

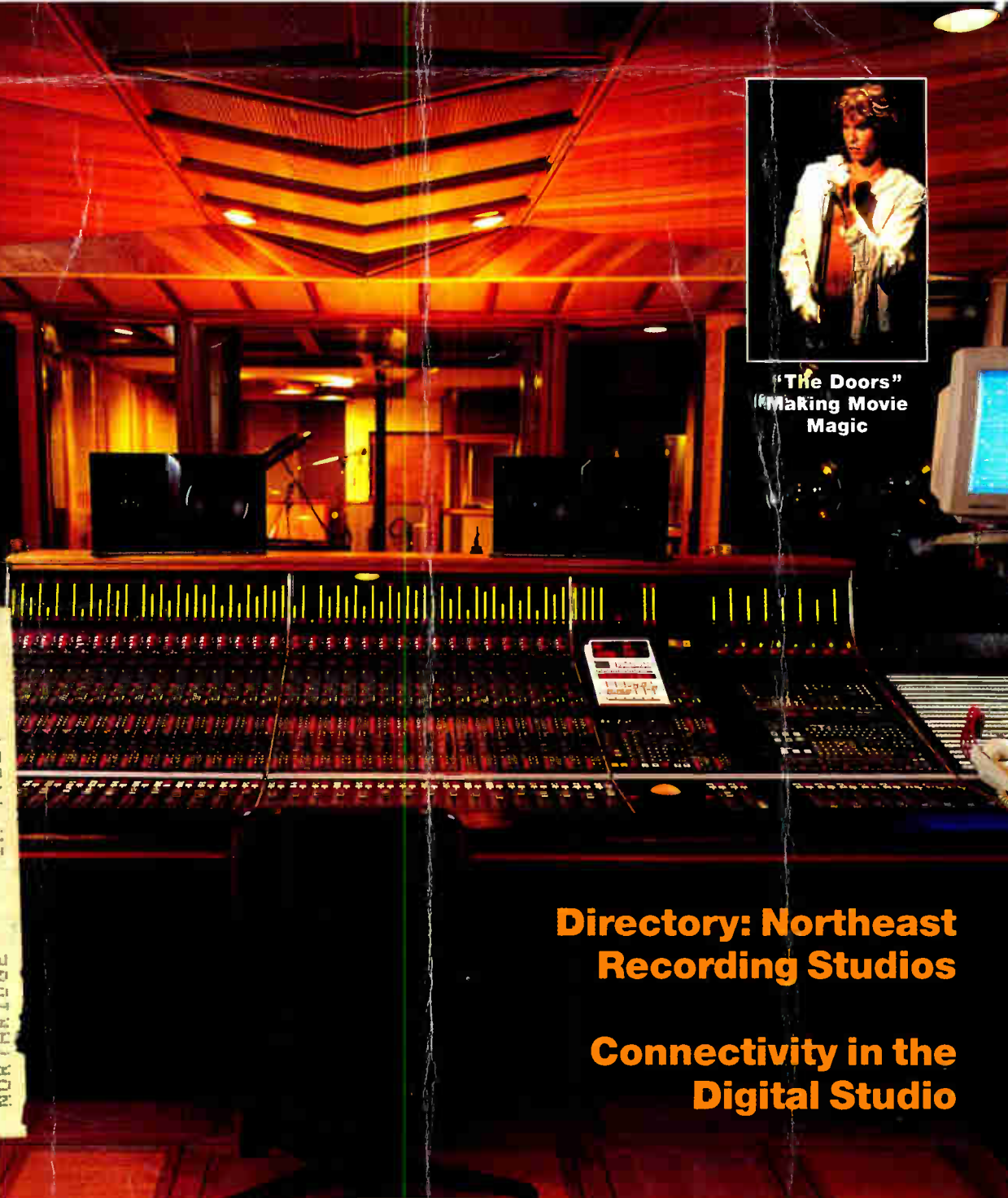
MIX

**Behind the Scenes At
Rock in Rio II**

**Synchronizer
Buyer's Guide**



**"The Doors"
Making Movie
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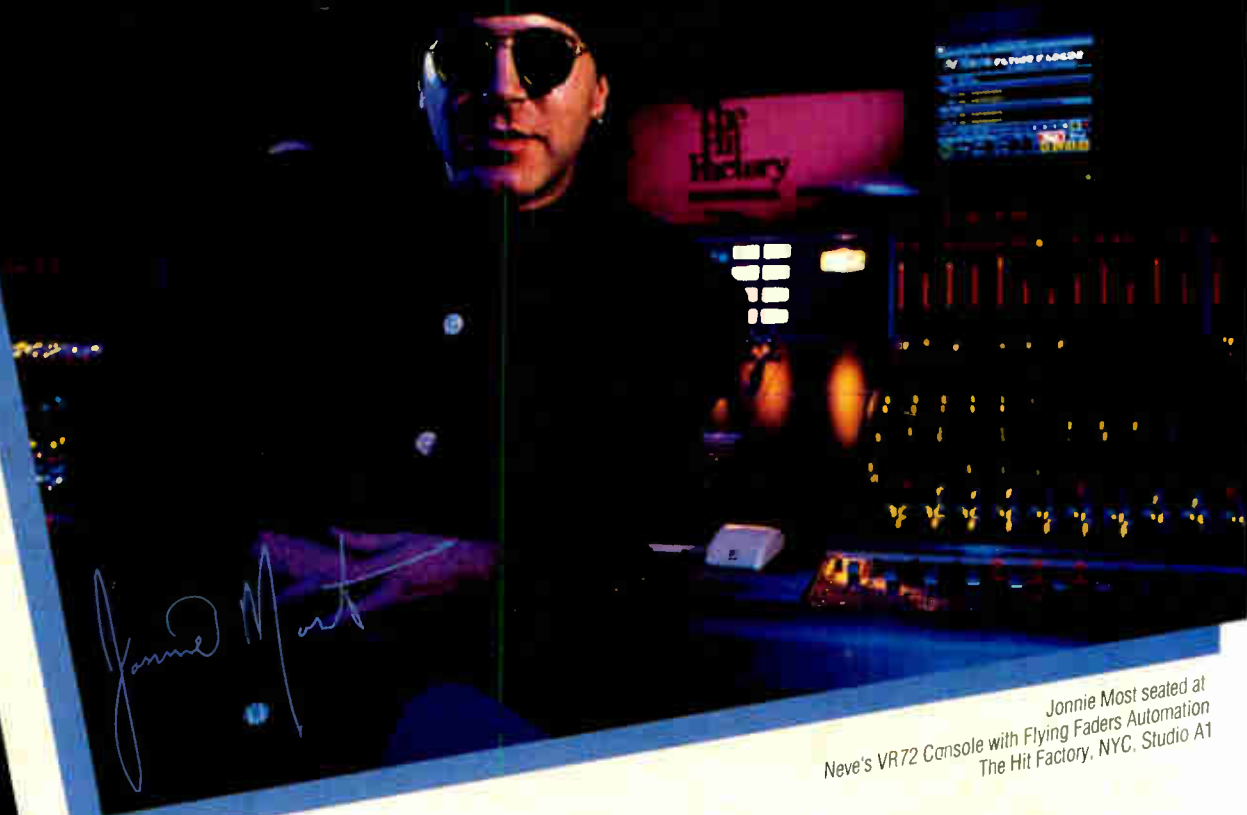


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Jonnie Most seated at
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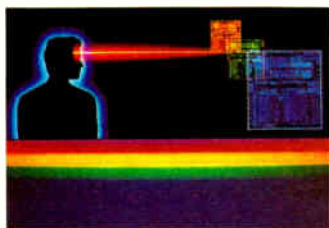
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MAY 1991, VOLUME 15, NUMBER 5

AUDIO

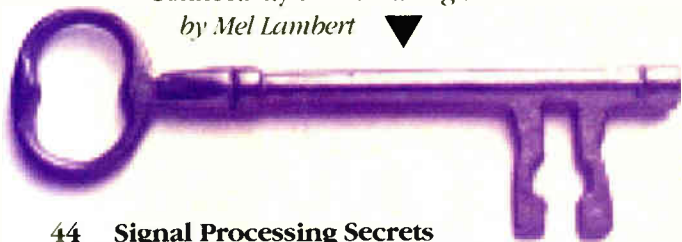
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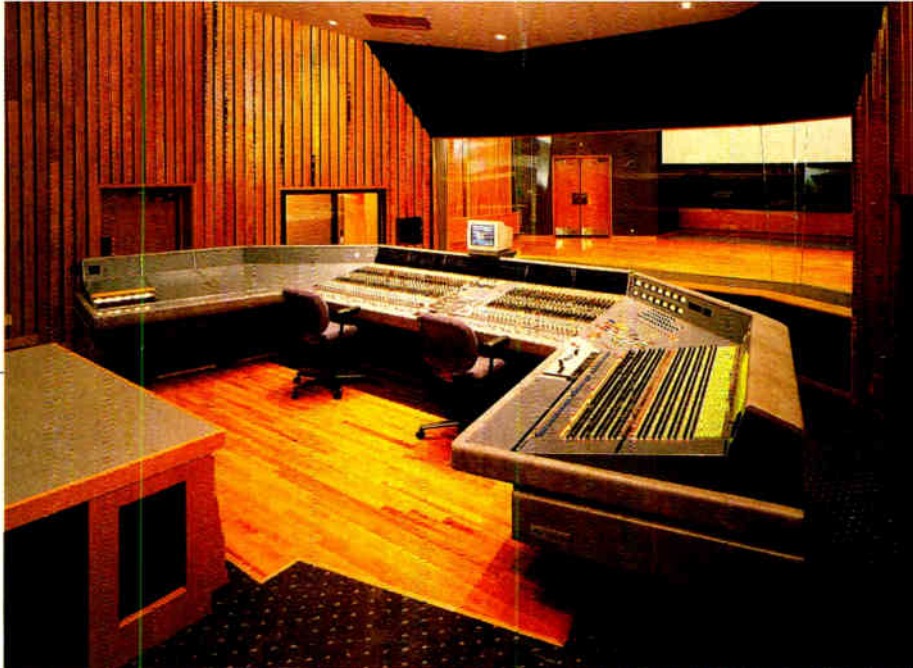
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Cover: Founded in 1972 and designed by Richie Bittner and Lou Holtzman, New York's Eastside Sound now sports the first (and to date, the only) Harrison Series Ten "B" console on the East Coast, an automated, 66-input version. NY Technical Support's Greg Hanks handled installation and wiring. Two Sony APR-24 multiTracks are located in a separate machine room. Recent projects at Eastside include the latest PolyGram release for Jon Lucien and the HBO soundtrack for *Criminal Justice*.

Photo: Robert Vance Blosser.



DIRECTORY

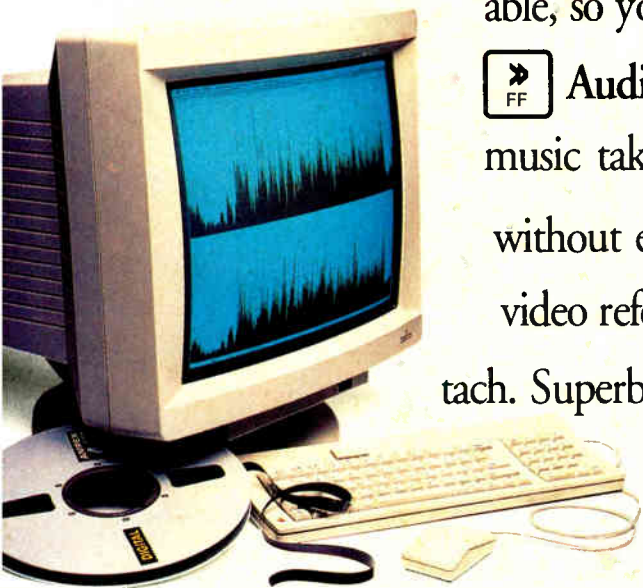
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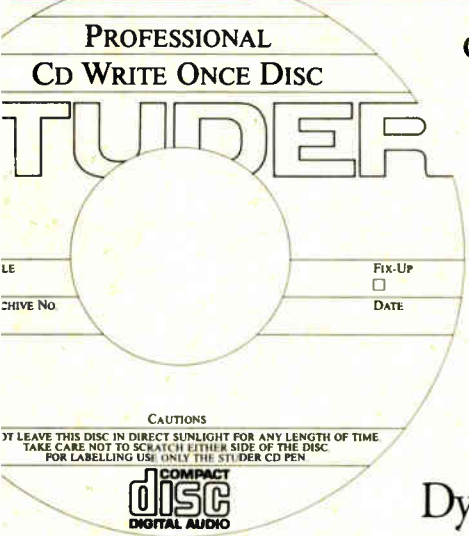
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STUDER

FROM THE EDITOR

The Microsoft CD-ROM Conference, held recently in San Jose, California, provided plenty of food for thought. Here is an event, now in its sixth year, that continues to show signs of representing the *next big thing*, while being burdened with a colossal identity crisis. It's a place where prototypes for both the chicken and the egg are showcased. New forms of software programming are displayed, along with new hardware devices with which to play them.

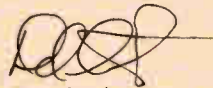
The participants of this conference represent the new age of information producers and their products, drawing together entertainment, education and technological razzle-dazzle. The industry has been slower than most have hoped in getting off the starting blocks due to a number of critical problems. One is that multimedia playback devices are not new and improved ways to play existing program material, as was the case with VCRs and CD players. Rather, these devices are new ways to access new forms of information presentation. They may be the best ways so far to present full-value information on a subject, but creating these products is like learning to spell in a language that is still being invented. This leads to the obvious peripheral problems of standards, interchangeability and common-denominator issues, which must be resolved in order to bring this revolution into our businesses, schools and homes.

Despite the frustration that many feel regarding the turtlesque progress of the multimedia industry, important prerequisites are being established. As reasonably priced authoring systems begin to enter the market, allowing writers and producers to integrate music and sound with images, video and text, the fledgling industry is moving more into the hands of the creative artists and production entrepreneurs.

When will all of this begin to present realistic business opportunities? It already has. For example, many people have seen and purchased the now classic multimedia version of Beethoven's Ninth (as produced by the Voyager Company), which brings interactive access to the score, and historical notes and graphic images along with the listening experience. Electronic encyclopedias such as Microsoft's Concise Columbia Encyclopedia, with music tracks, sound effects and animation sequences, are grabbing attention in progressive libraries and well-funded learning institutions. And manufacturers of complex equipment, such as Boeing and Steelcase, are finding that electronic "manuals" provide better training and more effective sales and repair of products ranging from airplanes to office furniture.

When is the time to get involved? Now, if this appeals to you. The field is ripe with opportunity and needs the creativity and ingenuity of people who aren't afraid of some trial and error on the road to success. Be sure to pack a great deal of patience.

Keep reading,



David Schwartz
Editor-in-Chief



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The Saul Zaentz Company Film Center has just completed a major expansion featuring Otari's *Premiere* film post-production console for dub stage 2.

The *Premiere* is the result of extensive collaboration between The Saul Zaentz Company and Otari, and was designed to meet the needs of the Center's new dubbing stage.

The *Premiere* was designed and built especially for film mixing, and is configured for easy operation by one to three Sound Mixers. In addition to

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World Radio History

CURRENT

Two Show Reports

Guitarist Adrian Belew kicked off Canada's West Coast Music Exposition with a keynote address on February 28 at Vancouver's Robson Conference Center. The four-day event incorporated a trade show that included industry manufacturers, retailers and professional organizations, as well as panels, workshops and conferences conducted by contemporary artists and industry personnel.

Participants included bassist Jeff Berlin, film composer Michael Conway Baker, director of A&R for RCA Records John Axelrod, local AES education committee chairman Jeff Berryman, *Mix* associate editor Paul Potyten and dozens of others. The Exposition was designed to coincide with the 20th anniversary of the Juno Awards and the Record Music Industry Conference and Awards. The March 3 Junos—Canada's equivalent of the Grammys—were hosted by Vancouver for the first time.

