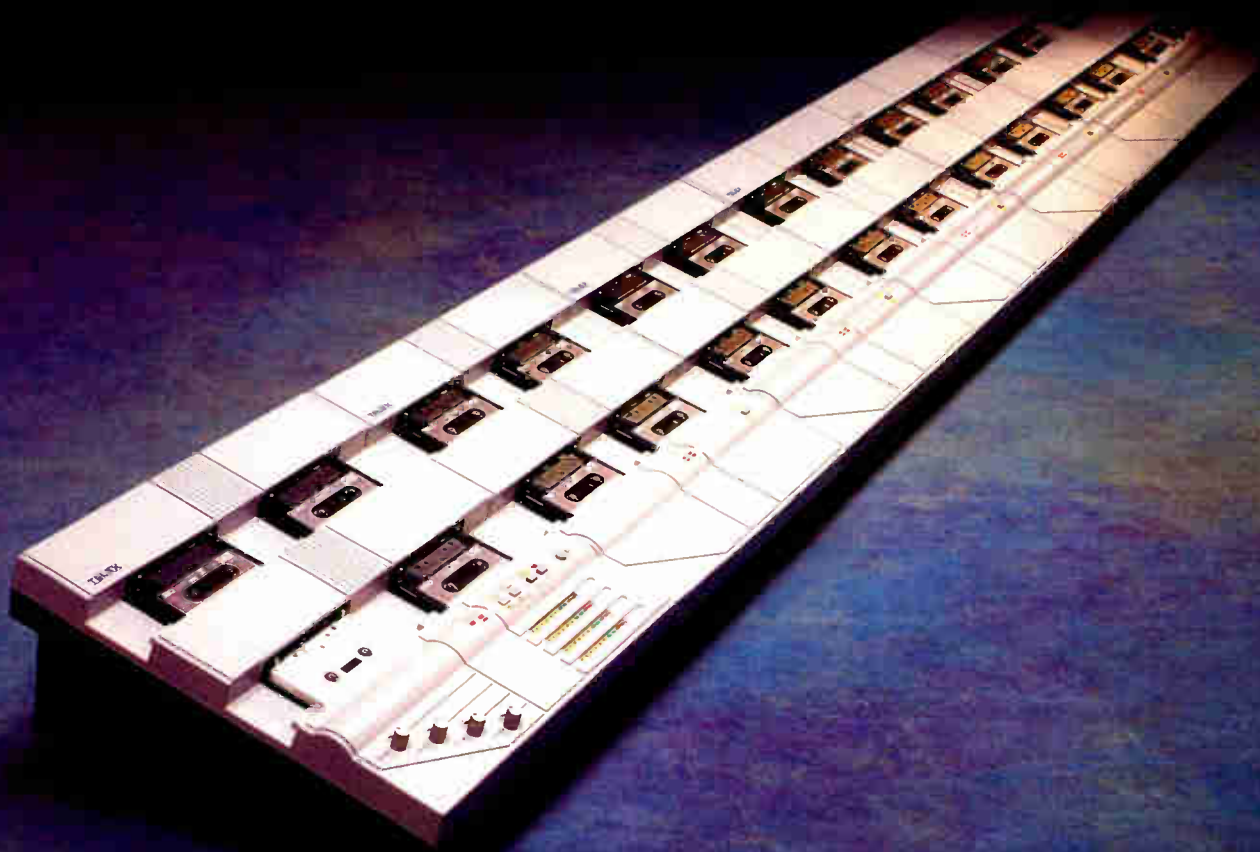
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**TELEX**

by Philip De Lancie

# 1991 RIAA REPORT

## A TALE OF TWO INDUSTRIES

“**W**e were braced for the worst. So even modest growth comes as good news.” That’s how Recording Industry Association of America president Jason Berman summed up his response to the RIAA report on 1991 U.S. prerecorded music sales. Berman’s relief is no doubt widely shared by executives at the six major label groups that the RIAA represents, which account for some 95% of the market. But a close look at the figures reveals a sharp divide between the fortunes of the duplication and replication industries that supply the prerecorded tapes and discs. The outlook for replicators appears

bright, while duplicators seem to be facing a significant erosion of their core music industry market.

The overall dollar value of net shipments of prerecorded music in the U.S. rose 3.89% in 1991, to \$7.54 billion (see Fig. 1b). The gain continues a growth streak that has seen the value of the market more than double (in non-inflation-adjusted dollars) since it bottomed out in 1982 (the year before U.S. introduction of the CD). The 1991 growth in value was far less vigorous than in years past. 1990’s increase over 1989, for instance, was 14.62%. But considering

—CONTINUED ON PAGE 134

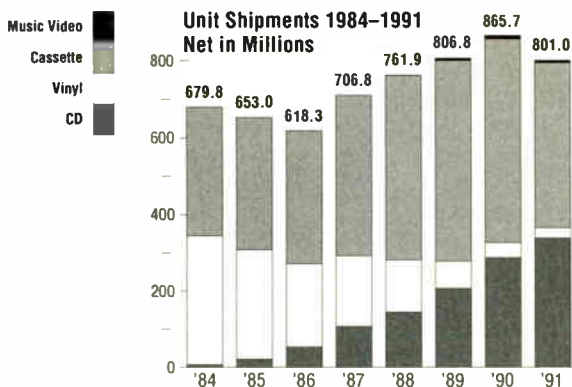


Figure 1a

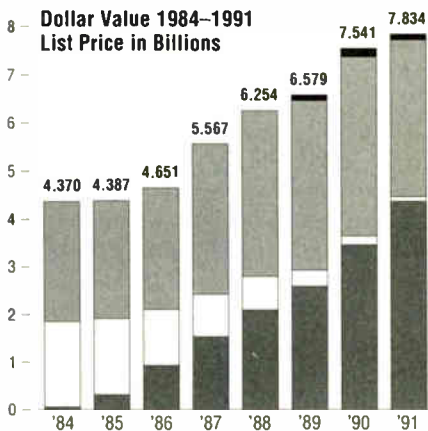


Figure 1b

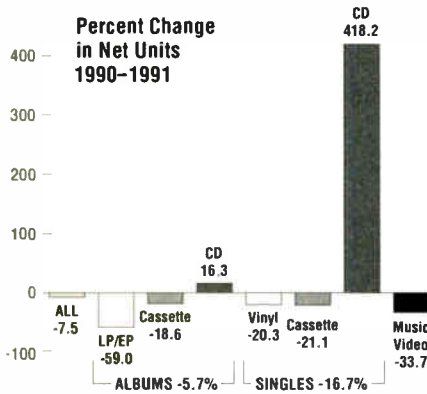


Figure 2a

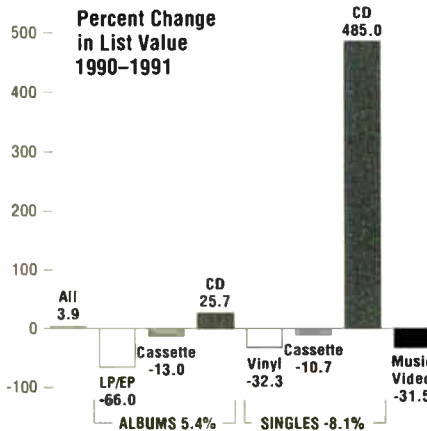
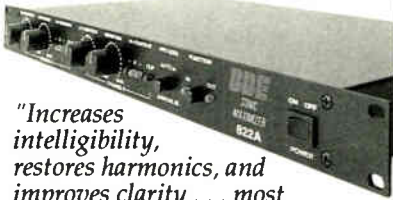


Figure 2b

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## Tape & Disc News

### BASF Brings Home Audio Tape Production

BASF Corporation Information Systems has decided to cease its North American pro audio tape manufacturing activities. The company will shift production from Bedford, Mass., to existing plants in its European home base. According to a statement released by BASF, the company "remains committed to the magnetics business," while the concentration of capacity in fewer plants will allow for greater economies of scale in manufacturing. The move will also place production closer to the company's research and development efforts.

The change comes as BASF's North American operations are being restructured, part of what group vice president Dr. Hans Schmidt calls "a worldwide effort to improve profitability in the magnetic media business." Unfortunately, this means a loss of about 170 jobs at the Bedford site. The company has pledged to assist those affected in trying to find new positions within BASF or in the local area. At the same time, the general program of concentrating production in fewer sites will continue, and additional product lines manufactured at Bedford may be dropped later in the year.

The only bright news for the Bedford operation is that it will henceforth coordinate sales and marketing activities for all of North America.

### Labels Slow to Embrace Mini Disc

A critical element in the successful introduction of a new prerecorded music format is the support of the six major label groups that control the distribution of almost all music sold in the U.S. Philips has done well in this regard with DCC: To one degree or another, all the majors have stated their intention to back the new configuration—even Sony Music, whose parent company is pushing the rival Mini Disc format.

Sony's DCC support evidently hasn't earned it any reciprocal support from Philips. According to a report in *Billboard*, Philips-owned PolyGram "does not contemplate putting out mini discs in 1992." And PolyGram is not alone in

its caution toward MD. Based on interviews conducted at the recent NARM convention in New Orleans, *Billboard* concludes that Sony's MD efforts have yet to entice BMG, MCA and Warner Music Group. One area of concern is apparently the CD market. With player penetration at around one-third of U.S. households, some label executives are worried that the format is still not sufficiently established to be unaffected by the introduction of another optical disc configuration.

On the positive side for Sony, executives with EMI told *Billboard* that the company will be supporting both formats, with Capitol/EMI involvement planned for the MD launch at year's end. As for the holdouts, Sony's Bob Sherwood points out that the deadline for preparing masters and artwork to participate in the launch is not until August. That leaves Sony several more months to bring the other majors onboard.

### REPLtech Program Unveiled

Knowledge Industry Publications has set the schedule for its REPLtech conference, billed as the only event dedicated exclusively to the duplicating/replicating industry. Planned for June 16-18 at the Santa Clara Convention Center (near San Jose, Calif.), the conference will combine morning seminars with an exhibit hall open in the afternoons. The first day's conference will be of general interest, while participants on days two and three will be able to choose from four concurrent "tracks" of sessions on materials, mastering and replicating/duplicating for DCC, video, optical disc and floppy disk. For further information, call (800) 800-5474.

### CEDAR Adds Time Correction

CEDAR Audio continues to expand the applications of its digital audio signal processing device. The latest addition to the CEDAR family is a Phase/Time Correction Module, which allows a user to shift the timing relationships of stereo program to correct for phase problems and delays that can muffle high frequencies and smear stereo imaging. Operations are carried out in real time, with a claimed accuracy of 1/200 of a sample (1/10,000,000 of a second). The company also announced installation of one of its restoration and production systems to Abbey Road Studios, which will use the system's noise reduction capabilities for in-house (EMI) and outside client productions.





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## SPLICES

Klarity Kasette, which claims to be the largest real-time duplication facility on the East Coast, has expanded into high-speed duplication. The company added Electro Sound Model 4800 slaves and a Model 8000 master bin to its Waterville, ME, facility...Nashville-based duplicator Sound Impressions installed a DAAD digital bin from Concept Designs...Disc Makers (Philadelphia) extended its seven-day Express Cassette offer. The program combines one-stop graphic design, printing, duplication and packaging services with a fast turnaround. The company also offers duplication clients additional services such as press kits, ad design and promotional items such as T-shirts and posters...Music Annex Duplication of Fremont, CA, opened a Southern California sales office in Mission Hills, staffed by Kathy Fry...Joe Gastwirt mastered a "Jimi Hendrix home demo tape" at Ocean View Digital Mastering in Los Angeles. Work is also underway at the facility on the forthcoming Grateful Dead release *From the Vault, Vol. 2*...Barry Diament Audio in Riverdale, NY, reports mastering a new Of Cabbages and Kings project for Triple X, and a new Killers CD for BMG...Absolute Audio (New York City) mastered Grand Master Slice and Millie Jackson for Jive, and The Africans for Island...Pioneer signed two agreements with EMI-related labels for the distribution of Laserdisc music videos. A three-year arrangement with EMI Classics (Angel Records) provides for the release of at least ten classical titles per year. A parallel agreement with Capitol Records calls for the release of selected pop and rock titles for a term extending into 1994. ■

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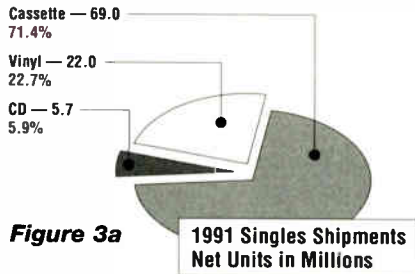
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### TAPE & DISC

—FROM PAGE 131, RIAA REPORT

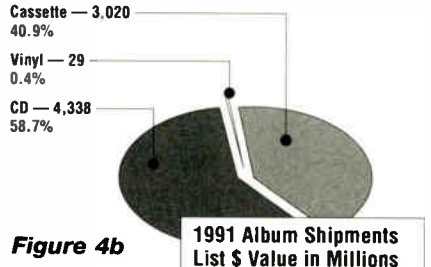
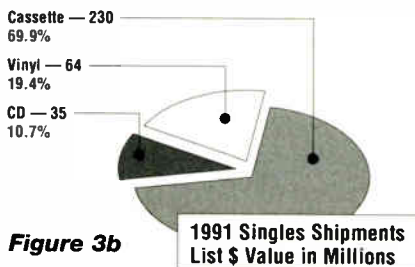
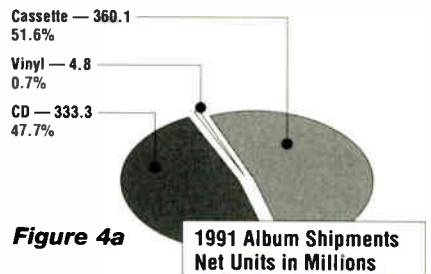
the performance of the economy as a whole, the major labels appear to have done pretty well.

At the same time, the report shows that net shipments (units shipped, less returns) fell from 865 million in 1990 to 801 million in 1991, a drop of 7.47% (Fig. 1a). The decline, which follows four



### Factors in Unit Decline

It's doubtful that any single reason fully explains the apparent downturn in the popularity of the prerecorded music cassette. One might think that the recession would have influenced price-conscious music buyers to choose cassettes over CDs. But the RIAA's Berman, quoted in *Billboard*, offered a different assessment of the effect of the



consecutive years of increases, returns net shipments to 1989 levels.

This simultaneous rise in value and drop in units makes sense when comparing the performance of the two main configurations. Counting both albums and singles, the market for cassettes was 100 million units smaller than in 1990, a 19% decline (Fig. 2a). Cassette is still the dominant configuration, especially in the singles market, where it accounted for 71% of the 97 million units shipped (Fig. 3a). But in the album market (698 million units), cassettes and CDs were nearly equal for the year, with shares of 52% and 48% respectively (Fig. 4a).

So how was the value of the overall market sustained in spite of the steep drop in cassettes? CD shipments jumped 18% to 330 million units. That gain of 51 million did not, in unit terms, offset the loss of cassettes. But since the list price of CD albums averaged nearly \$5 more per unit than cassettes (Fig. 5), record company revenues grew even as the volume of overall shipments fell. The list value of CD album shipments exceeded that of cassettes by 56% to 42%.

slowdown. "The recession took its toll on those people at the lowest end of the economic spectrum," he said. "They are the cassette buyers."

Is Berman applying class analysis to the music market? Given the humble roots of popular music, there's no little irony in the notion that only the affluent are able to keep buying it. It makes sense that CD sales were sustained by the comfortable, while the "financially impaired" were forced to cut back on prerecorded cassettes. But there may be more to the story than that.

Now that CD players have reached a respectable level of penetration (the Electronics Industries Association reports that 35% of U.S. households have one), most people probably have access to a system on which they can record cassettes from CDs. As money got tighter, more cassette users may have turned to home taping as a low-cost alternative to prerecorded tapes. Estimates from the EIA suggest that blank audio cassette sales avoided the drop that hit prerecorded cassettes, holding steady at about 425 million units.

Another possibility is that portable-

type CD players have become common enough that the CD has begun to displace the cassette in some of its traditional strongholds like boom boxes and Walkman-type "personal portables." It's not easy to verify this hypothesis, since the EIA does not break out portable CD players in its figures. But it does seem as if there are a lot more of those portable CD players around now than there were a couple of years ago.

### Singles Market

Tied to the overall drop in cassettes in 1991 was a substantial softening of the market for singles. While album units

1991 Average List Price

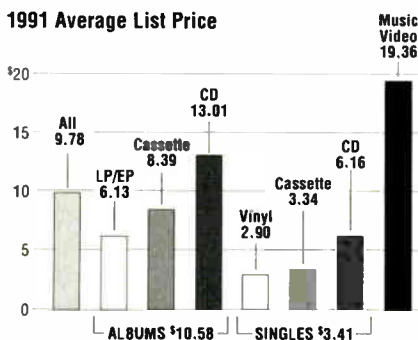


Figure 5

declined 6%, singles fell 17%. Cassettes make up the bulk of this market, and they took the brunt of the loss.

CD singles, on the other hand, showed unexpected strength after barely limping along since their introduction in 1988. CD single shipments shot up an astounding 418%. The gain wasn't enough to prevent an 8% decline in the overall value of the singles market, however, because the configuration still accounts for only 6% of units, and was outsold not only by cassettes, but by vinyl singles as well.

Oddly enough, the drop in vinyl singles was slightly less than that for cassette singles, which had been growing steadily since debuting in 1987. Vinyl singles also continued to outperform vinyl albums, of which a mere 5 million units were shipped. That's less than any other format listed by the RIAA, including music videos, which the group began counting in 1989.

Aside from the distinction of having surpassed LPs, however, 1991 was not a stellar year for music video. Net shipments declined 34% for the year. That's a disappointing showing for a format that jumped 53% in 1990 over 1989. To make matters worse, the whole-year

—CONTINUED ON PAGE 176

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## L.A. GRAPEVINE

by Amy Ziffer

Finally...the scoop on Cherokee/Lion Share that I promised two months ago. After Lion Share's closure in December, Cherokee purchased the assets and began operating the facility as a satellite while working out a new lease agreement. L.A. real estate being what it is, that fell through, and Cherokee opted to vacate the premises. In March, the equipment was pulled out and put into storage. (It's pretty sad to think of Lion Share reduced to four warehouses worth of gear.)

Since late last year, Cherokee has had a new, silent partner, whose participation made possible the Lion Share purchase and the tentative launch of a new line of equipment. "We're getting into several businesses," says co-owner Bruce Robb. "We've been working on our own automation system for years. I think the days of studios being able to sustain themselves solely with recording are passing very quickly." A prototype of Cherokee Automated Research's system will be installed in Studio 3 in a few weeks.

Robb says Cherokee may be building more rooms on the Fairfax property and is also seeking another facility to house Lion Share's assets. He thinks the smaller facilities are doomed, saying, "We feel the way to go is volume." This is definitely a story I'll be following.

Amigo's John Stanley hasn't been sitting on his hands since the closure. "When it came to an

—CONTINUED ON PAGE 140

## NASHVILLE SKYLINE

by Dan Daley

Denny Purcell of Georgetown Masters recently gave me a private peek at a new bit-compression system developed at Georgetown. Devised by longtime colleague Rick McCollister, the Exart system can store 20-bit digital audio on off-the-shelf 16-bit media and systems. The Extended Audio Resolution Transcoder, when paired with the Drake A-to-D converters, converts 20-bit data in real time for storage and retrieval on current 16-bit decks, such as Sony 1630s.

At The Money Pit, engineer/producer Ed Seay, who was the first to use the Exart (on a new Martina McBride record for BMG), did a blind A-B demo of the system through the Trident Series 80 bus and through the 2-track return. While Seay notes that the effect was subtle, there was a definite sense that the Exart's output was closer in sonic accuracy to what passed originally through the console. Seay also says that the system provides a better-imaged stereo spread because each individual instrument has that much more resolution. Purcell and McCollister have no present marketing plans for the system, which remains in prototype stage at this writing. Purcell did estimate, however, that the system, which took a year and about \$1 million to develop, could be retailed for \$4,000 per unit.

Despite the proliferation of digital in Nashville, it's still an analog town at heart, and Woodland Digital did some exploratory surgery in preparing for the new Take 6 album recorded there this spring. Studio manager Jake Niceley and Take 6 set up a shoot-out between

—CONTINUED ON PAGE 139

## NEW ORLEANS GUMBO

by Jeff Forlenza

The big bass drum leads the marching band and all those dancing along behind them—the second liners—as they parade through the French Quarter. Live music spills into the streets everywhere you go in New Orleans—dixieland, blues, rock 'n' roll, R&B, jazz, Cajun, zydeco—swirling in a syncopated gumbo as thick as the muddy Mississippi River.

We traveled to N'awlins during Mardi



PHOTO: PAT KANCHICK

**Ultrasonic owner Jay Gallagher (L) and Aaron Neville display the Gold Record that Neville received for *Warm Your Heart*, which was partially recorded at the studio.**

Gras to check in with some studios and to get a piece of king cake.

At The New Orleans Recording Company in nearby Metairie, LA, owner/chief engineer Steve Himmelfarb has been busy since he took over the former Southlake studio. The Smithereens came in with producer Ralph Stall to cut a song for the film *Encino Man*, while Himmelfarb recorded a Cajun version of The Police's "Every Breath You Take" with Beausoleil for Disney Productions' *Betty Lou's Got a Gum in Her Handbag*. Also,

# C O A S T

John Mooney recorded and mixed his album, *Testimony*, with Rob Fraboni for Domino Records, and Cyril Neville and the Uptown Allstars were working on an album for Cyril's Endangered Species label.

Out by Xavier University on Washington Avenue is Ultrasonic Studios, owned by Jay Gallagher. This is where Robbie Robertson recorded guest musicians Bruce Hornsby, Art Neville and George Porter for his *Storyville* album. Now they've opened Studio C, a Pro Tools digital editing room used primarily for advertising, music production and album sequencing. Recent projects from the Sony/MCI facility included Fats Domino working with engineer Steve Reynolds on a Christmas album and chief engineer David Farrell tracking the Rebirth Brass Band with producer Ron Levy for Rounder Records.

Sea-Saint, the famous studio under the direction of Marshall Sehorn and Allen Toussaint, is still alive and kicking on Clematis Avenue. Their equipment list includes a Harrison 3232 console, a 32-track Studer recorder and an Akai DD1000 digital editor. While Toussaint has been in New York working on a play called *High Rollers*, engineer Roger Branch reports The Ravellers, an alternative band from North Carolina, came in to record; and

**On Mardi Gras Day, St. Charles Ave.**

producer Carlo Ditta brought in the Roland Stone Group, with Dr. John providing keyboards and guitar.

If you travel 90 minutes from the Crescent City to the heart of Cajun



**(LtoR) John Mooney, Tommy Malone (of The subdudes) and Dr. John at Steve Himelfarb's New Orleans Recording Company.**

country, you'll find Dockside Studio set on a sprawling plantation in Milton, LA. Steve Nails, former guitarist for the band Bamboo, owns and operates Dockside with his wife, Cezanne. Nails was paralyzed in an auto accident in 1984 and now conducts business from his motorized wheelchair. Equipment includes an automated Soundcraft console controlled by a Mac II, a Studer A820 24-track and a fully equipped MIDI production studio. A recent

—CONTINUED ON PAGE 138

## N.Y. METRO REPORT

**by Dan Daley**

The year-old relationship between Pyramid Recording (a two-room facility in midtown) and producer/mixer Arthur Baker is drawing to a close. Baker is moving to his own digs, recently completed in New Jersey. Pyramid owner Todd Hemleb would not comment on the nature of the parting, though he did say that such symbiotic relationships between equipment owners in need of space and studio owners in need of equipment is becoming more common in the area, working out to everyone's advantage provided terms are agreed upon in advance.

"I don't have to amortize equipment costs, and I can put my money and time into the physical facility," Hemleb explains. "The MIDI revolution started it, and it's simply moved up into higher-level gear. As the industry changes, the types of business relationships within it change." Hemleb says he would definitely go that route again and is currently looking for a new equipment relationship for the

—CONTINUED ON PAGE 141



PHOTO: JEFF FORLENZA

—FROM PAGE 137, NEW ORLEANS GUMBO

project at Dockside was Mamou's *Ugly Day*—it's rocking zydeco-fusion based on a Mardi Gras tradition of roasting a pig, and all the pomp that goes along with that tradition.

At the foot of the French Quarter on



PHOTO: PETER PIAZZA

Steve Nails in Dockside Studios.

Canal Street is Studio 13. Studio president Rennie Flettrich explains that the 13th floor of the Maïsson Blanche building used to be a radio station, and these days bands record in the former offices of the station. Studio 13 equipment includes a Studiomaster console and an Akai 12-track. Flettrich says that they mostly do demo work—Johnny J. and the Hitmen, Black Piranha, Dead Eye Dick and others. Most of the time, Flettrich records straight to DAT. Studio 13 partner Matt Buras is a MIDI specialist and produces rap acts such as Full Pack, who recently signed with Luther Campbell's label.

Take a one-hour drive north from New Orleans to Bogalusa, LA, and you'll find Studio in the Country. The

Westlake-designed facility features a Neve V3 with Flying Faders and 48 tracks of Studer. Owner Gene Foster reports former-Nevilles guitarist Brian Stoltz's *Big Deep*—featuring former-Nevilles bassist Darryl Johnson—recorded a new project for RCA with engineer Gary Langan (engineer of Yes's *90125*). From Tokyo, The Privates did a project for Toshiba/EMI, with Foster engineering. Trent Reznor from Nine Inches Nails (who recently moved to New Orleans) did Queen remixes.

Out in Lake Charles, LA (the town made famous by The Band's "Up on Cripple Creek"). EMF Productions had Lester Chambers (of the Chambers Brothers) in with EMF owner/producer Ed Fruge and engineer Brent Flash as they worked on a project for Island Records.

A Mardi Gras treat: We ran into Peter Buck of R.E.M. at Tipitina's one night. He told us they were working on demos for their next album with producer Scott Litt at Daniel Lanois's studio before they headed up north to Bearsville Studio in Woodstock, NY. ■

## SESSIONS & STUDIO NEWS

### SOUTHEAST

Vince Gill was at Sound Stage Studio (Nashville) recording his latest MCA release with producer Tony Brown and engineer John Guess...Warrant were at Morrisound Recording (Tampa, FL) tracking their next Sony Music

release with producer Michael Wagener and engineer Jim Morris...Producer Rodney Mills (Gregg Allman, *.38 Special*) was at Southern Tracks Studios (Atlanta) recording demos for singer/guitarist Tony Sarno, with Tag George assisting...

### SOUTHERN CALIFORNIA

Faith No More were at Scream Studios (Studio City) mixing their latest release for Slash/Warner Bros. Matt Wallace produced and engineered with engineer David Bryson and assistant Craig Doubet...Def Leppard mixed their new album with producer "Mutt" Lange and engineer Mike Shipley at Skip Saylor Recording (L.A.)...Jimmy Jam and Terry Lewis were at Aire L.A. Studios (Glendale) producing cuts for the film *Mo' Money*. Luther Vandross, Ralph Tresvant and Karyn White were all cutting vocals for the film soundtrack with engineer Dave Rideau and assistant Mike Scotella...

### NORTHWEST

Monster Music recording artists The Looters recorded their new album, *Imago Mundi*, at Kommotion Studios in San Francisco. Guitarist/songwriter/singer Mat Callahan produced and Fred Cirillo engineered. The Tower of Power horn section will be featured on several cuts...Oaktown natives En Vogue were at Spark Productions (Oakland, CA) cutting tracks for a new album with engineer Tony Mills and producer Burke Treischmann...Geffen act The Posies were rocking with engineer Adam Kaspat up at Ironwood Studios in Seattle...

### SOUTHWEST

In Houston, Studio West owner/engineer J.R. Kuzniar reports the Top 40 band The Works completed an eight-song demo...Jerry Jeff Walker recorded and mixed an album at Cedar Creek Studios (Austin) with engineer Fred Remmert and producer Lloyd Maines; and NYC's King Missile worked with engineer Tim Dittmar...From the Big Island of Hawaii, Sea-West Studios (Pahoa) reports producer Rick Asher Keefer mixed the debut CD from Columbia act Children of the Revolution...

### NORTHEAST

Run-DMC were at Rawlston Recording (Brooklyn) laying down tracks for their new Profile Records release. Larry Smith and Jam Master Jay produced, with Akili Walker and George Walker at the

### Southeast Studio Spotlight:

## South Beach Studios

*Mix* was at the opening night soiree of South Beach Studios in Miami Beach. Primary owner is Chris Blackwell, founder and CEO of Island Records. South Beach is located in the Marlin Hotel, also owned and refurbished by Blackwell. The room is designed as primarily a mix facility, with limited overdub capability, according to Joe Galdo, the project's supervisor and main operational guru.

"It was meant to be a comfortable place, and I think we succeeded," says Galdo. Among the first projects slated were the Happy Mondays with producers Chris Franz and Tina Weymouth of the Talking Heads.

—Dan Daley



PHOTO: MARK DIAMOND

The exterior of the luxurious Marlin Hotel in Miami Beach where South Beach Studios is located.

board...Luna, an alternative band with former members of Galaxie 500, The Chills and The Feelies, recorded at NYC's RPM Studios with producer Fred Maher (who produced Lou Reed's *New York*)... At Manhattan's Eastside Sound, Hal Wilner was working on a Charles Mingus tribute album featuring Keith Richards, Charlie Watts, Dr. John, Elvis Costello and Vernon Reed. Joe Feria and Kim Yano engineered the session for Sony/CBS...

#### NORTH CENTRAL

At Smart Studios in Madison, WI, up-and-coming engineer/producer Butch Vig worked on a couple projects: Frontier Records artist Young Fresh Fellows recorded "Electric Bird Digest," with Vig and Doug Olson sharing production and engineering credits; L7 recorded *Bricks are Heavy* for Slash/Warner; and then Vig teamed up with Smashing Pumpkins to record a song for a film soundtrack...

#### STUDIO NEWS

In Spicewood, TX, Pedernales "Cut 'N Putt" Studio has renovated and re-equipped with Tascam analog and digital equipment: an M-700 40-input console, along with the DA-800 digital and ATR-80 analog recorders were added. Pedernales is where Willie Nelson cut many of his hits. The studio is in the center of a championship golf course, on a bluff overlooking the Pedernales River. ■

FROM PAGE 136, NASHVILLE SKYLINE

the hot, new analog formulations from Ampex and 3M, and used BASF 468 as a reference. Niceley spliced one minute each of Ampex 499, 3M 996 and BASF tape onto a single reel, then, using the Otari MTR-100's auto-alignment capability, set up a button push to match each manufacturer's specifications. The tapes were sent through channels with a combination of three different bias (+1.6, +1.8 and +2 dB) and level (+3, +6 and +9 dB) settings.

Both the Ampex and 3M tapes performed best when overbiased at 1.8 and referenced at +3/250 @ 30 ips. Niceley found that as level was increased, the high end became duller. "They both sounded like they were going into tape compression earlier," he explains. The final choice was 499, he says, with Take 6 deciding that once the tape hit its distortion point, it remained more musical-sounding. "They wanted to see what would work



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kind of thing.”

Television monitors provide three views of the inside of the venue. The largest is dedicated to broadcast signal. A smaller one gives Lee a continuous wide-angle view of the stage, so he can see artists coming on or going off. And a third one is always fixed on Bill Conti.

In stark contrast to the limited visual contact, Lee is bombarded with voices coming out of P.L. (Push and Listen) boxes lined up atop the patch bay, as well as a pair of Anchor speakers under the console, to which he must be attuned even while mixing. One of the Anchors is dedicated to a mic next to Bill Conti; it's on at all times and is for private communication. (The P.L. boxes are broadcast devices, and anyone with a receiver can tune in.) The other Anchor is a feed from the Greene/Crowe truck with all the audio elements *except* the orchestra, which acts as his cue to the action inside.

On one or another channel of five different P.L. boxes, Lee can talk or listen to the following: two Design FX staff members in the pit; the director and assistant director; conductor Bill Conti; the producer; the stage managers; production mixer Paul Sandweiss; the P.A. mixer, Patrick Baltzell; and the monitor mixer, Mike Abbott.

*2:30 p.m. There's a break, and I get a tour of the pit from Zoli.*

The pit is 47 feet wide and 19 feet deep at the center, tapering to 15 feet at either end. At the lowest point, there is seven feet of headroom. Because not every musician has a direct line of sight to the conductor, pairs of video monitors are scattered about, positioned to give everyone a view of both Conti and the broadcast signal. Conti himself has a trio of monitors with the same feeds Lee has in the truck. There is barely enough room for two people to pass between the rows of chairs.

With 45 open microphones in a space this small, “the sound almost mixes itself,” according to Zoli. “It's not true stereo; we don't have the luxury of using a couple of overheads and having individual mics flesh things out. Everything must be miked individually, and we have to rely a lot on the foldback and P.A. mixers not to overdrive their systems.” If they do, the sound will be picked up by the mics in the pit and will muddy the music mix or create feedback loops. This is especially critical because most of the mics are condensers.

Lee calls the Dorothy Chandler Pa-

vilion, with its 2,500 seats and three balconies, a “good-sounding house,” a “polite” room. “You don't need a lot of sound reinforcement,” he says. “Strings and woodwinds need the most help. The drums practically carry themselves; the P.A. mixer may have to reach for them just a little.”