"We're delighted with the success of the event, despite scheduling conflicts with the Frankfurt Musikmesse and other goings on," says Laurie Mercer, producer of WEST-EX. "But we're looking forward to the next event, which will be held here in April 1992."

The Sixth International Conference & Exposition on Multimedia and CD-ROM was held March 18-20 at the San Jose Convention Center, in San Jose, Calif. The event, sponsored by Microsoft, provided ample evidence that CD-ROM promises to be one of the fastest-growing industries of the decade.

Among the new developments announced at the conference were a JVC write-once CD-ROM drive, the XR-W1001, tentatively priced at \$2,500

for VARs, and expected to be available this fall; a set of chips from Intel that lets a Macintosh use its DVI digital motion video technology (previously the sole domain of IBM PCs); and a CD-ROM drive from Tandy that will retail for \$399.

According to Julie Schwerin, president of Infotech, 1.25 million CD-ROM drives are currently in use worldwide. The industry continues to double its annual gross revenue, up from \$750 million in 1989 to \$1.5 billion dollars last year.

—Paul Potyten

I Hear Music

A bill before the New York City Council could drastically affect local sound reinforcement installations if it passes, according to AFM Local 802 president John Glasel. The bill, sponsored by Councilwoman Carol Greitzer, would require soundproofing in any establishment that has music produced by any means, including clubs and exhibition halls. Such establishments would have to meet certain soundproofing criteria to get a "Certificate of Soundproofing."

Glasel says meeting the standards, once they are established, would be complicated and expensive and would result in fewer installations in the long run. Furthermore, he adds, the standards would be determined by a panel of non-experts in a mandated 120 days, a feat Glasel says has eluded an AES group that has been trying to do the same thing for nearly two years.

Glasel says of the 1,100 noise complaints reported in fiscal 1990 in New York, only 41 were directly music-related. He thinks a better approach would be to more strictly enforce current anti-noise laws, the measurement of which Local 802

originally participated in. The real noise problem comes from traffic and rowdy patrons, not the music, Glasel maintains. "[This bill] would make New York City a music-free zone."

Councilwoman Greitzer responds by saying enforcement under current statutes is difficult, since violations occur late at night and trained Environmental Protection Department personnel can't respond quickly. However, she adds that certain exemptions for existing establishments should be allowed for in the bill's final form.

—Dan Daley

Convention News

The big convention this month is in Cincinnati, and the world champion Reds are in town. The National Sound and Communications Association (NSCA) will meet May 20-22 at the Cincinnati Convention Center. More than 300 exhibitors and 5,000 attendees are expected to attend the three-day event. Classes begin on Saturday the 18th, though the exhibit opens Monday. If you haven't been to NSCA before, they have a few quirky rules, which are popular with attendees but unlike most trade shows. Exhibitor registration begins May 17. Call the NSCA for more information: (708) 598-7070.

The Association of Professional Recording Services will host APRS 91—"the one show for the pro audio industry" is the theme—June 5-7, 1991, at Olympia 2 in London. With an economically unified Europe only seven months away, this show should provide a chance for early positioning in a wide-open market. APRS 91 will showcase products and systems for recording, broadcasting, post-production and sound reinforce-

INDUSTRY NOTES

Industry vet Chris Stone (a founder of the Record Plant recording studios and SPARS) joined Euphonix of Palo Alto, CA, as executive director. Jim Dobbie will also lend his support to the company's management team as CEO and chairman...SMPTE is calling for papers for the October 1991 Technical Conference and Equipment Exhibit. The theme is "Advanced Motion Imaging—Enhancing the Universal Language": a 500-word synopsis and a completed SMPTE author form must be sent by May 31 to program coordinator Marilyn Waldman. Call (914) 761-1100 for additional information...Neve has moved its New York offices to 235 West 48th St., Ste. 32J. The telephone number remains the same. Also, Nick Balsamo has moved into the office of senior sales engineer and David Roesch has joined as a technical services engineer...**Berklee College of Music** received a \$1 million donation from Japan's Uchida Scholarship Foundation, cementing a long and beneficial relationship...**Robert Mueller** was appointed general manager of Panasonic's professional/industrial video division; as GM, he will oversee all sales and marketing activities of the division...The University of Southern California and SMPTE are joining forces to present a one-day seminar on the practical implications of digital technology. The seminar will be on May 11, 1991; for details, call Don McCroskey at (818) 846-0918...**Valley People International** is now selling its products (including the Kepex II, Gain Brain II, DSP, DYNAMITE processor and the GATEX noise gate/expander) factory-direct in the U.S.; to order, call (800) 800-3435...The University of Minnesota's Institute of Technology recently received \$130,000 worth of engineering equipment from Tektronix...BGW Systems added new reps to handle its power amp line: Innovative Sales and Marketing of Irvine, CA; Bi-State Marketers in Fairfield, NJ; and White Radio Limited of Burlington, Ontario, Canada...West London's DDA operation brought in four new faces: Philip Marsh as materials manager, Vaughan Matthews as buyer, Tracy Taylor for credit control and Mike Maynard in R&D...Klipsch & Associates awarded its "1990 Rep of the Year" title to New England Technical

Associates...Phoenix, AZ-based **Conservatory of Recording Arts** received national accreditation through the Accrediting Commission of the National Association of Trade and Technical Schools. The school offers a master program in audio recording...SMPTE standards may come a little quicker now—the society's board of governors approved a revised set of procedures that is expected to cut the processing time for standards, recommended practices and engineering guidelines in half. A minimum period of one year is still expected to be the norm, however...**Westwood One's** Southwest regional sales department welcomed **Joseph Laffey** as account executive. He will operate out of the Dallas office...Also in the Southwest, a new design and manufacturing firm, **artefx**, was formed in Mesa, AZ. Products will include a headphone cue system, a direct box and a variety of half-rack products, such as distribution and power amps, level matching devices and interconnect panels...**Audio Biz**, a new manufacturer's rep firm covering Illinois and Wisconsin for pro and commercial sound lines, may be reached at (708) 949-0280...**Ensoniq** recruited **Steve Pretti** to its customer service department...**Ron Tunks Sales** promoted **Chuck DiModica** to VP of the pro audio division...**Freed International** added the talents of **Michael Brown** to its sales force...**Quad Eight Electronics** of Valencia, CA, announced several promotions and new hires: **Chuck Kelley** is now vice president and general manager, **Mark Fleming** is chief engineer and **Buddy Frisbee** is director of sales and marketing...**Curtis Dahl** joined **DOD/DigiTech's** engineering department, where he will oversee development of operating systems and user interfaces. He will also develop a user environment for the company's VLSI processor...**R.E. Snader** (Northern CA-based marketer of pro audio and video equipment) added **Pioneer's** laserdisc players and **Digidesign's** new desktop audio products to its roster...**Ontario's Adamson Acoustic Design Corporation** hired **Mitchell Zusman** as their new marketing manager...**Spindletop Films**, of Dallas, chose **The Emmer Group** as Spindletop's East Coast sales rep. ■

ment. For free registration, contact the APRS 91 offices: 2 Windsor Square, Silver Street, Reading RG1 2TH England; (0734) 756218, fax (0734) 756216.

ShowBiz Expo West will be held June 8-10 at the Los Angeles Convention Center. More than 16,000 are expected to attend. Scott Ross, group vice president of LucasArts Entertainment Company, will deliver the keynote address on the opening day of the convention. Contact **Kris Sofley** at (213) 668-1811 for more information.

You can't start planning too early for international shows. **BroadcastAsia92**, the second Asia-Pacific sound, film and video exhibition, will take place a year from now, June 2-5, 1992, at the World Trade Centre, Singapore. Contact **Andrew Furness** of **Overseas Exhibition Services Ltd.** for more information: (071) 486-1951; fax (071) 935-5637.

Yamaha Refinements

After a two-year analysis, Yamaha Corporation is making some changes within its music sales and marketing divisions in order to make life easier for both dealers and customers.

Effective April 1, the electronic keyboard sales group and piano sales group were merged into the Keyboard division; Pro Audio and Synthesizer, Guitar and Drum divisions were merged into one Audio, Guitar and Synthesizer division, with **John Gatts** as the new general manager; and drums have been moved back to Grand Rapids, Mich., and are now part of the Band and Orchestral division.

Four regional managers have been appointed, each with the authority of a national sales manager. They are: **Jim Coffin**, Western; **Tom Weeber**, Midwest; **Paul Gazarian**, Northeast; and **Bob Shomaker**, Southeast. Most employees transferred with the new divisional structures. ■

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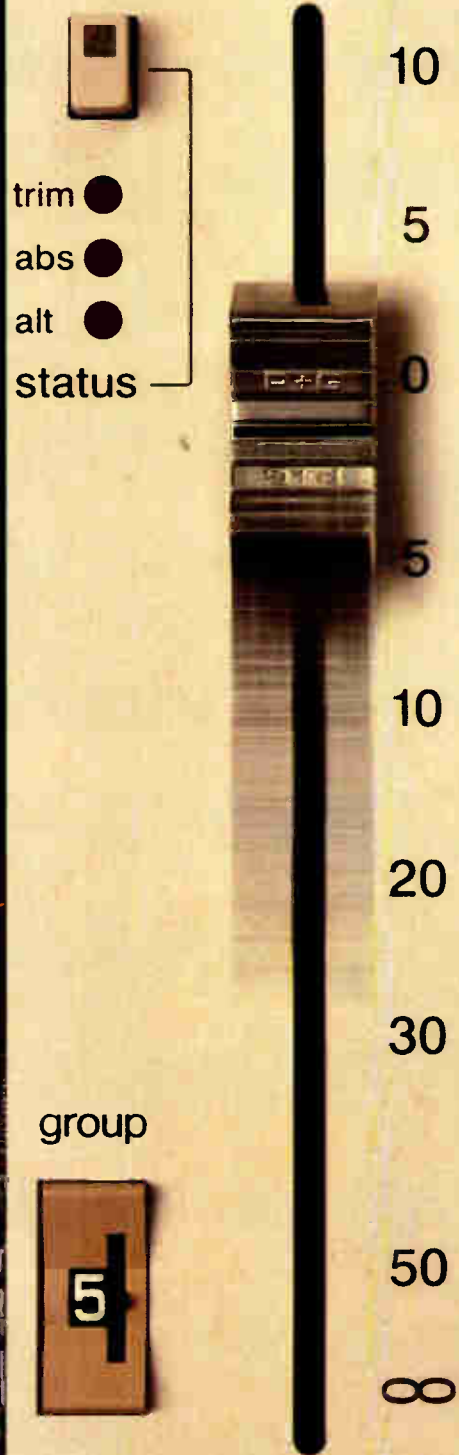
- ▶ Works as standard G Series VCA system, or as a full moving fader system
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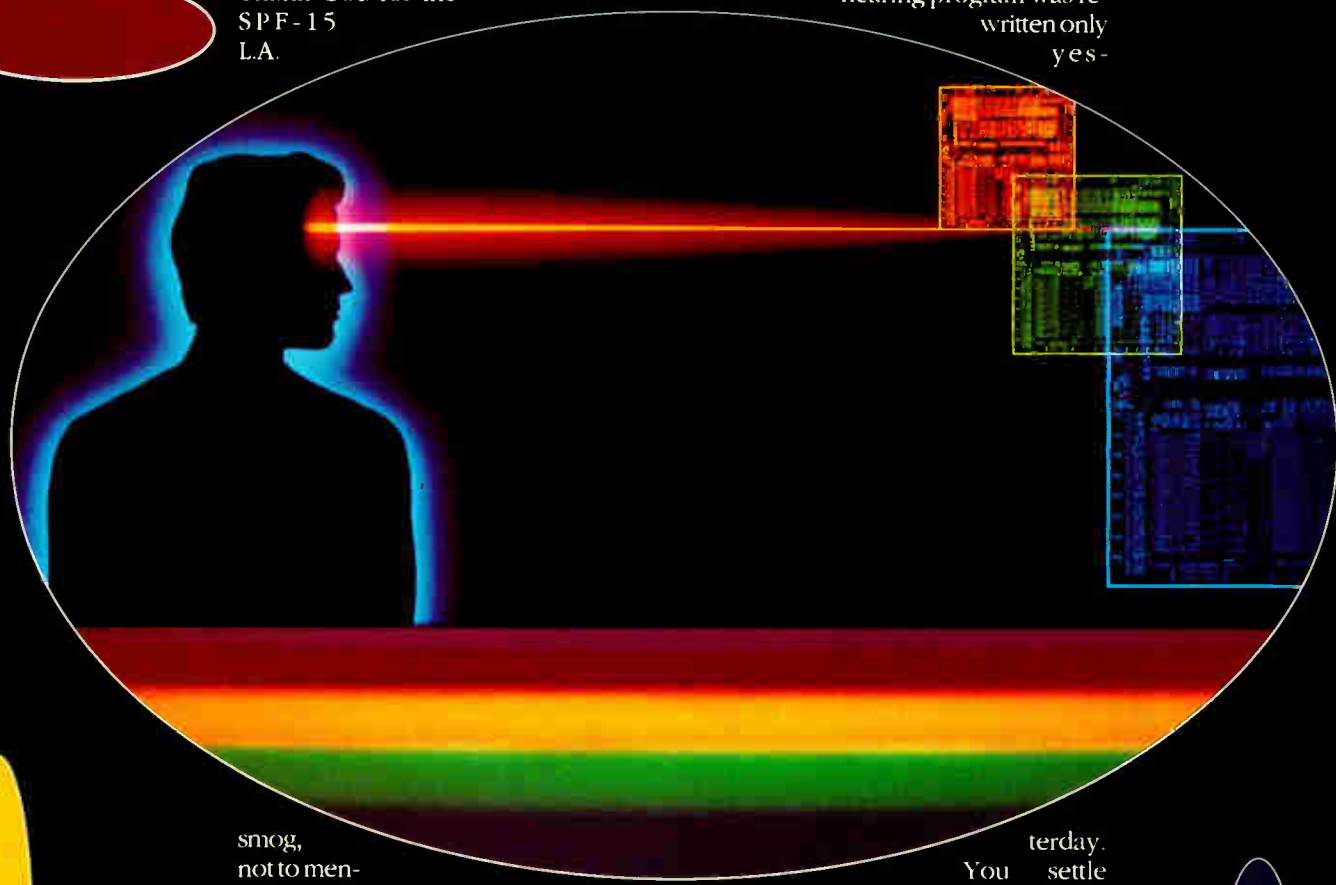
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by Ken C. Pohlmann

2010

The year is 2010. You are just recovering from all of those wild end-of-the-millennium parties that occupied most of your time from 1995 through 2000, and all of those wild beginning-of-the-millennium parties that lasted through 2005. Pulling your electric car into the parking lot, slipping on your oxygen mask, you quickly dash into the studio, involuntarily glancing at your UV monitor. You've already logged over two hours of sunlight this month—way over the melanoma danger level. Thank God for the SPF-15 L.A.

into control room A. As usual, you're about ten minutes late, but Elmer takes it calmly, relinquishing the chair without a word. Tokyo comes online, and you call up last night's data, as well as your automatic engineer program. These rappers like all-nighters, so you're looking at a ten-hour session. Fortunately, the Pacific fiber isn't too crowded today. The incoming signal looks good on the analyzer. Your mixing chops were bumped to 100 MHz last week, and your high-frequency hearing program was re-written only yes-



smog, not to mention the recent ordinance that gives it a Swiss mocha flavor.

Safe inside the studio and its climate control system, you breathe freely. The professional air purifier here works much better than that crappy consumer model in your rabbit hutch. You ease your way past the manager's door and

terday. You settle back, calmly monitoring the progress of the mix, in silence.

A consolidation process in the audio industry finally eliminated the patchwork quilt of small audio companies. As in the computer industry, the pace of technical development was simply too much for small companies. They fell behind, becoming less and less

Rather than show you a picture of George Massenburg posing in front of our digital multitrack, here's why he stands behind it.

Legendary recording engineer and producer, George Massenburg,



The PCM-3348 has developed a reputation for steadfast reliability.

48-track, you don't need to see his face to get the picture.

Reasons like the transport. "It's the finest I've ever run. When you press play, it plays without throwing loops. And it stops, starts, and locks-up incredibly fast."