There has to be some compromise to the house sound to enable the broadcast quality to be tops. “You have 2,500 people in the house,” Lee says, “and a billion people watching. When you weigh those two, the television audience wins. So you make little deals with the P.A. mixer: ‘I'll give you more snare in the premix if you'll bring your overall down.’”

*3:45 p.m. With the rehearsal over, Lee is not happy. “Bad rehearsal, good show,” he says to anyone who asks how things are going. While everyone else goes off to find food, Lee won't be eating; one year he got food poisoning and had to work throwing up into a wastebasket. The next two hours are a waiting game. Just before 5:30, Design FX's maintenance technician Jack Crymes and Mark Eshelman do a last check of the mics. Everything is working. About the same time, almost everyone who's been slouching around the truck all afternoon in jeans and T-shirts disappears, only to return clad in tuxedos. Lee has apparently changed, too, then I see he's still wearing leather pants.*

“No matter how much preparation we do,” Lee sighs, “after the musicians come back from dinner, everything is different. And once they start, we have only eight minutes and 59 seconds—the length of the overture—to fix it.”

During the last 20 minutes, the air in the truck takes on a definite charge. At 5:51, Bill Conti raises his baton, and Lee turns and says with a completely straight face, “I've just forgotten the entire show.” He lets out a primal scream, and the orchestra begins. Almost immediately, there is a sound of rustling fabric and whispering. Lee grabs a P.L. box and asks someone in the pit to remind the singers that their every movement can be heard through their open mic. Things settle down, and Lee slowly begins dancing in his seat. By air time, he's already in a groove.

The show is much funnier behind the scenes than viewers ever see. Minor mistakes and surprises happen constantly, and every time one does, the P.L. boxes explode with screaming voices. Everyone gasps. “What's he

doing?” when Best Supporting Actor winner Jack Palance unexpectedly moves off mic and commences doing push-ups. When 100-year-old producing legend Hal Roach thanks the Academy from his seat and there is no mic to pick him up, everyone cheers Billy Crystal's clever save. Conti conducts furiously even during the prerecords, just in case someone turns a camera toward him.

Diplomacy is invaluable during rehearsal, but there's rarely time for it during the show. Everyone has to be able to take their lumps and correct the problem *fast*. “The only people with thin skins are those who don't know what they're doing,” Lee says. “Everyone else knows that you mess up all day long. You're not supposed to, of course, but if you do, you have to be smart enough to keep moving and not panic.”

But nothing happens this year to cause panic. Except for a small problem with a pumping limiter down the line near the start of the show, it's relatively uneventful. The hours fly by. Occasionally Lee checks the time; he's got five dollars in the orchestra pool riding on the length of the show. By the midway point, it's obvious that everything's under control and will likely stay that way.

*10:33 p.m. Show's over. As Academy members filter out the front doors of the Pavilion toward a reception tent pitched outdoors where dinner awaits, Lee makes his way to the pit. The Design FX staff is already starting to break down.*

“Time to bond with the orchestra,” he explains. “I really do love them. I fawn over them. I've been accepted by them in a relatively short time—four years—and the only reason is because I care about them. They would never screw me, and I would never screw them.”

It's a good thing, too, because with a billion people listening, they'd all look pretty silly. In a lot of ways, that seems to be the key to the whole thing: a little give and take, a little consideration for the next guy, and the teamwork necessary to pull off such a demanding production will happen.

Lee is elated, and with good reason. He's pulled it off again. He's calmer than he was that first year, but mixing the music for the Academy Awards is still the thrill of a lifetime. ■

*Amy Ziffer is the Mix Los Angeles editor.*



# Southeast Studios

Information in the following directory section is based on listing applications 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.



Criteria Recording Studios in Miami, which celebrates its 35th anniversary this year, unveiled its newly renovated Studio A. Pictured is the George Augspurger-designed control room featuring a vintage Neve 8078, a Studer A827 24-track and the new Formula Sound cue system. The live studio room measures 53'x46' and can handle up to 80 musicians. **Photo:** Andrew Duany.

## CONTENTS

145	LOCATION INDEX
147	24 TRACK
165	12 & 16 TRACK
167	2, 4 & 8 TRACK

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- A03  24 + Tracks
- A04  Digital Recording
- A05  Remote Truck
- A06  MIDI/Music Production

**SOUND REINFORCEMENT**

- B08  Sound Reinforcement

**VIDEO/FILM**

- C10  Production Company
- C11  Post-Production Company
- C12  Remote Truck
- C13  Multi-Image Production
- C14  Videotape Duplication

**EQUIPMENT MANUFACTURING**

- D17  Audio
- D18  Music
- D19  Video

**DUPLICATION/DISC MFG.**

- E20  CD Manufacturing
- E21  Tape Duplication
- E22  Mastering Only
- E23  Other (please specify)

**ACOUSTICS/DESIGN CONSULTANT**

- F26  Acoustics/Design Consultant

**SOUND/VIDEO CONTRACTOR**

- F27  Sound/Video Contractor

**BROADCAST PRODUCTION**

- G30  Radio Station
- G31  TV Station
- G32  Other (please specify)

**MEDIA**

- H35  Ad Agency/PR Firm
- H36  Magazines/Newspapers/Books

**RECORD COMPANY**

- J39  Record Company

**INDEPENDENTS**

- K42  Audio Producer
- K43  Audio Engineer/Technician
- K44  Video Producer/Director
- K45  Video Editor/Technician

**EDUCATIONAL/INSTITUTIONAL**

- L47  Corporate Facility
- L48  Music/Recording/School/Program
- L49  Trade Association
- L50  Government

**RETAIL/RENTAL/MFRS.REP**

- M51  Audio/Music
- M52  Video/Film
- M53  Rep/Sales

**MUSICIAN/ARTIST/COMPOSER**

- N55  Musician/Artist/Composer

**INDUSTRY-RELATED**

- N56  Artist Management/Booking
- N57  Music Publisher
- N58  Student
- N59  Other (please specify)

**3. Please check ONE category that best describes your JOB TITLE:**

- A.  Corporate Management- President, owner, other manager, etc.
- B.  Technical & Engineering- Engineer, editor, design engineer, etc.
- C.  Production & Direction- Producer, director, etc.
- D.  Sales & Administration- Sales representative, account executive, etc.
- E.  Other ( please specify)

2. Please enter ONE number code from above that best indicates your MAIN business activity:

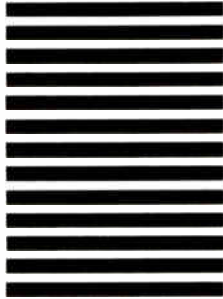
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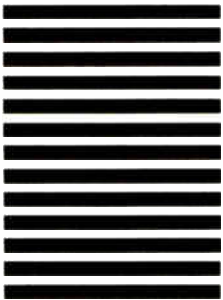
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# Southeast

## Location Index



### ALABAMA

#### Birmingham

- 24 Bates Brothers Recording ..... 147
- 16 M.A. Benington Co. .... 165
- 24 Boutwell Recording Studios Inc. .... 148
- 8 Polymusic Studios Inc. .... 167
- 24 Sound of Birmingham Productions ..... 160
- 16 Studio 6/Persuasive Media ..... 165

#### Florence

- 16 University of North Alabama ..... 166

#### Greenville

- 4 Ridge Recording Studios ..... 167

#### Town Creek

- 16 Birdland Recording Studios Inc. .... 165

### FLORIDA

#### Altamonte Springs

- 24 Wolf's Head Productions ..... 164

#### Boca Raton

- 8 Electric Chickenland Mobile and Studio Recording ..... 167

#### Cape Canaveral

- 16 Communications Concepts Inc. (CCI) ..... 165

#### Clearwater

- 24 Charco Studios ..... 149

#### Coral Gables

- 24 Midland Recording Studios ..... 156

#### Fern Park

- 24 YRS Multimedia ..... 164

#### Fort Lauderdale

- 24 New River Studios Inc. .... 157

#### Fort Myers

- 24 SoundCheck Studios Inc. .... 160

- 16 Unity Gain Recording Studio ..... 165

#### Gainesville

- 24 Mirror Image Sound & Recording Inc. .... 156

#### Holly Hill

- 24 Reel Time Recording Inc. .... 159

#### Jacksonville

- 24 The Warehouse Studio ..... 163

#### Jupiter

- 24 Echo Beach Studios ..... 153

#### Lake City

- 16 Starlight Studios ..... 165

#### Marathon Shores

- 8 Radio Active Productions Recording ..... 167

#### Marco Island

- 24 Morningstar Recording Studio ..... 156

#### Merritt Island

- 24 Cornerstone Studio ..... 151

#### Miami

- 24 Criteria Recording Studios ..... 151

- 24 Gong Sounds Recording Studio ..... 154

- 16 Pine Grove Studio ..... 165

- 24 Studio Center ..... 162

#### Miami Beach

- 24 South Beach Studios ..... 160

#### Miramar

- 16 Metanoia Inc. .... 165

- 24 Palm Beach Digital ..... 158

#### Oldsmar

- 16 Mark C. Guthrie & Associates ..... 165

#### Orlando

- 24 Lone Pine Recording Studios ..... 155

#### Pompano Beach

- 8 Josh Noland Music Studio ..... 167

#### Riviera Beach

- 24 Palm Beach Sound & Synthesis Inc. .... 158

#### Sarasota

- 8 RCS Productions ..... 167

#### Tallahassee

- 8 Public Display of Affection Productions ..... 167

#### Tampa

- 24 Axiom Recorders ..... 147

- 8 Bay Sound Productions ..... 167

- 24 Morrisound Recording Inc. .... 156

- 16 Progressive Music Studios ..... 165

- 24 Westend Recording ..... 163

#### West Palm Beach

- 24 Saturn Sound Studios Inc. .... 159

#### Winter Park

- 24 Platinum Post/Full Sail Recorders Inc. .... 158

### GEORGIA

#### Athens

- 24 Sound Gallery ..... 160

#### Atlanta

- 24 Audio Production Center (APC) ..... 147

- 24 Bosstown Recording Studios ..... 148

- 24 Catspaw Studios ..... 148

- 24 Crawford Post Production Inc. .... 151

- 24 Crosstown Audio ..... 151

- 24 Doppler Studios ..... 153

- 24 Musiplex ..... 157

- 24 Oliverio Music Inc. (OMI Studios) ..... 157

- 4 Project 70 Audio Services Inc. .... 167

- 24 Southern Tracks Recording ..... 161

- 24 "Southern Living At Its Finest" ..... 161

- 24 Triclops Sound Studio ..... 163

#### Augusta

- 24 Studio South Recording ..... 162

#### Chamblee

- 24 Exocet Studios ..... 153

#### Columbus

- 16 Mr. O Audio ..... 165

#### Covington

- 24 "The Peach" Recording Studio ..... 158

#### Lawrenceville

- 16 Oracle Recording Studio ..... 165

#### Lithia Springs

- 16 Easy Recording Inc. .... 165

#### Macon

- 16 Muscadine Recording Studios ..... 165

#### Marietta

- 24 Allgood Productions ..... 147

#### Smyrna

- 24 The Midi Twin Recording Studio ..... 156

- 24 Twelve Oaks Recording Studios ..... 133

#### Stone Mountain

- 16 R.W. Studio ..... 165

#### Woodstock

- 16 EZ Recording & Productions ..... 165

### KENTUCKY

#### Ashland

- 24 LMR Productions Inc. .... 154

#### Louisville

- 24 Allen-Martin Productions Inc. .... 147

### LOUISIANA

#### Baton Rouge

- 16 Bayou Breeze Productions ..... 165

#### Bogalusa

- 24 Studio in the Country ..... 152

#### Kenner

- 16 Festival Recording Studios ..... 165

#### Lake Charles

- 24 EMF Productions ..... 153

#### Metairie

- 24 New Orleans Recording Company .. 157

#### Milton

- 24 Dockside Studio ..... 152

**New Orleans**

24 Dinosaur Productions Studio and Production Company ..... 152

16 Loyola University Recording Studio ..... 165

24 Ultrasonic Studios ..... 163

**Opelousas**

24 Little Jabot Recording Studio ..... 154

**Shreveport**

24 Night Wing Recording Complex ..... 157

**Sidell**

24 Alien Sound ..... 147

**West Monroe**

24 JY Recording and Sound ..... 154

**MISSISSIPPI**

**Jackson**

16 Fernandez Creative Services ..... 165

**Natchez**

8 Sharp Recording Studio ..... 167

**NORTH CAROLINA**

**Asheville**

16 Whitewater Recording Studios/ Cassette Duplication ..... 166

**Carrboro**

16 Lloyd Street Studios Ltd. .... 165

**Charlotte**

24 Jay Howard Production Audio Inc. .. 154

24 Reflection Sound Studios (see also Studio B) ..... 159

24 Studio B Productions (see also Reflection Sound Studios) ..... 161

24 StudioEast Recording Studio ..... 162

**Greensboro**

24 Acoustic Creations Recording Studio ..... 147

24 Sound Lab Inc. .... 160

**Hickory**

24 Hix Studios ..... 154

**Kernersville**

2 New Moon Productions ..... 167

**Pineville**

24 Sound Source Recording Studios ... 160

**Southern Pines**

8 Offbeat Studio ..... 167

**PUERTO RICO**

**Rio Piedras**

24 Melody Recording ..... 156

**SOUTH CAROLINA**

**Easley**

16 Southeastern Sound Studio ..... 165

**Hilton Head**

8 Mookieville Studios ..... 167

**Myrtle Beach**

16 Cherry Grove Studio ..... 165

**Williston**

8 Track One Studios ..... 167

**TENNESSEE**

**Chattanooga**

24 Pyramid Recording ..... 158

**Franklin**

24 The Bennett House Inc. .... 147

24 The Castle Recording Studio ..... 148

24 Franklin Institute of Recording Sound Technology ..... 154

**Hendersonville**

24 English Valley Music ..... 153

24 Music City MIDI ..... 157

**Knoxville**

24 Cinetel Productions ..... 149

**Memphis**

24 Ardent Recordings ..... 147

24 Commercial Music Recording Complex ..... 150

24 Kiva Recording Studio ..... 154

16 Mileage Studio ..... 165

24 New Memphis Music/Cotton Row Recording ..... 157

16 Rockingchair Studios ..... 165

24 Sounds Unreel Studios ..... 160

24 The Warehouse Studio ..... 163

**Monteagle**

24 Plateau Productions ..... 158

**Murfreesboro**

16 Aural Canvas ..... 165

**Nashville**

24 Bradley's Barn Inc. .... 148

8 Brantley Sound Associates Inc. .... 167

24 Digital Associates ..... 152

24 Eleven-Eleven Sound ..... 153

24 Emerald Sound Studios ..... 153

24 GHJ ..... 154

24 Groundstar Laboratory ..... 154

24 Hilltop Recording Studio ..... 154

24 Javelina Recording Studios ..... 154

24 The "Loft" Recording Studio/Warner Bros. Recorders ..... 155

24 Masterfonics ..... 155

24 MasterLink Studios I & II and Cassette Express ..... 155

24 The Money Pit ..... 156

24 Music City Audio Inc. .... 157

24 Music Mill ..... 157

24 Music Row Audio ..... 157

24 Oak Valley Sound Studio ..... 157

24 OmniSound Recording Studio ..... 158

24 Recording Arts ..... 158

16 Redwood Recording ..... 165

24 The Reflections Recording Studios ..... 159

24 Scene Three ..... 159

24 Scruggs Sound Studio ..... 159

24 Sixteenth Avenue Sound ..... 159

24 Sound Emporium Studios ..... 160

24 Sound Stage Studio ..... 160

24 Soundshop Recording Studios Inc. .... 160

16 Spotland Productions ..... 165

24 Studio 19 ..... 162

24 Suite 2000 ..... 162

24 Syncro Sound Studio ..... 162

24 Treasure Isle Recorders ..... 162

24 Westpark Sound/Westpark Creative Group Inc. .... 163

**Paris**

24 Clifty Studios ..... 150

**VIRGINIA**

**Alexandria**

24 New Arts Club Recording Inc. .... 157

**Arlington**

8 Posh Recording ..... 167

**Chantilly**

16 Goldreef Studios ..... 165

**Charlottesville**

24 Virginia Arts Recording ..... 163

**Chesapeake**

16 Woodhouse Recording ..... 166

**Danville**

16 Dan-Sing Recording Studio ..... 165

**Fairfax**

24 Walton Recording Inc. .... 163

**Falls Church**

24 Cue Recording Ltd. .... 151

**Fredericksburg**

24 Wally Cleaver's Recording ..... 149

16 Wally Cleaver's Recording ..... 165

**Harrisonburg**

24 Alive Studios ..... 147

**Leesburg**

8 Sound Plus ..... 167

**Manassas**

8 Sounds, Reasonable! ..... 167

**Merrifield**

2 The Sound Category ..... 167

**Richmond**

16 In Your Ear ..... 165

16 Studio Nico ..... 165

**Springfield**

24 Bias Recording Company Inc. .... 147

**Virginia Beach**

24 Master Sound Recording Studio ... 155

24 Windmark Recording ..... 164

**Yorktown**

4 MainStream Productions ..... 167

**WEST VIRGINIA**

**Huntington**

24 Chandler Audio Inc. .... 148

**South Charleston**

24 Triangle Audio Inc. .... 162

**OUTSIDE U.S.**

**Devonshire, Bermuda**

24 BermudaSound Recording Studios ..... 147

**Port of Spain, Trinidad**

24 Coral Sounds Studio ..... 150

**St. Philip, Barbados**

24 Bluewave Recording Studios ..... 148

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# Southeast

## 24-track studios



[24+] **ACOUSTIC CREATIONS RECORDING STUDIOS;** also REMOTE RECORDING; 4813 W. Wendover Ave.; Greensboro, NC 27410; (919) 632-1004. Owner: Kip Williams. Manager: Kip Williams.

[24+] **ALLGOOD PRODUCTIONS;** 1827 Powers Ferry Rd.; Powers Ridge, #15—Ste. 100; Marietta, GA 30067; (404) 956-7956. Owner: Toni Allgood. Manager: William Allgood.

[24+] **ALIEN SOUND;** also REMOTE RECORDING; PO Box 230; Slidell, LA 70459; (504) 646-2653; FAX: (504) 643-4859. Owner: Inter Muse Corp. Manager: S.M. Schneider.

[24+] **ALIVE STUDIOS;** 1251 Virginia Ave.; Harrisonburg, VA 22801-2497; (703) 434-6703. Manager: Abe Rittenhouse.



**ALLEN-MARTIN PRODUCTIONS INC.**  
Louisville, KY

[24+] **ALLEN-MARTIN PRODUCTIONS INC.;** 9701 Taylorsville Rd.; Louisville, KY 40299; (502) 267-9656; FAX: (502) 267-9070. Owner: Bill Porter. Manager: Nick Stevens. Specialization & Credits: Audio Studio A: 24-track analog with full Mac-driven Synclavier system and tons of outboard sound

sources; Sony MXP-3036 44-input console fully automated to hard disk. Live room is 30'x40' x20' with Steinway concert grand piano and extensive mic collection, including vintage Telefunken, Neumanns and AKGs. Vintage tube processing gear. Complete video production and post-production facility including remote. Beta SP format (online) Grass Valley VPE-131 edit controller, Dubner 29K CG, Grass Valley DPM 700 DVE, and lock-up to 24-track audio studio. Audio-for-video including Foley, ADR, music, voice, SFX sweetening, 30x30x20 Cyclorama. Offline non-linear editing suite, digital FX and Mac Graphics. Staff specialist can assist in album production, pressing and duplication, music video production, film scoring, post scoring and mixing. Staff scriptwriters, songwriters and engineers. Jingle division's clients include: Coca-Cola Inc., AMC, Nationwide Insurance, Chevron, Valvoline, GE, Exxon, McDonald's, Wendy's, KFC.



**ARDENT RECORDINGS**  
Memphis, TN

[24+] **ARDENT RECORDINGS;** 2000 Madison Ave.; Memphis, TN 38104; (901) 725-0855; FAX: (901) 725-7011. Owner: John E. Fry. Manager: Kenneth Whitehead. Engineers: John Hampton, Joe Hardy, Jim Gaines, Tom Harding, Jeff Powell, Tom Laune. Dimensions: Room 1: studio 37'x25', control room 20'x24'. Room 2: studio 24'x17', control room 20'x25'. Room 3: studio 25'x35', control room 18'x25'. Mixing Consoles: Neve VR w/Flying Faders automation 48x48, Solid State Logic 6000E 44x32, Neve V Series w/Necam 96 automation 40x48. Audio Recorders: (2) Mitsubishi X-850 32-track digital, Mitsubishi X-800 32-track digital, (3) MCI JH-110 2-track. Echo, Reverb & Delay Systems: Eventide 3000 w/samples, Lexicon 224XL, Quantec, (6) Yamaha REV5, Publison

Infernal Machine, Lexicon Prime Time, (2) Eventide 949 Harmonizer, DeltaLab Effectron, ADR Scamp ADT, Marshall Time Modulator, (3) EMT, \*AMS RMX-16, \*AMS DMX-16, (3) live chambers. Other Outboard Equipment: (2) Fairchild Limiter, (2) UA 176 limiter, UA 1176, (4) dbx 160, (6) dbx 165, (3) Scamp Racks w/gate, compressor, de-esser, dynamic noise filter, auto panner, (2) Valley Intelligent de-esser, Garfield Master Beat and Zeta. Microphones: Neumann M249, Neumann U67, Neumann U87, Neumann KM86, B&K, Sanken, AKG C-422 stereo, AKG C-414, AKG C-451, AKG D-12; Crown PZM, Electro-Voice RE20; Sennheiser MD-421, Sennheiser MD-441, Shure SM81, Shure SM57, Beyer 201; also Sony and RCA. Monitor Amplifiers: BGW, Hafler. Monitor Speakers: Audicon, JBL 4350, KEF, Yamaha NS-10M, Auratone. Musical Instruments: \*Fairlight Series III, \*Yamaha DX7, \*Roland D-50, (2) \*Roland piano synthesizer, Minimoog w/MIDI, Moog Memorymoog, Steinway grand piano, Hammond M-3 organ, (2) Gretsch drum set. Video Equipment: Complete 1" videotape, Betacam SP, 16 and 35mm film production and editing. Other: \* Rental charges for these items. Rates: Available on request.

**Specialization & Credits:** Ardent Recordings Inc., the largest recording facility in Tennessee, was founded in 1966 by John E. Fry, who still serves as its president today. Originally located in northeast Memphis, Ardent moved to the current Madison Avenue address in 1971. The custom-built facility was designed from the outset to provide optimum efficiency for the operation of three complete and constantly updated recording studios. Clients include ZZ Top, R.E.M., Steve Earle, Primal Scream, John McVie, Robert Cray, Colin James, Nile Rodgers, Stevie Ray & Jimmie Vaughan, The Georgia Satellites, Kevin Paige, Tora Tora, The Fabulous Thunderbirds, The Replacements, Lynyrd Skynyrd, The Eric Gales Band, Gregg Brown, Travis Tritt, etc.

[24+] **AUDIO PRODUCTION CENTER (APC);** also REMOTE RECORDING; 3838 Oakcliff Industrial Ct.; Atlanta, GA 30340; (404) 242-7678; FAX: (404) 242-0278. Owner: Salvatore Nappo. Manager: Salvatore Nappo.

[24+] **AXIUM RECORDERS;** also REMOTE RECORDING; 2406 S. MacDill Ave.; Tampa, FL 33629; (813) 837-6384. Owner: Shaun Egger. Manager: Shaun Egger.

[24+] **BATES BROTHERS RECORDING;** also REMOTE RECORDING; 25 Joy Ave., Ste. #101; Birmingham, AL 35023; (205) 491-4066; FAX: (205) 491-7476. Owner: Eric Bates, Eugene Bates. Manager: Eugene Bates.

[24+] **THE BENNETT HOUSE INC.;** 134 4th Ave. N.; Franklin, TN 37064; (615) 790-8696; FAX: (615) 790-9034. Owner: Keith & Denise Thomas. Manager: Daryl Bush, Kathy Marshall, Todd Moore. Engineers: Independent engineers, Gene Eichelberger, Shawn McLean, Roy Gamble. Dimensions: Room 1: studio 22'x18', control room 20'x28'. House recording rooms: (3) 16'x20', 12' ceiling. Mixing Consoles: Trident A Range 28x24. Audio Recorders: (2) Otari MTR-90III 24-track, Ampex ATR-100 2-track 1/2", Sony PCM-3348 48-track. Cassette Recorders/Duplicators: Panasonic SV-3700 DAT, Studer A710, other cassette decks. Synchronization Systems: (3) TimeLine Lynx SMPTE time code module. Echo, Reverb & Delay Systems: EMT 250, (2) Lawson plate, Yamaha REV7, (3) Sony MUR-201, Lexicon 480L, Lexicon 300, Yamaha SPX900, Yamaha PCM42, Eventide 949. Other Outboard Equipment: (2) UREI 1176LN, (2) Teletronix LA-2A, (8) Kepex II gate, CD player, EQs, delays. Microphones: Neumann KM84, Neumann U47, Neumann U87, AKG D12, AKG C-414, AKG C-451, AKG C-224, Sanken CU32, Sanken CU41, AKG Tube, Shure SM57, Sennheiser 421, Crown PZM, Electro-Voice RE20, Sony ECM-50, Schoeps stereo CMTS-50L. Monitor Amplifiers: McIntosh 2300, Yamaha. Monitor Speakers: Tannoy System 10, Yamaha NS-10, Electro-Voice Sentry 100, Auratone. Musical Instruments: Baldwin 7' grand piano, Eddy Reynolds Fender Rhodes electric piano. Video Equipment: Sony 5850 3/4" VTR, Mitsubishi 27" monitors, cameras, other monitors. Rates: Please call for rates. Specialization & Credits: The Bennett House Studios offers a unique, creative atmosphere for your recording experience. The newly renovated studio with its 48-track analog and digital capabilities is enhanced by our 19th century, Victorian home. The 12-foot ceilings and hardwood floors create a very desirable, live, ambient recording space. Special arrangements may be made for lodging in our two comfortably furnished upstairs bedrooms. The Bennett House is located just south of Nashville in the heart of historic Franklin, Tennessee. Recent artists include: Carman, Chagall Guervara, Simon Climie, Joe Diffee, Dixiana, Amy Grant, Bill Halverson, Waylon Jennings, Flaco Jimenez, Bob Montgomery, Willie Nelson, Keith Palmer, Collin Raye, Michael W. Smith, Doug Stone, Keith Thomas, White Heart, Vanessa Williams, BeBe & CeCe Winans and Tammy Wynette.

[24+] **BERMUDASOUND RECORDING STUDIOS;** PO Box DV 732; Devonshire, DVBX Bermuda; (809) 292-1103; FAX: (809) 295-4973. Manager: Ian Marshall.

[24+] **BIAS RECORDING COMPANY INC.;** also REMOTE RECORDING; 5400 Carolina Pl.; Springfield, VA 22151; (703) 941-3333. Owner: William O. McElroy, Robert Dawson. Manager: Gloria Dawson.

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## Southeast 24-track studios



[24+] **BLUEWAVE RECORDING STUDIOS**; Bayleys Plantation; St. Philip, Barbados; (809) 423-6286; FAX: (809) 423-5154. Owner: Mr. E. Grant. Manager: Mrs. A. Grant. Engineers: Frank Agarrat, Tom Gonzalez. Dimensions: Room 1: Studio 35'x36', control room 27'x20'. Room 2: studio 30'x15', control room 20'x25'. **Mixing Consoles**: SSL 52-channels, computer w/Total Recall, TAC Matchless 24-track. **Audio Recorders**: (2) Otari MTR-9 MkII, (2) Ampex ATR-102, Sony/MCI 24-track. **Cassette Recorders/Duplicators**: Awa F9900 2-track, (2) Sony DTC-1000ES, Nakamichi MR2, Tascam 122 MkII, Panasonic SV-3700. **Noise Reduction Equipment**: (2) Scamp S100 dual channel, (2) Scamp S05 dynamic noise filter gate, (2) Scamp S06 dynamic noise filter gate, Dolby A 24-track, Dolby A 2-track. **Synchronization Systems**: Adams-Smith Zeta-3, (7) Lynx module, (2) Lynx Keyboard controller KC-1. **Echo, Reverb & Delay Systems**: Lexicon 480L, Lexicon 224XL, (2) AMS reverb, (2) AMS delay, (2) TC Electronic delay, (2) TC Electronic Spatial Enhancer, (5) Lexicon PCM70, (2) Lexicon LXP-1, Lexicon LXP-5, (3) Eventide H3000, Eventide H910, Lexicon PCM41, Yamaha SPX900, Yamaha REV5, Yamaha REV7, (2) Yamaha SPX1000, Lexicon Super Prime Time, (6) Lexicon PCM42, (10) Drawmer stereo, (2) Drawmer tube limiters, (4) dbx 160XT, (4) dbx 165A, (12) dbx de-esser, (6) dbx gate, dbx 162, (6) UREI 1176, (2) UREI 1178 stereo, (2) UREI LA4, (2) Tube-Tech compressor, (2) Aphex gates, (2) Focusrite EQ, (2) GML EQ, (2) Tube-Tech EQ, (2) Sontec EQ, (2) Pultec EQ, (8) API 550B EQ, API 5502 stereo, (8) Hardy mic pre, ADR vocal Stresser, (2) Bedini spatial expander, (2) Barcus-Berry Sonic Maximizer. **Microphones**: (14) Neumann (including vintage tube), (8) AKG (including tube), (3) Crown PZM, (6) Sennheiser, (10) Shure, (4) Electro-Voice, (2) Schoeps, (4) Studer, RCA. **Monitor Amplifiers**: (9) Genelec 1,600 watt modules, (2) FM Acoustic, (4) Bryston. **Monitor Speakers**: (2) Genelec 1035A, (2) Genelec 1033, Yamaha NS-10, Westlake, Tannoy, custom. **Rates**: Call for rates. **Specialization & Credits**: Bosstown Recording Studios was formerly Soundscape Studios. The same management and staff is proud to serve our clients under new ownership.

all G Series electronics, SSL 4000G 80 frame w/64 mono, 8 stereo, 24 E Series EQ, Soundcraft Delta w/28 mono, 4 stereo. **Audio Recorders**: (2) Studer A820 24-track, Studer A827 24-track, Studer 820 2-track 1/2" w/1/4" center-track time code conv., Studer 820 2-track 1/2", Studer A80RC 2-track 1/4", Studer B67 2-track 1/4", Studer A810 2-track 1/4", Sony 2500 DAT, (2) JVC DTC900 DAT w/time code interface, Otari MTR-90 24-track, Sony TCD-D10 portable DAT. **Cassette Recorders/Duplicators**: Tascam T-122, (4) Nakamichi MR-1, (10) Nakamichi MR-2. **Noise Reduction Equipment**: (4) Dolby SR, (28) Dolby A. **Synchronization Systems**: Adams-Smith Zeta-3, (7) Lynx module, (2) Lynx Keyboard controller KC-1. **Echo, Reverb & Delay Systems**: Lexicon 480L, Lexicon 224XL, (2) AMS reverb, (2) AMS delay, (2) TC Electronic delay, (2) TC Electronic Spatial Enhancer, (5) Lexicon PCM70, (2) Lexicon LXP-1, Lexicon LXP-5, (3) Eventide H3000, Eventide H910, Lexicon PCM41, Yamaha SPX900, Yamaha REV5, Yamaha REV7, (2) Yamaha SPX1000, Lexicon Super Prime Time, (6) Lexicon PCM42, (10) Drawmer stereo, (2) Drawmer tube limiters, (4) dbx 160XT, (4) dbx 165A, (12) dbx de-esser, (6) dbx gate, dbx 162, (6) UREI 1176, (2) UREI 1178 stereo, (2) UREI LA4, (2) Tube-Tech compressor, (2) Aphex gates, (2) Focusrite EQ, (2) GML EQ, (2) Tube-Tech EQ, (2) Sontec EQ, (2) Pultec EQ, (8) API 550B EQ, API 5502 stereo, (8) Hardy mic pre, ADR vocal Stresser, (2) Bedini spatial expander, (2) Barcus-Berry Sonic Maximizer. **Microphones**: (14) Neumann (including vintage tube), (8) AKG (including tube), (3) Crown PZM, (6) Sennheiser, (10) Shure, (4) Electro-Voice, (2) Schoeps, (4) Studer, RCA. **Monitor Amplifiers**: (9) Genelec 1,600 watt modules, (2) FM Acoustic, (4) Bryston. **Monitor Speakers**: (2) Genelec 1035A, (2) Genelec 1033, Yamaha NS-10, Westlake, Tannoy, custom. **Rates**: Call for rates. **Specialization & Credits**: Bosstown Recording Studios was formerly Soundscape Studios. The same management and staff is proud to serve our clients under new ownership.

[24+] **BOUTWELL RECORDING STUDIOS INC.**; also REMOTE RECORDING; 720 S. 23rd St.; Birmingham, AL 35233; (205) 251-8889; FAX: (205) 251-9905. Owner: Corporate. Manager: Mark Harrelson.