Reasons like its user-friendly, ergonomic

design.

"The



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Reasons like reliability. "I've produced a lot of records on the 3348, and I've never had any problems. It always works."

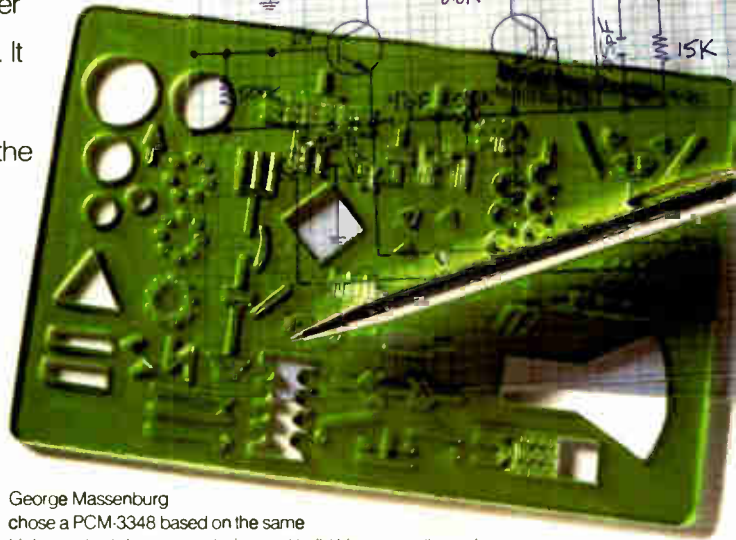
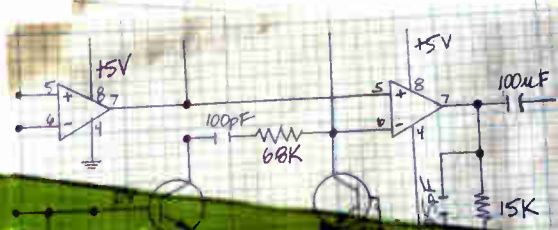
Reasons like the people behind the 3348. "I like Sony's philosophy. They're looking way over the horizon. They've given the 3348 features I've only

begun to use now, but I know they'll be essential down the road."

And, of course, the most important reason of all. "The sound is excellent. In fact, I've digitally transferred all of my current projects from 32-track to Sony's 48-track, and now I can't imagine using anything else."

Sony's unique transport enables the PCM-3348 to move tape faster than any other multitrack recorder.

And that, coming from George Massenburg, is music to our ears.



George Massenburg chose a PCM-3348 based on the same high standards he uses to design and build his own audio equipment.

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You see that guy up there with the funny looking clothes on? That's Wolfgang Amadeus Mozart. And while he was a pretty remarkable little composer in his day, we've got a pretty remarkable little composer ourselves. Namely, the Roland MC-50 MicroComposer.

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Nor did our diminutive friend have a 3.5" floppy disk for storage, an advanced editing system with microscope editing,

an intelligent tape synchronization function, a Super-MRP Performance system for chaining songs together for live performance, an operating system in internal ROM so there's no boot-up time, and 40,000 notes in Internal memory.

But, there was one area in which Mozart shined. As a gifted composer, he could just sit down at the piano, take out his quill pen, and immediately hammer out timeless pieces of music. And, he could do it all himself.

As remarkable as the Roland MC-50 is, it does need someone to bring out its full potential.

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competitive. Most were purchased by larger corporations or simply forced out of the marketplace. Today there are six principal audio hardware corporations. One is European, one is American, four are Japanese. Although smaller hardware companies still exist, they are consigned to secondary roles—odd bits and parts, repair services, etc.

The entrepreneurial spirit is still alive in the audio software industry, however. It seems the turnover is continual, about every two years. A company writes a great studio program, a titanium engineer uses it and everybody switches to it. Then two years later a new software package comes along and the cycle repeats itself. Of course, private programmers do a brisk business. They get as many points on an album as the engineer.

The other people getting rich are the lawyers. After a hit album comes out, everybody tries to copy the software used on it; the lawyers have a field day claiming copyright infringement. Nobody uses producers anymore. The artist, the programmer and the engineer—that's all you need.

Recording studios do quite well. There are fewer of them now, about 100 in the U.S. Most are still privately owned, but more and more are joining franchises because the cost of setting up a studio is about \$100 million. On the other hand, labor costs are way down. There are usually three staff engineers, the manager and the accountant. All the rest is automated.

The last full-time maintenance engineer retired in 2008. Well, actually, he committed suicide. After three straight weeks of looking for a bug in some telecom software, he calmly grabbed a cold water pipe in one hand and placed his other hand on the studio cold fusion grid. The entire industrial park was down for a week. The lawyers got rich on that one, too. Now the companies send their own servicemen to do repairs—too complicated for anyone else, and too dangerous.

A prompt comes up on screen 17; it's that new R&B band in Tehran, requesting priority studio access. You could double-shift, but why bother? You glance at the parking lot monitor—the boss's helicopter is gone. You open communications with the Iranians, then route their feed to Royce down-

town. They can always use pickup business. Meanwhile, the programmer in Tokyo has disconnected your automatic engineer software, requesting some vacuum tube patches. Halting you is a professional insult. Moreover, you can't believe it, so you query her and she repeats her request. You shrug, and then call that tube historian in London.

His system logs on, and you punch-up his patches after reinstating your own program. Don't the Japanese know the tube thing is dead? After government studies in 1996 linked high levels of THD to impotence, everything warm-sounding went right to the bottom of the charts, forever. Acting swiftly, Congress banned the use of analog audio equipment entirely. The flashing red light on your screen reminds you that all these fancy tube emulation programs now carry warning labels.

The equipment in the studio is a far cry from the 1990s inventory. Of course, all processing, mixing, editing and mastering is done on super micro—standard computer industry models—interfaced to plasma screen worktables. The appropriate display

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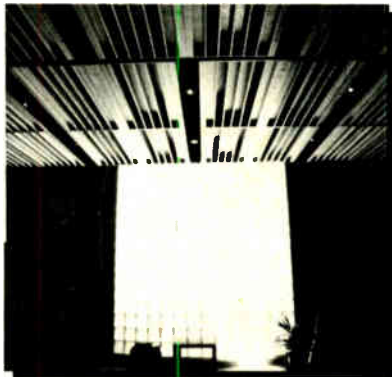
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comes up under the flat glass, and you simply run your fingers over the touch-sensitive surface. There are still a few pieces of non-virtual audio equipment around, but mainly for nostalgia purposes. All of those tube limiters, MCI equalizers and other classic signal processors were analyzed, and their transfer functions written into DSP programs and integrated into system software. The optical transducer, invented at the University of Miami in 2001, obsoleted all conventional microphones and loudspeakers.

Open reels and tape, in general, vanished, pushed aside by optical media. Most 4-track stuff is done to floppy optical, and multitrack stuff is hard optical. Increasingly, experimental solid state systems are popping up at the AES show. Folks really log on to see them—500 GB of RAM in a shoebox. The projected price tag of \$50 million has people waiting in line, cash in hand.

In the consumer market, the compact disc is still the sole recording and reproduction format. It is a 3cm floppy optical disc, holding ten hours of quad music, thanks to data compression techniques. Record stores are still around, but the number peaked in 2004 and is now dwindling rapidly because of the home taping controversy. Hardware manufacturers finally got fed up with the political hassles, and in 2001 solved the problem by simply buying up all of the record labels. Now consumers all own compacter disc recorders and record their own music software off cable or satellite subscription services. Digital audio broadcasting is transmitted over the fiber for home distribution, and over land- or sky-based transmitters for mobile and rural reception. Of course, HDTV remains the sole television format. The adoption of worldwide standards for both DAB and HDTV, as well as the audio compatibility between the two, greatly simplifies distribution.

Completed mixes—everything is quad today—are downloaded into mastering systems that automatically execute the different processing steps necessary for DAB, CD or telecom distribution, and phone out the completed job. Everything is automatic, but through a nifty legal loophole, mastering engineers still get royalty checks. They are required, however, to watch the disc-access light flickering on the

mastering system. Their presence is certified by an on-site government inspector.

It's the Iranians calling again. They're not happy with the steel guitar program at Royce. You punch it up and listen. They're right: It sounds much too natural. You retrieve their link and log them into your own automatic assistant engineer program. You select Pauline for the job. She just got a revision last month and has always been good with temperamental clients.

Most recording is done over the fiber network. Rather than travel to studios, bands prefer to stay at home or go to a vacation spot and phone in their parts. It's really much more efficient for both band and studio, and tremendously less stressful. Of course, the telecom software is devilishly tricky and fiber bills astronomical, but what choice is there? The lead shielding needed in today's airplanes makes air travel impractical, and everybody hates trains.

Tokyo is calling it a night. Their signal is writing footers, and your system has already sent backups to the salt dome. Out of curiosity, you check their tube activity—over a gigabyte of processing—unbelievable. You glance over at accounts receivable; there's a charge to the Iranians for \$50,000. Apparently Pauline found them a steel guitar they liked. They have switched themselves over to Tel Aviv for some reason—freaky folks. The Japanese sign off with a friendly good-bye limerick—currently a very fad thing—and the Pacific fiber goes dark. Eight o'clock sharp and the Pan American fiber comes online. The schedule shows an entire night of 30-second spots booked by the Peruvian government. Roy comes in the control room right on time, bless his heart, carrying his vintage President Quayle thermos.

You punch out. Another day, another \$10,000. On your way out, you grab a copy of today's *Mix* magazine and slip it into your portable player—about 500 MB, not counting the ads. Maybe there's news on that rumor that *Mix* is buying Sony. Hey, look at this, they finally retired Pohlmann. Thank God. His stuff was getting awfully boring. ■

Ken Pohlmann will live in the Aleutian Islands in the year 2010. His invention of the Zombie Pillow Roadster will make him a worldwide celebrity. He will change his legal name to 91552.

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by Stephen St. Croix

SOONER OR LATER

THE STORY OF Φ

“A ll this won't phase me, I'm a pro.” (Don't write to tell me it's “faze.”)

“I don't know. It's like we're just out of phase. When I want sushi, she wants Mickey D's.”

“Now look! What phase is the moon in? I've told you before, sure it's a big deal when you finally *find* one, but you can't just rush into the sacrifice until it's a full moon, even if she does say it's okay.”

“Beam me up, Scottie, my phasor's dead again!”

“Okay, Jimi, we'll phase it if you want, but you gotta be careful. If you insist on distortion and phasing on all these guitar tracks, people could begin to think of it as your *sound*. You really want that? And then there's this lighter fluid thing...”

“You sure those speakers are in phase? I distinctly remember that when I played on this album there was a guy playing bass.”

“Let's simply leave him alone in the control room for a while. I'm sure it's just a phase. We'll come back when he tires out, or after the drugs wear off, or when he runs out of bullets.”

Well, well. Maybe phase *does* matter after all, in spite of the occasional claim to the contrary.

It seems that there are actually a few people out there who insist that phase is academic, and that humans can't tell the difference if there is, let's say, phase

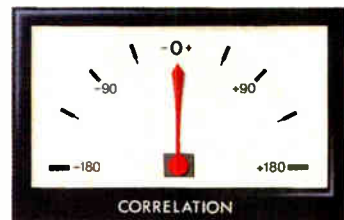
shift in EQ.

I'm here to tell you folks that it just ain't true. It *does* matter—always, under all conditions, except for really useless recordings.

I would imagine that most of you agree with the above examples I have put forth for your approval. The majority of *Mix* readers probably go to the trouble of ensuring that the speakers in their control rooms or living rooms are

-FAST LANE-

Multiple Choice Question



Circle the correct answer.

"in phase." This is simply a part of the standard operating procedure for carbon-based life forms (even cats run away from out-of-phase speakers).

Okay. It looks like we agree on the absurd, the obvious. But let's go a bit further with getting those speakers in phase. We put the red wires on the red terminals, and the black on the black. Fine. Then we sit in the middle and listen in mono to be sure there have not been any silly mistakes. Nobody likes missing bass, missing center image or phase weirdness that tears your head apart (well, *most* people don't, anyway).

But...what about *absolute* phase? Oh, Yes. (West) Virginia, there *is* something called absolute phase. Let's say you were lucky enough to have been sitting in front row center when the drummer for the Neutered Prunes did his famous kick-drum-only solo. You remember those incredible compression fronts that you felt with every kick. *Positive* compression, *not* rarification.

If you want your new *Neutered Prunes Live Alive Oh* album to do the same thing to you at home, to have that same feeling, you had better be sure

that your speakers (or speaker in a mono system) have the correct absolute phase. That woofer diaphragm has to move *out* to compress the air in your living room with the first transient, just like the front skin on the kick drum moved *out* when you were there. You'd also better hope the engineers who recorded the album understood this concept, or you don't have a chance.

But wait, there's more. There are no known naturally occurring acoustic waveforms that are symmetrical; that is, that have the same shape for the positive and negative excursions of their waveforms. Human speech is no exception. Quite some time ago, this observation made researchers wonder if inverting the waveforms of speech would make any difference in intelligibility.

A test has been devised to quantify intelligibility as a function of absolute phase. Basically, voice is mixed with noise, and the voice level is dropped until the victim under test can no longer understand what is being said. Then the absolute phase of the voice is reversed, and the test is repeated.

We do a great deal of this psycho-acoustic research here at Marshall, and

our findings in the area of intelligibility concur with recent findings from other research locations.

The results seem conclusive. The listener can tolerate a much higher relative noise level and still understand the dialog when the absolute phase of the voice is correct, or non-inverted. This is really not that much of a surprise, since we know these waveforms are asymmetrical, and we do in fact spend an entire lifetime listening to them (acoustically) in proper absolute phase.

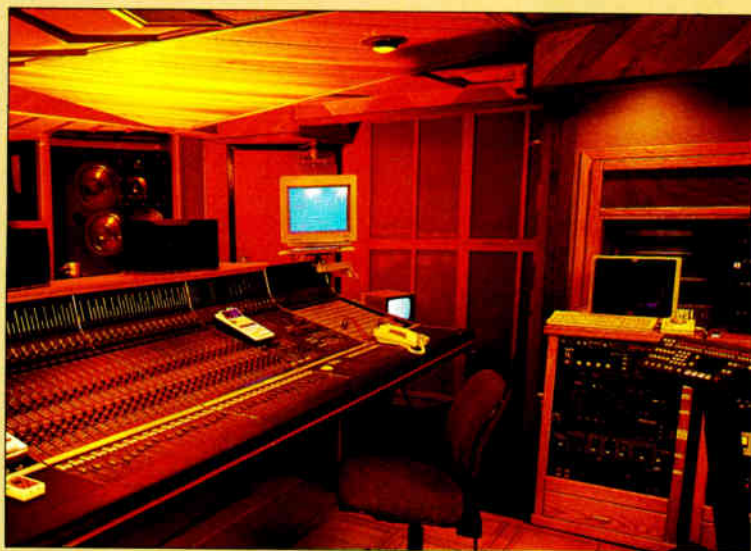
Consider taking this a little further. After so many years of hearing a saxophone in proper phase, it stands to reason that we would be happier with a recording of one that played back the same way. It should seem a little more real, a bit more physical, more recognizable. And it does.

And now, EQ.

As far as I know, the first company to actually put real-time FIR (Finite Impulse Response) on the street was Quantec, with its XL processor.