[24+] **BRADLEY'S BARN INC.**; PO Box 120838; Nashville, TN 37212; (615) 244-1060. Owner: Owen Bradley. Manager: Michael Bevington. Engineers: Bobby Bradley, Doug Crider. Dimensions: Room 1: studio 24'x28', control room 15'x20'. Room 2: studio 63'x47'. **Mixing Consoles**: Sound Workshop Series 40 w/ARMS automation and 4-channel cue. **Audio Recorders**: Studer A80 24-track, (2) Studer A80 2-track 1/2", Studer B67 2-track 1/4", (3) Ampex 440 2-track 1/4", (2) Sony 501 w/Betamax, (2) Sharp SX-D100 DAT. **Cassette Recorders/Duplicators**: (2) Onkyo, Sony. **Noise Reduction Equipment**: (26) Dolby. **Synchronization Systems**: BTX. **Echo, Reverb & Delay Systems**: Lexicon 224XL, Eventide H3000, Yamaha REV7, (2) Yamaha SPX90, Lexicon PCM42, (2) Lexicon PCM60, Eventide 910, (2) EMT tube plate. **Other Outboard Equipment**: (2) LA2A tube limiter, (3) Pultec EQH2, Pultec EQP1A, Pultec Mavec mic preamp and EQ tube, (2) Audio & Design F769X-R recording Vocal Stresser, Audioarts parametric EQ 4200A, (2) Teletronix UREI LA3A limiters, (2) Omni Craft GT-4 noise gates, Scamp Rack, (2) Dyna-Mite signal processors, Wendel Jr. w/various cartridges, (2) Orban de-esser, (7) Langevin tube mic preamp. **Microphones**: (9) Neumann U67, (2) Neumann U87, (6) Neumann U47FET, (4) Neumann U48 tube, (14) Neumann KM84, Neumann KM54 tube, Neumann U64, Neumann KM56 tube, (5) Neumann M49 tube, (2) Telefunken ELAM 251 tube, (2) Sony C-500, Telefunken ELAM 921 tube, (3) Sony ECM-50, (3) Shure SM57, Shure SM81, (4) RCA 44 ribbon, (6) RCA DX77 ribbon, (2) Altec 150A tube, (7) Electro-Voice RE20, (7) Electro-Voice RE15, (2) Sony ECM-22, (3) Electro-Voice RE16, AKG 414, (5) Sennheiser MD-421, (2) Crown PZM, (2) Wahrenbrock PZM. **Monitor Amplifiers**: (2) Crown Microtech 1200, (6) McIntosh 2100, (3) Phase Linear 400. **Monitor Speakers**: (4) UREI 813, (4) Yamaha NS-10M, (4) Auratone, (4) JBL 4313. **Musical Instruments**: Steinway grand piano w/ MIDI, Hammond B-3 organ w/Leslie, upright tack piano. **Video Equipment**: (2) JVC 3/4" video machines, JVC RM-88U editing unit.

[24+] **THE CASTLE RECORDING STUDIO**; 1393 Old Hillsboro Rd.; Franklin, TN 37064; (615) 791-0810; FAX: (615) 791-1324. Owner: Joseph Nuyens. Manager: Joseph Nuyens, Mike Janas.

[24+] **CATSPAW STUDIOS**; also REMOTE RECORDING; 560 Dutch Valley Rd.; Atlanta, GA 30324; (404) 876-2287; FAX: (404) 881-8409. Owner: Catspaw Productions Inc. Manager: Brad Jones.

[24+] **CHANDLER AUDIO INC.**; also REMOTE RECORDING; 3030 Piedmont Rd.; Huntington, WV 25704; (304) 429-6499; FAX: (304) 429-6499. Owner: Chandler Audio Inc. Manager: Denny Chandler. Engineers: Denny Chandler, Dick Hawkins, Jay Edwards, independents. Dimensions: Room 1: studio 40'x36', control room 24'x24'. Room 2: studio 12'x10', control room 20'x16'. **Mixing Consoles**: Harrison 3624, Fostex 812. **Audio Recorders**: Studer A80 24-track, Fostex R-8 8-track, Panasonic SV-3700. **Cassette Recorders/Duplicators**: (2) Nakamichi BX-300, (2) Tascam 122. **Echo, Reverb & Delay Systems**: (2) Yamaha REV5, (2) Yamaha SPX90, (2) Lexicon Prime Time, Klark-Teknik DN-780, Lexicon PCM60, Ursa Major Space Station, TC Electronic 2290, Roland Dimension D, Roland chorus/echo, (2) Korg SDD-3000. **Other**



BOSS TOWN RECORDING STUDIOS  
Atlanta, GA

[24+] **BOSS TOWN RECORDING STUDIOS**; 677 Antone St.; Atlanta, GA 30318; (404) 351-1003; FAX: (404) 351-1076. Owner: Bobby Brown. Manager: Jon Marett. Engineers: Ted Mallia, independents. Dimensions: Room 1: studio 50'x60', control room 28'x29'. Room 2: studio 18'x14', control room 15'x16'. Room 3: studio 8'x9', control room 9'x13'. **Mixing Consoles**: SSL 4040E w/36 mono, 4 stereo,



**Outboard Equipment:** Gate noise gate, (2) Dyna-Mite, (2) UREI 1176, (4) Ashly Audio comp/limiter, (2) dbx 160X, Aphex Compellor, Orban de-esser, (3) White Instruments EQ, (2) Studio Technologies mic pre. **Microphones:** (5) Neumann U87, (2) AKG 414, AKG The Tube, (6) Sennheiser 421, (2) Sennheiser 441, Shure SM7, (4) Shure SM81, (2) Crown PZM, EV 408 (2) RCA D-77. **Monitor Amplifiers:** (5) Crown. **Monitor Speakers:** UREI 813B, JBL 4311, Yamaha NS-10, (2) Auratone, JBL 4430. **Musical Instruments:** Oberheim OB-8, Oberheim DPX-1, Roland D-50, Roland MKS-20, Roland MKS-30, Roland MKS-70, Akai S612, Yamaha DX7, Yamaha RX88, Rogers drum kit, Music Man bass. **Other MIDI Equipment:** (2) Digital Creations patch bay, Roland SBX-80, Atari ST. **Video Equipment:** JVC 6250 3/4" U-matic. **Rates:** \$90 per hour 24-track/\$25 per hour 16-track.



CHARICO STUDIOS  
Clearwater, FL

[24+] CHARICO STUDIOS; 2382 Congress Ave.; Clearwater, FL 34623; (813) 784-5000; FAX: (813) 784-8211. **Owner:** Charis Corporation. **Manager:** James B. McCullough. **Engineers:** Daryl Wicker, Scott Seehawer. **Dimensions:** Room 1: studio 19'x24', control room 16'x25'. Room 2: studio 8'x12'. Room 3: MIDI studio 10'x14'. Room 4: Lounge 16'x18'. **Mixing Consoles:** Trident A-Range 40x32x2, Niche ACM automation.

**Audio Recorders:** Studer A80 MkII 24-track w/ALC, Panasonic SV-3700 DAT, Tascam DA-50 DAT, Ampex A440 2-track. **Cassette Recorders/Duplicators:** (2) Tascam 122 MkII. **Synchronization Systems:** Opcode Studio 3. **Echo, Reverb & Delay Systems:** Lexicon 200, Eventide H-3000SE, Korg DRV-3000, Lexicon LXP-1, LXP-5 MRC MIDI controller, Yamaha SPX90, Yamaha D1500, Space station digital delay/reverb/chorus. **Other Outboard Equipment:** Klark-Teknik BN 504 Quad compressor/limiter, Yamaha CC-2020B compressor, Valley People EXR Exciter, (2) dbx 160X, (2) Gate noise gates, TUBIT dual tube compressor, TUBIT tube parametric EQ, TUBIT dual channel parametric EQ, TUBIT tube 2-channel mic preamp, Tube Direct box. **Microphones:** (2) AKG CO-451 EB combo, (3) D-70 ME, AKG D-112, (2) AKG 414D, Beyer M500, Neumann U87II, (2) Neuman KM84, Shure SM57LC, (4) Shure SM57B, (4) Sennheiser MD-421, AKG Tube. **Monitor Amplifiers:** PS Audio, Aragon, Hafler. **Monitor Speakers:** B&W 801Matrix A, Phase Technology PC60 MkII, Yamaha NS-10M, Tannoy SRM-128, JBL 8330. **Musical Instruments:** Roland RD-300S, D-501, MKS-70, R-8, S-770 digital sampler, Octapad, Oberheim MX-1000, Kurzweil PX 1000 plus, Korg M1, EX 8000, DW 8000, Yamaha SY77, Alesis HR16, Boogie studio 22, E-mu Proteus 1. **Other MIDI Equipment:** Digital Music MX-8, Barcus Berry pickups, Mac SE30, Frog system Syquest 44MB removable drive, Opcode Vision sequencer, Galaxy librarian, M1 librarian, Performer sequencer, Oberheim object mover. **Rates:** \$65/hr, \$225/1/2 day, \$550/day, \$2,450/week (5 day), lockout extra \$250/day, no extra charge for top mic usage (rates subject to change without notice 3/5/92). **Specialization & Credits:** Custom performance tracks, R&B, dance, lite rock, MOR, Rap, songwriting, Southern gospel & pop music arranging; publishing demos.

[24+] CINETEL PRODUCTIONS; 9701 Madison Ave.; Knoxville, TN 37932; (615) 690-9950; FAX: (615) 693-6576. **Owner:** Bagwell Communications. **Manager:** Bob Jordon, VP operations, SALES: Jerry Conrad, VP creative services. **Engineers:** Randy Day, chief engineer; Randall Inman, audio engineer. **Dimensions:** Room 1: studio 80'x100', control room 15'x20'. Room 2: studio 40'x40', control room 15'x20'. **Mixing Consoles:** Amek Mozart 56 PO/48-channel w/Steinberg auto, Soundcraft 800B/32-channel, (2) Soundcraft 500/24-channel, Yamaha MC2404, Shure SM32. **Audio Recorders:** Otari MX-70 16-track, (2) Tascam MSR-16 16-track, (2) Panasonic SV-3900 DAT, TEAC 35-2 2-track, Otari MX-5050 2-track. **Cassette Recorders/Duplicators:** (4) Sony TC-WR720. **Noise Reduction Equipment:** dbx 180 Type I, (6) dbx 900. **Synchronization Systems:** (2) Alpha Audio Boss II w/TimeLine Lynx system. **Echo, Reverb & Delay Systems:** Lexicon 200,

Yamaha SPX1000, MICMIX reverb. **Other Outboard Equipment:** (8) dbx 165A compressor/limiter, Klark-Teknik DN-410 parametric equalizer, (3) B&B Systems phase monitor, Audio Control SA-3050A analyzer, (2) UREI 1178 comp/limiter. **Microphones:** (4) Shure SM85 condenser, (3) Shure SM57 cardioid, (2) Shure SM58 cardioid, (8) TRAM TR50, Schoeps MK41 shotgun, (3) Sennheiser 416, Sennheiser 816, (2) Neumann SRM 190-I stereo. **Monitor Amplifiers:** (2) Crown D-75, (3) Ramsa 9210, QSC 1400 power amp, QSC 1700 power amp. **Monitor Speakers:** (2) Tannoy SGM-1000, (4) Tannoy PBM-6.5, (2) Auratone NFM, (6) Electro-Voice Sentry 100A, (2) JBL 4311B. **Musical Instruments:** Yamaha SY77 MIDI keyboard, Yamaha SY99 keyboard, Yamaha TX16W sampler, Yamaha RY30 Rhythm machine, Korg Wave Station, Yamaha QY10 music processor, electric 12-string guitar. **Video Equipment:** (3) RCA TK-47 w/Fujinon 17:1 lenses, (5) Sony BVP-50 Beta-cam SP w/Triax, Ikegami HL-79E w/Triax, (2) Ikegami HL-83 CCU control, Sony DXC-537 camera, 28' Grip/lighting tractor-trailer w/Crawford Gen., 14' Grip/lighting van, 25' mobile "beta bug" control van, (2) Paltex ES/D computer editors, Chyron Infinity, Grass Valley 200 switcher, Grass Valley 300 switcher, Silicon Graphics 4D/80 Superwork Station, Vertigo 3-D animation software, DFX Compositum w/paint, DVE and (2) D1/O boards, DDR-100 100 second real-time D1 disc recorder, Mac II w/DFX video F/X, Sony Navigraph printer, (10) Beta SP deck, (8) Sony 1" deck, Elmar crab dolly, Barber boom.

[24+] WALLY CLEAVER'S RECORDING; also REMOTE RECORDING; 2200 Airport Ave.; Fredericksburg, VA 22401-7220; (703) 373-6511. **Owner:** Peter L. Bonta. **Manager:** "Buffalo" Bob Colbroth. **Engineers:** Peter Bonta, Pete Fields, Don Holcombe, Dave Hibbits. **Dimensions:** Room 1: studio 20'x40', control room 18'x22'. Room 2: studio 8'x8'. Room 3: studio 8'x9'. **Mixing Consoles:** Custom ESP 44 input w/JL Cooper Mag II automation. **Audio Recorders:** MCI JH-114 24-track w/AL III, Tascam 85-16B 16-track 1", Otari 5050 2-track, Scully 280B 2-track, Revox A77 2-track, Panasonic SV-3500 DAT. **Cassette Recorders/Duplicators:** (2) Tascam C-3RX. **Noise Reduction Equipment:** dbx 150 stereo, Tascam DX-16B 16-channel dbx. **Echo, Reverb & Delay Systems:** Yamaha REV7 digital reverb, Lexicon PCM60 digital reverb, Alesis QuadraVerb, Alesis MIDIVerb II, Lexicon PCM41 digital delay, DeltaLab 1024 digital delay, Master-Room stereo reverb, AKG BX-10, SDR-1000 digital reverb. **Other Outboard Equipment:** (2) UREI 1176 limiter, (2) UREI LA-4 limiter, Valley People Dyna-Mite stereo limiter/gate, dbx 160 limiter, Symetrix 522 stereo limiter/gate, Audio + Design Gemini stereo limiter, Eventide 910 Harmonizer w/keyboard, Aphex Type B Aural  
—LISTING CONTINUED ON NEXT PAGE

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# Southeast

24-track studios



—LISTING CONTINUED FROM PREVIOUS PAGE

Exciter, Audioart stereo 4-band parametric EQ, DOD stereo 15 band graphic EQ. **Microphones:** Neumann U87, Neumann U47 FET, (4) Neumann KM84, (2) AKG C-414, (4) AKG C-451EB, (2) EV RE20, (2) Sennheiser MD-441, Sennheiser MD-409, (2) Sennheiser MD-421, RCA 44-A, RCA 77-DX, RCA 64, RCA BK-5B, Shure SM56, Shure SM57, Shure SM54, (3) Countryman active DI box, (2) PZM, (4) custom DI. **Monitor Amplifiers:** Crown DC-300A, Crown DC-150A, (2) BGW 150. **Monitor Speakers:** (2) UREI 809, (2) Tannoy PBM-6.5. **Musical Instruments:** Yamaha 6' grand piano, Hammond M-3 organ w/Leslie, Yamaha DX7, Akai S-900 sampler w/8 triggers, Korg SG-1 sampling grand, Rogers 6-pc. drum set, 1964 Fender P-bass, (4) pre CBS Fender amp. **Other MIDI Equipment:** Alesis MMT-8 sequencer, Alesis HR-16 drum computer, Alesis Data-Disk, 2,000+ voice DX7 library, 300+ voice Akai S-900 sample library, Akai ME35T audio/MIDI trigger, JL Cooper PPS-1 SMPTE/MIDI time code generator, Atari 1040STE computer w/MIDI seq. software. **Rates:** \$60/hr.—24-track; \$45/hr.—16-track. Call for block rates.

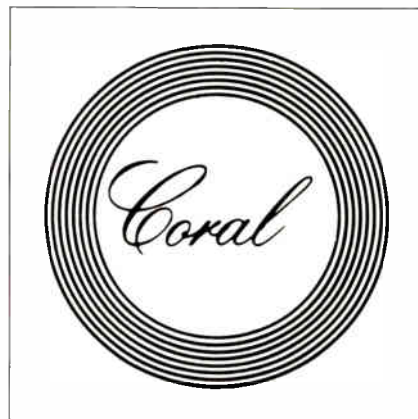
[24+] CLIFTY STUDIOS; Rte. 7 Box 335, PO Box 15; Paris, TN 38242; (901) 644-7111; FAX: (901) 644-7171. Owner: Keith Lancaster. Manager: Gary Miller.



COMMERCIAL MUSIC RECORDING COMPLEX  
Memphis, TN

[24+] COMMERCIAL MUSIC RECORDING COMPLEX; CFA-232 Memphis State University; Memphis, TN 38152; (901) 678-2559 (office); (901) 678-2015 (studio); FAX: (901) 678-5118. Owner: Memphis State University. Manager: Larry Lipman. Engineers: Larry Lipman, E. Joe Walsh, advanced students in audio degree program. Dimensions: Studio A: 60'x60'x20'. Studio B: 23'x16'x20', control room 20'x16'x12', electronic music lab 16'x10'x12'. Synclavier suite: 11'x11'x10'. Film scoring lab: 10'x10'. **Mixing Consoles:** MCI JH-636 36x24. **Audio Recorders:** Otari MTR-90II 24-track, Otari MTR-12 CT 1/2-track 1/4", (2) Panasonic SV-3700 DAT, Otari 5050 MkIII-8-track 1", MCI JH-110B 1/2-track 1/4", Studer PR99 1/2-track 1/4". **Noise Reduction Equipment:** dbx 208 24 channels. **Echo, Reverb & Delay Systems:** Lexicon 224XL, Lexicon M97 Super Prime Time, (2) Yamaha SPX90II. **Other Outboard Equipment:** Aphex Type B Aural Exciter, Eventide H949 Harmonizer, (2) dbx 160X, (2) Valley People Dyna-Mite, Scamp, (2) Yamaha SPX90II, Yamaha EMP100. **Microphones:** (2) Neumann U87, Neumann U47, Neumann KM84, (2) AKG C-414EB/P48, (2) AKG C-452/CK-1S, (5) Sennheiser MD-421U, (2) Shure SM81, Shure SM57, Electro-Voice RE10, Electro-Voice RE20, Electro-Voice 654A, (2) Crown PZM 30GP, Sanken CU-41, AKG "The Tube". **Monitor Amplifiers:** (2) BGW, (5) AB Systems. **Monitor Speakers:** (2) UREI 813A, (2) UREI 811A, (2) Tannoy GLM, (2) Tannoy PBM-6.5, (2) Yamaha NS-10, (2) JBL 4401, (2) JBL 4412, (2) Auratone. **Musical Instruments:** Steinway 7' grand, Baldwin 9' concert grand, Yamaha DX7, Roland JX-10, Roland MC-500, Roland MPU-101, Roland Pad-8 Octapad, Roland TR-707, Roland TR-727,

Roland MT-32, Akai S900, Akai ME-30P, Moog 3C, full complement of studio, orchestral and percussion instruments available. **Other MIDI Equipment:** Macintosh Plus. **Video Equipment:** Complete 1", 3/4", Betacam and Super VHS video production/CMX post-production services available, funding has been requested to enable video production suite to be interfaced with recording studios. **Other:** Synclavier 3200 w/16 voices and 16MB WaveForm RAM, 2GB optical disk drive loaded w/NED Timbre Library, 80MB and 160MB Winchester drives, 20MB Kennedy cartridge drive, 1.2MB disk drive, Macintosh II graphics workstation, extensive sample library, Yamaha turntable, Adcom preamp, (2) Countryman Type 85 direct box, (12) active cue system. **Rates:** The CMUS Complex is operated primarily as an instructional facility. Although normally unavailable for commercial use, studio rental is authorized under special circumstances. Availability and rates upon request. **Specialization & Credits:** Memphis State offers the Bachelor of Music in Commercial Music with concentrations in Recording Technology, Music Business, Jazz Composition and Jazz Performance. Fully accredited by NASM. CMUS majors won 1990 NARAS Student Music Award Jazz/Big Band category. Our programs stress a thorough understanding of fundamental concepts, yet place equal emphasis upon developing the student's ability to quickly adapt to new practices, technologies and creative directions. Our instructors possess a broad knowledge of music industry practices and are actively involved in today's commercial music industry. Modern production facilities include a comprehensive 24-track studio, video production suite, electronic music lab and Synclavier digital workstation. (See Southeast Studio Master Directory for complete equipment list.) The Memphis arts community offers a dynamic environment, providing students with diverse cultural opportunities and a rich assortment of internship possibilities. Scholarship funds are available for exceptional students, and many states offer our students financial assistance through the Academic Common Market.



CORAL SOUNDS STUDIO  
Port of Spain, Trinidad

[24+] CORAL SOUNDS STUDIO; 16 Milling Ave.; Sea Lotos, PO Box 783; Port of Spain, Trinidad, West Indies; (809) 623-7789; FAX: (809) 637-7086. Owner: Coral Recording Services Ltd. Manager: Mike Schuler. Engineers: Eric Michaud. Dimensions: Studio: 48'x30' w/20' ceiling, control room: 24'x12'. **Mixing Consoles:** Audionics 26x24 w/8 Focusrite ISA-110 module rack. **Audio Recorders:** Otari MTR-90 24-track w/Dolby SR 24-channel connected, Otari MTR-20 1/2" w/Dolby SR 2-channel connected, MCI 1/4". **Cassette Recorders/Duplicators:** (2) Tascam 122. **Echo, Reverb & Delay Systems:** Lexicon 200, Lexicon Prime Time II, Yamaha REV7, (2) Yamaha SPX90, Eventide Harmonizer H969. **Other Outboard Equipment:** (2) Aphex Aural Exciter 103, Orban Sibilance Controller 516, (2) UREI 1176N limiting amplifier, (2) UREI LA-5 audio leveller, Orban parametric equalizer 622B, Studer A727 compact disc player. **Microphones:** (2) AKG The Tube, (2) Neumann U87, (2) Shure SM7, (2) AKG 414. **Monitor Amplifiers:** BGW 75, BGW 250E, BGW 75A, (2) JBL/UREI Room EQ. **Monitor Speakers:** (2) Altec Super Reds 604E, (2) Yamaha NS-10M, (2) Auratone 5C, (2) Visonik 9000, (2) Mastering Lab crossovers. **Musical Instruments:** Oberheim Matrix-12 synth, E-max sampler/synth, Yamaha DX7II FD, Prophet-2002 sampler, Akai Linn MPC 60 drum machine/sequencer, Linn drum machine, Roland electronic drum kit, Kawai baby grand acoustic piano, extensive library of E-max, Akai Linn and DX7 diskettes and cartridges. **Other:** Sound Ideas CD effects library, complete set professional percussion instruments, AKG headphones, Countryman Direct Boxes. **Rates:** Special introductory rate of U.S. \$45/hr. (or even less for quantity block bookings), which includes engineer with 15 years of experience and all equipment/instruments. Top-quality accommodation in relaxing and sunny locations available at surprisingly reasonable rates. **Specialization & Credits:** Relax in a Caribbean Island studio with a room purpose-built to professional specifications with top-quality equipment. We are "The Home of the Calypso Rhythm and Steelband Drums" in a modern 24-track studio with 24-channel Dolby SR and eight Focusrite ISA-110 equalizer modules. We recently had a 50-member local Steelband Orchestra doing tracks for Jean-Michel Jarre of France, which was used as the basis for a live

show in Paris on Bastille Day with an attendance of about two million people. We have also done a multitude of best-selling calypso records in the Caribbean for the past eight years. We welcome all types of music and projects and do our utmost to make all clients feel welcome and comfortable for their entire stay on the Island.

[24+] **CORNERSTONE STUDIO**; 3500 N. Courtenay Pkwy.; Merritt Island, FL 32953; (407) 459-2508; FAX: (407) 452-8472. Owner: Cornerstone Church of Merritt Island. Manager: Joel Wild.

[24+] **CRAWFORD AUDIO SERVICES**; also *REMOTE RECORDING*; 535 Plasamour Dr.; Atlanta, GA 30324; (404) 876-7149; FAX: (404) 876-8956. Owner: Jesse Crawford. Manager: Steve Davis.

[24+] **CRITERIA RECORDING STUDIOS**; 1755 NE 149th St.; Miami, FL 33181; (305) 947-5611; FAX: (305) 956-5181. Owner: Joel M. Levy. Manager: Margie Curry. Engineers: Robert Knox, Kurt Berge. Dimensions: Room A: studio 46'x50', control room 25'x27'. Room B: studio 15'x16', control room 23'x26'. Room C: studio 25'x32', control room 15'x16'. Room D: studio 14'x22', control room 17'x19'. Room E: studio 50'x50', control room 23'x26'. **Mixing Consoles**: Solid State Logic 6000G 48x32, Solid State Logic 6000E 48x32, MCI 532B 32x32, MCI 532C 32x32, Neve 8078 40x24x32. **Audio Recorders**: Studer 827 24-track, Mitsubishi X-800 32-track, (2) Studer A820 24-track, (2) Otari MTR-90 24-track, MCI JH-24 24-track, (2) Mitsubishi X-802 2-track digital, (2) MCI JH-110B 4-track, (2) MCI JH-110B 2-track, 1/4" or 1/2", (2) Studer A820 2-track 1/2", (2) Sony PCM-2500. **Cassette Recorders/Duplicators**: (5) Yamaha K1020, (10) Yamaha KX1200 U. **Noise Reduction Equipment**: (2) Dolby A racks 24 tracks, (24) dbx cards, (4) Dolby SR units. **Synchronization Systems**: (2) Adams-Smith Zela-3 w/remotes. **Echo, Reverb & Delay Systems**: EMT 251, Lexicon 224XL, (3) Lexicon 480L, (3) AMS RMX, (3) AMS DMX, (3) Lexicon PCM70, (4) Yamaha SPX90, Eventide 2016, (2) Lexicon PCM41, (3) Lexicon PCM42, (3) Eventide H3000. **Other Outboard Equipment**: (2) Focusrite 110 EQ module, (2) Focusrite 130 dynamic module, (6) Drawmer 201 gate, (4) Kepex gate, (8) Pultec tube EQ, (2) UREI LA-4, (2) UREI LA-3, (8) dbx 160, (2) dbx 160X, (3) Teletonix LA2A, ADR Vocal Stressor, ADR Complex limiter. **Microphones**: (150) Various microphones. **Monitor Amplifiers**: (3) Bryston, (5) McIntosh, (2) UREI 6500, (2) APT, (2) Acoustat. **Monitor Speakers**: (3) Criteria/Ed Long monitors, (2) Criteria custom tri-amped, (5) Yamaha NS-10M, (2) Westlake BBSM-2, (2) Genelec S30.

[24+] **CROSTOWN AUDIO**; 2135 DeFoor Hills Rd, NW; Atlanta, GA 30318; (404) 352-4790; FAX: (404) 352-2143. Owner: Crosstown Audio Inc. Manager: Jon Aaron.



**CUE RECORDING LTD.**  
Falls Church, VA

[24+] **CUE RECORDING LTD.**; 109 Park Ave., Ste. E; Falls Church, VA 22046; (703) 532-9033. Owner: Willard R. Jeffrey III. Manager: Tom Deakin. Engineers: Jim Ebert, Ken Schubert, Tom Perrell, James Dixon, Tom Ogakini, Trip Brock, Michael Tinsley. Dimensions: Room 1: studio 32'x25', control room 25'x21'. Room 2: studio 15'x11', control room 14'x13'. Room 3: studio 8'x5', control room 9'x8'. **Mixing Consoles**: SSL 4000G w/automation and Total Recall, MCI JH-628 28x24 automated. **Audio Recorders**: Studer A827, Sony APR 24-track, Studer A807 TC 2-track, Studer A810 2-track, Otari MTR-10 2-track, Otari 5050B 2-track, Sony PCM-2500 DAT, Sony PCM-2300 DAT, Panasonic SV-3500 DAT, Turtle Beach digital workstation. **Cassette Recorders/Duplicators**: (12) Tascam 122B, Nakamichi MR-1. **Noise Reduction Equipment**: dbx Type 180 2-channel. **Echo, Reverb & Delay Systems**: (2) Lexicon PCM70 digital reverb, Klark-Teknik DN780 digital reverb, (2) Yamaha REV7 digital reverb, (2) Yamaha SPX90, EMT 140S tube plate reverb, Lexicon 200 digital reverb, (4) Deftalab Effectron 1024 digital delay, Korg SDA-2000 sampling, Eventide H3000 Ultra-Harmonizer, MXR flanger doubler, Roland stereo chorus, Systech stereo phase

—LISTING CONTINUED ON NEXT PAGE

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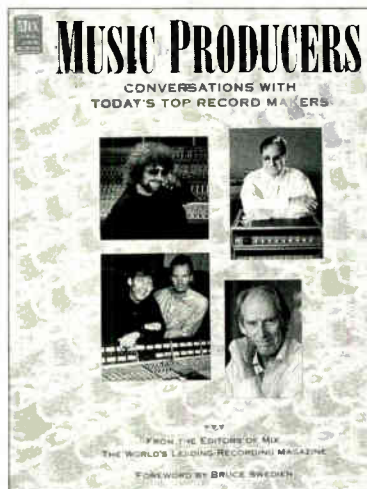
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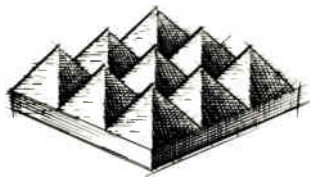
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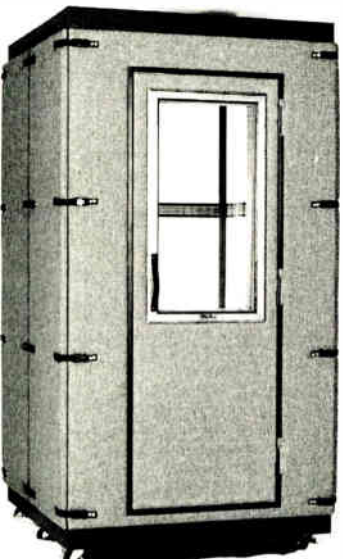
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# Southeast

24-track studios



—LISTING CONTINUED FROM PREVIOUS PAGE

shifter. **Other Outboard Equipment:** UREI 1176 compressor/limiter, (2) UREI LA-4 compressor/limiter, (2) dbx 160X compressor/limiter, (2) dbx 166 compressor/limiter, (10) Kepex noise gate/expander, (4) Aphex Type C Aural Exciter, (6) BBE Sonic Maximizer, Drawmer DS-201 noise gates. **Microphones:** (3) Neumann U87, AKG C-24 tube, (2) Neumann KM86, (2) AKG 414, (2) AKG 451, (2) AKG D-12, (6) Sennheiser MD-421, (6) Sennheiser MD-409, Sennheiser MD-441, (4) EV RE20, EV 636, Beyer M88, (2) Crown PZM, (10) Shure SM57, (2) Altec ribbon, Sony ECM-33F. **Monitor Amplifiers:** Bryston 4B, Bryston 3B, Crown PSA-2, Crown D-150, Hafler LL-1200, Hafler 2400, (3) Crown D-75. **Monitor Speakers:** (2) State-of-the-Art Electronik CFM-750, (2) Tannoy SRM15, (2) UREI 813A, (2) Westlake BBSM-6, (6) Yamaha NS-10M, (4) Tannoy PBM-8.0, (2) Tannoy PBM-6.5, (2) Auratone Cube, (2) JBL4401. **Musical Instruments:** Sojin 6' grand piano, Ludwig 6-pc. drum kit, various guitar amplifiers, D-50, S-1000, Korg Wavestation, Matrix 1000, Proteus IIXR, MPC60, Atari 1040STE w/C-Lab, HR-16, D/4, Linn LM2, DX7, Jupiter 6, Micro Moog, M3R. **Rates:** Available upon request. **Specialization & Credits:** Cue Recording, Ltd. is a three-studio facility located five minutes from the nation's capital. From our computerized MIDI room to automated mixing in Studios A and B, we provide top-notch audio recordings at sensible rates. Advanced control-room monitoring has been achieved using the R.F.Z. Reflection Free Zone architecture and RPG Diffusers in control room A. Neil Muncy Associates Ltd. in Toronto designed the room producing excellent results: accurate imaging with a remarkably flat frequency response, free from the need for room equalizers. The room is a pleasure to mix in, from all-cone monitoring by State-of-the-Art Electronik, to the security of knowing what you're hearing now is what everyone else will be hearing later. Recent clients include Larry Fast of Peter Gabriel, Glenn Jones, Annie Haslam, America's Most Wanted, Buddy Miles, Michael Path, H.R., Wrathchild, The Newkyses with Nils Lofgren, Felton Pilate, (Rocky 5), E.U., Rare Essence and Danny Gatton.

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DIGITAL ASSOCIATES  
Nashville, TN

[24+] **DIGITAL ASSOCIATES;** also REMOTE RECORDING; 2407 12th Ave. South; Nashville, TN 37204; (615) 297-3900. **Owner:** Rick Horton. **Manager:** Rick Horton. **Engineers:** Rick Horton, Bill Heath, Kelly Key, Todd Kidd. **Dimensions:** Control room 1: 16'x20'. Control room 2: 14'x14'. **Mixing Consoles:** Amek TAC Matchless 36x32, Yamaha DMP7D, Ramsa WR-444 12x4 remote. **Audio Recorders:** Mitsubishi X-880 32-track digital, Mitsubishi X-86 2-track digital, (2) Mitsubishi X-80 2-track digital, Studer Editech Dyaxis Digital Audio Production System 1.6GB, Sony PCM-2500 Pro DAT, Sony PCM-501ES digital audio processor, (2) Panasonic SV-3700 DAT, Panasonic SV-3900 DAT, Studer A80 24-track analog, Studer B67 2-track analog, Otari MTR-12 2-track 1/4" and 1/2" analog. **Cassette Recorders/Duplicators:** Nakamichi MR-1, Infonics 16-station mid-speed duplication system. **Noise Reduction Equipment:** Dolby A 2 channels, Dolby SR Spectral Record-

ing 2 channels, Dolby C 2 channels. **Synchronization Systems:** Adams-Smith Zeta-3 w/remote. **Echo, Reverb & Delay Systems:** Eventide H3000 Ultra-Harmonizer, (4) Aphex 612 expander/gate, Lexicon PCM70 processor, (2) Yamaha REV7 processor. **Other Outboard Equipment:** (2) Aphex stereo Compellor comp/limiter, Aphex Dominator II multiband processor, Aphex Expressor comp/limiter, UREI 1178 dual peak limiter, (5) Studio Technologies Mic Prominence stereo preamp. **Microphones:** AKG The Tube, Neumann U87, Neumann U47 tube, (2) Neumann M269 tube, (2) Neumann M256 tube, (2) Neumann KM54 tube, (2) Neumann M49 tube, (2) Schoeps M221-b tube, Crown SASS-P. **Monitor Amplifiers:** Hafler P500. **Monitor Speakers:** (4) Auratone T6. **Musical Instruments:** Goldline 30 digital real-time analyzer, Macintosh II, (3) XT-compatible computer.