Because we distribute Quantec (see how this works?), I've had the distinct pleasure of watching actual live humans listen to real zero-coefficient FIR digital EQ for the first time. Very inter-

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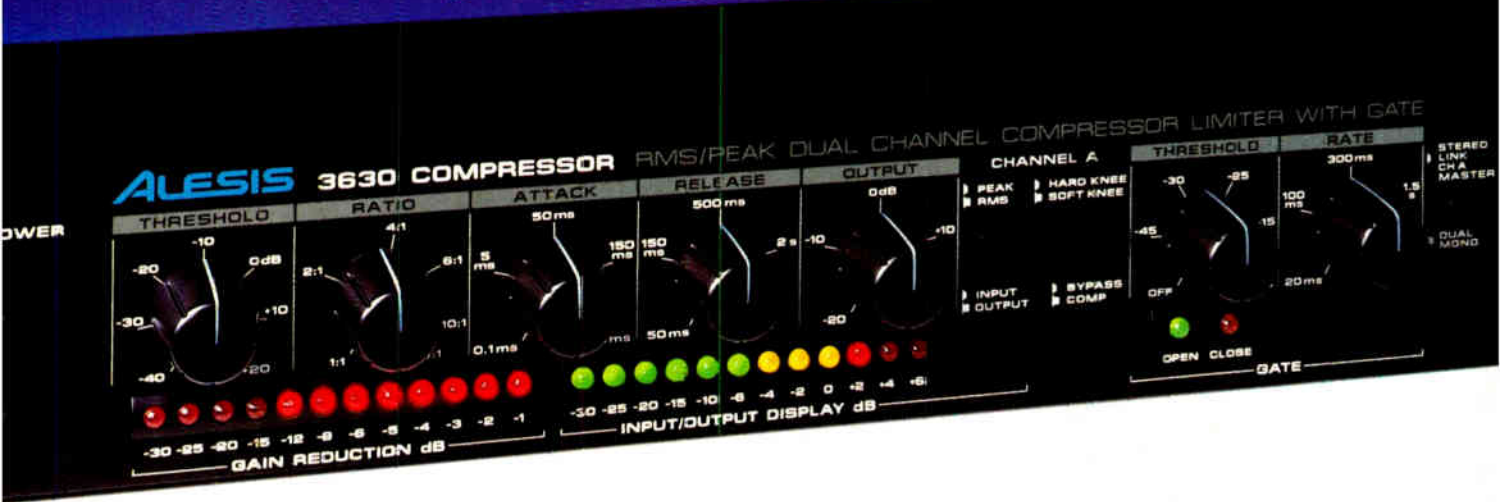
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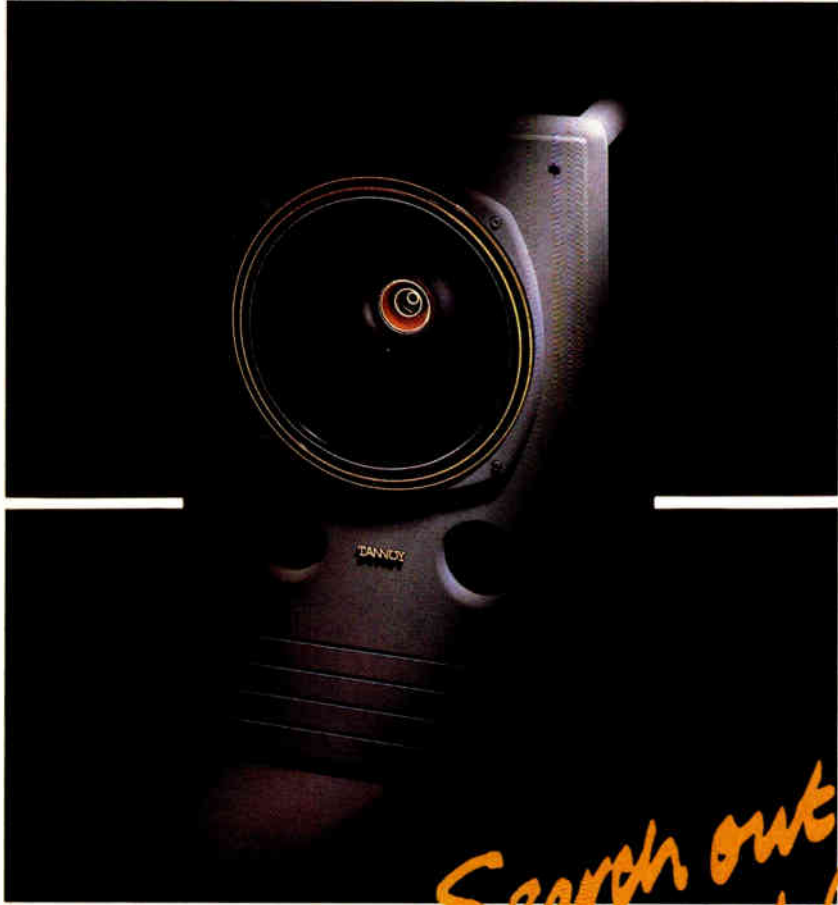
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World Radio History

esting.

Maybe I should back up a bit before I go any further. Analog EQ—all analog EQ—is accomplished by phase shift. Using capacitors, resistors and maybe even chokes, different frequencies are phase-shifted by different amounts, and then remixed, sorta. Since the delayed stuff isn't where it should be, there is some cancellation (or reinforcement) and the desired losses (or gains) result.

It works, but it is disgusting (sort of like Jeff Goldblum in the remake of *The Fly*). The different components of a signal are actually sprayed all over time (called group delay or phase delay), so that a nice sharp kick drum, for instance, becomes an unrecognizable, slurred waveform, with its different frequency components torn out of their proper time relationship. On the other hand, simple square waves become really great, cheesy disco kick drums.

Since some trained ears can still recognize this squashed, dismembered mess as a kick drum, some people say that phase shift (phase distortion) doesn't matter. But it takes a strange one indeed to claim that this mess is as clear and distinct in a mix as the original, unless the original was so stupidly recorded that it actually *needed* this EQ.

Most of today's digital EQ is IIR (Infinite Impulse Response), which is merely a digital model of the same old analog EQ, and it has the same phase shift problems. It proliferates because it is very easy to do and requires only wimpy computer power.

There *is*, however, this other stuff, FIR. It is quite different because, if done properly, there is absolutely *no* phase shift, no matter how radical or complex your EQ.

You won't find it at your local 7-11, though, because it takes big-time computing power to pull off real 32-bit zero-coefficient FIR, not to mention getting the audio out on the same day that you put it in. When you *do* find it, in addition to its obvious real-world advantages, it can be great fun, because you can use it to test the argument of whether or not phase matters to humans.

Using everything from mild to 250th-plus order (real, *real* steep slopes) real-time graphic FIR digital EQs in the Quantec XL, I have discov-

ered that famous golden-ears who can instantly hear .5 dB of analog boost at, say, 150 Hz can't even tell I've boosted at all until I get up to around 5 or 6 dB (at the same frequency on the same material, of course), and *then* they think that they are hearing .5 to 1 dB. Ooooooh!

Could this mean...could it possibly be that they have learned to hear the *phase shift* that accompanies every EQ they've ever used in their lives until now? Yup.

Imagine the possibilities for EQ without phase shift. I have actually gone into a finished mix and added 10 dB from 66 to 118 Hz to the entire thing in order to save a wimpy kick, and it worked perfectly. Obviously, this is something that no rational being would ever try because of the mud (read: phase shift) that would result. But using FIR, I was able to do this with no mud or slush, no loss of transients at all! It simply sounded corrected, with no side effects.

By the way, I also did a similar thing to a song with severe sibilance. I punched a 75dB-deep notch in the high end, 5 Hz wide, with no phase shift. The result was totally inaudible, except that the offending spitting was gone. Try *that* with analog or IIR EQ and tell me phase shift don't matter.

If you are one of those who can hear the difference in cheapo wire and the new multistrand skin-effect super wires, you are hearing the difference in horrible group delay errors (normal wire *severely* delays high frequencies), and only bad group delay.

Me? I'm mad as hell and I'm not gonna shift it anymore! I do almost everything in the digital domain now—only FIR EQ, only interleave phase-corrected converter sets, with Mogami, Kimber or Monster super wires for those few meters of unavoidable analog. I mix on Meyer HD-1s because they are almost totally phase correct; *they make square waves!*

My mixes now have the imaging, clarity, punch and "reality" I want. Each instrument is clearly defined, and the overall transparency is profound. No thickness or woodenness at all. Now if I could only *sing* a little better...

Mr. St. Croix writes for a few select audio magazines, two car magazines, one dive magazine and one "hardware" magazine. He sends the same columns to all of them.

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by Mel Lambert

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With analog-based technologies, this routine process involves transferring the production dialog, effects and

ing with digital multitracks, we are at best saving only a couple of analog tape generations between the original materials and the final master tape.)

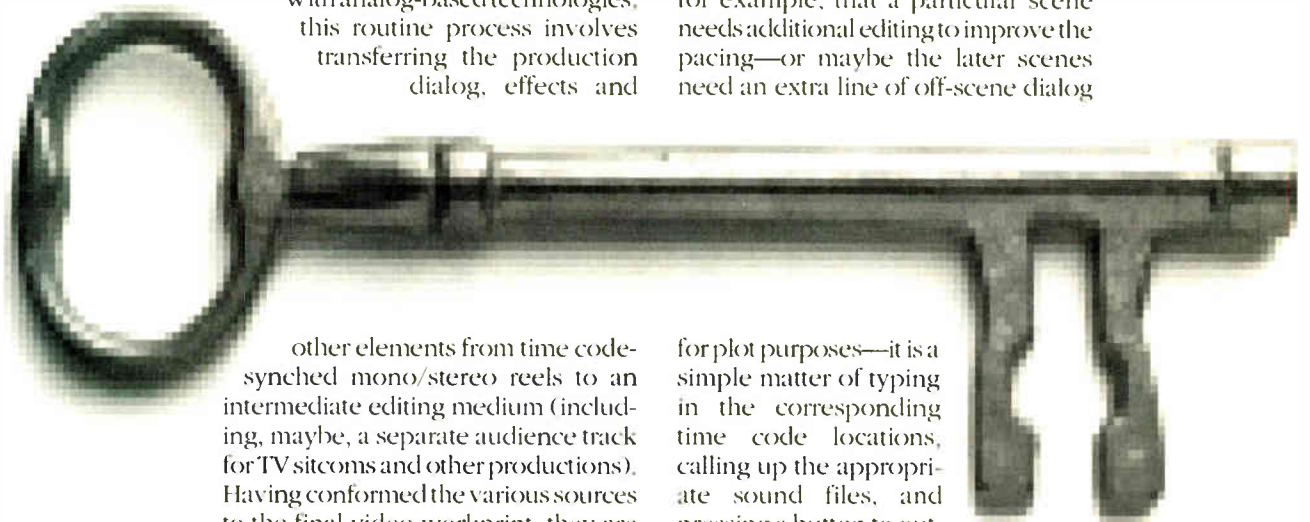
Where digital audio workstations outperform their analog equivalents is in the ability to perform last-minute changes on the various constituent sound files. Should the director decide, for example, that a particular scene needs additional editing to improve the pacing—or maybe the later scenes need an extra line of off-scene dialog

other elements from time code-synched mono/stereo reels to an intermediate editing medium (including, maybe, a separate audience track for TV sitcoms and other productions). Having conformed the various sources to the final video workprint, they are typically laid off to a time code-sync multitrack, onto which are also dubbed the sound effects, Foley, music, ADR, dialog and other materials that will comprise the final soundtrack.

Then, during the sweetening/re-recording session, these elements are blended together to produce the master mono/stereo/surround sound mix, along with probably one or two submixes such as stereo M&E to simplify the production of foreign language versions at a later date. A primary goal of the post-production engineer during this often complex process is to reduce the number of tape generations to an absolute minimum. (Even when work-

for plot purposes—it is a simple matter of typing in the corresponding time code locations, calling up the appropriate sound files, and pressing a button to output the re-edited and resequenced master mix from the workstation's analog or digital ports.

In the real world, however, I wonder if the coming workstation revolution will be as welcomed as some expect. Let's not forget that multifunction workstations are not just affecting the audio side of the recording, broadcast, film and video post industries; random-access, non-linear editing systems are now being used increasingly by picture editors to provide the same degree of creative flexibility enjoyed by their sound-conscious cousins. But, as film/video editors develop their skill in manipulating visual images, they might



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find it very useful to see how the picture edits and transitions are playing against even the most basic of soundtracks.

Such creative power will mean an erosion of the historically rigid lines between picture and sound production. After all, audio and video diverged in the first place because 1-inch videotape just isn't the medium on which to perform multigenerational audio dubbing, and the format does not provide sufficient capacity for complex audio sweetening. As a result, time code-

interlocked multitrack became a vital production tool, and led to a fundamental increase in audio quality and creative sophistication.

But digital is nothing if not democratic. The time code data that corresponds to the subframe trigger mark for a sound effects cue, for example, can be accessed by both picture and sound editors. Normally, the selection of the appropriate sound cue will be left to the post-production crew who will access this information downstream from the picture editor. However, in these days of cost-conscious productions, it hasn't escaped the more astute directors and

producers that an increasing amount of these creative decisions might be made easily during the editing process, and



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that the results of such selections can be reviewed quickly and easily.

Where does this leave the post engineer, who cannot begin much of the creative audio sweetening process without access to the time code numbers that comprise an EDL, or a time coded workprint? In a somewhat precarious position, I would suggest, unless more pressure can be placed on the manufacturers of digital audio workstations to make sure they are designed to be fully compatible with a wide variety of EDL formats, in addition to accommodating a selection of audio storage and digital I/O protocols.

The most important buzzword for the next five years is going to be *connectivity*: how information gets into and out of the various components that make up this new post-production environment. It is just not sufficient for a workstation manufacturer to say, "Yes, you can import CMX/Ampex/Sony-format EDLs," or "Sure, it can read WORMs, DATs and magneto-optical discs generated by (fill in the platform of your choice)." These and other capabilities are going to be absolutely essential in the coming generation of workstations, simply because both post facilities and their clients need to have fully transparent exchange among different designs of sound file information and the corresponding editing, mixing and processing data.

Without that ability, clients will pass on a facility's state-of-the-art technology, simply because it might be locked

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into a proprietary format, unable to move the project as freely as clients need to. Just as it's now taken for granted that any major facility around the world should be able to recover SR-encoded, 2-inch multitrack tape, the same compatibility will need to be offered by magneto-optical and other inload/archive formats.

However we might feel about such priorities, audio is still viewed (pardon the pun) as being supportive of the visual image. Many directors would welcome the opportunity to perform some of these complementary functions within a single editing/post-production environment, if not on the same hardware. Consider the creative possibilities. Having performed a rough cut of the visual elements (for "cut," read: "prepared a time code-based list of start/stop points" for replaying images from the laserdiscs, worktapes or data-compressed files stored on hard/optical disk), why wait to see how that scene transition plays against a sound effect of a car explosion, for example, or the music temp track? Simply calling up an "Audio Conform/Edit" page or screen from the picture-editing software, or accessing the appropriate

hardware gateway on a LAN, would allow these and other audio events to be initiated from the picture editor's



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working position.

It can be argued, of course, that picture editors have neither the training nor inclination to perform complex audio editing, mixing and processing functions. Which, to a point, is true. What that logic overlooks, however, is that our industry is passing through

some fundamental changes, many of which result from dramatic advances in the technologies now being made available to us.

To remain one step in front of the competition—and head off any encroachments into our areas of expertise—it makes sense for the present and upcoming generations of recording and production engineers to stay well informed of the current technologies, including those that are affecting our video-editing brethren. The worlds of sound and picture are moving inexorably closer, in terms of both the director's wishes and the merging of the technologies used to perform the various production and post-production processes. It behooves all of us to stay on our toes, ready to take advantage of the creative potential offered by the coming generation of workstations and digital editing systems. ■

Drawing upon over 15 years of active experience with all dimensions of professional audio on both sides of the Atlantic, Mel Lambert now heads up Media&Marketing, a high-tech consulting and marketing service for pro-audio firms and facilities.

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THE MUSIC

SOUND ASSEMBLY FOR "THE DOORS"

BY TOM KENNY

The *Doors* is not a rock 'n' roll movie. Let's start there. It's a dramatic movie that contains more than two hours of music—Doors music—as underscore, as score, as performance, as narrative. Press reviews have labeled it a film about excess or a film about the '60s, and in many ways it is. But Wylie Stateman, co-supervising sound editor, says it best: "It's the 1960s the way you would want to



Top left, Kilmer and Stone at the mic. Below, a sound gathering at Rothchild's home. (L to R): Bruce Botnick, Paul Rothchild, Tim Claman. (Standing): Wylie Stateman, Mike Minkler.



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remember them in 1990, which is in full-blown stereo with vibrant energy."

The Doors is a rock 'n' roll movie. It's about energy and passion. To the sound team on *The Doors*, that passion was translated into music, effects and dialog tracks that breathed and punched the spirit of the time period, 1967-1971, pivotal years in the development of rock 'n' roll.

On a rainy night in Hollywood, the night before *The Doors* opened worldwide, a few key members of the sound crew assembled for a post-mortem rap in Paul Rothchild's home. Rothchild, the original Doors producer

"The Doors" was the first feature film to pass through Dub Stage 2 at Skywalker Sound South, the new Lucasfilm post-production facility in Santa Monica, Calif. The final mix took place on the newly installed Otari Premiere console.

and music supervisor on the film, was joined by Bruce Botnick, original Doors engineer and music premix/prerecord engineer on the film. Also, there was Stateman, Mike Minkler, supervising re-recording mixer and co-supervising sound editor, and Tim Claman, digital music systems supervisor and PostPro wizard. Absent was Budd Carr, executive music producer on the last five Oliver Stone films, who handled administration and coordination.

"As with any Oliver Stone film, it was a collaborative

effort," Rothchild says. "Everybody makes suggestions into everybody else's domain, and the good ones stick and the bad ones go. Oliver needed human interaction, sometimes from 8,000 people [in a crowd scene] and sometimes from five people in a studio."

"This was a love groove," says Stateman, referring to the slogan that was taped to the console throughout post-production. "It was a labor far beyond anybody coming into a daily job."

The film itself is immense. Minkler, who has mixed more than 200 films, including five of the top ten most expensive films ever made, says, "This was the most difficult film I've ever mixed and the most enjoyable film I've ever mixed. There's so much going on that you can't get it all in one shot. If people want to examine this film and watch it ten times, I think they'll be pretty damn satisfied that we hit all the marks."

Sound crew collaboration began early in pre-production when the decision was made to record the live footage to multitrack. That meant loca-



PHOTO: FELICIA MARTINEZ

One of the editing rooms at Soundelux. Pictured (l to r) Keith Klawitter, Wylie Stateman, Scott Gershin.

PHOTO COURTESY OF LUCASFILM

tion recordist Tod Maitland (see sidebar) could carry actors separately, wouldn't have to mix, and could open up space for ambience mics and onstage dialog. It also meant a hell of a lot of tracks in the final mix.

"Musical biographies have been done plenty of times in the past," Minkler says. "Everybody knows how to do it. You have a prerecord, you do a playback, and then guys go out there and lip-sync."

"And then you write this retrospective piece," Stateman adds. "And that is *not* this movie."

Pre-production began with the problem of how to handle the live performance vocals: Should Val Kilmer, the actor playing Jim Morrison, lip-sync to Morrison's vocals, lip-sync to his own prerecorded vocals, or sing live on camera? This key decision would determine the music track assembly.

Kilmer, meanwhile, had sent Stone a rough video demo of himself doing Jim Morrison. Rothchild describes it as "an actor in cheap wig, cheap makeup, cheap camera, cheap lighting—performing Jim Morrison—singing the role." Stone knew Kilmer could do Morrison physically, that he had the moves. So when Rothchild told him that Kilmer was 80% of the way there on the voice, and that he could bring him up to 95%. Stone decided to test it.

Rothchild, Botnick and Kilmer went into Botnick's Hollywood studio, Digital Magnetics, to create new demos for "Back Door Man" and "Texas Radio & the Big Beat." One day Stone dropped by with the surviving members of The Doors. "I'll never forget this," Rothchild says. "We put up 'Texas Radio,' and about halfway through, John Densmore [Doors drummer] turned to me and said, 'Is that Jim, or is that Val?' And we cheered."

Stone still had to be convinced, however. Rothchild and Botnick took Nagra tapes of Kilmer lip-synching to Morrison, himself and live, transferred them to PCM-1610 digital 2-track, and matched music and voice to picture. They then transferred to mag and locked to picture, stereo format. "It was a primitive way of doing it in relation to the way it was actually done [in the film]," Botnick says. "But the technique was the same to the end."

Stone immediately saw that you couldn't have the famous Morrison vocal coming out of Kilmer's mouth and still be convincing. So he opted for live vocals, which was the choice all

along of the sound crew. Basically, when you see Kilmer, you hear Kilmer. Otherwise it's Morrison. The resemblance is uncanny. The music is all original Doors, with a couple of brief exceptions.

Rothchild's task then was to fill Kilmer in on the nuances and idiosyncracies that made Morrison's vocals what they were. In that process, he says. "An equal amount of time was spent filling his cup with information on Jim's personality and psyche and motivations, so that when he hit the stage as a singer/actor, he wouldn't have to be relying so much on mimicking Jim, as to digging inside of himself for the essence of Jim.

"The musician synchronization in this film is amazing," Rothchild adds. "The other three Doors actors had the impossible task of learning by rote the prerecorded work of The Doors, which was anywhere from 20 to 25 years old. Even The Doors couldn't resynchronize themselves to it. Every single note had to be learned because Oliver likes to shoot in 360—you never know where the camera is going to be. Each actor had to be prepared to be playing the tune perfectly at all times."

Each of the actors had an instrument coach, and each was supplied with a nightly "stringer" cassette of the next day's sequences. It was basically a Music Minus One—his part on the right, the mix on the left. These were put out daily, and had to be re-edited according to Stone's changes.

Months prior to shooting, Rothchild and Botnick began designing a system for music playback and track assembly. They transferred the original Doors 4-track (first album) and 8-track masters carefully onto a Sony PCM-3324 digital 24-track. Then 24-track analog SR dubs were made with the same time code, referenced at 60 Hz. Kilmer overdubs and vocal comps were added for the concert songs/scenes, before transferring back to 3324 for pre-production and production editing.

For the set, Stone wanted to have every playback option available at any time, including the ability to use Morrison's or Kilmer's vocal track. "It occurred to us that we could use a Fostex 16-track," Botnick says, "and

using a [TimeLine] Lynx synchronizer and the house composite sync generator, we could resolve the 16-track. We could provide playback in any magnitude of order, because we had a mono composite mix. We had a separate drum track mix. We had separate bass, guitar, organ, Jim and Val.

"We would resolve the 16-track onstage, and the code would be transferred and jam-synched to an Otari 24-track with SR," he continues. "That 24-track had a print for every take of everything that was on the 16-track, plus everything live that was recorded. The analog 24-track was then resolved and transferred to mag for dailies." Dailies were handled by the staff at Soundelux, Stateman's facility, doing combine-mixdowns of six to eight different selected takes, in stereo.

If a shoot was to be handled differently the next day, edits were done overnight on the 3324. "On rare occasions," Rothchild remembers, "Oliver would say, 'I want to throw out that entire verse' in the middle of shooting. At that point it was 'Get out the blade, cut the 16-track and pray.'"

"The Lynxes are smart enough that they rode right through the edits," Botnick adds. "What helped that also



PHOTO COURTESY OF TRI-STAR PICTURES

was the fact that since we were jam-synching brand new code onto 24-track, it was continuous code." While the resolution stayed constant, different music appeared at the same time code number for different days of the shoot and different takes of the same song. It was all lined up in post-production.

For the live vocal sequences, it had to be absolutely quiet on the set. There was no playback on the stage, no thundering rock 'n' roll for the audience. The actor/singers were set up with an earwig system, plastic flesh-colored inserts containing miniature, high-energy drivers for foldback. Pre-

recorded playback was sent to beltpack receivers, each with volume control. "We had standard recording studio earphone technology happening on this huge shoot," Rothchild says, "with different foldback to each performer."

Keyboards and guitar were not amplified, so keeping them quiet was no problem. Drums, however, had to be specially constructed. The snare, toms and kick were stuffed with foam rubber, and Zildjian supplied custom-built cymbals with top and bottom pieces of bronze and compressed foam in the middle.

To cover the likelihood of the actor-

drummer playing a passage that wasn't on the prerecorded track, each of the drums was set up with a piezo transducer, which triggered samples that were recorded onto the 24-track. "We could then sample John Densmore's toms and snare and come back with a drum part that was played perfectly to the eye," Rothchild says. "Even if it was played badly, it would work in the film."

The audiences, meanwhile, had to be loud and wild and crazy, but while Kilmer was singing, they couldn't be fed music. Up until the camera roll, the song would be cranked out to the

audience. Then when the scene started, it was replaced by a 30Hz tone called "Thumper." Essentially, Thumper was a hand-tapped click track (tapped into the 3324 by Rothchild's son, Dan) that was filtered out in post-production. Since the music playback stopped just as the cameras began rolling, location recordist Tod Maitland was able to capture some of the finest audience tracks you'll hear. In many cases, the screams for "Light My Fire" and the like are the screams from the actual shoot, rather than ADR fly-ins.

After the shooting was finished, all of the music elements—prerecorded vocals (Kilmer's and Morrison's), production vocals and the original Doors tracks—were transferred D-to-D from the 3324 into a New England Digital PostPro. Archived and unreleased material was loaded in as well, including outtakes from the tour that produced the album *Absolutely Live*. The PostPro was locked to a KEM flatbed, both picture and music mag track, using the same setup as the film editors.

Rothchild, Tim Claman and music editor Carl Kaller then worked with the picture department, providing music for the temp dubs and making edits to fit selected takes. At the same time, they were comping production vocals that came in on Dolby SR 2-inch, and synchronizing the actor, musicians and the vocals—basically, assembling the premix.

"It was sort of like making a record on the live vocal performances that we had to build," Claman says. "We were collecting tiny little pieces of words and phrases from as many as two or three dozen live takes from dailies. We were constantly stretching and compressing—very minute surgery to get the synchronization to work. We were trying to keep the energy of the live performance, but picking the best performance to match it."

"[Tim] would take every single edit that we made, an instrument at a time, and he'd move the edit point," says Rothchild, who made his first window edit (manually, with meticulous, jigsaw-shaped splices) on The Doors' first album back in 1967. "He'd find the cleanest, sweetest spot for every instrument in that edit."

The music premix was not without its challenges, one of which was to sonically match the Kilmer and Morrison vocals, often within the same song. "In the song 'The End,' we originally had Val's vocal from beginning to end," Rothchild explains. "The first two verses

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are outside and inside the cave. Then at one point you go through the Indian's eye and... Bam! You're onstage at the Whisky à Go Go with Val singing the Jim part. I watched it three times and said to Oliver, 'This doesn't work. If we're not looking at Val singing, we have to hear Jim.' It's the reverse of the other problem.

"But now we have a curious prob-

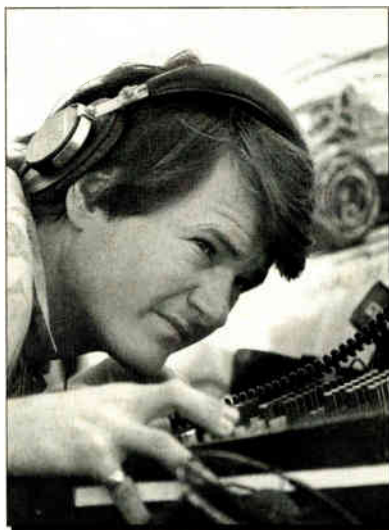
lem," he continues. "We have Jim's famous vocal 20 seconds away from Val's entrance onstage at the Whisky, in the same song. Fortunately, Val's performance is excellent. The original recording had a Sunset Sound live chamber on the take, so we couldn't take it off. We then had to match that echo to convince you psychologically

—CONTINUED ON PAGE 39

"The Doors" on Location

An Interview with Production Sound Mixer

Tod Maitland



No novice to the world of film sound, second-generation production mixer Tod Maitland, C.A.S., has over 40 pictures under his acetate belt, perhaps half as boom man. Last year he received his first Academy Award nomination, for *Born on the Fourth of July*, his second gig for Oliver Stone, one of the most successful mainstream directors.

Maitland remembers his first meeting in the late '80s with this "crazy, intense director" as terrifying, based mostly on second-hand stories he had heard. In the end, the job interview proved straightforward—"one of my easier interviews"—and Maitland decided Stone's reputation was based largely on the fact that the director works at a fever pitch, and expects top-notch work from his colleagues.

Maitland de-

scribes Stone's philosophy of recording "as live and as real as possible." Stone, he says, was very interested in *what* sounds his crew could get for him ("everything he wanted"), not *how* they were going to get them.

The Doors took 13 weeks to shoot (a moderate length by any standard), used 27 of the legendary band's songs, and frequently took on epic proportions in the shooting, employing as it did from 4,000 to 10,000 extras in concert scenes.

Maitland's major mixer credits include work with many top directors: *Cape Fear* (Scorsese), *The Believers* (Schlesinger), *Radio Days* (Allen); as boom man: *Tootsie* (Pollack), *Hannah and Her Sisters* (Allen), *The Tempest* (Mazursky) and *Gloria* (Cassavetes).

How did you start the planning process for recording the production track for the Doors film?

Once it was decided to go with live vocals, the pre-production team came in and figured out how to do it by coming up with an earwig system. This was the only way to give the actors what they needed and not inhibit their performances. The four band members had earwigs: Val Kilmer played Jim Morrison [vocals], Kyle MacLachlan played Ray Manzarek [keyboard], Kevin Dillon played John Densmore [drums], and Frank Whaley played

Robby Krieger

by Nick Pasquariello

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PAGE 40

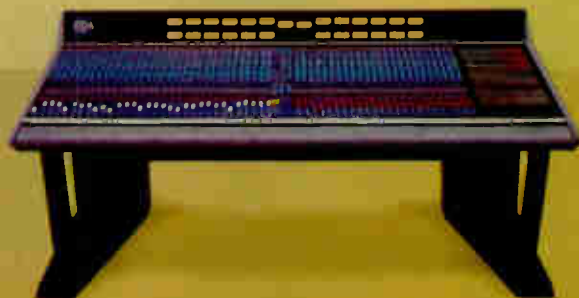
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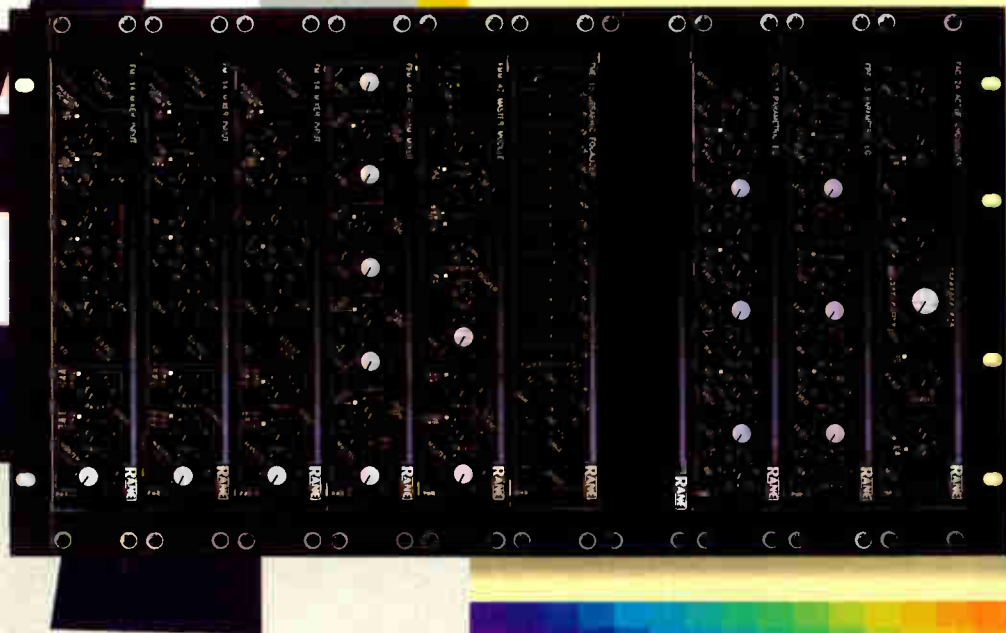
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—FROM PAGE 34, THE DOORS

that you're hearing the same person."