DINOSAUR PRODUCTIONS STUDIO  
AND PRODUCTION COMPANY  
New Orleans, LA

[24+] **DINOSAUR PRODUCTIONS STUDIO AND PRODUCTION COMPANY;** also REMOTE RECORDING; 2115 Magazine St.; New Orleans, LA 70130; (504) 525-9579; FAX: (504) 529-1387. **Owner:** Dinosaur Productions Inc. **Manager:** Richard Bird. **Engineers:** Richard Bird, Richard Paddison. **Mixing Consoles:** TAC Scorpion II 28x12x24. **Audio Recorders:** Studer A80 24-track 2". **Cassette Recorders/Duplicators:** Denon, Nakamichi. **Synchronization Systems:** MIDI sequencing SMPTE post-production capability. **Echo, Reverb & Delay Systems:** Valley People, Lexicon, Yamaha, Roland, Aphex, dbx. **Other Outboard Equipment:** Various drum machines, keyboards and accessories. **Microphones:** (4) AKG, (4) Shure, (2) Microtech Gefel, (4) Sennheiser, (2) Electro-Voice. **Monitor Amplifiers:** Crown. **Monitor Speakers:** (2) Electro-Voice, (2) Yamaha. **Musical Instruments:** Acoustic grand, Hammond M-3, acoustic and electric guitars & basses, house drum kit. **Specialization & Credits:** Total audio services specializing in live and studio sound. Unique studio design ambience with experienced production staff on premises. Songwriting services; songwriting/lyric consultation; publishing.



DOCKSIDE STUDIO  
Milton, LA

[24+] **DOCKSIDE STUDIO;** PO Box 27; Milton, LA 70558; (318) 893-7880; FAX: (318) 893-5987. **Owner:** Steve Nails. **Manager:** Steve Nails. **Engineers:** Benny Graeff, Victor Palmer. **Dimensions:** Room 1: control room 27'x15'. Room 2: studio 27'x15'. Room 3: studio 27'x15'. Room 4: studio 27'x15'. Kitchen 19'x15'. Other 17'x15'. **Mixing Consoles:** Soundcraft 32x24x8x2 fully automated. **Audio Recorders:** Studer A820 24-track. **Cassette Recorders/Duplicators:** Panasonic SV-3700 DAT, Fostex 3-track 1/4", Tascam 112. **Echo, Reverb & Delay Systems:** Lexicon PCM70, (2) Lexicon LP-1, (2) Yamaha SPX90, ART multiverb. **Other Outboard Equipment:** BBE Exciter, Aphex Aural Exciter, (4) Rane 28 band EQ, Summit

Audio TLA-100 compressor, Orban compressor, Audio Control Spectrum Analyzer. **Microphones:** Neumann U87, (2) Sennheiser, Crown PZM, a variety of AKG, Beyers and Shures. **Monitor Amplifiers:** Carver 300, Carver 120. **Monitor Speakers:** (2) JBL 4412, (2) Yamaha NS-10M, (2) Fostex near-field. **Musical Instruments:** Emulator E III w/8MB RAM, grand piano, Yamaha recorders drum kit, Roland Octapad, '56 Strat, Fender Reverbalax tube amp, Yamaha DX7IIIFD, Fender Jaguar bass. **Other MIDI Equipment:** Mac II, JL Cooper Magi automation, Alchemy, Sound Design, Master Trax Pro, fully equipped MIDI production studio. **Yamaha MEP.** **Other:** (16) AKG headphones, Sony, Yamaha and others, custom head-phone system. **Rates:** \$50/hr; \$800/day, lodging included or call for project prices. **Specialization & Credits:** State-of-the-art estate, Dockside Studio is tucked away in a 19th century setting along the Vermilion River 90 minutes from New Orleans in the heart of Cajun/Zydeco country. The studio is the epitome of Southern elegance and harbors one of the most technologically advanced music recording facilities. Dockside offers vintage sound mixed with MIDI high tech. The finest services are provided and each room has a warmth of sound echoing from the varieties of woods that cover the sound room walls. Southern hospitality includes a complete and separate musicians' lodging overlooking a pool. There is a basketball and tennis court and two-acre "fish are jumping" pond with trails throughout the 11-acre estate. The tranquil, secluded setting is perfect. Recordings include commercials, soundtracks and label recordings, and each project's needs are satisfied. Video locations are endless within the estate for movies as well as music videos.



**EMERALD SOUND STUDIOS**  
Nashville, TN

[24+] **EMERALD SOUND STUDIOS; 1033 16th Ave. S.; Nashville, TN 37212; (615) 321-0511; FAX: (615) 329-9417.** **Owner:** Dale Moore. **Manager:** Anthony Little. **Engineers:** Kerry Kopp, chief technician; Rick Jensen, assistant. **Dimensions:** Room 1: studio 28'x36', control room 19'x21". Room 2: studio 16'x18' control room 12'x14". **Mixing Consoles:** SSL E Series 64 input featuring Ultimotion, SSL G Series computer system w/Total Recall. **Audio Recorders:** Mitsubishi X-85D digital 32-track w/Apogee, Studer A800 2" 24-track analog, Studer A80FC Mk II 1/2" 2-track analog, Studer A80FC Mk I 1/4" 2-track analog, Panasonic SV-3500 DAT, Panasonic SV-3700 DAT, Sony 2500 DAT. **Cassette Recorders/Duplicators:** (2) Studer A71C. **Synchronization Systems:** (2) TimeLine Lynx. **Echo, Reverb & Delay Systems:** ADR F789X-R Vocal Stresser, AMS DMX 15-80S digital delay/dual sampler/pitch change system, AM3 RMX-16 digital reverb, API 5502 4-band parametric EQ, Aphex Aural Exciter II, (2) dbx 165A compressor/limiter, Demeter VTMP-2 pair mic pre, Drawmer DS-201X dualgate, (2) EMT 140ST reverb plate, EMT 250 digital reverb, Eventide H949 Harmonizer, Eventide H3000SE Harmonizer w/Steve Vai option, Lexicon 224XL digital reverb, Lexicon 48CL digital reverb w/SME sampling option, (2) Lexicon PCM70 digital effects processor, Publison IM90 Infernal machine w/1 sec. sample, Quantec QRS Room Simulator w/Stephen St. Croix update, (2) Sennheiser MEP-250D parametric EQ, Sontec DRC-202A dynamic range controller, (2) Teletronix LA2A compressor/limiters, (2) UREI LA4 compressor/limiter, (6) Valley Audio Kepax 1 noise gate, (2) Valley Audio Gain Brain II compressor/limiter, (2) Yamaha REV7 digital reverb, Yamaha SPX90 digital effects processor, Yamaha SPX1000 digital effects processor. **Microphones:** AKG C-12, AKG D-112, (5) AKG C-414EBP-4E, (4) AKG C-452EB, (2) AKG D-224, (4) AKG C-460-BULS, Beyer Dynamic MC740N, (2) Bruel & Kjaer 4007, Electro-Voice RE2C, Neumann U47 tube, Neumann U47 FET, Neumann M49c, Neumann KM54a, (2) Neumann U67 tube, (4) Neumann KM3+, (2) Neumann KM86, (2) Neumann U87, (2) Neumann KM84, (2) Sanken CU-41, (6) Sennheiser MD-421, (2) Sennheiser MD 441, (2) Sennheiser MKH-40, (7) Shure SM57, (2) Lawson F2M. **Monitor Amplifiers:** (2) FM Acoustic FM-1000, Perreaux PMF-8000C, McIntosh MC2500, (2) Yamaha P2200. **Monitor Speakers:** (2) Kinoshita/Hidley Model-2 main monitors w/DAT components, (2) Genelec QY Triamp S30, (2) Yamaha NS-10M studio. **Other:** (16) Form la Sound active cue system, 16 mixers w/8 channels each, pans & EQ, SVT International 26" video monitor. **Specialization & Credits:** Bridging the gap between work and pleasure, Emerald Sound Studios takes pride in providing the comforts of home while continuing to command a position of sonic excellence and professionalism. Emerald attracts such esteemed clients as Steve Winwood, R-ba McEntire, Whitney Houston, Alabania, Travis Tritt, Clint Black and a host of others. Our Tom Hidley-designed control room with the Hidley/Kinoshita monitoring systems makes for one of the most accurate control rooms in the world. Emerald also boasts a large, high-ceiling tracking room with four isolation booths. Amenities include private offices, secretary assistance, technical support, security, full-size kitchen, private art open lounges, movie/video library, Nintendo Entertainment system, steam shower, ping-pong and billiard suite. Emerald is also home to a full-service broadcast facility, with an onsite I.D.B. KU band stereo satellite up/down-link and T-1 (.544 MBPS) digital carrier.

[24+] **ECHO BEACH STUDIOS; 947 Alt. A-1-A; Jupiter, FL 33477; (407) 622-9902; FAX: (407) 622-9902.** **Owner:** Chas Payson.

[24+] **ELEVEN-ELEVEN SOUND; 1111 17th Ave. S.; Nashville, TN 37212; (615) 329-1111.** **Owner:** Frank Dileo. **Manager:** Rodney Good. **Engineers:** Rodney Good, Steve Ledet, independents. **Dimensions:** Studio 34'x36', control room 15'x18". **Mixing Consoles:** Neve V Series III 48x48. **Audio Recorders:** Mitsubishi X-850 32-track digital, Otari MTR-9011 24-track analog, Mitsubishi X-80A 2-track digital, Studer A80 2-track analog, Studer B67 2-track analog, Panasonic SV-3700 DAT. **Cassette Recorders/Duplicators:** Revox B710, Onkyo TA-2066, Sony TC-K870ES. **Synchronization Systems:** Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** Lexicon 224XL w/LARC, Lexicon 224 w/LARC, Lexicon PCM70, Yamaha REV5, Yamaha REV7, Yamaha SPX90II, TC Electronic 2290, Lexicon Prime Time, EMT 162, Alesis Quadraverb. **Other Outboard Equipment:** Tube Tech CLIB limiter/compressor, GML Moving Fader automation, UREI 1176 limiter/compressor, Eventide Instant Phaser, Eventide Harmonizer, Trident limiter/compressor. **Microphones:** (2) Neumann M249 tube, (2) Neumann U87, Neumann 47 FET, Neumann KM84, Sanken CU41, (4) AKG 414, (2) AKG 460B, (6) Sennheiser 421, Sennheiser MKH-40, (2) Studer SKM5J, Beyer M101, (2) Sony ECM-50P, (5) Sony ECM-33P, (3) Sony ECM-22P, (2) EV RE20, (3) Shure SM57, various others. **Monitor Amplifiers:** McIntosh 2500, BGW 600, (2) BGW 250D, Haller 500, Crown D-150, Crown 60, Crest P-3501, BGW 75. **Monitor Speakers:** (2) Sierra Audio w/oak dispersion horns, (2) KEF C-55, (2) Yamaha NS-10M. **Musical Instruments:** Steinway 7.5" grand piano w/Force Musical MIDI, Yamaha DX7, Fender Rhodes piano, Wurliizer piano, Hammond B-3 organ w/Leslie, harpsichord, vibes, clavinet, congas. **Rates:** Available upon request.

[24+] **EMF PRODUCTIONS; 1000 E. Prien Lake Rd., Ste. D; Lake Charles, LA 70601; (318) 474-0435; FAX: (318) 474-0435.** **Owner:** Ed Truge. **Manager:** Brent Flash.

[24+] **ENGLISH VALLEY MUSIC; 541 Forest Retreat Rd.; Hendersonville, TN 37075; (615) 822-6341; FAX: (615) 822-5570.** **Owner:** Jan Pulsford. **Manager:** Jan Pulsford.

[24+] **EXOCET STUDIOS; also REMOTE RECORDING; 3264 Shallowford Rd.; Chamblee, GA 30341; (404) 455-7256; FAX: (404) 455-0637.** **Owner:** Michael D. Adams. **Manager:** Geno Montgomery.

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# Southeast

21-track studios



[24+] **FRANKLIN INSTITUTE OF RECORDING SOUND TECHNOLOGY**; PO Box 1121; Franklin, TN 37064; (615) 794-3660. Owner: Danny M. Hiley.

[24+] **GHL**; also REMOTE RECORDING; 2807 Azalea Pl.; Nashville, TN 37204; (615) 269-5183; FAX: (615) 385-0204. Manager: Gary Hedden.

[24+] **GONG SOUNDS RECORDING STUDIO**; 10775 SW 188th St.; Miami, FL 33157; (305) 378-9243; FAX: (305) 378-9441. Owner: Gladstone Gilbert. Manager: Gladstone Gilbert.

[24+] **GROUNDSTAR LABORATORY**; 12 Music Circle S.; Nashville, TN 37203; (615) 256-7575; FAX: (615) 255-5448. Owner: Ronnie Millsap Enterprises. Manager: Keith Odle.

[24+] **HILLTOP RECORDING STUDIO**; 902 Due West Ave.; Nashville, TN 37115; (615) 865-5272; FAX: (615) 865-5553. Owner: Linneman Partners. Manager: John Nicholson. Engineers: John Nicholson, chief, Jack Linneman, Tim Fitzpatrick. Dimensions: Studio 35'x18', control room 20'x18'. Mixing Consoles: Quad Eight Virtuoso (Westar) 36x24 fully parametric EQ, transformerless preamps. Audio Recorders: Sony 3324 digital 24-track, Sony APR-24 analog 24-track, MCI JH-110B 2-track, Fostex E-2 2-track w/center track time code, Panasonic SV-3700 DAT. Cassette Recorders/Duplicators: (2) Nakamichi MR-1, Onkyo TA-2058 w/4 interface. Noise Reduction Equipment: (2) dbx Type 1, (2) Dolby SR, (2) Dolby A, (2) dbx D-9 22 cards. Synchronization Systems: Sony APR-24 w/internal SMPTE. Echo, Reverb & Delay Systems: EMT stereo plate reverb, Yamaha REV7 digital reverb, Yamaha SPX90II effects processor, Ibanez SDR-1000 digital reverb, Eventide H910 Harmonizer, Alesis Microverb III, Alesis Microverb II, Digitech 256XL effects processor. Other Outboard Equipment: Aphex Aural Exciter Type C, (4) dbx 160 compressor/limiter, (2) UREI 1176LN peak limiter, (2) UREI 545 parametric EQ, (4) Alesis 3630 compressors, (6) UREI 545 parametric EQ, (2) Valley People Kepex II noise gate, (2) Valley People Maxi Q parametric EQ, (4) Audio Logic MT-44 noise gate, (4) UREI 1/3-octave graphic room EQ, dbx 463 de-esser. Microphones: (2) Neumann U87, (4) Neumann KM84, Neumann KM86, (6) AKG 451, (4) Shure SM5B, Shure SM81, (4) Shure SM56, AKG D-12E, (10) direct boxes passive and active (various), (4) Sony ECM-50, (4) PZM, Lawson large condenser, Sennheiser MD-421, Joe Mill "little mic", RCA 77-DX ribbon, EV RE20. Monitor Amplifiers: (3) Crown DC-300, DC-175, D-75, (12) Alesis micro cue amps on cue system. Monitor Speakers: (2) Klipsch corner horns (mains), (2) Yamaha NS-10, (2) Tannoy NFM-8, (2) Electro-Voice Sentry 100A, (14) Fostex T-20 headphones, (2) Altec 9844 (studio), (4) Auratone 5C. Musical Instruments: Steinway CD-9 9' concert grand piano, Pearl 5-piece drum set w/Rims & Zildjian, (4) Fender, Ampeg and Peavey amps, Alesis D-4 drum module, Linn drum machine. Other MIDI Equipment: JL Cooper Mix-Mate 8-channel automation. Video Equipment: Sony BVU-800 3/4" VTR. Other: Two-way stereo active cue system, large drum booth w/great visibility, large collapsible vocal booth w/great visibility. Rates: Highly competitive for digital or analog, please call.

[24+] **HIX STUDIOS**; 2901 Hwy. 70 West; Hickory, NC 28602; (704) 328-2487; FAX: (704) 328-2489. Owner: Charles and Virginia Hicks. Manager: Marcus Keams.

[24+] **JAY HOWARD PRODUCTION AUDIO INC.**; 307 Atherton St.; Charlotte, NC 28203; (704) 525-7864; FAX: (704) 523-5473. Owner: Jay Howard. Manager: JoAnn Jeffries.

[24+] **JAVELINA RECORDING STUDIOS**; 808 19th Ave. S. and 30 Music Sq. W.; Nashville, TN 37203; (615) 320-5985; FAX: (615) 327-0858. Owner: Warren Peterson, Vicki Peterson. Manager: Warren Peterson. Dimensions: Room 1: studio 45'x75', control room 18'x27'. Room 2: studio 30'x30', control room 15'x20'. Mixing Consoles: Calrec UA8000 w/TASC automation 48-channel, Trident 80B Series 30-channel w/24 monitors. Audio Recorders: Mitsubishi X-880 32-track digital w/Apogee filter, Mitsubishi X-850 32-track digital, Sony APR-24 24-track analog.

[24+] **JY RECORDING AND SOUND**; also REMOTE RECORDING; 201 Trenton St.; West Monroe, LA 71291; (318) 325-4413; FAX: (318) 323-5915. Owner: James E. Young. Manager: Chris Turner.



**KIVA RECORDING STUDIO**  
Memphis, TN

[24+] **KIVA RECORDING STUDIO**; 904 Rayner St.; Memphis, TN 38114; (901) 278-1888. Owner: Gary Belz. Manager: Gary Harwood. Engineers: Greg Archilla—chief eng., Doug Nightwine, William Brown, Jack Holden. Dimensions: Room 1: studio 30'x45', control room 27'x19'. Room 2: studio 11'x18', control room 18'x22'. MIDI room 23'x24'. Mixing Consoles: SSL 4056G 48x32 w/Total Recall automation and G Series computer, Westar 52x24 w/Neve Flying Faders automation, API 16x4 discrete. Audio Recorders: (2) Mitsubishi X-800 32-track digital, Studer 24-A800, Mitsubishi X-86 2-track digital, Studer Mk 24-track analog, Studer A80 2-track analog, Panasonic SAT-3500 DAT, Ampex 1/4", Otari 1/2" 2-track. Cassette Recorders/Duplicators: (2) Yamaha C300, (2) Nakamichi BX-300. Noise Reduction Equipment: Dolby Type A 24 channels. Synchronization Systems: Adams-Smith Zeta-3. Echo, Reverb & Delay Systems: Lexicon 480L w/LARC, Lexicon 224 w/LARC, Lexicon PCM70 w/Ver. 3, AMS RMX 16, AMS DMX 15-80S, (3) Yamaha REVS, (3) EMT 140 plate, EMT 250. Other Outboard Equipment: (2) Drawmer DS-201 gate, (2) Teletronix LA-2A, (2) dbx 160, (2) dbx 165A, Lang PEQ2 tube EQ, (2) Yamaha SPX90, Eventide H949 Harmonizer, Fairchild Model 670 stereo, (4) Pultec EQP-1A, (2) Neve 1078 module, GML parametric EQ, Massenburg 4-channel mic preamp. Microphones: (6) AKG 414, (2) AKG D-112, (4) AKG 60, AKG D-224E, Beyer 101, EV 658-L, (2) EV RE20, (3) Neumann U48 tube, Neumann U49 tube, Schoeps MK26 tube, (6) Neumann U87, (5) Neumann KM84, (2) Neumann TLM170, RCA 77-DX ribbon, RCA 44 ribbon, (7) Sennheiser 421, Sennheiser MD-211, Shure SM81, Shure 565-SD, Sony ECM-33. Monitor Amplifiers: (8) Yamaha P2250, (6) Yamaha PD2500, (2) FM Acoustic FM1000. Monitor Speakers: (2) JBL 4435, (8) Yamaha NS-10M, (2) Tannoy SGM-10B, (2) Hidey-designed Kinoshita 24Hz system. Musical Instruments: Hammond B-3 organ w/Leslie, Yamaha DX7IFD, Roland D-550, Roland D-50, Roland S-50, PPG w/Wave Term, Roland Super JX-10, Akai S900, Bossendorfer 7'4" grand w/MIDI. Other MIDI Equipment: Roland MC-800 sequencer. Other: Studer Revox A725 CD player, Neve Prism rack. Rates: Available upon request. Specialization & Credits: Studio A, a Tom Hidley-designed and constructed control room, featuring a Kinoshita 24Hz monitoring system, is the only true mixing environment in the Memphis area. The console, an SSL 4056 G Series with Total Recall and automation, is complemented by an API 16x4 submixer with 550A EQ. Common ownership with the Peabody Hotel and the Holiday Inn Overton Square allows us to offer economical packages for studio time and luxury housing and accommodation. KIVA's list of clients include: Joe Walsh, Joe Vitale, Drivin' in Cryin'/Geoff Workman, Carl Perkins, Jimi Jamison, Albert King, Mark Lindsay, Bar Kays, Stevie Ray Vaughan, John Prine, Jerry Lee Lewis, Dennis Quaid, Ronnie McDowell and The BoDeans; and producers such as Norbert Putman, Mark Wright, T. Bone Burnett and Barry Mann. We have worked with labels including Geffen, CBS Records, Scotti Brothers, Epic, Chrysalis, Island Records, Motown, PolyGram, Arista, RCA, MegaJam and Warner Bros. with the soundtrack *National Lampoon's Christmas Vacation*.

[24+] **LITTLE JABOT RECORDING STUDIO**; 5903 I-49 S.; Opelousas, LA 70570; (318) 948-9561; FAX: (318) 948-9588. Owner: Jabot Productions. Manager: Robert Cardwell.

[24+] **LMR PRODUCTIONS INC.**; 947 Winchester Ave.; Ashland, KY 41101; (606) 324-9911. Owner: V. Scott Czeskleba. Manager: V. Scott Czeskleba. Engineers: Scott Czeskleba. Dimensions: Room 1: studio 16'x30', control room 12'x17'. Room 2: studio 10'x12'. Room 3: studio 9'x11'. Mixing Consoles: Tascam M3524 24-channel. Audio Recorders: Tascam MSR24 24-track, Tascam 388 8-track, Tascam DA30 2-track digital, Tascam 22-2 1/2-track. Cassette Recorders/Duplicators: Tascam 112, (3) TEAC. Noise Reduction Equipment: dbx 150X Type 1. Echo, Reverb & Delay Systems:

DigiTech DSP128 Plus, ART Proverb. Other Outboard Equipment: Aphex Aural Exciter Type C, Alesis MEQ230 1/3- octave EQ, Alesis 3630 compressor. **Microphones:** Sennheiser 441, (2) Sennheiser 421, (2) AKG C-1000S, (3) EV ND408, (2) EV ND757, (2) EV ND357, EV ND308. **Monitor Amplifiers:** Alesis RA100 Reference, Rane HC6 headphone, Tascam PA20B Reference. **Monitor Speakers:** Tannoy 8 near-field, Tascam CM4. **Musical Instruments:** Yamaha SY77 digital keyboard w/ 16-track sequencer, Yamaha CVP8 keyboard, Yamaha CS60 keyboard, Technics SX-K700 digital keyboard. Other MIDI Equipment: Tandy 1000TL w/Music Studio 3.0. Rates: \$40/hr 24-track, block discounts and demo/album package discounts.

[24+] **THE "LOFT" RECORDING STUDIO/WARNER BROS. RECORDS;** 1815 Division St.; Nashville, TN 37203; (615) 327-8444; FAX: (615) 329-1739. Owner: Warner Bros. Records. Manager: Robert Tassi.

[24+] **LONE PINE RECORDING STUDIOS;** 5024-A Simmons Rd.; Orlando, FL 32812; (407) 281-6881; FAX: (407) 275-1495. Owner: Michael Hurley. Manager: Patti Pool. Engineers: Michael Hurley. Dimensions: Studio 30'x23'x12', control room 17'x21'x12'. **Mixing Consoles:** Trident Series 80-B 24x24x2 w/Visionary Audio modified mic preamps. **Audio Recorders:** Otari MX-80 24-track, Studer A807 2-track w/ center track time code and Dolby SR, (2) Panasonic SV-3900 DAT w/MK 390 controller, Tascam TSR-8-8-track 1/2", Tascam 44 4-track 1/4", Tascam 42 2-track 1/4". **Cassette Recorders/Duplicators:** (2) Kenwood KX-800. **Noise Reduction Equipment:** Dolby SR on Studer A807. **Synchronization Systems:** Adams-Smith Zeta-3 w/Zeta remote. **Echo, Reverb & Delay Systems:** Lexicon PCM70, Eventide H3000SE Ultra-Harmonizer, (2) Summit TLA-100 tube compressor, Aphex Compellor, BBE 902 processor, (2) Alesis Quadraverb, (2) Alesis MIDVerb II, (2) dbx de-esser. **Other Outboard Equipment:** Technics SLP-500 CD player. **Microphones:** Neumann U89, (6) Neumann KM84, (2) AKG 414, AKG C-33 stereo, (2) Audio-Technica AT4051, Sennheiser MD-421, (2) Audio-Technica AT813, Crown PZM, AKG 460, (5) Shure SM57, Shure SM58, AKG D-112E. Vintage mics available on rental basis. **Monitor Amplifiers:** Bryston 4B, Bryston 3B, (3) Dynaco D-150. **Monitor Speakers:** (2) UREI 809 w/subwoofer, (2) Yorkville YSM-1 near-field, (2) Yamaha NS-10M Studio near-field, (2) Auratone cubes. **Musical Instruments:** Yamaha 9' concert grand piano, Yamaha touring drums, Fender Precision bass, Ibanez acoustic guitar, tambourine, vibraphone, triangle, (6) Manhasset music stand w/light, (6) symphony-style musician chairs, Schoenhut toy piano, Proteus 1 & 2, Korg M-1R, Roland D-550, Kurzweil PX-1000, Yamaha DX7, Alesis HR-16 drum machine, Roland R-5 drum machine, Yamaha KX88 88-key controller, 360 Systems MIDI patcher, Akai ASQ-10 Roger Linn sequencer, Seiko digital metronome. **Video Equipment:** Sony 9850 3/4" video recorder/player. Rates: 24-track and direct-to-digital, \$110/hr; substantial discount for block bookings. 2/4/8-track, \$75/mr.

[24+] **MASTER SOUND RECORDING STUDIO;** also REMOTE RECORDING; 5249 Challeedon Dr.; Virginia Beach, VA 23462; (804) 499-0000; (804) 496-0553. Owner: Robert Ush. Manager: Robert Ush. Engineers: Robert Ush, Mike Trimble, Brent Havens. Dimensions: Room 1: studio 45'x35', control room 22'x20'. MIDI room 18'x12'. **Mixing Consoles:** Aneq G2520 40x24x96 w/VCA bypass and MasterMix II automation. **Audio Recorders:** Studer A827 24-track, Sony/MCI JH-24 24-track w/autolocator III, Sony 3202 2-track digital, Otari MTR-12H 1/2-track 1/2" 30 ips, Sony 5003V 1/2-track 30 ips, (2) Panasonic SV-3500 R-DAT. **Synchronization Systems:** (2) TimeLine Lynx, Sony JH-45 SMPTE. **Echo, Reverb & Delay Systems:** (2) Lexicon 200 stereo digital reverb, (2) Yamaha SPX90II, (2) Alesis QuadraVerb, Ibanez SDR-1000, Eventide 969 Harmonizer, DigiTech IPS-33, Lexicon PCM42, Lexicon PCM70, DigiTech DSP-128, ART Multiverb, Korg DRV-3000. **Other Outboard Equipment:** Drawmer 1960 stereo tube limiter, Drawmer 201 stereo gate, Aphex 612 stereo expander/gate, (4) Valley Gate 4-channel gate, LT Sound CLX-2 stereo compressor/limiter/expander, BBE 802 2-channel exciter, Universal Audio 175 tube limiter, BS-402 stereo compressor/limiter, (11) Valley compressor/limiter, Panasonic SL-4300 CD player. **Microphones:** (2) Neumann U87, (2) Neumann U47, Neumann TLM170, Neumann U89, (6) AKG 414JULS, AKG TL-414, AKG The Tube, (8) AKG C-451/460B, AKG D-112, AKG D-12E, (6) Sennheiser MD-421, Sennheiser MD-441, (17) additional assorted dynamics. **Monitor Speakers:** (2) JBL/UREI 4435, (2) Tannoy SGM-15, (4) Tannoy PBM-8, (2) Tannoy PBM-6.5, (2) Yamaha NS-10, (2) Auratone, (2) TOA. **Musical Instruments:** Korg M-1, Yamaha C7 7'6" concert grand piano, E-mu Emax stereo sampling keyboard, Kawai K-5, Fender Rhodes, Yamaha DX7, Oberheim Matrix-6, Ensoniq ESQ, Yamaha FB-01, Roland Super JX-10, Roland Juno, E-mu SP-12 drum machine, Alesis HR-16B, Roland R-8 drum machine, Yamaha 9-piece custom recording series drum set. **Other MIDI Equipment:** Macintosh SE w/20MB HD, Southworth Jam Box/4 SMPTE-to-MIDI controller, Performer, Southworth MIDI Paint. **Video Equipment:** Sony 3/4" recorder, NEC 19" color monitor. Rates: 48-track \$145/hr., 24-track \$95/hr., 16-track \$70/hr., video sweetening \$125/hr.

[24+] **MASTERFONICS;** 28 Music Square E.; Nashville, TN 37129; (615) 327-4533; FAX: (615) 242-0101. Owner: Glenn Meadows. Manager: Milan Bogdan. Engineers: Glenn Meadows. —LISTING AND PHOTOLOGO CONTINUED TOP OF NEXT COLUMN—



MASTERFONICS  
Nashville, TN

dows, Milan Bogdan, Benny Quinn, Jim Loyd, Scott Gunter, David Boyer. Dimensions: Room 1: mix control room 26'x20'. Room 2: studio 45'x20', control room 17'x16'. Room 3&4: mastering room 20'x14'. CD prep room 20'x14'. **Mixing Consoles:** SSL 4000E 64x32 (32 mic/line, 16 dual line, 4 stereo modules)—room 1, SSL 4000E 48x32 (40 mic/line, 8 stereo modules)—room 2, both SSL's equipped w/Total Recall and G Series automation; JVC DM-900 digital, Neumann SP75, Neumann 272. **Audio Recorders:** (2) Otari DTR-900II 32/64-track digital, Studer A807 1/4, Ampex ATR-102 1/4 & 1/2, JVC 900 2-track digital, Sony 1630 2-track digital, Sony 3402 2-track digital, Mitsubishi X-86C 2-track digital, (2) Sony 2500 R-DAT, (2) Panasonic SV-3500 R-DAT, Fostex D-20 R-DAT, (6) Tascam DA-30 R-DAT, Sony 601 2-track digital, (3) Studer A80 1/4 & 1/2, Studer B67 1/4, Otari MX-55 1/4 w/TC. **Cassette Recorders/Duplicators:** (20) Tascam 122 MkII real-time. **Echo, Reverb & Delay Systems:** (4) EMT plate, EMT 250, EMT 252, AMS DMX 15-80S, AMS RMX 16, (3) Sony MU-R201, Quantec Room Simulator, Quantec QRS/XL w/Mac, (2) Lexicon 480L, (3) Lexicon 224XL, (2) Lexicon PCM70, Yamaha SPX90II. **Other Outboard Equipment:** (3) Fairchild 670 tube, (3) Teletronix LA-2A tube, (2) Pultec EQP-1A3 tube EQ, Sontec EQ, Sontec DRC-202, GML 8900 comp/limiter, TC Electronic 2290, (4) API 550A EQ, Wendel Jr., (2) Publison IM-90, Eventide H969, Eventide H3000E, Drawmer DS-201, (2) Valley Audio PR-10 rack w/two DSP, (2) Valley People Gain Brain II, (6) Valley People Kepex II, (2) Valley People Maxi-Q, ADR F-796X-R, Sontec DRC-202, (2) dbx 160X, dbx 165A, Universal Limiting Amplifier 175. **Microphones:** Neumann U47 tube, Neumann M49 tube, Neumann U87, Neumann U67 tube, TLM170, Telefunken 251, AKG 414EB, Shure, EV, Audio-Technica, Sennheiser, Sony. **Monitor Amplifiers:** FM Acoustic, JDF, Sony. **Monitor Speakers:** Hitley/Kinoshita, Yamaha NS-10, KEF C55, Genelec, B&W, Fostex 780, Auratone. **Musical Instruments:** Kimball 6' grand piano, (5) Gibson guitar, Fender Rhodes electric piano, Wurilizer electric piano, Leslie cabinet. **Video Equipment:** NEC monitor, JVC CR-8250, JVC CR-6000U, (2) JVC 600U, JVC 850U, JVC BR-7000 VHS Hi-fi, JVC SLO-1800 Beta, Sony DMR-4000. **Other:** Sony DFX-2400 sample frequency converter, Sony DTA-2000 tape analyzer, (3) Sony DAL-1000 digital compressor, JVC AE-90 and AE-900 digital editors, (3) JVC DS-LC900 digital parametric controller, JVC FC-900 format converter, JVC TC-900 time code unit, JVC 901 digital interface, Yamaha PDS CD disc system, Wadia Digilink 20 fiber optic system, BASE, Neumann VMS-70. **Specialization & Credits:** Special Services: Complete CD, cassette and vinyl manufacturing services. Custom packaging, artwork, printing. Highest quality, excellent pricing. Contact: Jim Loyd.

[24+] **MASTERLINK STUDIOS I & II AND CASSETTE EXPRESS;** Divisions of Al Johnson Enterprises Inc.; 114-116 17th Ave. S.; Nashville, TN 37203; (615) 244-5656; FAX: (615) 242-2472. Owner: Albert Jolson. Manager: Tommy Casassa/director of operation. Engineers: Larry Rieuf Jr., David Cherry, Chad Hailey, Stephen Foster, Lerr Repasky. Dimensions: Studio 35'x40', control room 15'x17'. Room 2: 25'x30' NED Synclavier suite. **Mixing Consoles:** Sphere Eclipse C 40x32 w/automation, Trident 75 28x24. **Audio Recorders:** Otari MTR-100A 24-track 2" w/HX Pro, Ampex MM1200 24-track or 16-track 2", Studer A180 2-track w/center track time code, Studer A80 2- or 4-track 1/4" or 1/2", Studer B67 2-track, Ampex ATR-1000, Scully 3- or 4-track, Nakamichi F-1 w/VHS or Beta. **Cassette Recorders/Duplicators:** Denon DRM-500, JVC KDV-6 and Nakamichi MR-1 cassette, (110) KABA duplicator slave, Kronos cassette loader. **Noise Reduction Equipment:** (2) Dolby SR, (2) Dolby A, (2) dbx. **Echo, Reverb & Delay Systems:** Lexicon 200, (2) Lexicon PCM70, Lexicon Super Prime Time, Eventide 910, Eventide 949, Yamaha REV5, AMS RMX-16, Roland DEP-5. **Other Outboard Equipment:** Eventide 3000 Ultra-Harmonizer, Valley rack w/(2) each Kepex/Commander/Gain Brain/Valley DSP de-esser/dbx comp/limiter, (2) GateX noise gate, (2) Teletronix leveling amp, (2) UREI leveling amp, (2) Aphex Type B Aural Exciter, API parametric EQ (discrete), Sontec parametric EQ. —LISTING AND PHOTOLOGO CONTINUED TOP OF NEXT PAGE

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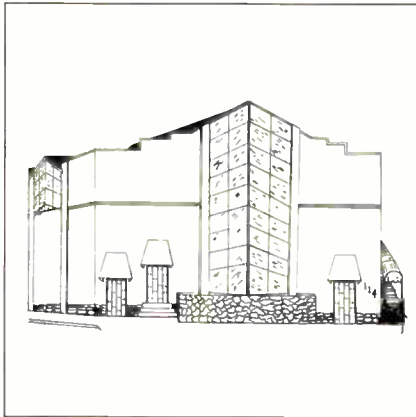
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—LISTING CONTINUED FROM PREVIOUS PAGE



**MASTERLINK STUDIOS I & II  
AND  
CASSETTE EXPRESS  
Nashville, TN**

Goldline RTA-30, Klark-Teknik DN360 graphic EQ, (2) UREI 529 room EQ, UREI crossover. **Microphones:** Neumann: U47A, U48, U67, U87, KM54A, KM56, KM84; Sennheiser: MKH-415T, MKH-40P48, 421U4, 421U4, 421/9; Sony: C-48, ECM-22P, ECM-22, ECM-50, ECM-26, ECM-50PS; Beyer Dynamic: M88N(C); AKG D224E, Shure 580SB & 55; Western Electric 635A & 210; Countryman EM101. **Monitor Amplifiers:** (2) McIntosh MC-250, (2) McIntosh MC-2100, (3) Yamaha P2050 and (2) Studer A68. **Monitor Speakers:** (2) Westlake TM1, (2) Meyer HD-1, B&W DM100, EV Sentry and Yamaha NS-10M. **Musical Instruments:** Baldwin 9.5" grand, Kawai 5'10" grand w/MIDI triggers, Hammond B-3 organ w/Leslie, Wurflitzer electric piano, Rhodes 73 electric piano, Horner D6 clarinet, Pearl and Slingerland drums, Gretsch drums w/MIDI pickups. **Other MIDI Equipment:** Roland MKB-1000 MIDI controller, Akai 900 sampler, Roland D-50, Roland Super Jupiter w/programmer, Yamaha TX816 module, Oberheim Matrix-6, E-mu Emulator II+ w/hard disk, Linn 9000, Roland Octapad, Roland DDR-30 digital drums, J.L. Cooper 16x20 MIDI matrix, Southwest Music Systems Jam Box 4, GM-7 guitar controller. **Video Equipment:** Sony 3/4" U-matic SP, BTX 4500 time code generator, Mitsubishi 25" monitor. **Digital Workstations:** 64 voice Synclavier including MIDI/SMPTE/VTC and SCSI interface, Macintosh II w/Performer software 5MB RAM and 40MB drive. **Specialization & Credits:** Masterlink I: Best tracking room in Nashville. Automated 40x32 Sphere Eclipse C and new Otari MTR-100A 24-track. Beautiful 9'1/2" Baldwin Grand and "killer" mic selection spanning three decades. Masterlink II: Newest and most advanced "computer-based" production room on Music Row. NED Synclavier and Mac Performer systems. **Cassette Express:** (615) 244-5667. Largest KABA duplication system in the Southeast. Credits: Regular clients include: TNN—On Stage and American Music Shop, BMG Music, Ronnie McDowell and a host of other nationally known artists.

[24+] **MELODY RECORDING;** also **REMOTE RECORDING;** De Diego #2, San Francisco; Rio Piedras, PR 00927; (809) 763-3555; FAX: (809) 764-3375. **Owner:** Javier D. Hernandez. **Manager:** Rei Pena.

[24+] **THE MIDI TWIN RECORDING STUDIO;** 1600 Wilson Way, Ste. 2; Smyrna, GA 30082; (404) 436-5834. **Owner:** John and Steve Briglevich. **Manager:** John and Steve Briglevich.

[24+] **MIDLAND RECORDING STUDIOS;** 4041 Laguna; Coral Gables, FL 33146; (305) 444-6222; FAX: (305) 446-5356. **Owner:** Andres Valdes Jr. **Manager:** J.C. Ulloa. **Engineers:** J.C. Ulloa, Will Tarrant. **Dimensions:** Room 1: studio 21'x29', control room 21'x18'. Room 2: studio 7'x7', control

room 18'x11'. Room 3: control room 10'x7'. **Mixing Consoles:** Trident Series 80B 50x24x24 w/DiskMix III moving faders automation, Trident Series 65 32x24. **Audio Recorders:** Otari MTR-90II 24-track, Otari MX-80 24-track, (2) Otari MTR-12 2-track 1/4" and 1/2", (2) Sony PCM 2500 & PCM 1000 ES DAT. **Cassette Recorders/Duplicators:** (2) Tascam 122 MkII, (2) Kenwood KX3510, Aiwa F990. **Synchronization Systems:** Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** Lexicon 480L, AMS RMX 16, AMS DMX 15-80S, (3) Lexicon PCM70, (2) Lexicon PCM42, Eventide H3000, (3) Yamaha SPX90, Roland SDE-3000 delay, Alesis MIDVerb II, Ibanez DM-2000 delay. **Other Outboard Equipment:** (2) L/L LAB 660 compressor, (4) Drawmer 201 stereo gate, (2) ADR Complex stereo limiter, dbx 162 stereo compressor, dbx 165A limiter, Aphex Type B Aural Exciter, (8) Aphex CX-1 compressor/gate, (4) Aphex EQF-2 equalizer, (4) Valley People Kepex II gate, (2) Valley People Gain Brain II compressor, Valley People DSP de-esser, (2) API 550B equalizer. **Microphones:** AKG C-24 stereo tube, (2) AKG 451, (4) AKG 414, AKG D-12, (2) Neumann U47FET, (2) Neumann U87, Neumann KM88, (2) Schoeps CMC5, (4) Sennheiser 421, Sennheiser 44.1, (2) Sony ECM-55, (2) Sony C-37, (6) Shure SM57, Shure SM7, (4) Beyer M88, (2) Beyer 101, (2) Fostex M88. **Monitor Amplifiers:** Bryston 4B, (2) Hafler P-505, (2) Hafler P-225, (2) UREI 6230. **Monitor Speakers:** (2) Meyer 833 2/834 subwoofer, (2) Westlake BBSM-6, (2) Fourier, (6) Yamaha NS-10M, (2) JBL 4312, (4) Auratone 5C. **Musical Instruments:** Steinway D 9" grand piano, E-mu Emulator II 2.3, E-mu Emax HD, Yamaha DX7IID, Roland D-50, Alesis HR-16 drum machine. **Other MIDI Equipment:** Opcode Systems Studio 3 MIDI/SMPTE Mac interface, Mac Plus w/ Performer available upon request. **Other:** Roland PVC-350 vocoder and any other piece of gear available upon request. **Digital Workstations:** Digital editing and recording available upon request. **Rates:** Available on request.

[24+] **MIRROR IMAGE SOUND & RECORDING INC.;** also **REMOTE RECORDING;** 619 S. Main St.; Gainesville, FL 32601; (904) 376-8742; FAX: (904) 375-6688. **Owner:** Robert McPeck. **Manager:** Ray Valia.

[24+] **THE MONEY PIT;** 622 Hamilton Ave.; Nashville, TN 37203; (615) 256-0311; FAX: (615) 259-4541. **Owner:** Paul Worley, Ed Bayers Sr., Ed Bayers Jr. **Manager:** Jim Burnett. **Engineers:** Ed Seay (as available), Mike Poole (as available), Clark Schleicher (as available), Jim Burnett. **Dimensions:** Room 1: studio 30'x16', control room 22'x21'. Iso booth 13'x10'. Iso booth 16'x10'. Booth 20'x11'. Piano booth 15'x8'. **Mixing Consoles:** Trident Series 80 40x24x28 w/diskmix 3 moving fader automation. **Audio Recorders:** Mitsubishi X-850 32-track digital w/Apogee filters and LaBarre analog modifications, Otari MTR-90II 24-track, Panasonic SV-3500 DAT, Studer B62 2-track 1/4". **Cassette Recorders/Duplicators:** Aiwa AD-F800 3-head, Sony TCK-870ES. **Echo, Reverb & Delay Systems:** EMT 250, Lexicon PCM70 v.2, EMT 140 stereo delay w/162 electronics, Yamaha SPX90, (2) Yamaha SPX900, Publison Internal machine 90 (available), (2) Lexicon PCM42 digital delay, ART Pro-Verb, Eventide H910 Harmonizer, (7) Valley People Kepex II gate, (2) Valley People Gain Brain, Alesis Quadraverb, Valley People DSP II, (2) dbx 160X compressor/limiter, (2) UREI 1178 dual peak limiter, (2) UREI 1176N limiting amp, LT Sound dual-channel parametric EQ, Klark-Teknik DN360 dual-channel graphic EQ, Pultec EQP-1 EQ, Pultec EQP-1A3, (2) dbx 160 comp/limiter, GML-4 ch. mic pre's, GML Model 8200 parametric equalizer, Tub Tech CL1-B compressor. **Microphones:** Microtech Gefell UM705, (2) Neumann U87 tube conversion, Neumann U47 tube, Neumann U64 tube, (2) AKG 414EB, (7) AKG C-451EB, (5) Electro-Voice ND408, (5) Sennheiser 421U, (2) Sennheiser 441U, (2) Crown PZM, (4) AKG C-1000, Electro-Voice RE20, (2) Sanken CU-32, (3) Shure SM57, Studer/Schoeps SKM5-U. **Monitor Amplifiers:** UREI 6500, (3) Hafler P500, (2) BGW 250D, Crown D-150. **Monitor Speakers:** Westlake BBSM-10, Acoustic Research AR18BV, Auratone 5C, EV S12-2A, Yamaha NS-10M. **Musical Instruments:** Baldwin SD10 9" grand piano, Yamaha PF80 88-key MIDI keyboard available, Roland MKS-20 sampled grand piano, Roland D-550 linear synthesizer, various electric and acoustic guitars and basses available, Linn drum machine.

[24+] **MORNINGSTAR RECORDING INC.;** also **REMOTE RECORDING;** 901 Maple Ave.; Marco Island, FL 33937; (813) 642-7981. **Owner:** Roger D. Raymond. **Manager:** Donald A. Tegeler.

[24+] **MORRISOUND RECORDING INC.;** 12111 N. 56th St.; Tampa, FL 33617; (813) 989-2108; FAX: (813) 980-6950. **Manager:** Tom Morris. **Engineers:** Tom Morris, Jim Morris, Rick Miller, Scott Burns, Judd Packer. **Dimensions:** Room 1: studio 40'x30', control room 24'x25'. Room 2: studio 14'x30', control room 24'x25'. **Mixing Consoles:** SSL 4064G Series w/ Total Recall, Sound Workshop Series 34 w/automation. **Audio Recorders:** (2) Otari MTR-90, Otari MTR-12, Otari 5050MkII 8-track, (3) Otari 5050B 2-track, (2) Panasonic 3700 DAT, (2) Panasonic SV-3500 DAT. **Cassette Recorders/Duplicators:** (6) Tascam 122 MkII. **Noise Reduction Equipment:** (4) dbx 150. **Synchronization Systems:** BTX Shadow, Adams-Smith Zeta-3, SSI Shadow controller. **Echo, Reverb & Delay Systems:** Lexicon 480L, Lexicon 224XL, (2) Lexicon PCM70, Lexicon PCM60, (2) Lexicon PCM41, (2) Lexicon PCM42, Lexicon Prime Time, TC Electronic 2290, (2) Eventide H3000, (2) Eventide H910, Yamaha REV7, BBE Sonic Maximizer, (2) EXR Aural Exciter, Delta Lab DI-5, Symetrix 501, dbx 166, (2) dbx165, Audio Art stereo parametric EQ, Loft 450, Valley



**People Dyna-Mite, BSS DPR-502. Other Outboard Equipment:** Eventide H910 Harmonizer, DeltaLab DL5, Eventide H3000, (2) dbx 165, (2) UREI LA-4, (2) Valley People Dyna-Mite, (2) EXR EX-3 Exciter, Omni Craft noise gates, Audioarts stereo parametric equalizer, (2) dbx 166. **Microphones:** (15) Sennheiser 42.1, (2) Sennheiser 441, (5) AKG 414, (2) AKG 451, (3) Neumann U87, (3) EV RE20, (6) Shure SM57. **Monitor Amplifiers:** (6) Hafler. **Monitor Speakers:** (2 pair) UREI 813B, (3 pair) Yamaha NS-10M, (2 pair) Auratone 5C, JBL 4312, Eastern Acoustic Work MS50, EV Sentry 100A. **Musical Instruments:** Yamaha conservatory grand piano, Gretsch 5-piece drum set, Yamaha 5-piece drum set, Hammond C-3 w/ Leslie. **Video Equipment:** Sony VO-5800, audio post-production for film or video, JVC CR850U. **Digital Workstations:** Digidesign Sound Tools system, Spectral 16-channel direct-to-disk system. Rates: Please call.

**[24+] MUSIC CITY AUDIO INC.;** also REMOTE RECORDING; PO Box 4762; Nashville, TN 37216; (615) 227-3542. Owner: Music City Audio Inc. Manager: Joe Mills.

**[24+] MUSIC CITY MIDI;** Hendersonville, TN 37077; (615) 264-1819. Owner: K.K. Proffitt.



**MUSIC MILL**  
Nashville, TN

**[24+] MUSIC MILL;** 1710 Roy Acuff Pl.; Nashville, TN 37203; (615) 254-5925; FAX: (615) 244-5928. Owner: Harold Shedd. Manager: Todd Culross. Engineers: Jim Cotton, Joe Scaife, Todd Culross. Dimensions: Room 1: studio 23'x19', control room 31'x36'. Room 2: 13'x16', control room 23'x19'. **Mixing Consoles:** Focusrite Studio 64x48 w/GML, Trident TSM 32x24 w/Allison Automation. **Audio Recorders:** (2) Mitsubishi X-850 32-track digital, (2) Studer A800 24-track, (2) Panasonic 3700 DAT, Sony 2500 DAT, (2) Studer A710 cassette. **Echo, Reverb & Delay Systems:** Lexicon 480L w/sampling, (2) EMT 250, Lexicon 224X, (2) EMT 140 plate reverb, (2) BAE L140 plate reverb, AMS RMX-16 reverb, Publison Infernal Machine, Lexicon 300, (2) TC Electronic 2290 processor. **Other Outboard Equipment:** (8) GML 8300 mic preamp, (2) GML 820 parametric EQ, Tube Tech compressor, Teletronix LA-2A, (4) Teletronix LA-3A, (4) Kepex II gate, Drawmer DS-201 gate, Aphex expander/gate, Aphex Compeller. **Microphones:** (2) Sanken C-41, Neumann M49, (5) Neumann U87, (2) Neumann U67, Neumann U47 FET, (2) Neumann KM84, (2) AKG C-460, (5) AKG C-414EB, (2) AKG C-452, (6) Sennheiser MD-421, (2) Sennheiser MD-441, Shure SM57, Shure SM56, Shure SM81. **Monitor Amplifiers:** (4) MacIntosh 2300, (2) MacIntosh 2205, (4) BGW 250. **Monitor Speakers:** (4) Super Reds w/Mastering Labs crossover, (4) Yamaha NS-10M, (4) Auratone 5C. **Musical Instruments:** Yamaha 57" grand piano w/Forte MIDI system, Dyno-My-Piano 73 w/chorus, Wurliitzer electric piano, Pearl drum kit, misc. amplifiers. Rates: On request.

**[24+] MUSIC ROW AUDIO;** 11 Music Circle S.; Nashville, TN 37203; (615) 244-3700; FAX: (615) 244-6729. Owner: Bruce Dees, Bill VornDick, Scott Martin. Manager: Michele Rahmani.

**[24+] MUSIPLEX;** also REMOTE RECORDING; 2091 Faulkner Rd. NE; Atlanta, GA 30324; (404) 321-2701; FAX: (404) 636-7738. Owner: Tom Wright. Manager: Alicia Paulete.

**[24+] NEW ARTS CLUB RECORDING INC.;** also REMOTE RECORDING; 2016 Mt. Vernon Ave., Ste. #300; Alexandria, VA 22301; (703) 519-7841. Owner: James Williams. Manager: William May. Engineers: James Williams, William Froberg. **Mixing Consoles:** Digital mixing 32 channel 8 input/8 output. **Audio Recorders:** Panasonic DAT player, Denon recordable CD player. **Echo, Reverb & Delay Systems:** Digital signal processor, Lexicon digital reverb. **Other Outboard Equipment:** 32-voice digital sampling. **Monitor Speakers:** Evn speaker sound system, Digital Design speaker sound system. **Other MIDI Equipment:** Texture software, C-Lab software, 1800MB hard disk storage. **Other:** Manhattan sound effects library, Sound Ideas sound effects library, Pacific Rim Collection sound effects library, LA Effects sound effects library. **Digital Workstations:** AudioFrame 1000.

**[24+] NEW MEMPHIS MUSIC/COTTON ROW RECORDING;** 1503 Madison Ave.; Memphis, TN 38104; (901) 276-8518. Owner: Ward Archer Jr, Nikos Lyras. Manager: Tamara Frost.

**[24+] NEW ORLEANS RECORDING COMPANY;** 3229 8th St.; Metairie, LA 70002; (504) 833-0066; FAX: (504) 833-0883. Owner: Steve Himefarb. Manager: Steve Himefarb.



**NEW RIVER**  
STUDIOS INC.  
Fort Lauderdale, FL

**[24+] NEW RIVER STUDIOS INC.;** 408 S. Andrews Ave.; Fort Lauderdale, FL 33301; (305) 524-4000; FAX: (305) 524-3999. Owner: New River Productions Inc. Manager: Virginia Cayia. Engineers: Dave Barton, Jim Thomas, Larry Janus. Dimensions: Room 1: studio 25'x20', control room 20'x16'. Room 2: studio 8'x8', control room 12'x14'. **Mixing Consoles:** Neve 8101 56x48 w/Flying Faders automation, Trident Series 64x32x16. **Audio Recorders:** Mitsubishi X-850 32-track w/Apogee filters, (2) Studer A800 24-track, (2) Studer A80 2-track 1/2" and 1/4", Studer A80 4-track 1/2" w-center-channel SMP/E, Sony PCM-2500 R-DAT, JVC DSDT 900 time code DAT, Studer Revox B77 2-track. **Cassette Recorders/Duplicators:** (2) Yamaha KX\*200, (2) Yamaha K-1000. **Noise Reduction Equipment:** Dolby SP24, (2) Dolby SR, (4) Dolby 361 (A). **Synchronization Systems:** (3) Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** AMS RMX 16 digital reverb, Lexicon 480L digital effects, EMT 140 stereo tube plate, Lexicon 97 Super Prime Time, (3) Lexicon PCM42, (2) Eventide H949 Harmonizer, Neve 33509 stereo compressor/limiter, (2) Pultec EQP-1, Lexicon PCM70, Lexicon LXP-5, (2) API KH-553 EQ, Eventide H3000SE, Lexicon LXP-1 reverb, ADR scamp rack, (2) Teletronix LA-2A, (3) dbx 165A compressor, (2) Drawmer DS201 dual noise gate, (4) UREI 117E limiter, (2) API 550 EQ, (4) API 550A EQ, (2) SPX9011, (7) Kepex II noise gates, Gain Brain comp/limiter, (2) dbx 162 stereo compressor. **Microphones:** Neumann M49, (2) Neumann KM84, (2) Neumann KM86, (4) Neumann U87, (2) Neumann U89, (4) AKG 414, (4) Beyer M88, (2) Beyer M101, Schoeps CMTS 501 stereo, (4) Sennheiser 421, (2) Schoeps CMC-5, various others. **Monitor Amplifiers:** (5) Acoustat TNT 200. **Monitor Speakers:** (4) Westlake BB5M10, (2) Westlake BB5M6, (4) Yamaha NS-10M, (2) Meyer subwoofers. **Musical Instruments:** Yamaha C7D 7'6" grand piano, Sonor drum kit, Hammond B-3 organ w/Leslie. **Other MIDI Equipment:** Macintosh Plus w/Performer, Opcode Studio Plus II computer MIDI interface, Akai S1550 sampler, Yamaha TX802 keyboard module, Roland D-50, Roland D-550 synth module, Alesis HR-16 drum machine, 360 System: MIDI Bass, Opcode Time Code. **Video Equipment:** Sony BVU-850SP 3/4" U-matic, Proton 25" monitor, JVC 6600 3/4" U-matic, JVC monitor, Tektronix TSG-100 house sync generator. Rates: Please inquire about hourly and daily rates. **Specialization & Credits:** New River Studios has been in operation for over nine years. Recently, Studio A underwent extensive control room modifications and upgrades. The upgrades include a Mitsubishi 32-track recorder and Neve's Flying Faders automation. Still available is 24- and 48-track analog recording. Studio B is our MIDI studio, equipped with 24-track recording. Also available is our 1" layback system called SynLink, formed with Selkirk Communications Video Services. Our most recent album credits: Skid Row, Danger Danger and Extreme. Video and commercial clients: the Florida Lottery and US Air Force. Thanks to all our clients for your support.

**[24+] NIGHT WING RECORDING COMPLEX;** also REMOTE RECORDING; 4321 Fairy Ave.; Shreveport, LA 71108; (318) 636-7394. Owner: W.C. Wheat Jr., Marie Wheat. Manager: Wendell DePrang.

**[24+] OAK VALLEY SOUND STUDIO;** also REMOTE RECORDING; 105 Oak Valley Dr.; Nashville, TN 37207; (615) 262-2600; FAX: (615) 262-4070. Owner: Nashville Teleproductions Inc. Manager: Kevin McManus.

**[24+] OLIVERIO MUSIC INC. (OMI STUDIOS);** 750 Ralph McGill Blvd. NE; Atlanta, GA 30312; (404) 525-4440; FAX: (404) 525-4545. Owner: James Oliverio. Manager: Eob Gillespie.

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## Southeast 24-track studios



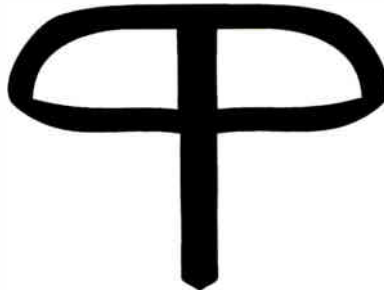
[24+] OMNISOUND RECORDING STUDIO; 1806 Division St.; Nashville, TN 37203; (615) 321-5526; FAX: (615) 321-5528. Owner: Esprit Sound Inc. Manager: Michael Koreiba. Engineers: Patrick Kelly, Greg McNeer-Technician. Dimensions: Room 1: studio 45'x19', control room 13'x28'. Room 2: studio 10'x11', control room 10'x19.5'. Mixing Consoles: Trident A-Range 40x24x24 w/Otari DiskMix III moving fader automation, MCI 528 28x32x36. Audio Recorders: Ampex ATR 102 2-track 1/2", Otari MTR-90III 24-track, Studer B67 2-track 1/4", Studer A800 24-track, Sony 75Es DAT deck. Cassette Recorders/Duplicators: Technics M65 3-head, (2) JVC TD V531BK 3 Head. Echo, Reverb & Delay Systems: (2) Lexicon PCM70, Lexicon PCM42, Lawson Echo Plate, Roland SRV-2000, Yamaha SPX90II, Alesis MIDiverb II. Other Outboard Equipment: ADR Vocal Stresser, (3) dbx 160 limiter, dbx 161 limiter, (3) LA-2A, (2) Drawmer DS-201 gate, (4) Kepex II gate, LT Sound stereo compressor/limiter/de-esser, Tube Tech CL1B compressor. Microphones: Neumann U67 tube, (2) Neumann U87, (3) Neumann KM84, Neumann U47 FET, (7) Sennheiser MD-421, (5) Shure SM57, (5) AKG 414, (2) AKG 451, (2) AKG 452, (2) AKG D-12, AKG D-112, (2) B&K 4006, (2) Electro-Voice RE20. Monitor Amplifiers: Bryston 4B, McIntosh 2100, Adcom GFA-555. Monitor Speakers: Tannoy FSM, Tannoy LGM-12", (4) Yamaha NS-10M, Auratone 5C, Altec Big Reds. Musical Instruments: Yamaha C7 concert grand w/MIDI. Rates: Call for rates.

[24+] PALM BEACH DIGITAL; also REMOTE RECORDING; 1846 Windsor Dr.; N. Palm Beach, FL 33408; (407) 694-8160; FAX: (407) 622-6077. Owner: Ken Boyce. Manager: Chris Devon.

[24+] PALM BEACH SOUND & SYNTHESIS INC.; 3885 Investment Ln., Ste. 1; Riviera Beach, FL 33404; (407) 842-7211. Owner: John and Deborah Simsic. Manager: Deborah Simsic.

[24+] "THE PEACH" RECORDING STUDIO; 716 Dixie Rd.; Covington, GA 30209; FAX: (706) 786-3366. Owner: Kerry Livgren.

## PLATEAU



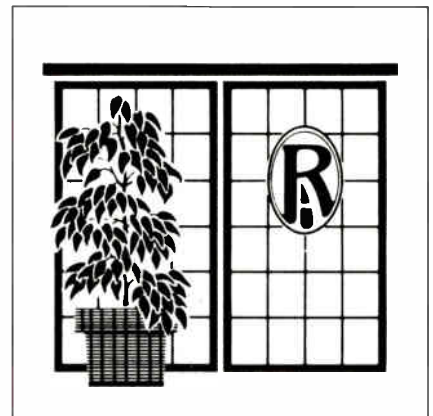
PLATEAU PRODUCTIONS  
Monteagle, TN

[24+] PLATEAU PRODUCTIONS; also REMOTE RECORDING; 313 Main St.; Monteagle, TN 37356; (615) 924-2070. Owner: Monteagle Arts. Manager: Peter Keeble. Engineers: Peter Keeble, various independents. Dimensions: Room 1: studio 20'x30', control room 15'x18". 130-seat performance room. Mixing Consoles: Tangent 3216. Audio Recorders: MCI JH-114 24/16-track, Studer B67 2-track, Ampex 440B 4/2-track, Scully 280 2-track, Revox A700 2-track, Tascam DA-30 DAT. Cassette Recorders/Duplicators: Assorted. Noise Reduction Equipment: dbx 24-channel, Dolby 361 2-channel. Echo, Reverb & Delay Systems: Yamaha REV7 digital reverb stereo, AKG BX-10 stereo reverb, DeltaLab DL-1 digital delay, DeltaLab DL-4 digital effects, Eventide H910 Harmonizer,

Eventide DL-91 digital delay. Other Outboard Equipment: LA-2A tube limiter, LA-3A limiter, (2) dbx 160 compressor/limiter, (2) dbx 161 compressor/limiter, dbx 165 compressor/limiter, (2) Orban parametric EQ, (2) ADR sweep EQ, (4) Allison Research gate. Microphones: (3) Neumann U87, (5) AKG 414, (2) Neumann KM84, Neumann U47 FET, (3) Sony 33P, (3) Sony 22P, (2) Sennheiser 441, (4) Sennheiser 421, AKG D-12E, (5) Beyer M201, Beyer M101, (6) Shure SM57, (2) Shure SM58. Monitor Amplifiers: Bryston 4B, BGW 150B, BGW 100B, Crown D-60. Monitor Speakers: Tannoy System 10, JBL 4313, JBL 4311, Auratone Sound Cube, MDM-4 time-aligned. Musical Instruments: Hammond B2W w/ percussion organ, Wuritzer electric piano, Yamaha DX7 synthesizer, Steinway 1923 grand piano, Pearl drums, Slingerland drums, Yamaha RX11 drum machine. Other: Stage set up—monitors/mixer/house. Specialization & Credits: Located on the Cumberland Plateau at the intersection of U.S. Highway 41 and Interstate 24 in Monteagle, Tennessee, Monteagle Arts occupies a landmark at the highest point on the Dixie Highway. Designed and constructed in 1951, the Monteagle Motel stood as a testament to the spirited architecture of the era. The buildings have found new life as the Monteagle Arts complex, which houses 313 Main—a 130-seat performance room; an informal production space, guest rooms for Plateau Productions, its technical areas and offices. The remaining spaces are occupied or available for other arts-related use. Plateau Productions is a full-service company emphasizing efficient live performance recording in conjunction with more fixed studio amenities. Area attractions include: South Cumberland Recreation Area, Wonder Cave, University of the South, Sewanee Natural Bridge, historic settlements, and bed & breakfast inns. Feel the difference.

[24+] PLATINUM POST/FULL SAIL RECORDERS INC.; also REMOTE RECORDING; 3300 University Blvd.; Winter Park, FL 32792; (407) 671-1111; FAX: (407) 671-1112. Manager: Buffy Thibodeaux.

[24+] PYRAMID RECORDING; 1208 Lula Lake Rd., Lookout Mountain; Chattanooga, TN 37350; (706) 820-2356; FAX: (706) 820-0539. Owner: R.H. Macielan. Manager: Jim Stabile.



RECORDING ARTS  
Nashville, TN

[24+] RECORDING ARTS; Box 121702; Nashville, TN 37212; (615) 321-5479. Owner: Carl Tatz. Manager: Lou Johnson. Engineers: Lou Johnson, Steve Tilisch, Rocky Schnars, David Cherry, Dennis Riche, Larry Lee. Dimensions: Room 1: studio 14'x16', control room 12'x25'. Room 2: studio 14'x12'. Room 3: studio 8'x10'. Mixing Consoles: Soundcraft 3200 w/64-ch., Optifile 3D automation. Audio Recorders: Mitsubishi X-880 32-track w/Apogee filters, Otari MTR-90II 24-track, Sony PCM-7010 DAT, Sony PCM 7010 DAT, Revox A-77 2-track analog. Cassette Recorders/Duplicators: Aiwa AD-F1000. Synchronization Systems: JL Cooper PPS-100 mic pre/EQ, Adams-Smith Zeta-3 w/remote sync. Echo, Reverb & Delay Systems: Lexicon 480L, (2) Lexicon PCM70, Klark-Teknik DN780, Eventide Model H3000 SEV, Roland SRV-2000 reverb, Roland DEP-5, Yamaha REV7, Yamaha SPX90II, Lexicon PCM42 digital delay, Lexicon Prime Time Model 93, Roland Dimension D. Other Outboard Equipment: (2) Focusrite ISA 110 mic pre/EQ, Alesis D-4, Loftech IS-1 RMX test set, Drawmer DL241 stereo auto compressor, Valley People 440 compressor, (3) dbx 160X compressor, (3) UREI 1176LN compressor, Teletronix LA-2A compressor, (2) UREI LA-4 compressor, Sony CPD-350 CD player. Microphones: Fred Cameron mod. Neumann U87, (2) AKG 414EB, AKG 451E, EV RE20, (3) Shure SM57, (4) Sennheiser 421, (2) Sennheiser 441. Monitor Amplifiers: (2) Bryston 6B, (3) Bryston 4B, Yamaha P2050. Monitor Speakers: (2) Yamaha NS-1000, (2) Yamaha NS-10M studio, (4) Auratone 5C, (2) Visonik David 9000, (2) Fostex RM-780. Musical Instruments: All types available. Other: (4) stereo cue systems w/George Judenas' impedance-matched headphone boxes. Systems are driven with Bryston 4B amps, and heavy 10x13 gauge Mogami oxygen-free, copper speaker cable used throughout. Specialization & Credits: Recording Arts is Nashville's affordable "A room" for automated mixdown as well as overdubbing tracking. It is superbly designed and equipped

in a very inviting and comfortable atmosphere. The console is sonically breathtaking with non-VCA gates on every channel. The monitoring is very accurate and the outboard equipment selection is excellent. The studio has recently been awarded three platinum and one gold LP by the RIAA. They are, respectively: *Don't Rock the Jukebox*, Allan Jackson; *It's All About To Change*, Travis Tritt; *High Lonsome*, Randy Travis; *Pass It On Down*, Alabama.