"On the original Jim vocal," Botnick adds, "it was an EMT 140 chamber with 15 ips slap—167 milliseconds. [On the film premix] we didn't have any EMTs, but we had these Lexicon 480Ls. And through fooling with EQ and adjusting the delays, we got it pretty much the same. It took a long time."

"But it was a very important point in the film," Rothchild cuts in. "At that moment you sell the whole idea of Val's voice."

The PostPro was then taken into the Cary Grant Theater on the Columbia lot, where all the music was mixed to three 6-track mag dubbers with SR, and back to the PostPro as well. "We basically had a master on the PostPro," Botnick says. "It had three tracks of our left-center-right, plus all the effects and reverb. We didn't marry them to our mix so that when it got to the dub stage, Michael could adjust it."

Claman was working completely with first-generation elements. And that's what was delivered to the dub stage at Skywalker Sound South for Mike Minkler, Wylie Stateman and Greg Landaker to mix. Botnick also provided underscore 3-tracks, which he converted from 2-track Doors originals using a Bedini Audio BASE processor. That way, Minkler had the option of lowering the vocal level when dialog appears onscreen.

While the PostPro was the workstation of choice for the disk-based music editing, any and all DAWs were used in the creation and manipulation of effects.

"Every piece of the latest, most sophisticated equipment was used on this film and exploited for its greatest attributes," Stateman says. "For the creation of transitional sounds and musical supporting sounds that had to be played along in tempo, we used the WaveFrame AudioFrame. We used the Synclavier 9600 for its abilities to sequence and task sounds out of RAM, where you need tremendous list management. And we used it for sound creation—camera flashes and some of the wind gusts that spin us in and out of sequences.

"And for developing the editorial work on the crowd scenes, we used the AMS AudioFile for its brute force," he continues. "Take a sound that's going to be repeated 750 times in one scene, cut it, then take another sound to lay over the top or to sweeten that particular effect with, run the list and spit it

out to a 2-inch machine, Dolby SR."

Lexicon 480Ls were used for reverb and echo. Many of the effects had to be brought to their most mature point in the cutting room, long before the final mix. Sound editing was handled by Scott Gershin, Jay Richardson and Lon Bender at Soundelux.

The crowd scenes are memorable in this film, largely because they're very real. Sure, there is some sweetening to add bulk, but the ambience and noise Tod Maitland gathered on the sets was used extensively in the final mix.

"After the edits were final," Minkler says, "Wylie went into the 5-track stereo recordings of these crowds, which have a reflection of the vocal, reflection of the music, but mostly crowds. They had great balance between them. We used them for ambience on the music as well. So when you see people in the audience, you feel them completely around you in 5-channel configuration—three in the front and two surround. You are in the middle of this concert."

Dialog editing took place at Soundelux and involved more than 2,000 hours of work. "There are lots of words in this picture," Minkler says. "We were up to 70 or 80 channels of dialog per reel, instead of the conventional five, six, seven or eight."

ADR was handled at Skywalker Sound South's "Bundy" annex (formerly Lion's Gate), while Gregg Orloff supervised the Foley mix from the new pit at the main facility.

True post-production began at Skywalker Sound South (Santa Monica, Calif.) in mid-December on the newly installed Otari Premiere console in Dub Stage 1. It was the first feature film to pass through the facility, which opened last October. It's a THX monitoring environment, though KRK monitors were brought in as references, as they were used throughout the project.

"We had two objectives [in the re-recording]," Minkler says. "One was to supplement the reality, and the other was to enhance the non-reality and tell a story with it. The reality part has to be good and accurate and dramatic and fit in so you believe it. The other stuff is a lot of guesswork.

"During 'The End' for instance, the guys are all on acid and doing their thing, and we started introducing tons of sounds," he continues. "Paul started freaking out. 'What are you doing to my music?' Well, it was a palette. We came in with everything, and then



Inc. Magazine

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started weeding and wading and playing."

On the dub stage, the three-man re-recording team basically had the 6-track mag reels, the production analog SR 24-track, a Synclavier and an AudioFrame. They continued to seek and receive input from their colleagues. "It was literally like building a house with five or six or eight people all giving input on how that house should look," Minkler says.

"There are nine people talking in a scene and you have to hear every word," he continues. "And Paul wants to hear every lyric. And somebody else wants to hear every note of the bass. And somebody else wants to hear the guy talking in the background. We ended up where everybody was completely happy with the outcome, but, oh Manny, it made me old!"

The film was released in all major formats, with selected Cinema Digital Sound [see *Mix*, September 1990] prints sent throughout the country. All were done at Skywalker, as were the transfers to optical.

"There's a lot of pictures and a lot of years at this table here tonight," Minkler says in summation. "We've all done gigantic projects as well as small ones, but certainly none of them have come up to this. Every foot of this film was rough. From dealing with the music on a file, dealing with the creativity of blending the dialog, effects and music together, premixing sound effects. Every single frame of every little element was so difficult, because we pushed ourselves. That was the spirit of this film."

"This film is a lot like this house," Rothchild adds. "This house is a state-of-the-art machine in an antique facade. The film is a technological breakthrough, a monster of energy, and you can't see the wires." ■

Tom Kenny is an associate editor at Mix.

—FROM PAGE 31, TOD MATTIAND

[guitar]. [The centerpiece of the earwigs consisted of the elements out of Sony MDR E 184 earphones.]

The pre-production planning team consisted of Mike Minkler, Wylie Stateman; myself; Paul Rothchild; Keith Klawitter, 24-track engineer; Bud Carr, executive music producer, who does music supervising for all of Oliver's movies; T.J. Omara, my boom man—my eyes and ears of what is going on

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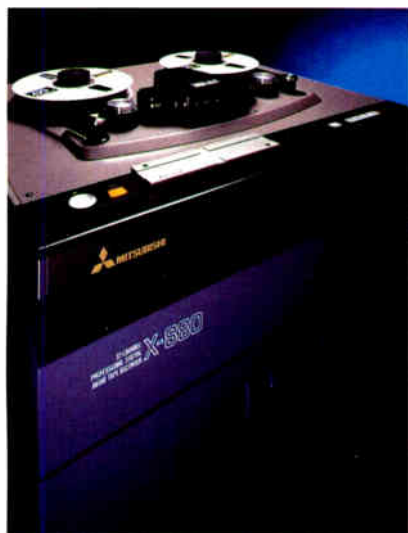
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at camera; and one rep from A-1 Audio, Connie Fernstrom, in charge of all of the earwig mixes.

During six weeks of meetings we worked out these systems: earwigs, speakers, 24-track, how to break down the playback—what we'd be needing to send to each person, how to break down the mixes for everybody, what Oliver needed, what we needed for dailies, how to get Val's live vocals, the drum triggers, and recording all of the live concert sound.

One good thing Oliver and Alex Ho [co-producer] do is keep their crews together—this is our third movie together. Normally, the production sound mixer never talks to the sound editors or post-production sound mixer, but we talk constantly—from way before the movie starts through production and well into post-production. That helped us a lot in the preparation of the movie.

Would you describe how you worked on the set?

During any dialog scenes and during the concert filming, I was basically coordinating all the dialog recording. All of the dialog went through my mixing board, from which I would send it to the 24-track production master. I would also get feedback from the 24-track and send that out to Oliver and send it out to people who needed to hear things that went on.

Everything went onto the 24-track. We were using two mixing boards. I would mix the dialog that went to the Le Mobile 24-track, and Val's live singing would go through me and then to the truck. We used Neve preamps beforehand, so everything was totally clean.

We only used the 24-track while we were shooting the live performance concert scenes on about 12 locations. The other times—when we were shooting as if it were a normal movie and not a musical—we would shoot 2-track stereo with Dolby SR.

We recorded Val live on the 24-track and we had ambience microphones set up all over the venues.

Also on the 24-track were the live instruments—guitar, keyboard and the keyboard bass; Val's prerecorded playback, and anywhere from four to six ambience microphones that were strategically placed throughout the audience. This is one of the ways we got some of the best audience tracks you'll ever hear.

—CONTINUED ON PAGE 51



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Signal Processing Secrets

Thirty years ago, the well-equipped engineer's signal processing arsenal might consist of some simple equalizers, a tube compressor or two, and perhaps an acoustic chamber for reverb. Anything else had to come from the engineer's bag of tricks, such as tape "slap" delay or the tried-and-true "finger on the tape reel" for flanging.

Today you can buy some digital wonderbox that will perform just about any studio effect (or several effects simultaneously), but there's still no substitute for ingenuity on the part of the operator to come up with some new creative sounds. We checked in with engineers from a selection of studios in the Northeast and asked them to divulge a few of their signal processing secrets.

John Goldberger, engineer Skyline Studios, NYC

"I just completed work on Ric Ocasek's [former leader of The Cars] new record. I've been doing a lot of things like running multiple signal processors in series, and putting panning effects and a couple of other effects in a series. I've been getting into a lot of interesting harmonization effects recently. For instance, if you have a synth track that's kind of dull and has no top end, you can get some top end by adding an octave harmonizer and some reverb on the output of that effect. You get this bright reverb on a warm synth sound.

I use a couple of different things for this: The AMS DMX is pretty smooth, and sometimes I use the [Eventide] H3000. Some signals it works great on, other signals it doesn't. It depends entirely on the harmonic content.

"If I have a boring mono synth pad," he adds, "I'll try to come up with something new to make it interesting stereo. I might do something as simple as use the [ADR] Pan-Scan on the flanger, where you take the pad and mult it so one output goes to the flanger and the other goes to one side of the Pan-Scan so the flanger starts sweeping across. It's a nice effect. Simple things like that can go a long way."

Gary Chester, chief engineer The Edison, NYC

About 80% of the work coming through The Edison involves commercial TV, though *Silence of the Lambs* was mixed there and Carl Perkins will have come in by the time you read this. The facility handles a lot of kids' cereal commercials for Saturday morning cartoons, and, surprisingly, the spots are heavily orchestrated and use very few out-board effects. Thirty players for a Cocoa Puffs commercial?

"One of the tricks that seems to work for television," Chester says, "is you close the bandwidth up on the instruments so they can all be heard. If you put all these instruments on top of each other, you have overlap. You end up cutting back on the overlap through equalizing, so that by itself the instrument might not sound as good as it could, but inside the overall ensemble you hear the instruments and they come through. Then you can effect them better—you know, echo, delay and stuff like that. I guess it's like shelving, how you shelve the whole orchestra the way the orchestrator arranged it."

Chris Gately, independent engineer Chestnut Sound, Philadelphia

Chris Gately owns a collection of out-board gear—Lexicon 224s, LXP-1s,

LXP-5s, two dbx racks full of gates, compressors, EQs, a couple of Complex limiters—but if there's one piece he will always bring to a session, it's the ADR Vocal Stresser. "It's not just a gate and compressor and peak limiter, like the Complex," he says, "but it's got the equalizer that can be switched in the sidechain, which makes it real handy if you want to get into selective compression—de-essing and that kind of stuff. The EQ section sounds good, really broadband, and you don't get much phase shift."

Want a compression tip? Gately was working on a song with a lot of drum machine tracks. The client wanted to insert some randomness in the monotonous ride cymbal part by having Gately move the fader up and down every time they passed the tape. Gately figured there must be a simpler way.

"There was a tuner in the studio, so I tuned to a local talk radio station," he says. "That would be a kind of on/off thing, usually compressed at one level. The voice is on or off, totally random, nothing to do with the song. I plugged that into the detector on a compressor, and had a compressor across the cymbal, going up and down randomly. It sounded much more human following a voice that had nothing to do with the mix. The client got into it."

Mike Tarsia, chief engineer/GM Sigma Sound, Philadelphia

Tarsia received a personal education in R&B mixing from his father, Joe Tarsia, who is known for his work with Chubby Checker and Bobby Rydell. These days, whenever Patti LaBelle, Vanessa Williams or The O'Jays record in Philadelphia, chances are they work with the junior Tarsia.

"When I first started engineering, I thought the more pieces of gear I used, the better the mix. I've been engineering ten years now, and I think *less* is better," Tarsia comments. "But one thing you can't live without is a short room program to make direct signals sound more natural. I use the Lexicon 480 or a vintage 224 to tighten every-

BY THE MIX STAFF

from Northeast Engineers

thing up. The original 224 has a nice, fat, gritty room sound, while the 480 has a cleaner, small room sound. Depending on the aura I'm trying to create, I switch between the two.

"I think compression gets overdone," he continues. "For R&B music, compression is a sin, because you want the airiness. Ambience and dynamics are a big part of R&B. You should be able to pull in the reins of your mix without compression."

**John Reynolds, engineer
Powerhouse Studios,
Washington, D.C.**

"We just finished a commercial for gun control here," Reynolds says, "and it opens with a semi-automatic rifle firing. I put that through an Eventide Ultra-Harmonizer and used a patch called Pitch Quantize. The producer wanted a high-end, a midrange and low-end version of the same sound. So we took the gunshot, which was a fairly high-end sound, dropped it down a sixth, then an octave, and then delayed each one a microsecond—about two frames in each case—and it gave it a big, powerful sound. This was a spot with Jim Brady [Reagan's former press secretary, who was nearly killed in an assassination attempt on the President many years ago], and he really wanted to catch the public's attention audibly with a big, very noticeable, gunshot sound. I think it worked."

**Joe Cuneo, engineer
Downtown Recorders, Boston**

"We just finished with a remix for K-9 Posse for Arista," Cuneo says, "and we had a whole pile of signal processing going because of the nature of what we were doing—we re-did the whole piece. One of my favorite pieces to use in that situation is the TC 2290: in one instance, I selected a random auto-panning patch. We wanted a slight bit of flanging on it. We ran several percussive things through that, and it gave a real nice space and sort of a wildness to the mix, which was very effective for creating a dance feel.

"Things are usually pretty wide open on dance mixes, so it gives us the chance to try a lot of different things. Most of what you're doing is somehow adding to the rhythm of the piece, but with delay lines and careful use of reverb and reverb times, you can create all sorts of nice spaces. I try to get as much stereo action as possible, particularly with drum machines. It gives them a little more life. For instance, in this mix we had some of the older drum machines going—Roland 808 and 909—but the sounds are a little sterile on their own. So I would do things like put a little flange on a hi-hat sound to give a curve to it."

**Tom Soares, engineer
Normandy Sound, Warren, R.I.**

Soares is probably best known for his

through a Roger Mayer noise gate. Then I'll gate the vocal off, so that it only opens up when the singer really sings loudly. Then I'll return that to the board and add a little EMT plate to the voice.

"I like to use the TC delay for guitar solos," Soares continues. "On rock stuff, in particular, it gives that long, out-of-phase delay. The echo sounds like it's coming from behind your head. It's a cool effect on headphones, and guitar players really like it."

**Todd Lockwood,
owner/chief engineer
White Crow Audio,
Burlington, Vt.**

Todd Lockwood has been seeing a bit more radio production work come through White Crow to supplement the base of music recording and television

"When I first started engineering, I thought the more pieces of gear I used, the better the mix. Now I think less is better." — Mike Tarsia

work with New Kids on the Block, but that's hardly the extent of his work at Normandy. He is also involved in projects for producer Tom Kendzia, Boston's Pale Nephews and New York City's Urban Blight.

For New Kids on the Block, Soares used "a lot of AMS stuff, a lot of EMT plate stuff. With their music, it's kind of obvious when there's processing. In other words, when you put an echo on one of their voices, their producer likes to hear it—he's not into subtleties at all.

"On very dynamic vocals," Soares adds, "I like to take the vocal and throw it through a PCM42 delay, and on the way back to the board I'll bring it

spots. Besides making heavy use of a rack of Summit tube limiters and Tube-Tech EQs, Lockwood keeps some less-typical units on hand. One is the Studio Technologies AN2 stereo simulator, "a single-rackspace unit that takes a mono signal, stereo-izes it, and makes it interesting," he says. "It's mono-compatible, and occasionally I'll use it on a voice track or a solo harmonica to make it sound like it has three dimensions."

Lockwood also uses the AN2 if he's short on tracks and would like to record in stereo, or in those situations where it's more desirable to get a mono signal and use the stereo synthesis later on for

spread—"particularly on synthesizers, because the phasing information that can come out of a synth can be brutal."