[24+] **REEL TIME RECORDING INC.**; also *REMOTE RECORDING*; 939 Carswell Ave., Holly Hill, FL 32117; (904) 238-7002. Owner: Mark D. Ignoffo. Manager: Mark D. Ignoffo. Engineers: Mark Ignoffo, Alan Kolby, independents welcome. Dimensions: Room 1: studio 24'x23', control room 24'x13'. Room 2: studio 16'x11'. Isolation room: 8'x5'. Mixing Consoles: TAC Matchless console 36x24x8x2, Studiomaster 16x2. Audio Recorders: Otari MX-70 16-track, Fostex E-16 16-track, Otari MX-5050 MkIII 2-track, Panasonic SV-3700 DAT, Sony DTC-M100 DAT. Cassette Recorders/Duplicators: Nakamichi MR-1, (3) Nakamichi MR-2, Aiva F800, Technics RS885, Technics RS755R. Synchronization Systems: Fostex 4030/4035, Yamaha MSS-1 SMPTE-to-MIDI. Echo, Reverb & Delay Systems: Lexicon PCM60 reverb, Lexicon LXP1, Lexicon LXP5, Yamaha SPX90, (3) DigTech DSP256, DigTech IPS 33B Harmonizer, MXR digital delay, Yamaha E1010 delay. Other Outboard Equipment: Apex compeller/compressor, Apex 612 noise gate, (4) dbx 163 compressor, dbx 463 noise gate, dbx 166 compressor/gate, Valley People Dyna-Mite stereo limiter/gate/de-esser, (2) Furman QN4 4-channel noise gate, Audio Logic MT66 stereo compressor/gate, Lexicon MRC MIDI controller, BBE 822 enhancer. Microphones: Neumann U87, Beyer MC740, AKG 451, Sennheiser 441, (3) AKG D-12E, EV PL20, (3) Beyer M69, (2) Shure SM81, (6) Shure SM57, Audio-Technica 2500D. Monitor Amplifiers: (2) Yamaha P2201, Soundcraftsmen LA2502, Rane HC6. Monitor Speakers: (2) UREI 809, (2) Tannoy PBM-8, (2) Auratone. Musical Instruments: Hammond B-3, Roland S-50 sampler w/sound library and sequencer, Yamaha DX5, ARP Odyssey synthesizer, (2) Roland R-8 drum machine, Roland 727 percussion machine. Rates: 1" 16-track \$30/hr., 1/2" 16-track \$22/hr. Synchronized 32-track \$45/hr. Block discounts and packages available on all formats. Call for prices on DAT duplication, cassette duplication and packaging.

[24+] **REFLECTION SOUND STUDIOS (SEE ALSO STUDIO B)**; also *REMOTE RECORDING*; 1018 Central Ave., Charlotte, NC 28204; (704) 377-4596; FAX: (704) 375-9723. Owner: Wayne Jernigan. Manager: Kelly Bright. Engineers: Mark Williams (chief eng.), Tracy Schroeder, Jamie Hoover. Dimensions: Studio A: 45'x35' w/18' ceiling, control room 19'x24'. Studio B: see Studio B listing. Studio C: 18'x24', control room 18'x14'. Mixing Consoles: Sony MXP-3036 36-channel hard disk-automated, four types of EQ, Sony MXP-3036 32-channel, four types of EQ, Allen Heath Saber+ 36-channel (see Studio B listing). Audio Recorders: (2) Sony PCM-3324 digital 24-track, Sony APR-24 24-track analog, (2) Sony/MCI JH-24 24-track, Sony PCM-3202 digital 2-track, Sony APR-5002H 2-track 1/2", (2) Sony APR-5003 2-track 1/4" (SMPTE), Tascam 16-track 1", Otari MX-5050 2-track. Noise Reduction Equipment: Dolby M16 Type A, (2) Dolby 361 Type A, (2) dbx 155, 8 channels. Synchronization Systems: Fostex SMPTE reader/regenerator, video sync available in Studio B. please see that listing. Echo, Reverb & Delay Systems: Lexicon 224XL, (2) Lexicon PCM70, ART MultiVerb II, EMT 140 vacuum tube stereo plate, TC 2290 w/15-sec. sampling, DeltaLab D-1, Effector, Super Time Line, LOFT analog flange, ask for complete list. Other Outboard Equipment: Tube-Tech PE-1B vacuum tube program equalizer, Tube-Tech CL-1A vacuum tube/optical limiter/compressor, UREI 1178 stereo peak limiter, (4) UREI 1176LN peak limiters, (2) Valley People 440 level processor, (2) dbx 900 frames w/compressors, gates, de-essers, de-hissers, etc., dbx 162 stereo limiter/compressor, all discrete solid state, dbx 165 high-speed limiter, discrete solid state, (2) dbx 160X compressor, Drawmer gates 4-channel, Dyna-Mite level processor, Valley People Autogate, ask for complete list. Microphones: Neumann tube—U47, (3) U67, (4) U64, Neumann—TLM170 transformerless, KM86, KM88, (4) U47 FET; AKG C-414 transformerless, C-460, C-452, (2) Sennheiser MKH40, (2) Beyer MC740, (2) Sony C-48, lots of others, ask for complete list. Monitor Amplifiers: Hafler, AB Systems, Ramsa. Monitor Speakers: TAD w/White passive EQ and crossover. Musical Instruments: Yamaha C7 grand piano newly rebuilt action, Kawai 7' grand piano, Hammond B-3 fully rebuilt 10/91, Sonor 5-piece drum set—deep shell, mahogany, Sonor 7-piece drum set—black, Sabian, Zildjian, Rhodes, Wuritzer electric pianos, lots of cool amps, percussion etc. See studio B listing for complete MIDI information. Rates: Call Kelly Bright and Mark Williams for complete and competitive rates.

[24+] **THE REFLECTIONS RECORDING STUDIOS**; 2741 Lamson Dr., Nashville, TN 37204; (615) 269-0828, (615) 269-3405. Owner: Gene Lawson. Manager: Joe Weber.

[24+] **SATURN SOUND STUDIOS INC.**; also *REMOTE RECORDING*; 515 S. Olive Ave., West Palm Beach, FL 33401; (407) 832-2148; FAX: (407) 832-1957. Owner: Clinton Smith, Allen Pearson. Manager: James A. Crockett. Engineers: James Crockett. Dimensions: Studio 20'x38', control room 16'x16'. Mixing Consoles: MCI JH-636 30x24x2 non-automated. Audio Recorders: MCI JH-24 24-track w/Autolocator III, (2) MCI JH-110B 2-track w/remotes, Panasonic SV-3700

DAT, Sony PCM-601 esD w/Sony HF-750 Beta VTR F1 system. Cassette Recorders/Duplicators: (6) Tascam 122B. Noise Reduction Equipment: Dolby 363 w/2 channels SR. Synchronization Systems: Cipher Digital Soft Touch edit controller, (2) Cipher Digital 4700 Shadow. Echo, Reverb & Delay Systems: Lexicon 200, Lexicon Prime Time, DeltaLab Effector, Eventide H949 Harmonizer, Eventide H910 Harmonizer, Yamaha SPX1000, Yamaha SPX90II. Other Outboard Equipment: Orban 622B stereo parametric equalizer, (2) dbx 165 compressor, (4) Allison Research Gain Brain, (7) Allison Research Kexex. Microphones: (2) Neumann U87, (2) AKG 414EB, (2) Neumann KM84, (2) AKG 451EB, (2) Sennheiser 441, (4) Sennheiser 421, (2) Shure SM7, (4) Shure SM57, (2) Shure SM85. Monitor Amplifiers: (2) Crown DC-300A, Crown DC-150, Crown DC-75. Monitor Speakers: (2) JBL 4411 studio, (2) Yamaha NS-10M near-fields, (2) Auratone 5C, (2) Bozak Monitor C in studio. Musical Instruments: Kawai GS30 6' grand piano, Fender Rhodes suitcase piano, Ludwig 5-piece drum kit. Video Equipment: Sony VO-5800 3/4" VTR, Fast Forward SMPTE time code generator/reader. Other: Network Music Production Library 100-CD, Network Sound Effects Library 50-CD, Technics SL-1200 MkII turntable, Crown IC-150 preamp. Rates: 24 track record/mix \$80/hr., 2 track record/mix \$75/hr., video post-production \$100/hr. Block rates available. Ampex 456 & 499 open reel and 467 DAT.

[24+] **SCENE THREE**; also *REMOTE RECORDING*; 1813 Eighth Ave. S., Nashville, TN 37203; (615) 385-2820; FAX: (615) 383-1026. Owner: Marc Ball, Kitty Moon. Manager: Nick Palladino.

[24+] **SCRUGGS SOUND STUDIO**; 2828 Azalea Pl.; Nashville, TN 37204; (615) 383-7994. Owner: Randy Scruggs.



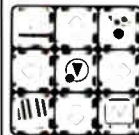
SIXTEENTH AVENUE SOUND  
Nashville, TN

[24+] **SIXTEENTH AVENUE SOUND**; 1217 16th Ave. S.; Nashville, TN 37212; (615) 327-8787; FAX: (615) 321-0928. Owner: Services Management Inc. Manager: Barry Sanders. Engineers: Graham Lewis (chief engineer), Scott Baggett, Melanie Jones, Jack Howell. Dimensions: Room 1: studio 24'x40', control room 28'x24'. Room 2: "The Playhouse" studio 1 29'x15', studio 2 16'x13', control room 13'x15'. Studio D: control room only 13'x13'. Mixing Consoles: Solid State Logic 4056 E 56x32 w/Total Recall and G Series computer & 32-channel of G Series mic pre/line amp, Neotek Elan 28x24 w/MIDI direct mute automation, Soundcraft 400B 20x4 (16 FX returns). Audio Recorders: Mitsubishi X-850 32-track w/Apogee filters, Studer A820 24-track, Studer A820 2-track (1/2" or 1/4" headstack), (2) Panasonic SV-3500 DAT, Studer A80 MkIII 24-tk, Tascam 8516B 1" 16-tk, Tascam 42 1/4" 2-tk, Digidesign Sound Tools + Pro Tools hard disk recorder/editor, Tascam 48 8-track 1/2", Tascam DA-30 DAT. Cassette Recorders/Duplicators: (4) Tascam 122 MkIII. Synchronization Systems: Adams-Smith Zeta-3 w/cables for all popular machines, Arden Systems SSL/Sony 3324/3348 interface box. Echo, Reverb & Delay Systems: AMS RMX 16, AMS DMX 15 w/stereo harmonizer, Eventide H3000SE, Lexicon 480L, Lexicon 224XL, (2) Lexicon PCM70, Lexicon PCM42, (2) Lexicon PCM41, Yamaha SPX90II, (2) Yamaha REV7, (2) Yamaha SPX90II, (2) Alesis MIDiverb II, (2) Effector II, (2) ADA one-second, Loft analog delay/flanger. Other Outboard Equipment: (2) Tube-Tech CL-1B tube compressor, (2) Tube-Tech PE-1C tube EQ, Drawmer 1960 tube compressor/limiter, (5) Valley Audio Kexex gate, Valley Audio Gain Brain, (2) dbx 165 "Over-Easy" compressor, Valley Audio Dyna-Mite, Valley Audio 440, (2) Valley Audio Leveller, Valley Audio GateX, (2) Valley Audio Micro FX rack (de-esser/ noise reduction/compressor), (2) dbx 160 compressor/limiter, Symetrix 544 quad gate, (2) Meyer CP-10 parametric EQ, Orban de-esser, custom quad gate. Monitor Amplifiers: Crown Macro Reference, (3) Yamaha 92250C, Hafler 6000, Hafler 550, (3) Perreux 5150B, Meyer MS-1000A. Monitor Speakers: UREI B13C, Meyer HD-1 self-powered, Yamaha NS-10M, EV Sentry 100, Tannoy SRM-12, Tannoy FSM-U, Auratone Sound Cube. Other: Formula Sound 8-channel active cue system, Kawai 7'5" grand piano, Yamaha U1 upright grand piano, Akai S-700 sampler, Simmons MTM

—LISTING CONTINUED ON NEXT PAGE

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## Southeast 24-track studios



—LISTING CONTINUED FROM PREVIOUS PAGE

trigger interface, Yamaha DX100, ADA programmable tube preamp. **Specialization & Credits:** Our approach at Sixteenth Avenue is to provide the tools, environment and staff to encourage the realization of your creative vision, in either the digital or analog realm. Studio A features an SSL 4000E console w/G Series computer, Mitsubishi digital and Studer analog multitracks, a good selection of outboard gear and mics, extra large control room and a great live studio with variable acoustics, all for a rate that won't cramp your style. Studio B, "The Playhouse" boasts a Neotek Elan console, Studer A80 24-track, a load of outboard gear and two small but comfortable recording rooms. Studio D has both the Sound Tools and Pro Tools digital recording/editing package for all of your digital manipulations. Our style is different, our attitude is right, and we aim to please. Why not work where you can concentrate on putting the life back into the music? Live to record!

[24+] **SOUNDCHECK STUDIOS INC.**; also *REMOTE RECORDING*; 1635 Jackson St.; Fort Myers, FL 33901; (813) 334-4994; FAX: (813) 482-7025. Owner: William Ernest Waites, Jim Becker.

[24+] **SOUND EMPORIUM STUDIOS**; 3102 Belmont Blvd.; Nashville, TN 37212; (615) 383-1982; FAX: (615) 383-1919. Owner: Roy Clark. Manager: Gary Laney, Susan Dey. Engineers: Gary Laney, Dave Sinko. **Mixing Consoles:** Neve 8128, Trident 80B. **Audio Recorders:** Otari 9011, Sony JH-24, Mitsubishi 850, (2) Studer A80, (2) Studer B67. **Echo, Reverb & Delay Systems:** (2) PCM70, (2) live chamber, (2) EMT 140, AMS RMX 16, AMS DMX 15 DDL, (2) Harmonizer 910, Lexicon Prime Time II, Harmonizer, 969, Quantec Room Simulator, SPX90, Lexicon PCM42, Lexicon Prime Time, Lexicon 224XL. **Other Outboard Equipment:** (3) LA2A, 1178LN, Neve compressor, (4) dbx 165, (4) Trident compressor, Vocal Stressor, (4) Drawmer gate, (4) Kepex gate. **Microphones:** Neumann U67, Neumann M49, AKG Tube, (20) Neumann U87, (5) Neumann KM84, (5) Studer, (4) RE-20, (6) AKG 414ES, (2) AKG 451, (6) Shure 57, (3) Shure SM81, Shure SM7, (2) RCA 77DX, (2) Sanken. **Monitor Amplifiers:** (2) Tannoy 840, Perreux, (4) BGW 750, (4) BGW 500, (2) BGW 250, Crown 100, Hafler 500.

[24+] **SOUND GALLERY**; also *REMOTE RECORDING*; 544 Boulevard Ave.; Athens, GA 30601; (404) 549-3849. Owner: Scott Stuckey.

[24+] **SOUND LAB INC.**; 2319 Fernwood Dr.; Greensboro, NC 27408; (919) 288-0185; FAX: (919) 288-0298.

[24+] **SOUND OF BIRMINGHAM PRODUCTIONS**; 3625 5th Ave. S.; Birmingham, AL 35222; (205) 595-8497. Owner: Don Mosley. Manager: Betty Mosley.

[24+] **SOUND SOURCE RECORDING STUDIOS**; 600 Towne Centre Blvd., Ste. 305; Pineville, NC 28134; (704) 889-9767; FAX: (704) 889-9768. Owner: Derek J. Slep. Manager: Paula Garris.

[24+] **SOUND STAGE STUDIO**; 10 Music Circle South; Nashville, TN 37203; (615) 256-2676; FAX: (615) 254-7030. Owner: Ron Kerr. Manager: Ron Treat. **Dimensions:** Room 1: studio 26'x50', control room 34'x29'. Room 2: studio 15'x16', control room 20'x20'. **Mixing Consoles:** (2) modified SSL 4000E w/48 modules and G Series mix computer. **Audio Recorders:** (2) Mitsubishi X-850 32-track digital w/Apogee filters, Studer A827 24-track analog, (2) Studer A80 2-track, Otari MX55 center 2-track stripe, (2) Panasonic 3500 R-DAT. **Cassette Recorders/Duplicators:** (3) Studer A710. **Synchronization Systems:** Adams-Smith Zeta-3 lock unit. **Echo, Reverb & Delay Systems:** (2) AMS DMX 15-80S, (2) dbx 165A limiter/compressor, (2) dbx 160 limiter/compressor, Aphex Compellor, (2) Publison Infernal Machine 90, (2) Publison Fulmost de-esser, (2) Valley People Kepex II, (2) Drawmer DS-201 gate, (2) Valley People 815 DSP de-esser, (2) Valley People Gain Brain II, (2) Lexicon PCM70 reverb, (2) Quantec QRS room simulator, (2) Sony MUR 201 digital reverb, (2) Yamaha SPX92 digital reverb, (2) Eventide H3000SE Ultra-Harmonizer, (2) Eventide 949 Harmonizer, (2) Sontec MEP-250C parametric equalizer, (2) Sontec DRC-202 compressor, (2) Telatronix LA2A limiter/compressor, (4) Lexicon 224XL digital reverb, (2) Lexi-

con 480L digital reverb, (2) Lexicon 300 digital reverb, (2) EMT 250 digital reverb, AMS RMX 16 digital reverb, TC Electronic 2290 effects unit, (2) Lydkraft PE1 Tube-Tech equalizer, (2) Lydkraft CL1B Tube-Tech compressor, Lydkraft MP1A Tube-Tech mic pre amp. **Microphones:** (2) AKG 414 EB ULS TL, (3) AKG 414 EB, (6) AKG C452EB, (2) AKG D-12, (2) Electro-Voice RE20, (3) Neumann KM84, Neumann KM86 1, (2) Neumann U47 FET, Neumann U87, Sanken CU 41, (7) Sennheiser MD-421, (2) Sennheiser MD-441, (2) Shure Beta 57, (2) Shure SM57, (2) Shure SM58, Sony ECM-15P, (3) Sony ECM-33P, (2) Stephen Paul U87 modified, Studer (Scheeps) SKM501 U (stereo), (3) Studer (Scheeps) SKM50U. **Monitor Amplifiers:** (4) FM Acoustic 1000-watt, FM Acoustic 800-watt, Yamaha P2200. **Monitor Speakers:** (4) Hidley Kinoshita monitor system, (2) Yamaha NS-10M, (4) Auratone 5CV. **Musical Instruments:** Wendel Jr. drum sampler w/sound library, (2) Forat F-16 drum sampler w/sound library, Pearl acoustic drum kit, Noble & Cooley 8" rosewood snare, (2) Yamaha C-7 piano. **Video Equipment:** JVC CR850U video deck. **Other:** (25) Formula Sound 8-channel active cue mixers. **Specialization & Credits:** Final Stage is a mastering facility offering both digital and analog processing featuring the Sonic Solutions CD-premastering digital workstation. With a 4-track hard disk system, Final Stage can complete complex CD assembly with automated EQ and compression and perform varispeed and sample rate conversions. Contact: Randy LeRoy. **Equipment:** Sonic Solutions CD-premastering digital workstation, Macintosh Ilii computer, KRK 9000 reference monitor, Apogee D/A 1000 converters, Apogee A/D 500 converters, Sony PCM-1630 digital mastering 2-track, Sony PCM-7010 DAT recorder w/ SMPTE, Panasonic SV-3900 DAT recorder, Sony CDP-2700 CD player, Sony 730ES cassette deck, GML Series II stereo compressor.

[24+] **SOUNDS UNREEL STUDIOS**; 1902 Nelson Ave.; Memphis, TN 38114; (901) 278-8346; FAX: (901) 278-8346. Owner: Don Smith (producer & engineer). Manager: Monica Smith.

[24+] **SOUNDSHOP RECORDING STUDIOS INC.**; 1307 Division St.; Nashville, TN 37203; (615) 244-4149; FAX: (615) 242-8759. Owner: Buddy Killen. Manager: Mike Bradley.



## SOUTH BEACH STUDIOS

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[24+] **SOUTH BEACH STUDIOS**; 1200 Collins Ave.; Miami Beach, FL 33139; (305) 673-8203; FAX: (305) 673-9609. Owner: Chris Blackwell, Joe Galdo. Manager: Nancy Mraz. Engineers: Cesar Sogbe. **Dimensions:** Studio 15'x15', control room 27'x15'. **Mixing Consoles:** 4072E w/G modules & G computer and G EQ w/(16) E EQ. **Audio Recorders:** Mitsubishi X-880 32-track digital w/Apogee filters, Studer A820 24-track analog w/Dolby SR, Studer 820 2-track 1/2" w/Dolby SR. **Cassette Recorders/Duplicators:** Sony 7030 DAT w/all options, Sony 2700 DAT, (2) Tascam 122 MkII. **Noise Reduction Equipment:** (3) Drawmer DS-201, (4) Kepex, (2) Dynaflex, (2) Focusrite 130 dynamic, (2) dbx 904. **Synchronization Systems:** (2) Lynx TimeLine. **Echo, Reverb & Delay Systems:** Sony DRE-2000, EMT 240 stereo plate, Lexicon 224 and 224XL, Lexicon 480L, (2) Lexicon PCM70, AMS RMX 16, Klark-Teknik DN780, (2) Eventide H3000, (2) Yamaha REV5, (2) Yamaha SPX1000, (2) Yamaha SPX900, (2) Yamaha SPX90II, Yamaha REV7, Roland R-880 reverb, AMS DMX, TC Electronic 2290, Alesis MIDverb, (2) Eventide 949, (4) Lexicon PCM42. **Other Outboard Equipment:** Cyclocosn panner, Roland Dimension D, Aural Exciter type III, BEL flanger, Pultec EQP-1, (4) API 550A, (2) API graphic, Neve Prism rack, (4) Focusrite 110, GML 8200, Artek Metric, Orban parametric, dbx 120X boom box, power subharmonic synth, dbx boom box, (3) dbx RM160, (2) dbx 160X, (2) dbx 163, dbx 900 rack, Neve 33609, SSL 6384, (2) LA-2A, (2) Focusrite 130, (2) UREI 1176. **Microphones:** Neumann M49, Neumann U67, (2) Neumann KM84, (2) Neumann U47, (2) RCA 77-DX, (3) Sennheiser MD-42. **Monitor Amplifiers:** (2) Bryston 3B, Bryston 4B. **Monitor Speakers:** Genelec 1034 A main, (2) Yamaha NS-10M, Westlake BB SM4, EV Sentry 100A. **Musical Instruments:** Many keyboards, sequencers, samplers, etc.

[24+] **SOUTHERN TRACKS RECORDING**; 3051 Clairmont Rd., NE Studio Complex; Atlanta, GA 30329; (404) 329-0147; FAX: (404) 329-0162. Owner: Bill Lowery. Manager: Mike Clark. Engineers: Russ Fowler, Tag George. Dimensions: Studio 25'x40', control room 24'x26'; Iso room 1: 15'x18'. Iso room 2: 16'x20'. Iso room 3: 8'x10'. Dead alcove: 12'x12'. **Mixing Consoles**: SSL 4040E w/G Series EQ and computer, 8 modules w/242 EQ. **Audio Recorders**: Mitsubishi X-800 32-track digital w/Apogee filters, (2) Sony JH-24, Studer A80 2-track 1/2", (2) Sony 2500 R-DAT, (2) Tascam D 30 R-DAT, Tascam ATR-60 1/4" w/center track. **Cassette Recorders/Duplicators**: (2) Tascam 122, (3) JVC 531. **Noise Reduction Equipment**: Dolby A 26 channels. **Synchronization Systems**: Adams-Smith Zeta-3, Tascam ES 50/51. **Echo, Reverb & Delay Systems**: EMT 140, Lexicon 224XL, Lexicon 224, Lexicon LXP-1, Lexicon LXP-15, Lexicon PCM70, AMS RMX 16, Yamaha SPX90, Yamaha SPX900, Alesis QuadraVerb. **Other Outboard Equipment**: TC Electronic 2290, Tube-Tech compressor, Tube-Tech PE 1C EQ, Neve 33609 compressor, (2) Neve 1079 EQ & mic pres, (2) Neve 1066 EQ & mic pres, (2) API EQ 4-band, Massenburg 8200 stereo EQ, (2) Sphere 4-band EQ, Summit stereo tube EQ, (2) UREI 527A graphic, (2) dbx 160 compressor, dbx 165 compressor, UREI 1178 compressor, Lexicon Super Prime Time, (2) Drawmer dual gate, (4) Kepex gate, Demeter tube mic pre, Eventide H3000-SE, Yamaha REVS, LT Sound compressor/de-esser, Eventide Harmonizer, Eventide flanger, Jeep Harned tube compressor, Aphex Type 3 Exciter. **Microphones**: AKG "The Tube", Neumann M49 tube, Neumann U47, (3) Neumann U87, (3) AKG 414, (2) AKG 452, AKG D-12E, (2) Neumann KM88, (2) Neumann KM84, (2) Sennheiser 441, (5) Sennheiser 421, Crown SASS stereo, (3) Wright, EV RE20, (6) Shure SM57, (2) AKG C-1000. **Monitor Amplifiers**: (3) Yamaha, (2) Hafler, Crown, BGW. **Monitor Speakers**: (2) George Augspurger custom system, (4) Yamaha NS-10. **Musical Instruments**: Yamaha grand piano, Tama drums. **Specialization & Credits**: The Black Crowes, .38 Special, Kansas, Atlanta Rhythm Section, Another Bad Creation, Keith Sweat, LL Cool J, Doug Stone, Questionnaires, Tinsley Ellis, Bertie Higgins, Joe South, The Blonz, Tommy Roe, Swimming Pool Q's Newsong, Mylon LeFevre, Uncle Green, Atlanta Pops Orchestra.

[24+] **"SOUTHERN LIVING AT ITS FINEST"**; 669 Antone St.; Atlanta, GA 30318; (404) 352-3204. Owner: Ricky Keller. Manager: Tim Holbrook.

[24+] **STUDIO B PRODUCTIONS (SEE ALSO REFLECTION SOUND STUDIOS)**; 1018 Central Ave., Charlotte, NC 28204; (704) 372-9661; FAX: (704) 375-9723. Owner: Studio B Productions Inc. Manager: Dave Harris. Engineers: Dave Harris, Mike Lawler. Dimensions: Studio 10'x15', control room 25'x15'. **Mixing Consoles**: Allen & Heath 36-input Sabre w/JL Cooper VCA automation. **Audio Recorders**: Fostex E2 1/4" 3-track, Sony PCM-2500 R-DAT, Nilko CD player. **Cassette Recorders/Duplicators**: Nikko. **Synchronization Systems**: Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems**: dbx 900 frame, Gatex, dbx 166, Lexicon PCM70, Lexicon LXP-1, Lexicon LXP-5, TC Electronic 2290. **Microphones**: Large collection of modern and vintage microphones. **Monitor Amplifiers**: Hafler P500, (2) Hafler P230. **Monitor Speakers**: Tannoy, JBL. **Musical Instruments**: Akai S1000 HD 16-bit stereo sampler w/20 meg RAM (4 mins mono), Korg M1Rex, Roland D-550, E-mu Proteus 1 XR, E-mu Proteus 2, E-mu Proclusion, Oberheim Matrix 1000, Yamaha TX7, Yamaha TX81Z, Alesis HR16 & Alesis HR16B drum machine, Yamaha KX88 Master MIDI keyboard controller, Roland Octapad II, MOTU Digital Performer sequencing software, Opcode editor/librarian software. **Other MIDI Equipment**: Macintosh IIcx, Macintosh SE, (2) MOTU MIDI Time Piece. **Video Equipment**: Sony VO 9800 3/4" VTR, MOTU Video Time Piece, (2) Sony color monitors. **Other**: Sound Ideas sound FX library, Mogami tielines into Reflection's Studios A & C (8-, 16 24-track and 48-track digital), JL Cooper CS-1 controller, **Digital Workstations**: Sound Tools (80 min. stereo). **Rates**: Rates on request.



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# Southeast

24-track studios



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[24+] **STUDIO CENTER**; 6157 NW 16th St., Ste. F-4; Miami, FL 33015; (305) 828-7231; FAX: (305) 826-8615. **Owner**: Studio Center Inc. **Manager**: Craig Powell. **Dimensions**: Studio 22'x15', control room 16'x19'. **Mixing Consoles**: SSL 6056E, G-Series computer w/Total Recall. **Audio Recorders**: Mitsubishi X-850 32-track digital, Sony PCM-3324 24-track digital, (2) MCI JH-24 24-track digital, Sony PCM-3402 2-track digital, Otari MTR-12 1/2" 2-track, Sony APR-5002 2-track, Sony PCM-2500 R-DAT. **Cassette Recorders/Duplicators**: Nakamichi MR-1, Tascam 122Mkl. **Noise Reduction Equipment**: Dolby A/SR available on request. **Synchronization Systems**: (2) Adams-Smith 2600 synchronizer. **Echo, Reverb & Delay Systems**: Lexicon 480L digital effects processor, Lexicon 224XL digital reverb, Lexicon PCM70 digital effects processor, (2) Lexicon PCM42 digital delay, Eventide H3000SE Ultra-Harmonizer, Eventide H949 Harmonizer, (2) Yamaha REV7, (2) Yamaha SPX90. **Other Outboard Equipment**: (12) API 550A parametric equalizer, Teletronix LA-2A limiter, (2) dbx 160 compressor/limiter, (2) dbx 165 compressor/limiter, Drawmer DS-201, Drawmer DL-231. **Microphones**: Neumann U87, Neumann U47, (4) AKG 414, AKG 460, AKG 451, AKG D-12, AKG The Tube, (4) Sennheiser MD 441, (4) Sennheiser MD 421. **Monitor Amplifiers**: Crown Macro reference, Bryston 3B, (2) Meyer Sound Labs MS-1000, (2) BGW 250. **Monitor Speakers**: Meyer Sound Labs 833/834, (3) Yamaha NS-10M, Auratone Super Sound Cube. **Musical Instruments**: Akai S1000 sampler, Casio FZ-1 sampler, Roland D-70, Roland R-8, E-mu Systems Proteus, Korg M3R, Oberheim Matrix-1000, Kawai K4, Roland MKS-80, Morgan & Sons 5'9" grand piano. **Other MIDI Equipment**: (2) Macintosh II computer system, Opcode Vision sequencing software, Opcode Galaxy Librarian software, (2) Opcode Studio 3 SMPTE/MIDI interface, (2) JL Cooper MIDI patch bay. **Video Equipment**: (3) Sony VO-5800/5850, Sony RM-450 video editor. **Digital Workstations**: Digidesign Sound Tools digital audio hard disk recorder/editor. **Specialization & Credits**: At Studio Center, our warm, relaxed atmosphere and courteous, efficient staff combined with the latest technology, provides a comfortable, creative environment for your recording project. We offer a fully equipped MIDI production suite as well as post-production facilities for film and video. Give us a call to discuss your next project. You'll be glad you did!

[24+] **STUDIO IN THE COUNTRY**; Hwy. 436; Bogalusa, LA 70427; (504) 735-8224. **Owner**: Eugene Foster. **Engineers**: Eugene Foster, Jim Odum. **Dimensions**: Studio 60'x70', control room 26'x26'. **Mixing Consoles**: Neve V Series 56x48 w/Necam 96 moving faders automation. **Audio Recorders**: Studer A820 24-track w/Dolby A/SR, Studer A80 24-track, (2) Studer A80 2-track, (3) Studer A721 cassette. **Noise Reduction Equipment**: Dolby A/SR 24-channel, Dolby A/SR 2-channel. **Synchronization Systems**: Adams-Smith 2600, Studer TLS-4000. **Echo, Reverb & Delay Systems**: AMS RMX 16 dig. reverb, Lexicon 200, Lexicon PCM60, (2) Yamaha SPX90II, EMT 140 stereo plate, live echo chamber, Lexicon 93 delay, Eventide 949 delay, Eventide 910 delay, DeltaLab CE-1700 delay, Lexicon 480L. **Other Outboard Equipment**: (2) Teletronix LA-2A tube limiter, (2) Teletronix LA-3 lim/comp, (2) UREI LA-4 lim/comp, (6) UREI 1176LN lim/comp, (2) Orban 424A lim/comp, (2) Spectra Sonics 610 comp/lim, Eventide Omnipressor, (2) dbx 162 stereo lim/comp, (2) dbx 166 lim/comp, (4) Valley People Dyna-Mite, (2) Valley People 415 dynamic filters, Pultec EQP-1A, Pultec MEQ-5, Orange County VS-1 vocal stresser, (2) Orban 672 EQ, (2) J.L. Cooper Time Cube, UREI Little Dipper, Eventide flanger. **Microphones**: (6) Neumann U87, (5) Neumann U47 tube, Neumann U67 tube, Neumann 49 tube, AKG C-24 stereo tube, (2) AKG C-12 tube, (5) EV RE20, Sony C-500, (3) Sony C-38P, Neumann KM84, (3) Neumann SM69 stereo, (3) Beyer M160, (3) Beyer M88, (3) Beyer M500, (2) Studer, Sennheiser MD-409, (7) Sennheiser 441, (4) Sennheiser 421, (3) Sennheiser Protipower, (6) AKG C-451, (2) AKG RE-15, (2) AKG RE-16, (2) Shure SM81, (2) PZM, (6) AKG 414EB, Neumann KM254, (12) Shure SM57, (10) Shure SM58. **Monitor Amplifiers**: (10) Crown DC-300. **Monitor Speakers**: (6) Westlake TM-1, JBL 4333 etc., Yamaha NS-10.

[24+] **STUDIO 19**; 821 19th Ave. S.; Nashville, TN 37203; (615) 327-4927. **Owner**: Larry Rogers. **Manager**: Larry Rogers.

[24+] **STUDIO SOUTH RECORDING**; also *REMOTE RECORDING*; 2510 Peach Orchard Rd.; Augusta, GA 30906; (404) 793-7800; FAX: (404) 793-9547. **Owner**: Howard and Lindy Lovett. **Manager**: Howard Lovett. **Engineers**: Howard Lovett, Dorian Tauss. **Dimensions**: Studio 30'x30', control room 25'x30'. **MIDI studio** 10'x12'. **Mixing Consoles**: Sony/MCI MXP-3036 w/SMPTE-based fader automation, Studer master 16x2 remote. **Audio Recorders**: Studer A80 24-track, Studer A820 2-track w/center track time code, Ampex ATR-800 and ATR-100, Ampex AG-440B, Revox PR-99, Revox A-77, (2) Tascam 42 (and 42B), Panasonic SV-3500 DAT and SV-255 portable DAT, Tascam 112 cassette, (2) Nakamichi BX-100 cassette, Telex stereo high-speed duplicator. **Noise Reduction Equipment**: Dolby SR/XP Series 24-track, Dolby SR 2-track 361 Series w/CAT 280s. **Echo, Reverb & Delay Systems**: AKG ADR 68K digital reverb, Yamaha SPX90, Yamaha SPX900, Lexicon LXP-15 digital reverb, Lexicon PCM41. **Other Outboard Equipment**: George Massenburg 8200 parametric EQ, Aphex Aural Exciter, Eventide 949, Simmons Trigger to MIDI interface, Valley People GateX, Valley People leveler, Valley People Dyna-Mite compressors, Aphex Studio Dominator, dbx 166 compressor, dbx 162 compressor, Symetrix 528 vocal processor, Symetrix T1-101 telephone interface, Omni Craft quad gate. **Microphones**: Neumann U87, ASC studio condenser, AKG C-414EB, AKG C-414, AKG 452, Shure SM5, EV RE20, Sennheiser 421, (5) Shure SM57, Fostex M88RP ribbon. **Monitor Amplifiers**: Crown Micro-Tech 600, Crown D-150, Yamaha M4, JBL/UREI 6260, Crown DC300, White Series 4000. **Monitor Speakers**: JBL 4430, JBL 4311, Tannoy PBM-8, Yamaha NS-10. **Musical Instruments**: Yamaha 7' grand piano, Ovation acoustic guitar, Ibanez electric guitar, Kramer electric bass, Ludwig 5-piece drum set. **Other MIDI Equipment**: Roland W-30 digital sampling keyboard workstation w/S-550 disc library, Roland U-220 module, Roland D-110 module, Korg M3R module, Yamaha DX7, Korg DVP-1 voice synth, Korg EX-800 analog synth. **Video Equipment**: Sony BVH-1100 1", JVC CR850U 3/4", Hitachi 26" video monitor, Adams-Smith Zeta-3 synchronizer. **Rates**: Call for pricing.

[24+] **STUDIOEAST RECORDING STUDIO**; 5457 Monroe Rd.; Charlotte, NC 28212; (704) 536-0424; FAX: (704) 536-8098. **Owner**: Timothy A. Eaton. **Manager**: Timothy A. Eaton.

[24+] **SUITE 2000**; also *REMOTE RECORDING*; PO Box 21272; Nashville, TN 37221; (615) 646-4900; FAX: (615) 646-4900. **Owner**: Richard Adler. **Manager**: Richard Adler.

[24+] **SYNCO SOUND STUDIO**; 1030 16th Ave. S.; Nashville, TN 37212; (615) 242-2455; FAX: (615) 242-2455. **Owner**: Randy Wachtler. **Manager**: Terri Shirley.

[24+] **TREASURE ISLE RECORDERS**; 2808 Azalea Pl.; Nashville, TN 37204; (615) 297-0700; FAX: (615) 297-1413. **Owner**: Treasure Isle Recorders Inc. **Manager**: Fred Vail, Dave Shipley. **Specialization & Credits**: The first Nashville studio to convert to multitrack digital (1983), Treasure Isle has remained on the forefront for 12 years. Grammy Award-winning producer George Massenburg stated: "Treasure Isle is simply the BEST 'live' tracking room in Nashville." The two-studio complex is within 15 minutes of Nashville's International Airport and only ten minutes from world famous "Music Row." Designed by partners Fred Vail and Dave Shipley, the studio offers a wide assortment of outboard gear, microphones, keyboards, a "live" echo chamber, and is noted for having the best drum sound of any studio in the Southeast. **Credits include**: Slaughter (*Stick It Live*), Dolly Parton (*White Limozeen*), Ricky Skaggs (last three albums), Highway 101 (last four albums), James Taylor, The Beach Boys, Linda Ronstadt, Emmylou Harris, B.B. King, Isaac Hayes. The Byrds (reunion album), Pam Tillis, Randy Travis, Desert Rose Band, Hardcore, Billy Preston, Chet Atkins, Shenandoah, Alabama, Vince Gill, Sandi Patti, Hank Williams Jr.

[24+] **TRIANGLE AUDIO INC.**; also *REMOTE RECORDING*; 214 1/2 7th Ave.; PO Box 8679; South Charleston, WV 25303; (304) 744-5164. **Manager**: Patrick Arnold.



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**[24+] TRICLOPS SOUND STUDIO; 120 Interstate North Pkwy. E., Ste. #164; Atlanta, GA 30339; (404) 955-3550; FAX: (404) 955-3803.** Owner: Rick Meyer, Mark Richardson. Manager: Rick Meyer. Engineers: Mark Richardson—chief engineer and producer/co-owner. Dimensions: Room 1: studio 40'x50', control room 20'x22'. Iso. 1: 12'x12'. Iso. 2: 12'x14'. Mixing Consoles: Neve 8068 MkII/Neve Flying Fader computer Automation/retrofit (1991). Audio Recorders: Studer A800 MkIII 2" 24-track, (2) Ampex ATR-102 2-track 1/2" and 1/4", Ampex AG440 2-track, Tascam DA 30 DAT. Cassette Recorders/Duplicators: Tascam 122 MkII, (4) asstd. Sony, Onkyo. Echo, Reverb & Delay Systems: EMT 140 tube stereo plate rev/echo, EMT 250 digital, EMT 251 reverb, Publison DHM 89B2 delay/harmonizer, Yamaha SPX90, Roland RE-501. Other Outboard Equipment: (2) Neve 32264 compressor/limiter, (4) dbx 160, dbx 165, (3) UREI 1176, Altec 436C tube comp., Pultec EQP-1 tube EQ, Quad 8, (2) Allison Research Gain Brain, (2) Allison Research Kepex gate, Aphex 612, Altec 24-band EQ parametric. Microphones: Neumann U47 tube, (2) Neumann U47 FET, (2) Neumann KM84, Sony C37A tube, (6) Sennheiser MD-421, (2) Sennheiser MD-441, Sennheiser MD-211, (3) Shure SM57, Shure SM58, Shure SM7, (2) AKG 414EB, (2) AKG C-451, AKG D-112, (2) Sennheiser MD-409, EV 666, EV 667, Beyer M69N. Monitor Amplifiers: (3) Macintosh 2300, (2) Yamaha P2200, Yamaha P2700. Monitor Speakers: (2) Wright monitor system, (2) UREI 813 orig. issue, (2) UREI 811B, (6) KEF C55, (2) Westlake Audio BBSM-4. Musical Instruments: Steinway 1959 Concert D 9' grand piano, Hammond C-3 w/Leslie 122, Mellotron (violins, cellos, flutes), Oberheim OBX-A, (2) Minimoog, Korg T3, Roland Juno-106, Akai MPC60 w/library, vintage guitars and basses, (4) vintage Marshall amps w/4x12 25-watt cabs., (4) vintage Ampex SVT, V-9, B-15, B-12 amps/cabs, asstd. vintage Gibson, Fender, Supro amps; Ludwig drums—kits/asstd. snares, asstd. percussions. Other MIDI Equipment: Atari Mega-2 ST w/sequencing software/SMPTe track, J.L. Cooper MIDI patch bays. Rates: Hourly, day and block rates available upon request. Call or fax for Triclops brochure/portfolio. There's a new "Monster" in Atlanta—Triclops. **Specialization & Credits:** Since our opening in June, 1990, Triclops has been producing a signature sound of "warmth" and "power" for our clients. Our Neve 8068 console, purchased from New York's A&R Studio, was retrofitted with Neve Flying Fader Automation in mid-1991. Our growing list of clients includes such artists as: Rock: Driving 'N' Cryin/Island; Georgia Satellites/Elektra; Follow For Now/Chrysalis; McQueen Street/SBK; Kansas, Steve Stevens, Chuck Leavell, Randy California and more. Blues: R&B—Ben E. King/Ichiban; Kansas. Tinsley Ellis/Alligator. Jazz: Bob Thompson/Ichiban. Engineer/Producer, Mark Richardson, has 20 years experience, including projects with Elvin Jones, Brecker Brothers, Steve Morse, Eric Johnson, Phalao, Kool and the Gang, The Godfathers, Toto, Joan Jett, Hanoi Rocks, and many more... Full resume upon request. Triclops is situated just north of downtown Atlanta in Interstate Northwest Business Park, safe, secure and private—offering an ideal atmosphere, both inside and out, for artists and producers to work in.

**[24+] TWELVE OAKS RECORDING STUDIOS; 620 Powder Springs St.; Smyrna (Atlanta), GA 30080; (404) 435-2220.** Owner: Sonny Lallerstedt. Randy Bugg. Manager: Randy Bugg.



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**[24+] ULTPANSONIC STUDIOS; also REMOTE RECORDING; 7210 Washington Ave.; New Orleans, LA 70125; (504) 486-4873.** Owner: Jay Gallagher. Manager: Jerry Embree. Engineers: David Farrell, Jay Gallagher, Scott Goudeau, Steve Reynolds. Dimensions: Main studio: 50'x50', control room A: 25'x16', control room C: 15'x17'. MIDI suite: 12'x15'. Mixing Consoles: MCI 652 52x48 w/automation, Studiomastrer 16x48. Audio Recorders: Studer A827 24-track, MCI JH-24 24-track, Digidesign Pro Tools, 24-ch Dolby SR, Digidesign Sound Tools disk-based recorder/editor, (2) Panasonic DAT 3700, Sony DAT-1000, Sony 5003 2-track w/center time code, Akai 1214 12-track, Sony PCM-F1 2-track digital, MCI JH-110 4-track, Otari 5050 2-track. Synchronization Systems:

Yamaha MSS-1 MIDI-SMPTE, TimeLine Micro Lynx. Echo, Reverb & Delay Systems: Lexicon 300, (3) Yamaha REV7, (2) Yamaha SPX90, Lexicon PCM70, Lexicon PCM41, Alesis MIDiverb II, Roland DEP-5, EXR Exciter, Gemini Easy Rider, Roland SDE-2000. Other Outboard Equipment: (2) dbx 160XT, (4) UREI 1176LN limiter, (4) Allison Research Kepex noise gate, (4) Allison Research Gain Brain limiter, UREI 565 filter, Drawmer stereo tube limiter. Microphones: Neumann U87, Neumann KM84, Neumann SM69, AKG C-414EB, AKG C-451, AKG C-33, AKG D-160, AKG D-112, Shure SM57, Shure SM81, Beyer 201, Beyer 101, Sennheiser 421, Sennheiser 441. Monitor Amplifiers: BGW 250B, BGW 100, Halfer Pro 5000. Monitor Speakers: Tannoy SGM-10B, JBL 4331A, JBL 4401, Yamaha NS-10, JBL Cabaret, Auratone, EPI 100, JBL L-100. Musical Instruments: Kawai grand, Ludwig drums w/Zildjian cymbals, Kurzweil 1000PX synthesizer, Roland D-550 synthesizer, (2) Akai S900 sampler, Korg sampling grand, Hammond B-3 w/Leslies, Roland MKS-80 synth, Roland MKS-20 synth, Yamaha TX802, Korg EX-8000 synth, Moog MIDIMOOG, Alesis HR-16 drum machine, Roland Octapad controller, LinnDrum, Latin percussion congas. Other MIDI Equipment: Yamaha KX88 controller, Macintosh w/ Performer and Vision software, WX7 wind controller. Video Equipment: Sony 5800 3/4" U-matic. Rates: Available on request. **Specialization & Credits:** Ultrasonic's recently renovated recording room features a spacious new room with five separate isolation areas. Our engineering staff has ten Grammy nominations as well as a Best Traditional Blues Album of the Year to their credit. We are the only studio in New Orleans to offer automated mixing and digital editing. And, of course, New Orleans offers the best food, musicians and nightlife in the world. Ultrasonic also has a complete audio/video MIDI suite, and a resident composer specifically for film scoring and commercial music beds. Credits: Linda Ronstadt, Robbie Robertson, Bruce Hornsby, Dolly Parton's *Down in New Orleans* TV special (Emmy Award—sound mixing), Paul Shaffer, Todd Rundgren, Fats Domino, Aaron Neville, Dirty Dozen. Advertising: Miller Lite Beer, Fischer-Price Toys, Mazola, Busch Beer, Oldsmobile, Barq's Root Beer. Clients: HBO/Cinemax, Epic/Sony, CBS, Elektra, ABC, Saatchi & Saatchi, DDB Needham Worldwide, Rounder, Windham Hill, Black Top, Capitol. Creole and Cajun catering available.

**[24+] VIRGINIA ARTS RECORDING; also REMOTE RECORDING; 512 Stewart St., Charlottesville, VA 22902; (804) 971-1411.** Owner: R. Paul Brier. Manager: R. Paul Brier.

**[24+] WALTON RECORDING INC.; also REMOTE RECORDING; 5583-B Guinea Rd.; Fairfax, VA 22032; (703) 425-9498.** Owner: Shannon Walton, Bonnie O'Leary. Manager: Bonnie O'Leary.

**[24+] THE WAREHOUSE RECORDING STUDIO; also REMOTE RECORDING; 2071 Emerson St., Unit 20; Jacksonville, FL 32207; (904) 399-0424; FAX: (904) 398-9683.** Owner: Tom Markham. Manager: Bart Stone.

**[24+] THE WAREHOUSE STUDIO; 453 Tennessee St.; Memphis, TN 38103; (901) 521-9551; FAX: (901) 521-9662.** Owner: PolyGram Records. Manager: Warren Tuttle. Engineers: Eli Ball, Neal Jones, G.E. Teel, Brad Vosburg. Dimensions: Room 1: studio 40'x30', control 30'x25'. MIDI: studio 30'x30'. Mixing Consoles: Amek Mozart 40x32 w/Supertrue Automation and Rupert Neve equalizers, Soundcraft 2400 28x24. Audio Recorders: Otari MTR-90 MkII 24-track w/ autolocator, Panasonic SV-3700 2-track digital, Panasonic SV-3500 2-track digital, Technics 1520 2-track analog. Cassette Recorders/Duplicators: (3) Tascam 122 MkII. Echo, Reverb & Delay Systems: Eventide H3000SE Ultra-Harmonizer w/ sampling card, Eventide H3000 Ultra-Harmonizer, Eventide H949 Harmonizer/delay, Lexicon PCM70 digital effects processor, (2) Lexicon LXP-1 digital reverb/delay and MRC controller, Yamaha REV7 digital reverb, Yamaha SPX1000 multi-effect processor. Other Outboard Equipment: (2) dbx 165A compressor/limiter, (2) UREI 1176LN peak limiter, (2) Drawmer 241 auto-compressor noise gate, Audio Logic MT44 quad gate, API 500-B4 preamp, BBE 822 2-channel Sonic Maximizer, Teletronix LA-2A compressor. Microphones: Shure, AKG, Neumann, Sennheiser, Electro-Voice, Beyer. Monitor Amplifiers: Halfer, BGW. Monitor Speakers: Tannoy, KRK, Yamaha. Musical Instruments: Complete MIDI room. Other MIDI Equipment: Mac IIci w/Sound Tools and Studio Vision software.

**[24+] WESTEND RECORDING; 5410 Mariner Dr.; Tampa, FL 33609; (813) 289-7766; FAX: (813) 289-6450.**


**[24+] WESTPARK SOUND/WESTPARK CREATIVE GROUP INC.; 3212 West End Ave., Ste. 201; Nashville, TN 37203; (615) 292-5838; FAX: (615) 292-5838.** Owner: Tom Reeves. Manager: Tom Reeves.

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24-track studios



WINDMARK RECORDING  
Virginia Beach, VA

[24+] WINDMARK RECORDING; 4924 Shell Rd.; Virginia Beach, VA 23455; (804) 464-4924; FAX: (804) 464-1773. Owner: Michael Marquart. Manager: Colleen Marquart. Engineers: Skip DeRupa, Michael Marquart. Dimensions: Room 1: studio 30'x18', control room 25'x20'. Room 2: studio 20'x15', control room 20'x15'. Mixing Consoles: SSL 4040E G Series, Neve 8058 MkII. Audio Recorders: Studer 827, Studer A80, Sony APR-24, Sony 2500 DAT, Sony PCM-7030 DAT, Sony portable DAT, Sony 5002 1/4 track, Mitsubishi X-86 digital 2-track. Cassette Recorders/Duplicators: Nakamichi Dragon, Yamaha KX8000, Yamaha KX800U. Noise Reduction Equipment: Dolby SR. Synchronization Systems: Studer locking system. Echo, Reverb & Delay Systems: Lexicon 48CL w/SME card, Lexicon PCM60/70, Lexicon 224XL, Lexicon 200, Aphex 250III, Alesis MIDIVERB II/III, (2) Yamaha REV7, Lexicon Super Fringe Time, Eventide H3000, Aphex Type C, Yamaha SPX90 II, Eventide Harmonizer H949, Lexicon PCM-42. Other Outboard Equipment: dbx 160X/166, Valley International 430 stereo compressor noise gates, Aphex Aural Exciter, Drawmer vacuum tube 1960, SSL G384 stereo compressor, API 550B, Summit vacuum tube EQ100. Microphones: Numerous: Neumann, Schoeps, Sennheiser, AKG, Shure, Beyer, B&K, Electro-Voice. Monitor Amplifiers: QSC 1400, QSC 1500, UREI 6290, Crown Micro-Tech 1000 power amp, Belles 45C. Monitor Speakers: Tannoy PBM-6.5, Tannoy FSMU, Tannoy NF-8, Yamaha NS-10, Auratone, Custom design with TAD and JBL. Musical Instruments: Baldwin 8' grand piano, Mesa/Boogie MkIII, Tru T3 workstation, Kurzweil K-1000, Roland D50 synth, Rockman sustainer CD-011C2, Rockman chorus/delay CD-1307, Rockman X100, Dynacord Add-One, E-mu SP-1200, E-mu SP-12, Sonor 5-piece drum kit. Other: Studer D-axis w/2 hours of sample time at 48k, Sony SDP-1000; Yamaha YPDR601 compact disc recorder. Full audio production and sound EFX libraries, Macintosh IIx/Icx. Rates: Reasonable—by the hr., day or project. Call for quotes and color brochure. Specialization & Credits: Windmark Recording, Inc. is a world-class facility located in a unique resort atmosphere. Near many recreational activities and only minutes from the beaches of the Chesapeake Bay and Atlantic Ocean. Studio amenities include wide-screen cable TV, video games, basketball hoop, kitchenette and outdoor patio with bbq. Windmark's quality equipment, experienced staff and relaxed atmosphere allow clients to express and capture the very best of their talent and creativity.

[24+] WOLF'S HEAD PRODUCTIONS; 658 Douglas Ave., Ste. 1112; Altamonte Springs, FL 32714; (407) 682-6669. Owner: Dana W. Cornock. Manager: Dana W. Cornock.

Pro Audio dictionaries and technical reference guides are available through the *Mix* Bookshelf catalog. Call toll-free (800) 233-9604 for your free copy.



YRS MULTIMEDIA  
Fern Park, FL

[24+] YRS MULTIMEDIA; 182 Oxford Rd.; Fern Park, FL 32730-2112; (407) 331-4588; FAX: (407) 331-8237. Owner: Charles J. Cervis, George F. York. Manager: Joseph Smith. Engineers: Joe Smith, Mark Mason, George F. Meyer III, Neils Pastor. Dimensions: Room 1: studio 18'x16', control room 20'x16'. Room 2: studio 8'x10', Room 3: studio 9'x5', Room 4: studio 5'x7'. Mixing Consoles: Amek Magnum 36-input w/8C inputs on mixdown, Audio Recorders: Otari MX-80 24-track, Akai A-DAM 12-track digital, Panasonic 3700 DAT. Cassette Recorders/Duplicators: Tascam 122. Synchronization Systems: Adams-Smith Zeta-3 w/remote. Echo, Reverb & Delay Systems: Lexicon 200 digital reverb, Lexicon PCM60 digital reverb, Lexicon PCM42 digital delay, Klang-Teknik DN78 digital reverb, Korg A-1 multi-effects, Korg DRV-3000 dual multi-effects, Yamaha FEV7 digital reverb, Intellex multi-effects, Roland SDL3000, (2) UREI LA-4, (2) UREI 539 graphic equalizer, Rane MPE 14 MIDI-programmable EQ. Other Outboard Equipment: Valley People 610 dual compressor/expander, Valley People Dyna-Mite, Valley People quad gate, BEBE 802, Aphex Type B Exciter. Microphones: Neumann U57, (2) AKG 414, (2) Shure SM81, Sennheiser 441, (4) Sennheiser MD-421, (2) CAD Equitek, (2) Audix SCX-1 cardioid and hypercardioid, (4) Shure SM57, (2) Shure SM58. Monitor Amplifiers: (2) Crest. Monitor Speakers: (2) Yamaha NS-10 near-field, (2) Tannoy DTM main. Musical Instruments: Korg T1 keyboard controller, Akai S-1000 PB, Kurzweil Pro-1, Casio VZ-10M, Roland MT-32, Roland R-8m, Yamaha grand piano. Other MIDI Equipment: Synapse MIDI routing system. Video Equipment: Sony monitor. Other: Carver CD player, IBM 386MHz computer. Digital Workstations: Hybrid Arts digital master. Rates: Available upon request.

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**[16] AURAL CANVAS; also REMOTE RECORDING;** 1407 Allen Ave.; Murfreesboro, TN 37129; (615) 890-1521. Owner: Forrest York. Manager: Forrest York.

**[16] BAYOU BREEZE PRODUCTIONS; also REMOTE RECORDING;** PO Box 66124; Baton Rouge, LA 70726; (504) 928-5289. Owner: Robert Vaughn, Buster Fresina. Manager: Robert Vaughn. Engineers: Robert Vaughn, Chuck Bush. Dimensions: Studio: 20'x24', control room 10'x12'. Mixing Consoles: Soundcraft 6000 22x16x2. Audio Recorders: Tascam MSR-16 16-track 30ips, Tascam 38 8-track, Tascam 32 2-track, Tascam DA-30, Sony TCD-D3. Cassette Recorders/Duplicators: Denon DRM-15. Noise Reduction Equipment: (2) Tascam DX-809 dbx, (2) Tascam DX40 dbx. Echo, Reverb & Delay Systems: Lexicon PCM70, Korg DRV-3000, Yamaha SPX90, Yamaha R1000. Other Outboard Equipment: Aphex Compellor, Aphex Aural Exciter Type C, Rane RE-27, Rane GE-14, (2) Rotron Hush 300, (3) Alesis Micro gate. Microphones: Neumann U87, AKG C-414, (2) AKG 451, Electro-Voice PL20, (3) Sennheiser 421, (2) Shure SM81, (8) Shure SM57. Monitor Amplifiers: Soundcraftsman PCR800, Kenwood M1. Monitor Speakers: (2) JBL 4311, (2) Yamaha NS-10M, (2) Toa near-field. Musical Instruments: Korg M1, Yamaha DX7IID, Yamaha TX81Z, Ensoniq Mirage, Roland JX-8P, Roland TR-707, Roland TR-727, Ensoniq ESQ, Yamaha TX802. Other MIDI Equipment: Atari 1040ST, Steinberg Q-Base 2.0. Video Equipment: Sony 3/4" U-matic.

**[16] M.A. BENINGTON CO.;** 2459 Cuchura Dr.; Birmingham, AL 35244; (205) 988-0707. Owner: Mike Benington. Manager: Mike Benington.

**[16] BIRDLAND RECORDING STUDIOS INC.;** 4891 County Rd. 585; Town Creek, AL 35672; (205) 685-3812. Owner: Owen Brown, James Murphree, Jeff Simpson. Manager: Owen Brown.

**[16] CHERRY GROVE STUDIO;** 404 7th Ave. N.; Myrtle Beach, SC 29577; (803) 448-6730. Owner: Ron Thompson. Manager: Tim Bode. Engineers: Ron Thompson, John Arig, Tim Bode, Steve Senn. Dimensions: Studio 12'x24', control room 12'x14'. Mixing Consoles: Studiomaster Series II 40x8x2. Audio Recorders: Roland 160 satellite, Fostex G-16S 16-track, Technics 1500S 1/2-track, Panasonic 3700 DAT, Panasonic 3900 DAT. Cassette Recorders/Duplicators: (3) Alesis 8-track, A-DAT 24-track. Noise Reduction Equipment: Drawmer DF320. Synchronization Systems: Card for G-16S. Echo, Reverb & Delay Systems: Lexicon LXP-15, Lexicon 200X, Lexicon LXP-1 and LXP-5, ADA 2.56 delay, Alesis QuadraVerb, ART MultiVerb II, Alesis MicroVerb II, Digitech ISP 33 harmonizer, TC Electronic 2290, Alesis MIDVerb III, Korg 3300, Digitech Vocalist. Other Outboard Equipment: BBE 802, BBE 401 Sonic Maximizer, (6) UREI LA-4 limiter, (2) UREI LA-3, (2) UREI LA-2, UREI 1176, Audioarts 4200A parametric EQ, (2) Boss CL50 limiter, Scamp CAD poly-8 limiter/gate, (2) dbx 163 limiter, (2) dbx 263 de-esser, Symetrix CL100 limiter, Symetrix 201 preamp, (5) Alesis MicroLimiter, (4) Alesis Microgate, (3) Alesis MIDVerb, (2) Alesis Microcrafter, (2) Alesis Microcrafter, Boss NS50 noise reduction, J.L. Cooper MSB+ MIDI patch, Casio TS-B1 MIDI thru box, Atari 1040ST w/Passport software, (12) Tascam PB-32 patch bay, Dr.T sync box, Brainstorm signal restorer for sync time. Microphones: Neumann U67 tube, Neumann U87, (2) AKG 414 BULS condenser, (2) Equirek II condenser, (2) Sennheiser 421, EV RE20, (2) AKG D-1000, (2) AKG D-112, (4) Shure SM57. Monitor Amplifiers: AMP 8000. Monitor Speakers: (2) Fostex 1000, (2) Fostex 800, (2) Auratone. Musical Instruments: (2) Gibson Les Paul, Fender Strat, Alvarez Yairi acoustic, 5) various Roland and keyboard, (5) various Yamaha keyboard, 360 Systems MIDI Bass, Casio CZ-1, RZ-1; (2) Oberheim Matrix 1000, Roland S-770 sampler. Rates: Call for package deals.

**[16] WALLY CLEAVER'S RECORDING;** 2200 Airport Ave.; Fredericksburg, VA 22401-7220; (703) 373-6511. Owner: Peter L. Bonta. Manager: "Buffalo" Bob Colbroth.

**[16] COMMUNICATIONS CONCEPTS INC. (CCI); also REMOTE RECORDING;** 7980 N. Atlantic Ave.; Cape Canaveral, FL 32920; (407) 783-5232; FAX: (407) 799-1016. Owner: Jim Lewis. Manager: John Paul Peregrin Jr.

**[16] DAN-SING RECORDING STUDIO; also REMOTE RECORDING;** 120 Ridgcrest Dr.; Danville, VA 24540; (804) 836-1209. Owner: Roy Frazier. Manager: Scott Frazier.



**EASY RECORDING INC.**  
Lithia Springs, GA

**[16] EASY RECORDING INC.;** 1948 Brennan Way; Lithia Springs, GA 30051; (404) 739-8747. Owner: Easy Entertainment Productions Inc. Manager: Deon Jones. Engineers: Norman Banton, Tyrone Holmes, Charlie Krawczyk, Fella. Dimensions: Studio 13'x11'. Mixing Consoles: Soundcraft 2400 Series, Tascam 688 mixer/recorder, Fostex 812. Audio Recorders: Fostex G-16S, Otari MX5050B, (2) Akai MG614 4-track, Panasonic SV-3500 DAT, Sony. Cassette Recorders/Duplicators: Nakamichi MR2, Tascam 102. Echo, Reverb & Delay Systems: Lexicon PCM70, Lexicon PCM60, Lexicon PCM41, Yamaha SPX90II, Yamaha RE7, (2) dbx 166 compressor/limiter, (2) Alesis 3630 comp/limiter, Valley Noise Gate, Korg DRV-3000 multi-effects, Alesis QuadraVerb. Other Outboard Equipment: Tapco 2230 graphic EQ, Peavey parametric EQ, Peavey EQ215 graphic EQ. Microphones: (2) AKG 414, Neumann U87. Monitor Amplifiers: Halber Pro 2400, Alesis RA-100, Rane HC8 headphone amp, Carver PM-175. Monitor Speakers: (2) Tannoy PBM-8, (2) Yamaha NS-10M, (2) EV Sentry 500. Musical Instruments: E-mu SP1200 sampling percussion, Akai MPC60II MIDI production center, Roland A-50 MIDI keyboard controller, Yamaha DX7 synth, Korg M1R, E-mu Proteus, Yamaha TX81Z, Yamaha RX5 digital drum, Yamaha RY30 digital drum, Kawai K4R digital synth module, Roland MT-32 sound module, Roland D-550, Yamaha DXII digital synth. Other MIDI Equipment: Roland S-10 sampling keyboard, (2) Akai S900 digital sampler, Akai S950 digital sampler, Simmons MIDI drum kit, Atari 1040ST computer w/Notator software, Macintosh 512K w/Master Tracks Pro software. Digital Workstations: Korg Olin workstation. Specialization & Credits: Easy Entertainment Productions Inc. brings you Easy Recording, located just fifteen minutes from downtown Atlanta, our studios boast a creative and stress-free environment in a quiet, relaxing setting. Our in-house producers and engineers handle rap, R&B, contemporary, gospel, hip house, reggae and alternative music. Easy Recording is a full-service recording facility, offering a wide range of services designed for any budget. All aspects of recording, including artists pre-production services and consultation are available. We utilize top-of-the-line synthesizers and computer software and are equipped to handle your project from conception to completion. Accommodations include a basketball hoop, a spacious lounge, kitchen, showers, even a private retreat room with 27" color TV, stereo system and four-track MIDI studio (so as not to waste any sudden inspiration). You owe it to yourself to contact us for your next session. When you want professional results, it's Easy.

**[16] EZ RECORDING & PRODUCTIONS;** 119 Williamsburg Ln.; PO Box 1283; Woodstock, GA 30188; (404) 924-0433; FAX: (404) 548-5785. Owner: Rick Payne. Manager: Rick Payne.

**[16] FERNANDEZ CREATIVE SERVICES;** 200 Commerce, Ste. B; Jackson, MS 39201; (601) 353-0266. Owner: Sergio Fernandez. Manager: Luke Warm.

**[16] FESTIVAL RECORDING STUDIOS; also REMOTE RECORDING;** 2112 17th St.; Kenner, LA 70062; (504) 469-4403. Owner: Rick Naiser. Manager: Rick Naiser, Michael Borrello.

**[16] GOLDREEL STUDIOS;** 3611 Centreville Rd.; Chantilly, VA 22021; (703) 665-2715. Owner: Golder O'Neill. Manager: Golder O'Neill.