Mono-compatibility is crucial and often overlooked, Lockwood feels. "Sometimes when I'm watching a program on TV," he says, "suddenly the sound sounds as if it's coming down a garden hose. And I know exactly what it is. It's somebody using a DDL to create this spatial feeling, which probably worked great in stereo in the film mixing studio, but the minute it gets played in mono, it sounds just like the garden hose effect. That's one of the reasons I feel comfortable with the ST unit. All the subtle comb-filter effects are symmetrical between left and right, so when you add them back together it cancels itself out in mono. You're right back where you started."

**Istvan Leelossy,
engineer/producer
City Lights, Farmingdale, N.J.**

Recently, Leelossy has been working with Jack Douglas (former producer of Aerosmith and John Lennon) and co-producing with City Lights co-owner Guy Daniel. "Most of the time I don't use any [signal processing]," he says,

"but when I do, I will set up an intricate chain of gear. For example, I will create my own de-esser with some limiter or EQ on the sidechain.

"I'm quite happy with the Orban parametric EQs on snare drums and lead vocals," Leelossy continues. "I also do a lot with the BBE 822 on background vocals. The BBE makes the signal brighter, but it also increases separation and transparency.

"If I want to compress something, I'll split the program over two modules. Then I compress one side fairly heavy, and I mix that with the uncompressed original sound. I like compression, yet I want to have the transients and peaks, so I add some of the compressed sound to the original signal and that gives me the power I like."

**John Kayne, chief engineer
321 Studios, NYC**

When he's not redesigning the mix room at 321 Studios, chief engineer John Kayne primarily engineers rock 'n' roll album projects. Among his favorite pieces of outboard gear are the older Eventide flangers and phasers.

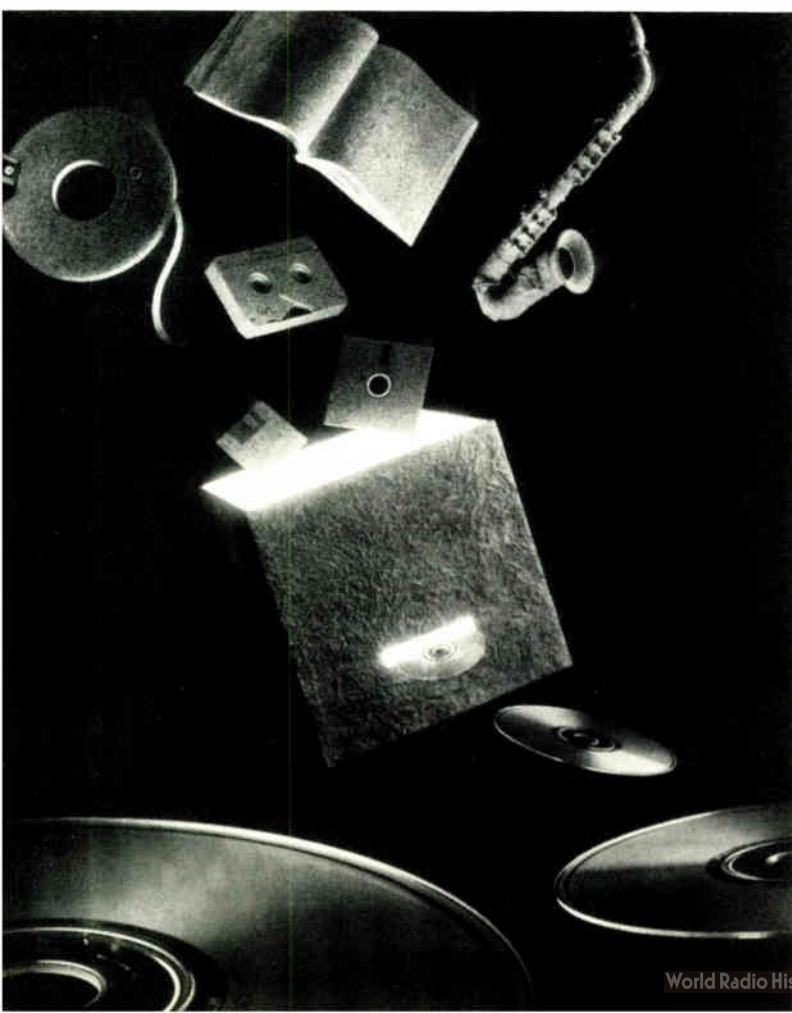
"I like to print extra effects tracks with guitar using the phaser and/or the

flanger through an AMS delay to set them off a little bit. The AMS gives you the silkiness, and then you get some of the wild stuff that the older flangers do, like with the envelope follower. We use the Sony 48-track here, so we usually have the extra tracks. I did that on a recent project with a group called Nude Swirl, to get a real heavy, thick tone. When I got the tape it was a remix, and it had only two guitar tracks on it. I was able to make it sound like 16."

**Dwayne Sumal, independent
Power Play,
Long Island City, N.Y.**

Before going freelance, Dwayne Sumal worked as a staff engineer at Power Play, where he still works about 70% of the time. He's part of a production team that has been together a long time. Sumal says, "I find the longer you work with a team the more you work in tune." They are currently doing a compilation album for a brand new record label. "I primarily do hip hop and reggae—Ziggy Marley, things like that.

"As far as reverbs go, my favorite outboard gear is the Lexicon 224. I also like the 480, but there are certain patches in the 224 that I really like. I like



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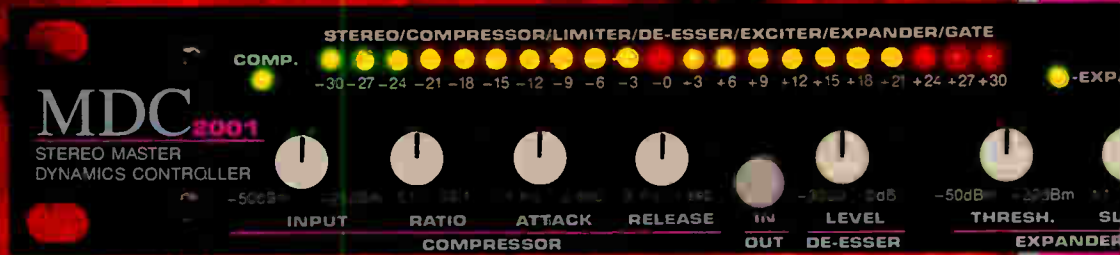
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the PCM70 and the 42 delays, too. I also use the AMS DMX 15-80S in conjunction with reverb as part of a room sound: I spread the delay hard left and right with a slight delay...one side up and one side down a little."

**Bill Higley, engineer
Sound Tracks, NYC**

As an engineer who specializes in audio-for-video and radio production, Higley doesn't often have the option to take the time to play with outboard effects. His job is to get it done quickly. "Right now we're using a ScreenSound workstation to put together four radio spots for the local Boston market. We also have a New England Digital PostPro.

"I use a Lexicon 300, a Yamaha SPX1000, along with some BSS compressor/de-esser units and Neve equalizers. I use them in conventional ways. I wish I had more of a chance to be creative with this gear, but it's difficult given the nature of what I do."

**Alex Perialas, engineer
Pyramid Sound, Ithaca, N.Y.**

"Actually, on a recent project I tried to avoid using a lot of signal processing,"

Perialas says. "The band I was working with was called Wrathchild America; they're a Baltimore group and one of the best live bands I've seen anywhere. I wanted to give the music a live feel, but I didn't want to use a lot of delays. After we recorded the basic tracks here, I went down to Hit Factory [in NYC] for mixing. They have a great live room, so what I did was sort of a foldback concept, primarily on the drum tracks. I didn't print any effects to tape; instead, I wanted to get the sound of the room for a natural reverb. I saturated the room with sound [from the studio's huge EV loudspeakers] and miked that. It was a virtual situation—we brought it back through the console in the mix—so in a sense it was a better generation than the tape itself, because it only went to the 2-track. And it sounded really good."

**Peter Denenberg, engineer
Acme Recording Studios,
Mamaroneck, N.Y.**

Denenberg handles a variety of rock projects, such as the Spin Doctors for Epic, as well as jazz albums on multi-track and live-to-2-track. "I'm still not impressed with digital," he says. "I

prefer analog with Dolby SR."

One of his favorite units is the Eventide H3000. "It's fun to use the sampling module to throw backward guitar chords onto tape—without having to turn the multitrack tape over. Also, we try to capture a lot of bands live, so if we have a good take with just one clam chord, we'll just pick that chord out from somewhere else in the piece and fly it back in with the sampler.

"We've used old MXR DDIs as fuzz boxes by running the signal way too hot into them, and then running the output into the mic in of a cassette deck. By gating and compressing it, you can make some real Hendrix-like sustained guitar sounds. Eventually, it gets so dirty that it sounds clean—like a bowed, distortion guitar.

"It took me a long time to figure out how to elongate tambourine sounds that are played along with snare drum backbeats. I have good luck with the UREI 1176 limiters by sort of removing the attack and setting up the release time so that it follows up the decay of the tambourine. The effect is almost as though you're riding the fader up on each tambourine hit." ■

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World Radio History

—FROM PAGE 43, TOD MAITLAND

The audience tracks were done live with each concert that we filmed. Every time we rolled the camera, these four to six microphones were recording the crowd ambience. And then after filming, we would keep the audience there and have them do yells, so we would get clean individual tracks that we would add in to sweeten up the audience tracks.

Also on the 24-track were individual tracks for each one of my dialog tracks, because Oliver would mix music and dialog. In almost all the scenes there's dialog, even in some of the bigger concerts in between songs, or there are people talking in the audience. For some of these scenes Oliver used multiple cameras; I had a microphone with each camera recording whatever was going on in front of each camera.

Depending on the location, we used one of two different types of 24-track units. We started out with an Otari for the smaller venues, such as the Los Angeles Whisky à Go Go, where all the equipment fit into one room. When we got into larger venues—seconding for Miami Beach, New Haven, The Fillmore—we used Le Mobile, a 24-track mobile truck run by Guy Charbonneau.

Le Mobile had two Studer 24-tracks; the second 24-track could begin rolling automatically in sync with the first 24-track, effectively doubling the running time.

The first day's shooting—the most difficult—probably gives you a good idea of the variety of challenges we faced during much of the shoot.

The scene starts with them singing "Break on Through to the Other Side." That was a playback situation, so each one of the band members needed to have their earwigs in, and we had to have the whole playback situation working.

[In the scene,] "Break on Through" falls apart. The musicians sit around and talk a little while, then Robby Krieger comes in and says he has this song called "Light My Fire," and he starts strumming it.

We then recorded dialog, and later the instruments. So we had a playback situation first, then we had a live instrument, live vocals, live dialog situation. Then, as they finally got "Light My Fire" going, they came back and did a second pass at it.

Everything that you could possibly have going at one time, we had going.

How did the actors work with the ear-

wigs?

One difficult thing was that [each actor wearing an earwig] had to hear a little bit more of his own instrument, so a monitor mixer had to mix different mixes for each one of them. For instance, Val needed to hear himself in playback because we would prerecord all the songs that would play live in concert. When you see Val very close on camera that's him live. There are other times when his movements onstage really prohibited getting a good live track, and those will probably be wider shots. At that point they will go back to a Val prerecord. On occasion, Val needed to hear himself live, in playback as well as music at a lower level.

There were actually some situations where we could keep the [audience] speakers away enough [from the stage], and Val could hear enough coming through the speakers so that he could do his live singing without affecting the recording we were doing of him.

When we didn't give the actors earwigs, we would turn up the speakers in the audience and that would give them exactly what they needed [from monitor speakers] on the stage, at which point it reverted to a normal playback situation.

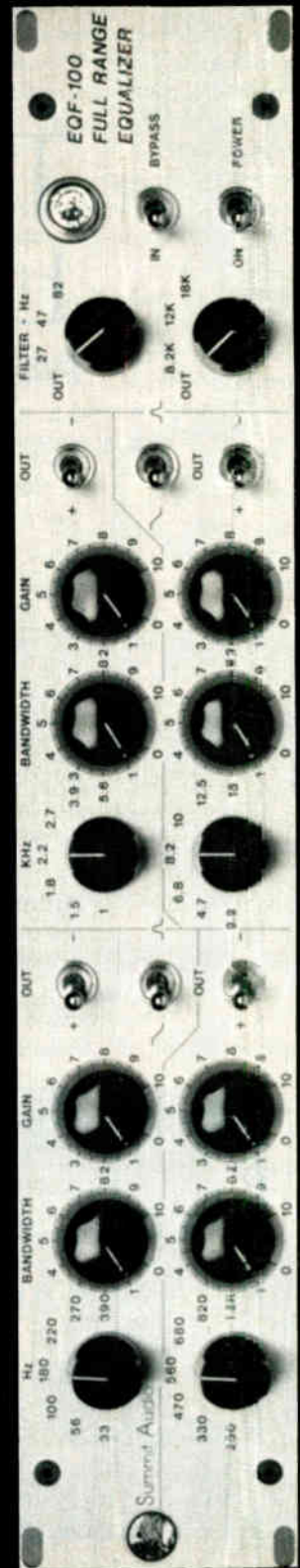
Why couldn't you do that all the time? Since you're doing multiple cameras and multiple takes, if Val comes in on a slightly different point in the music and you hear his playback come through his microphone, you're going to hear his live voice in his playback over his microphone. And at that point it becomes impossible to separate them. When Val found it very difficult to work with the earwig, we would just play the speakers very, very low.

Was Doors music playing on the set during the shooting?

Yes, Oliver wanted to hear Morrison's music all the time. While we were recording regular dialog situations, I would give Oliver the music in his headphones, which he wears all the time. I had all the Doors music on DAT, and I would have a separate mix set up for Oliver. I had marked cue points throughout the Doors music. Those cue points were based on timings that would work with the scene, so Oliver could hear in his headsets the way it was going to work in the final product. ■

Nick Pasquariello is a San Francisco-based writer.

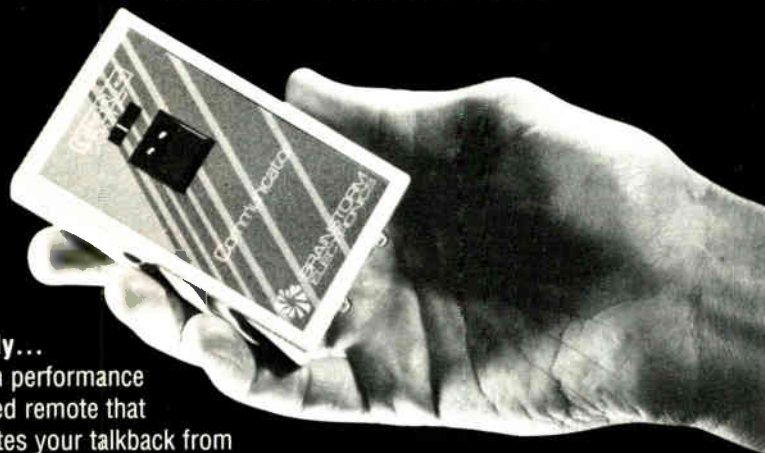
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are so easy to build that if there's one thing they could or should be used for in this type of equipment, it's as a timing reference. It's ridiculous to imbed time code in a MIDI stream and use it as a timing reference. It's not a good idea.

Oppenheim: The recommended usage of MIDI time code is not that it be imbedded in a MIDI stream, but that a particular MIDI cable be dedicated to MIDI time code.

Block: But even at that, I don't think it's a very good way to do it. If you're going to have a separate cable, why not just pass SMPTE instead of MIDI time code around?

Oppenheim: It depends on what you're coming into. If you're coming into a Mac Plus, all it has are serial ports—it doesn't have any slots—and if the primary application of it is MIDI and the person is using a MIDI interface, it's the only way you're really going to get it in there. There *are* some major holes in the specification of MIDI time code. It takes a finite amount of time to transmit each MIDI byte, but it never really shows a picture of those bytes being transmitted or where they are supposed to line up on the SMPTE frame.