**[16] MARK C. GUTHRIE & ASSOCIATES;** 417 Lakeview Dr.; Oldsmar, FL 34677; (813) 855-5642; FAX: (813) 289-1879. Owner: Mark C. Guthrie. Manager: Joy Katzen-Guthrie. Engineers: Joy Katzen-Guthrie, Bill Elliott, Mark Guthrie, Dave Donak, Gary Rivera. Dimensions: Studio 17'x24', control room 10'x9.5'. Mixing Consoles: Hill Concept 8400 28x24. Audio Recorders: MCI JH-24/16 2", Tascam DA-30 DAT, MCI JH-

110C 2-track 1/2", MCI JH-110C 2-track 1/4", B&B System AM-2B Phascope. Cassette Recorders/Duplicators: Tascam 122 MkII. Echo, Reverb & Delay Systems: Eventide H3000SE, Eventide SP2016, Roland GP-8, Alesis MIDVerb III, DigiTech DSP 128, Aphex Compellor, Lexicon PCM70, (5) Valley 440, Microphones: (2) AKG 414, (6) Neumann U87, (2) MD-421. Monitor Amplifiers: Audine, Halber P-500. Monitor Speakers: (2) ADS 520, (2) JBL 4301B. Musical Instruments: Roland A-80, Alesis HR-16, Proformance/1+, Roland SC-55. Other MIDI Equipment: Opcode Studio 3. Other: (2) PS Audio CD-1A CD player, Macintosh II 8/120 Vision. Rates: \$35 an hour. Demo packages available.

**[16] IN YOUR EAR; also REMOTE RECORDING;** 1300 W. Main St.; Richmond, VA 23220; (804) 359-3937; FAX: (804) 353-2669. Owner: Carlos Chafin. Manager: Gay Chapman. Specialization & Credits: In Your Ear Music and Recording Services features original music production and sound design for commercials and films. We have two recording studios equipped with NED 16-track and 8-track PostPro digital workstations. We have a fully equipped MIDI composition, post-scoring and digital recording suite. Credits include music and sound design for 20th Century Fox, Busch Entertainment, Sears, Wal-Mart, Wrangler Jeans, USAir, Weight Watchers' and other international, national and regional clients. Our studios and composition services are available for record clients and other collaborative production efforts.

**[16] LLOYD STREET STUDIOS LTD.;** 116 C.W. Main St.; Carrboro, NC 27510; (919) 967-5775. Owner: Lloyd St. Studio Ltd., NC Corp. Manager: Stan Lewis.

**[16] LOYOLA UNIVERSITY RECORDING STUDIO;** College of Music; New Orleans, LA 70118; (504) 865-2773. Owner: Loyola University. Manager: Sanford Hinderlie.

**[16] METANOIA INC.;** 7660 Harbour Blvd.; Miramar, FL 33023; (305) 983-9710. Owner: Charlie Stracuzzi. Manager: Charlie Stracuzzi.

**[16] MILEDGE STUDIO;** 5281 Lochinvar; Memphis, TN 38116; (901) 346-8818. Owner: Mike Elledge. Manager: Mike Elledge.

**[16] MR. O AUDIO; also REMOTE RECORDING;** 2080 Phillips St.; Columbus, GA 31903; (706) 689-0000; FAX: (706) 689-0005. Owner: Maurice R. Owens. Manager: Maurice R. Owens.

**[16] MUSCADINE RECORDING STUDIOS;** 3078 Vineville Ave.; Macon, GA 31204; (912) 745-2401. Owner: Paul Homsby. Manager: Paul Homsby.

**[16] ORACLE RECORDING STUDIO; also REMOTE RECORDING;** PO Box 464188; Lawrenceville, GA 30246; (404) 921-7941. Owner: Gene Smith. Manager: Gene Smith.

**[16] PINE GROVE STUDIO;** 10985 SW 172 Terrace; Miami, FL 33157; (305) 255-1495; FAX: (305) 225-7209. Owner: Newton Simmons. Manager: Newton Simmons.

**[16] PROGRESSIVE MUSIC STUDIOS; also REMOTE RECORDING;** 2116 Southview Ave.; Tampa, FL 33606; (813) 251-8093; FAX: (813) 251-6050. Owner: Ken Veenstra. Manager: Ken Veenstra.

**[16] REDWOOD RECORDING;** 628 Elaine Dr.; Nashville, TN 37211; (615) 331-0533. Owner: Rich Henry.

**[16] ROCKINGCHAIR STUDIOS;** 165 S. Holmes; Memphis, TN 38111; (901) 458-8564; FAX: (901) 458-8564. Owner: Ruth Thompson, Mark Yoshida. Manager: Alan Mullins.

**[16] R.W. STUDIO; also REMOTE RECORDING;** PO Box 870724; Stone Mountain, GA 30087-0019; (404) 413-9579. Owner: Rick Ware. Manager: Rick Ware.

**[16] SOUTHEASTERN SOUND STUDIO; also REMOTE RECORDING;** 4880 Earle E. Morris Jr. Hwy.; Easley, SC 29642; (803) 269-2540. Owner: Paul Wang, Buddy Strong. Manager: Paul Wang, Buddy Strong.

**[16] SPOTLAND PRODUCTIONS;** 2000 21st Ave. S.; Nashville, TN 37203; (615) 395-2957; FAX: (615) 386-3638. Owner: Ben Holland. Manager: Deborah Trimble.

**[16] STARLIGHT STUDIOS;** 2859 W. Hillsboro St.; Lake City, FL 32055; (904) 752-9459; (904) 752-9326. Owner: Donald K. Johns. Manager: Donald K. Johns.

**[16] STUDIO 6/PERSUASIVE MEDIA; also REMOTE RECORDING;** 6 South 55th Pl.; Birmingham, AL 35212; (205) 591-0804; FAX: (205) 591-0804. Owner: Frank Pigott. Manager: Frank Pigott.

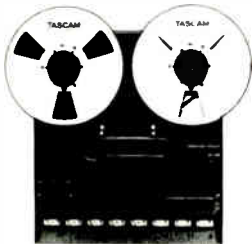
**[16] STUDIO NICO;** 320 Brook Rd.; Richmond, VA 23220; (804) 648-0306. Owner: Tim Holt. Manager: Tim Holt.

**[16] UNITY GAIN RECORDING STUDIO;** 2976-F Cleveland Ave.; Fort Myers, FL 33952; (813) 332-4246. Owner: Anthony Iannucci. Manager: Patricia Frangello. Engineers: Anthony Iannucci. Dimensions: Room 1: studio 25'x17', control room 21'x16'. Mixing Consoles: Soundtracs PC MIDI

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EMERYVILLE, CA 94608



—LISTING CONTINUED FROM PREVIOUS PAGE

Series 24x16x2 48 return. **Audio Recorders:** Tascam MSR-16 16-track, Tascam 38 8-track, Tascam 32 2-track open reel, Tascam DA-30 DAT. **Cassette Recorders/Duplicators:** (2) Tascam 122-MkII 2-track. **Noise Reduction Equipment:** (2) dbx Type 1 DX4D, dbx Type 1 DX2D. **Synchronization Systems:** SMPTE-enhanced direct time lock via MOTU MTP. **Echo, Reverb & Delay Systems:** Eventide H910 harmonizer, Korg DRV-3000, Lexicon PCM70, Lexicon PCM42, Lexicon LXP-1, Korg A-3. **Other Outboard Equipment:** Lexicon MRC, B&B EQF-2, (6) B&B Audio CX-1, dbx 166. **Microphones:** AKG D-12E, AKG C-451EB, (2) AKG C-414B ULS, (2) Neumann KM85i, (5) Sennheiser 421, Electro-Voice PL20. **Monitor Amplifiers:** Crown Micro-Tech 1200, Crown D-75. **Monitor Speakers:** UREI Time Align 809-A, Yamaha NS-10. **Musical Instruments:** Yamaha 5-piece Tour Series kit w/Zildjian cymbals, Roland D-50 linear synth. **Other MIDI Equipment:** Macintosh Apple LC 10-meg RAM/185-meg hard drive, Mark of the Unicorn Professional Performer, Mark of the Unicorn MIDI Time Piece, Akai S950 Professional sampler, Passport Transport. **Other:** (3) ADC Bantam patch bay, Yamaha O2031-A 31-band graphic EQ, custom vocal booth 7x4x4, (6) AKG 141 headphones, (3) Pro-Co DB-1 direct boxes.

[16] UNIVERSITY OF NORTH ALABAMA; Box 5040; Florence, AL 35632-0001; (205) 760-4361; FAX: (205) 760-4644.

[16] WHITEWATER RECORDING STUDIOS/CASSETTE DUPLICATION; also REMOTE RECORDING; 1152 Sweeten Creek Rd.; Asheville, NC 28803; (704) 274-0956. **Owner:** Adam Greenberg. **Manager:** Adam Greenberg. **Engineers:** Adam Greenberg, Tim Stechman. **Dimensions:** Room 1: studio 25'x18'. Room 2: 8'x6.5' iso booth. Room 3: 4'x6' iso booth. Room 4: studio 27'x15', control room 17'x16'. **Mixing Consoles:** Allen and Heath Saber Series 44-input, TEAC Model 5 8x4. **Audio Recorders:** Tascam MS-16 1" 16-track w/dbx and AQ-65 autolocator, Otari MX-5050-8SD 8-track 1/2", Fostex Model 20 1/2-track, Panasonic SV-3700 R-DAT, Tascam 32 1/2 track, Tascam DA-30 DAT. **Cassette Recorders/Duplicators:** (30) Onkyo TA-201 duplicator (real-time), Akai 6X-R88, Teac 124 syncaset, Telex high-speed mono duplicator. **Noise Reduction Equipment:** dbx 24-channel, Dolby B and C. **Synchronization Systems:** FSK. **Echo, Reverb & Delay Systems:** Korg DRV-3000 multieffects processor, Yamaha SPX90II processor, Alesis MIDverb II, Alesis Microverb, Digi-Tech RDS 1900 delay, Vestax 411B delay, Digitech 7.6 time machine. **Other Outboard Equipment:** Neptune graphic EQ, Moog 3-band parametric EQ, BBE 402 sonic maximizer, dbx 160X compressor/limiter, (2) Symetrix 501 compressor/limiter, Symetrix 522 expander/compressor/gate/ducker/limiter, Audio Logic MT-44 quad noise gate, Symetrix CL150 compressor, Valley Gate 4-channel noise gate. **Microphones:** (2) Neumann KM84, AKG C-414-BULS, Beyer M88, Beyer M69, (8) Shure SM57, Shure SM58, Sony ECM-55, Electro-Voice 1777 condenser, Audio-Technica ATM63, Sennheiser ME-80 shotgun. **Monitor Amplifiers:** Halber, Crown. **Monitor Speakers:** JBL. **Musical Instruments:** 1963 Hagstrum Corvette 6-string guitar, Charvel Model 1-A electric guitar, 1965 Gibson S6 electric guitar, Alvarez 6-string acoustic, Ibanez 12-string guitar, Casio C2-1000 synth, Yamaha DX100, Yamaha CS15 mono analog synth, Ensoniq ESQ-1, Roland TR-707 drum machine, Ampeg V-4 guitar stack, Peavey backstage amp, Miller upright piano, Tama Swingstar drum kit and various percussion. **Other MIDI Equipment:** Yamaha QX21 sequencer, Anatek MIDI merger, Akai ME20A. **Video Equipment:** Complete 1/2" and 3/4" SP video production services available. **Other:** Musicians' lounge and rehearsal area, complete real-time cassette duplication. **Rates:** Call for rates.

[16] WOODHOUSE RECORDING; 2900 Brittany Way; Chesapeake, VA 23321; (804) 483-6212. **Owner:** Larry Carr. **Manager:** Larry Carr. **Engineers:** Larry Carr. **Dimensions:** Studio: 22'x17.5', control 18'x11'. **Mixing Consoles:** Tascam M-520. **Audio Recorders:** Tascam MS-16 w/ remote and autolocate, Tascam 38, Tascam 32, Panasonic SV-3700 DAT. **Cassette Recorders/Duplicators:** Tascam 122, Technics RS-T80R, Technics RS-TR555. **Noise Reduction:** dbx Type I on all open-reel tracks, Rockman Hush IIc. **Echo, Reverb & Delay Systems:** (2) Ibanez SDR-1000 turbo, (2) Lexicon LXP-1, Yamaha SPX90, SPX900, Ibanez DMD-2000. **Other Out-**

**board Equipment:** Valley Dyna-Mite II, (2) UREI 537 EQ, Valley Gatec, (2) Yamaha GC-2020B comp/limiter, BBE 822 Sonic Maximizer, Yamaha Q2031 EQ. **Microphones:** AKG, Beyer, Shure, Audio-Technica, Tascam, various D.I. **Monitor Amplifiers:** AMR PMA2000, Carver 175, Rane HC6 headphone amp. **Monitor Speakers:** AMR 312, AMR 308, (4) AKG 41phones, (2) Sony MDR-V6 phones, Auratone 5C. **Musical Instruments:** Rogers 6-pc. drum kit, Korg T-3 EX, Wuritzer electric, Sears Silvertone 1484 guitar amp. **Rates:** \$25/hr.

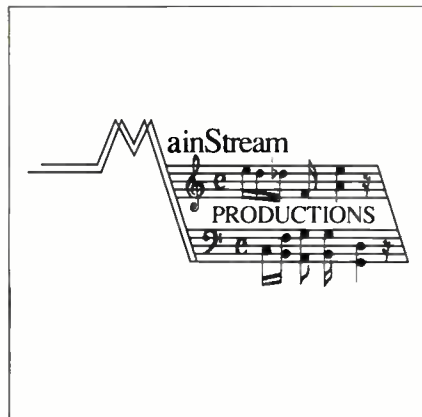
## Southeast

2-, 1- & 8-track studios

[8] **BAY SOUND PRODUCTIONS;** also REMOTE RECORDING; 301 Floral Dr.; Tampa, FL 33613; (813) 962-6175. Owner: Dan Smith. Manager: Dan Smith.

[8] **BRANTLEY SOUND ASSOCIATES INC.;** REMOTE RECORDING only; 204 Third Ave. S.; Nashville, TN 37201; (615) 256-6260; FAX: (615) 255-9369. Owner: Lee Brantley. Manager: Bobby Brantley.

[8] **ELECTRIC CHICKENLAND MOBILE AND STUDIO RECORDING;** also REMOTE RECORDING; 4425 Sugar Pine Dr.; Boca Raton, FL 33487; (407) 241-7091. Owner: Marc Scott. Manager: Marc Scott.



**MAINSTREAM PRODUCTIONS**  
Yorktown, VA

[4] **MAINSTREAM PRODUCTIONS;** 105 Don Juan Dr.; Yorktown, VA 23693; (804) 596-8362; FAX: (804) 596-8362. Owner: Donald VonCannon. Engineers: Don VonCannon. Dimensions: Studio 12'x11'. **Mixing Consoles:** Alessi 1622, Yamaha PM430. **Audio Recorders:** Tascam Series 70. **Cassette Recorders/Duplicators:** TEAC V-850X, TEAC A-510. **Noise Reduction Equipment:** dbx 224X Type II NR, dbx 128 Type II NR. **Echo, Reverb & Delay Systems:** Alessi MIDIverb II, ART SGE Mach II, Roland SDE-1000, dbx 128 compressor. **Microphones:** (2) Shure SM81, (2) Shure PE588. **Monitor Amplifiers:** Sony STR-D2010. **Monitor Speakers:** (2) Custom-built monitors using JBL & Electro-Voice components. (2) Auratone Cubes. **Musical Instruments:** Yamaha DX7II w/ E, Yamaha RX5 drum machine, Roland SPD-8 drum pad, Fender Stratocaster, Yamaha FG160 acoustic, Digidesign SampleCell. **Other MIDI Equipment:** JL Cooper FaderMaster, Opcode Studio 5 interface. **Video Equipment:** Sony SL-757UC VHS, Panasonic AG-7400 S-VHS, Sony video monitor. **Other:** Sony CDP-970 CD player. **Digital Workstations:** Mac Ilii w/Sound Tools and Studio Vision. **Specialization & Credits:** MainStream Productions provides a personal, relaxed environment in which to create the musical identity for your product or service. We are located in the heart of Tidewater, Virginia, one of the fastest-growing metropolitan areas on the East Coast. MainStream specializes in jingle production for radio & TV commercials, and we offer complete composition & recording packages, as well as post-production services. We are also involved with multimedia productions, providing services for corporate, educational and commercial presentations. We handle local and national projects, serving a wide range of advertising markets. We have the talent and savvy to get your project out on time and under budget. Please call for package pricing info. Rate cards available on request.

[8] **MOOKIEVILLE STUDIOS;** 38 Forest Cove; Hilton Head, SC 29928; (803) 686-6644. Owner: Alan Horenstein. Manager: Alan Horenstein.

[2] **NEW MOON PRODUCTIONS;** also REMOTE RECORDING; 7676 Anthony Rd.; Kernersville, NC 27284; (919) 643-4115; FAX: (919) 643-4299. Owner: Frank A. Bruno. Manager: Frank A. Bruno.

[8] **JOSH NOLAND MUSIC STUDIO;** 760 W. Sample Rd.; Pompano Beach, FL 33064; (305) 943-9865; FAX: (305) 943-9865. Owner: Josh Noland. Manager: Josh Noland.

[8] **OFFBEAT STUDIO;** also REMOTE RECORDING; 965 Old U.S. 1 South; Southern Pines, NC 28387; (919) 281-5822. Owner: Bob Hensley. Manager: Bob Hensley.

[8] **POLYMUSIC STUDIOS INC.;** 2717 19th St. S.; Birmingham, AL 35209; (205) 871-8442. Owner: D. Whiteside, R. Hunter, M. Dulin. Manager: Daniel Whiteside.

[8] **POSH RECORDING;** also REMOTE RECORDING; 519 N. Monroe St.; Arlington, VA 22201; (703) 524-1617. Owner: Mr. Phillip S. Kerlin. Manager: Mrs. Simone Kerlin.

[4] **PROJECT 70 AUDIO SERVICES INC.;** also REMOTE RECORDING; 777 Lambert Dr. NE; Atlanta, GA 30324; (404) 875-7000; FAX: (404) 875-7009. Owner: Jerry L. Connell. Manager: Jessica T. Adams.

[8] **PUBLIC DISPLAY OF AFFECTION PRODUCTIONS;** 3050 Fernanago Dr.; Tallahassee, FL 32308; (904) 847-6104; FAX: (904) 877-7044. Owner: Billy Gabor and Phredde Thomas. Manager: Billy Gabor and Phredde Thomas.

[8] **RADIO ACTIVE PRODUCTIONS RECORDING;** also REMOTE RECORDING; PO Box 2523; Marathon Shores, FL 33052; (305) 743-4248. Owner: John Bartus. Manager: John Bartus. **Specialization & Credits:** Conceive, write and record your next project in the only oceanfront recording studio in the beautiful Florida Keys. Take full advantage of our synchronized MIDI system, lay down vocals and other instruments on the multitrack, mix down to DAT (or 1/4" analog), and relax by the sea...or in our jacuzzi. Dive or snorkel the only coral reef in the U.S. Charter a boat and catch the big fish. Or just soak up the year-round Keys' sunshine. The creative possibilities are endless and everyone is treated like a local at Radio Active Productions Recording. Competitive lockout rates include limited oceanfront accommodations, and we are located less than five minutes from other lodging and resorts to fit every budget and need. The tropical creative experience is waiting: The only thing missing is you. Call or write for rates and details.

[8] **RCS PRODUCTIONS;** 6583 Samoa Dr.; Sarasota, FL 34241; (813) 379-4002. Owner: Risha Ann Gravelin. Manager: Risha Ann Gravelin.

[4] **RIDGE RECORDING STUDIOS;** also REMOTE RECORDING; 399 Cahaba Rd., PO Box 308; Greenville, AL 36037; (205) 382-7800; FAX: (205) 382-2714. Owner: Cleveland Poole. Manager: Cleveland Poole.

[8] **SHARP RECORDING STUDIO;** also REMOTE RECORDING; 116 Gloucester Rd.; Natchez, MS 39120; (601) 446-6186. Owner: Richard B. Sharp Jr. Manager: Brian Mulhearn.

[2] **THE SOUND CATEGORY;** only REMOTE RECORDING; PO Box 9; Merrifield, VA 22116; (703) 280-9119. Owner: Ralph A. and Mary A. Haller. Manager: Mary A. Haller.

[8] **SOUND PLUS;** also REMOTE RECORDING; Rte. 4, Box 41; Leesburg, VA 22075; (703) 777-7176. Owner: Philip W. Goshorn. Manager: Bob Gaskill.

[8] **SOUNDS, REASONABLE!;** also REMOTE RECORDING; 10203 Bent Tree Ln.; Manassas, VA 22111; (703) 631-6376. Owner: Fred Wygal. Manager: Ellen Wygal.

[8] **TRACK ONE STUDIOS;** PO Box 355; Williston, SC 29853; (803) 266-3410. Owner: Barry Keel. Manager: Barry Keel.

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### Upcoming deadlines:

Southern California, Hawaii  
and Southwest Studios:  
June 10, 1992

New Products for 1993:  
July 10, 1992

Call (800) 344-LIST for a  
listing application.

J U L Y 1 9 9 2

## 15 YEARS OF MIX!

SPECIAL ISSUE:

## The Digital Studio

- **Getting Started in Digital**  
Basic equipment needs and concerns for first-time buyers.

- **Modular DAWs**  
Personal computer-based systems for music recording and audio-for-video.

- **Digital Sound Reinforcement**  
Manufacturers discuss the effects of digital gear on live sound.

- **Defining the "Ideal" Multipurpose Workstation**  
Functions and features of existing systems, and the future of the all-digital studio.

- **Facility Spotlights**  
East Coast, West Coast and international facilities involved in music recording, film and video production, and audio post-production.

- **Directories**  
Independent Engineers & Producers.

- **Plus!**  
The Ten Most Influential Producers of the Last 15 Years; U2 at the Oakland Coliseum; Bonzai lunches with veteran engineer Bruce Botnick; ten-page guide to digital audio products!



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# AD INDEX & READER SERVICE PAGE

PAGE	READER SERVICE NUMBER	ADVERTISER
158	001	Ace Music Center
58	002	Acoustical Solutions
113	003	Akai
27	004	AKG Acoustics (Tri-Power)
95	005	AKG Acoustics (dbx)
129	006	AKG Acoustics (Modular Mics)
IFC	007	Alesis (adat)
59	008	Alesis (1622)
82	009	Allen & Heath
148	010	Allen-Martin Productions
9	011	Ampex
163	012	AMP Services
133	013	Apex Machine Company
43	014	Apogee Electronics
35	015	Applied Research & Technology (ART)
135	016	ARX Systems
68	-	Ashly Audio
157	017	AudioForce
153	018	Audio Images
70	019	Audio Precision
111	020	Audio Teknology Incorporated (ATI)
133	021	Audio World Technology
67	022	BASF
132	023	BBE Sound
73	024	beyerdynamic (TG-X 580)
75	025	beyerdynamic (TG-X 480)
77	026	Boynton Studio
151	027	Brainstorm Electronics
62	028	Bruel & Kjaer
31	029	Burlington Audio/Video Tapes (3M)
149	030	Burlington Audio/Video Tapes (Sony)
157	031	CCS Printing
135	032	Century Music Systems
101	033	Clair Brothers Audio Systems
123	034	CMCI/Circuits Maximus Company
140	035	Cooper Sound
61	036	Crown
25	037	D & R USA
162	038	D.A.T. - Audio Gallery
18	039	DDA
126	040	Demeter
81	041	DIC Digital Supply
63	042	Digidesign
108	043	Digital Audio Labs
IBC	044	DigiTech
150	045	Dinosaur Productions
58	046	Disc Makers

PAGE	READER SERVICE NUMBER	ADVERTISER
119	047	DOD
17	048	Dolby
41	049	Dynacord
109	050	DynaTek Automation
139	051	EAR Professional Audio/Video
105	052	E-mu Systems
33	053	Euphonix
115	054	Europadisk
158	055	First Light Video Publishing
98	056	Fostex
118	057	Full Compass
40	058	Full Sail Center for the Recording Arts
146	059	Furman Sound
26	-	Future Disc Systems
117	060	Future Sonics
153	061	Gold Line/Loft
50	062	Gotham Technology Group
71	063	Greencorp
74	064	Groove Tubes
116	065	Grove School of Music
141	066	Grundman Mastering
93	067	The Hollywood Edge
152	068	illbruck
77	069	Institute of Audio Research
BC	070	JBL Professional
32	071	The Russ Jones Marketing Group
154	072	JRF Magnetic Sciences
75	073	KABA Research & Development
114	074	Killer Tracks
150	075	Klarity Kasette
160	076	Lentine Music
159	077	Leo's Professional Audio Systems
2	078	Lexicon
155	079	MacBeat
87	080	Mackie Designs
156	081	MainStream Audio
163	082	Markertek Video Supply
73	083	Micro Technology Unlimited (MTU)
151	084	Mix Books
71	085	Music Tech
132	086	National Sound
52	087	Neumann USA
20	088	Neutrik
107	089	Optical Media International
60	090	Optifile/Sascom Marketing
155	091	The Peabody Conservatory of Music
39	092	Peavey Electronics
162	093	PolyQuick

PAGE	READER SERVICE NUMBER	ADVERTISER
85	094	Professional Audio Services & Supply
141	095	QCA
88	096	Ramsa
86	097	Rane
139	098	The Recording Workshop
166	099	Rhythm City
160	100	Rocket Lab
6-7	101	Roland
140	102	Rolls
104	103	Sabine Musical Manufacturing
55	104	Sanken
134	105	SAS Industries
46	106	Saturn Research
99	107	Schoeps
53	108	Sennheiser
54	109	Shure
1	-	Siemens Audio
11, 127	-	Solid State Logic (SSL)
134	110	Sonocraft
13	-	Sony
126	111	Sound Concepts
154	112	Sound Impressions
69	113	Soundtracs
159	114	Sprague Magnetics
3	115	Studer Revox (D820-48)
90	116	Studer Revox (Dyaxis)
125	117	Studio Consultants
144	118	Studio Tech
92	119	Sweetwater Sound
89	120	Symetrix
84	121	Systems Development Group
16	122	Tannoy
117	123	Tape Duplication Technology
36	124	Tascam (ATR-80)
64-65	125	Tascam (M-3500)
128	126	Tech 21
130	127	Telex Communications
161	128	Thoroughbred Music
15	129	3M Corporation
125	130	UCLA Extension
103	131	Vega
51	132	Wadia Digital
42	133	Whirlwind Music
152	134	The Whisper Room
76	135	White Instruments
22-23	136	Yamaha (SPX series)
122	137	Yamaha (YPDR601)
102	138	Yorkville
164	139	YRS Multimedia

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Issue: *Mix*, June 1992 • Card Expires: October 1, 1992

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**1) Your company's primary business activity (check ONE):**

- 01  Recording studio (including remote trucks)
- 02  Independent audio recording or production
- 03  Sound reinforcement
- 04  Video/film production
- 05  Video/film post-production
- 06  Broadcast/radio/television
- 07  Record company
- 08  Record/tape/CD mastering/manufacturing
- 09  Equipment manufacturing (incl. rep firm)
- 10  Equipment retail/rental
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001	026	051	076	101	126	151	176	201	226
002	027	052	077	102	127	152	177	202	227
003	028	053	078	103	128	153	178	203	228
004	029	054	079	104	129	154	179	204	229
005	030	055	080	105	130	155	180	205	230
006	031	056	081	106	131	156	181	206	231
007	032	057	082	107	132	157	182	207	232
008	033	058	083	108	133	158	183	208	233
009	034	059	084	109	134	159	184	209	234
010	035	060	085	110	135	160	185	210	235
011	036	061	086	111	136	161	186	211	236
012	037	062	087	112	137	162	187	212	237
013	038	063	088	113	138	163	188	213	238
014	039	064	089	114	139	164	189	214	239
015	040	065	090	115	140	165	190	215	240
016	041	066	091	116	141	166	191	216	241
017	042	067	092	117	142	167	192	217	242
018	043	068	093	118	143	168	193	218	243
019	044	069	094	119	144	169	194	219	244
020	045	070	095	120	145	170	195	220	245
021	046	071	096	121	146	171	196	221	246
022	047	072	097	122	147	172	197	222	247
023	048	073	098	123	148	173	198	223	248
024	049	074	099	124	149	174	199	224	249
025	050	075	100	125	150	175	200	225	250

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001	026	051	076	101	126	151	176	201	226
002	027	052	077	102	127	152	177	202	227
003	028	053	078	103	128	153	178	203	228
004	029	054	079	104	129	154	179	204	229
005	030	055	080	105	130	155	180	205	230
006	031	056	081	106	131	156	181	206	231
007	032	057	082	107	132	157	182	207	232
008	033	058	083	108	133	158	183	208	233
009	034	059	084	109	134	159	184	209	234
010	035	060	085	110	135	160	185	210	235
011	036	061	086	111	136	161	186	211	236
012	037	062	087	112	137	162	187	212	237
013	038	063	088	113	138	163	188	213	238
014	039	064	089	114	139	164	189	214	239
015	040	065	090	115	140	165	190	215	240
016	041	066	091	116	141	166	191	216	241
017	042	067	092	117	142	167	192	217	242
018	043	068	093	118	143	168	193	218	243
019	044	069	094	119	144	169	194	219	244
020	045	070	095	120	145	170	195	220	245
021	046	071	096	121	146	171	196	221	246
022	047	072	097	122	147	172	197	222	247
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024	049	074	099	124	149	174	199	224	249
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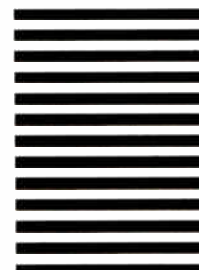
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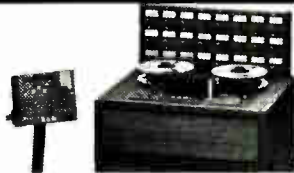
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—FROM PAGE 141, N.Y. METRO

Conway Recorders and Village Recorders on the West Coast; Sound On Sound will be its first East Coast installation—had told him that Sound On Sound has been one among many studios whose expansions have been held up by banks experiencing tough times and delaying loans they've previously committed to.

"They said they haven't had a client who hasn't had a similar problem in recent months," Amlen says. "It's annoying because I've had to turn down lockouts." A new Neve VR-72 is awaiting delivery for the room, and he has \$50,000 worth of new outboard gear sitting in his office, "not generating any revenue," he adds.

Nick Balsamo was named president of Power Station, effective April 16. Prior to this announcement, Balsamo was a sales rep with Siemens in New York. Bob Walters becomes CEO of the studio, and will be less involved with day-to-day operations and more with the future growth and plans of the studio, according to general manager Barry Bongiovi. Balsamo's responsibilities will include overseeing production, maintenance, sales and finance. ■

## TAPE & DISC

—FROM PAGE 135, RIAA REPORT

figures were worse than the figures for the first half of the year, when the configuration showed a decline of 18%.

### Reading the Tea Leaves

Luckily for the rest of the industry, overall 1991 performance was an improvement on mid-year results, which had shown an 11% dip in units and a 23% fall-off for cassettes. That means the sag in cassette sales has already begun to turn around somewhat. Berman told *Billboard* he thinks cassettes will stabilize if, as expected (hoped?), the economy picks up this year. But considering the format's two prior years of slight declines, it's hard to shrug off the feeling that the cassette is permanently on the downside of its peak as a music carrier.

That assessment doesn't mean that cassettes will fade away. But their long-range future seems now to lie in spoken word. According to R. R. Bowker, a company that tracks spoken word cassette titles and producers, that mar-

ket has "more than tripled in size in the last five years." Even so, the slowdown in music cassettes is going to be painful for some, as evidenced by BASF's decision to shut down its tape plant in Bedford, Mass.

One thing for sure about the cassette slowdown is that its meaning will be debated by those who are about to bring new configurations to market. Sony and Philips will agree that the figures show consumers to be losing their enthusiasm for the cassette and ready to move on to new music carriers. But Philips will maintain that a switch to digital sound (in the form of DCC) will be enough to keep the market happy, while Sony will argue that the consumer preference for optical discs is now clear, making Mini Disc the logical heir to the cassette. Since the competing new formats aren't expected until late this year, it won't be until at least this time in 1994 that the RIAA can offer much of an indication as to which company is right. ■

*Tape & disc editor Philip De Lancie is a mastering engineer at Fantasy Studios in Berkeley, Calif.*

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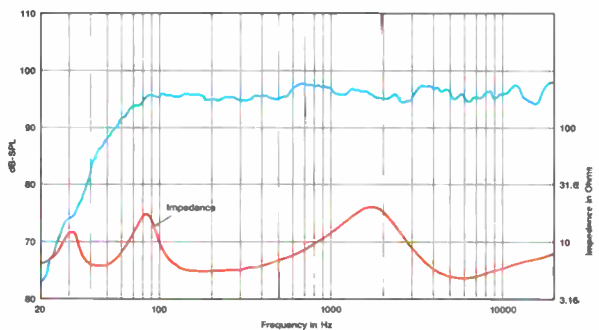
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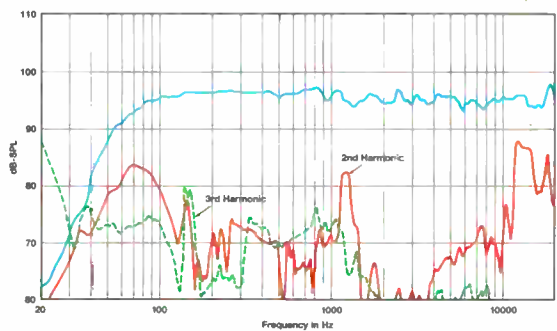
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