Block: That's the one thing [SMPTE] time code is good for. The specification is very accurate.

Miller: There's way too much information in the spec of SMPTE time code to permit transmission via MIDI.

Block: There's only one thing you really need to know. Where's the beginning of the frame?

Johnsen: At that point, you're talking about lowest common denominator thinking. If we're talking about problems throughout the spectrum, perhaps we should consider where the lowest common denominator cutoff point is.

Block: Maybe the standards need to be lowered to the lowest common denominator signal to the Mac that will work.

Miller: Well, I'm not arguing in favor of that, but just trying to shed some light on why it is that way and how it got there.

Block: If you want to improve the situation, do you suggest that you lock your sampling rate to MIDI time code? Is [MIDI time code] what you're going to use as the time base for your sampling rate clock?

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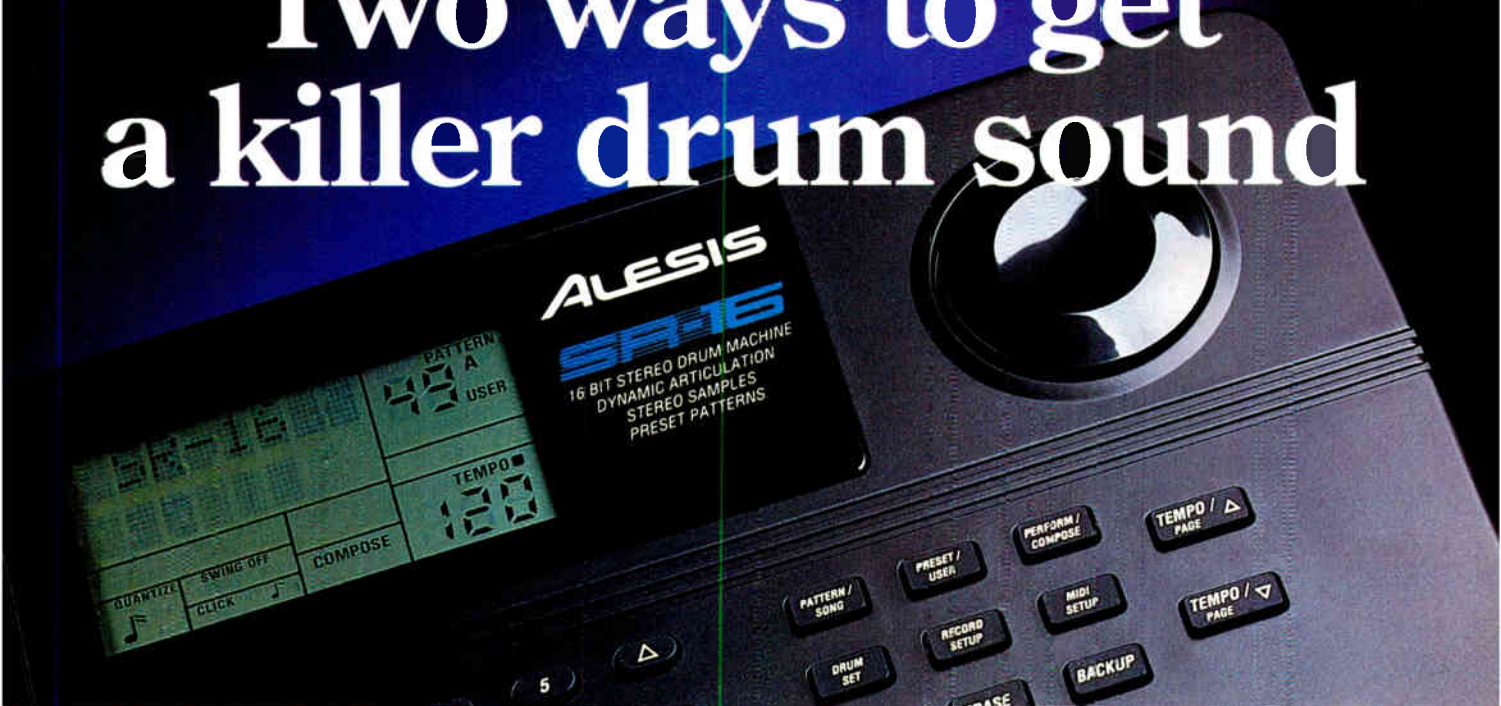
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Miller: I've seen it done. And it works pretty well.

Oppenheim: Pretty well, but don't try it with a sine wave or something where you can hear the pitch.

Miller: What I'd like to see is a Mac II workstation with a real SMPTE reader and writer.

Block: And, by the way, you were asking for black burst, but quite frankly I think it would be better to pass time code [around the system], rather than black burst.

Miller: Obviously, you have to pass time code around. But black burst is useful for supplying a unified time base to that which generates the time code and those things which specify and create time code based on sample rate clock.

I'm not saying black burst *instead of* time code. You must have time code. Wouldn't you want all the time code generators within one facility locked to the same frequency? Wouldn't you want them generating code based on the same crystal frequency?

Block: Maybe. The answer to your question is yes, but in the real world it's again a question of what you are trying to do with this generator: striping new code or making dubs?

Miller: Let's say striping new code. Then you want to clock to burst. Right?

Block: Absolutely.

Miller: Say you record audio onto a hard disk at a certain sample rate and the computer isn't striping time code anywhere: it's hypothesizing SMPTE based on its sample clock. If you take that digital audio to a different D/A converter to bring it back to analog, wouldn't you want both the A/D and the D/A running at the same rate so that the duration stays the same from one station to the next?

Block: Well, you *have to*.

Miller: Right. So you just give it black burst. That's what I'm saying about black burst. You have two problems: the first is that you've got time code being generated by different machines and being passed around, and the other is that there's a bunch of these things that run off a crystal time base.

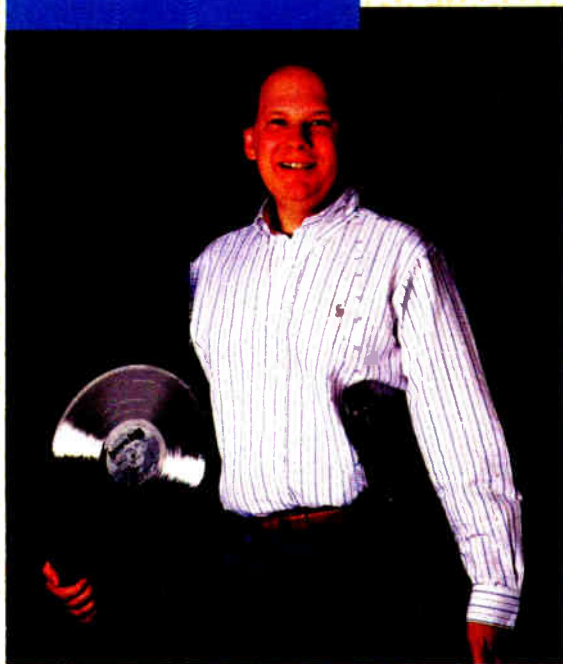
Johnsen: Yes, black burst is the most commonly available non-specific time reference we can have. That's what it's good for and should be used for.

Miller: Right. It provides a solution. Granted, people have to pay for it, but when you've got this much money

Bob Ludwig

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invested in this gear and you find out that because your time base is wrong it doesn't work and there's nothing the manufacturer can do to make it work, the investment of a black burst generator and a single-machine resolver such as a Lynx module become very reasonable.

Block: You can't just say, "Hook your generator to black burst; put your machine in external position; record; do your music." It'll only work about 50% of the time. You actually have to understand the entire process.

Johnsen: We're back to the educational problem again.

Block: Absolutely. Unless you understand what you're trying to do, there's no way you'll know whether you're doing it correctly or not.

Miller: It's really up to the operator whether they want to come at this from a situation of ignorance or one of knowing what they're doing. You're always going to get both types. At Digidesign I tried to educate people at a greater level than Band-Aiding each call. I had great success with people on very concrete terms without spending a huge amount of time [with them]. A lot of these people *bad* all of this hardware sitting around, and were unaware that it could solve their problem.

Block: You're right. But that still doesn't address the entire problem.

Johnsen: It would be useful to have a book that goes out with every manufacturer's product when it's sold. If manufacturers approached this problem from the front side, they wouldn't be spending so much time on the phone dealing with it on the back side.

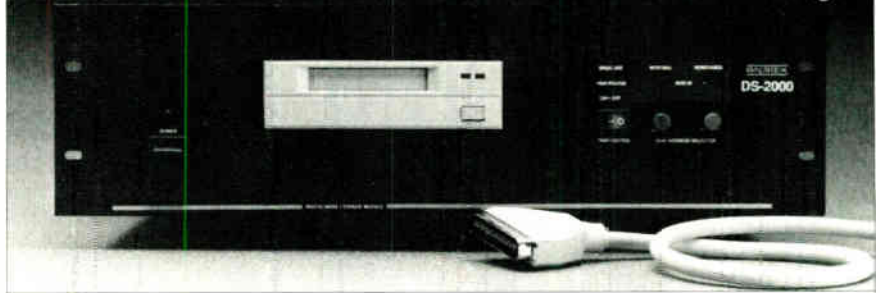
Miller: People should be made aware at the time of purchase that they may be getting into something different from what they've been doing up until this time. Sequencers merging with digital audio is a nice opportunity for certain manufacturers to take some big steps that reach across the market, from the pros to hobbyists.

Block: If you want to talk about the [personal computer] revolution, and you want stuff to be in sync with your picture when you're done—even if it never goes to EFX in the process—then you'd *better* get this information out.

Johnsen: And the importance to me as EFX—and I'm *not* seeing any of those projects—is that eventually one of

—CONTINUED ON PAGE 194

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AUDIO-VIDEO SYNCHRONIZERS

A Buyer's Guide

B Y G E O R G E P E T E R S E N

A long time ago, in a galaxy far, far away, life was a lot simpler. Plug in a recorder and record what you need. No problem—except for the occasional blown relay or weak vacuum tube. Today, life is a lot more complicated, and the fine line between audio and video production is more clouded than ever. Audio facilities are mixing for picture, video post houses are gearing up for audio, and somewhere on the outside of all this is the project studio, where just about anything can happen. A common link to all this activity is the need for transport synchronization, whether it's locking an audio deck to a VTR, film dubber, second audio transport, or two audio transports to a VCR.

One of the most important considerations in selecting a synchronizer is evaluating your facility's needs. A simple, two-machine synchronizer may be exactly what you need now, but will this system be adequate two years from now? An expandable synchronizer that permits adding more transports to the system (at a later time) may provide a sensible solution.

Most synchronization systems are designed to operate with a variety of audio and video gear, and sync manufacturers can supply ready-made cables to fit different transports, thus eliminating installation hassles. However, this "plug and go" approach has its drawbacks. Depending on the complexity of the system, cabling can cost anywhere from hundreds to even thousands of dollars, so remember to figure cable prices into your budget.

While outside the scope of this article, a couple of recent trends are the proliferation of chase sync facilities into audio machines (usually through the addition of an optional plug-in card) and MIDI- or SMPTE-to-tape synchronizers. The latter provide a convenient, low-cost method of adding tracks to any recorder by syncing the tape deck to MIDI

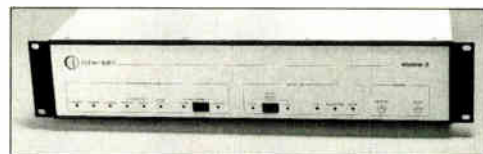
sequencers, offering a nearly unlimited number of virtual tracks. We decided to look at the current offerings in audio-video transport synchronizers, ranging from relatively simple devices to complex networks. The products are presented here alphabetically by manufacturer; addresses are provided so you can contact the companies directly for more information.

The **Adams-Smith** System 2600 A.V. Editor is a modular transport control system that can synchronize up to ten transports from 20 manufacturers, with longitudinal or vertical interval time code (LTC or VITC), tach pulse (film), MIDI, GPI (general purpose interface) and multiple frame rate support. The



**TimeLine's
Lynx Keyboard
Control Unit**

**Photo at
right, Cipher
Digital's
Shadow II**

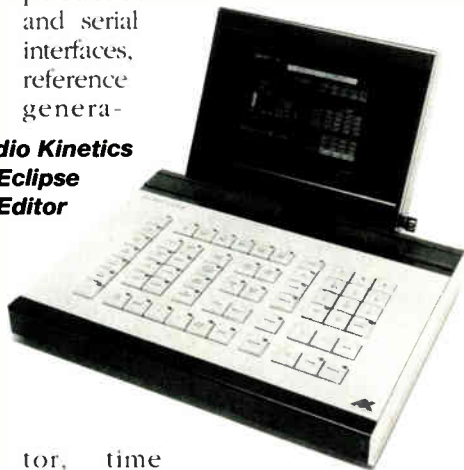


Adams-Smith System 2600 A/V Editor

System 2600 A/V is a complete audio-for-video editor, with edit decision list management, rack-mount computer, high-resolution color display, hard disk storage and C:Sound audio graphic editing. The latter provides visual waveform editing of record in/out and sync points with sub-frame accuracy, without the need to manually enter time code addresses.

Accessory modules for the 2600 include 3.5-, 5.25- and 8-inch floppy drives, LTC/VITC reader/generators, parallel and serial interfaces, reference genera-

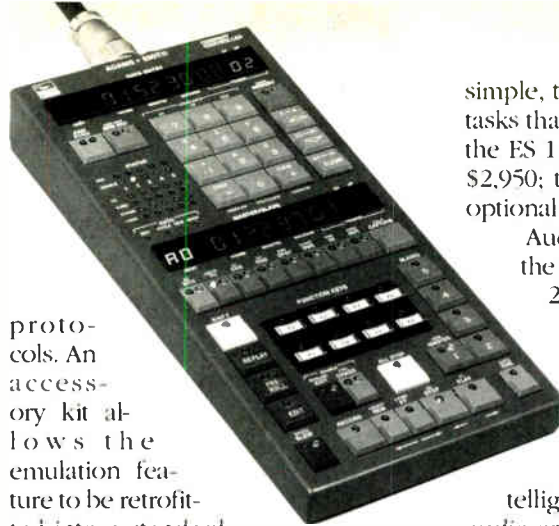
Audio Kinetics Eclipse Editor



tor, time code reshaper and a full-function Compact Controller remote. Adams-Smith has announced new features for the 2600 A/V, such as MIDI event sequencing and list management, Cross-Lock™ mixed-frame rate sync, Vari-Lock™ variable speed sync, character inserter display for ADR talent, and a motion control jog/shuttle wheel for transports or C:Sound displays. System pricing begins at \$19,900.

Adams-Smith's Zeta-Three is an audio/video/MIDI synchronizer that incorporates two-machine full chase-lock capability, time code functions and MIDI-to-SMPTE/EBU in a single-rackspace unit. The Zeta Remote adds both a compact, full-function remote and the ability to control up to four Zeta-Three units, with 100-point autolocation. Designed for use with the remote is the Zeta-Three "B" synchronizer, which is identical to the original Zeta-Three but lacks front panel controls. The latest version of the Zeta series is the Zeta-Three^{em}, which adds VTR emulation using standard serial communication

Tascam MIDiiZER synchronizer



protocols. An accessory kit allows the emulation feature to be retrofitted into a standard Zeta-Three. Complete Zeta system pricing starts at \$3,345.

Adams-Smith, 34 Tower Street, Hudson, MA 01749; (508) 562-3801.

The open-architecture ES 1.11 synchronizer from **Audio Kinetics** provides a full range of functions, from one-machine chase to an ESBUS local area network of up to 256 machines. Each ES 1.11 has an independent SMPTE/EBU multistandard time code reader/generator; a VITC reader option can be added. The ES 1.11 features an 80-character backlit LCD screen that displays setups, and the machine parameters are stored in battery-backed RAM. Multiple time code standards and machines can be mixed within a system. At the recent AES convention in Paris, Audio Kinetics unveiled new emulation software for the ES 1.11 that allows it to work with any machine using the Sony serial control protocol. Options include two remotes: Eclipse (\$7,950) is a 16-machine controller with a large 20-line electroluminescent display; Penta (\$2,950) is capable of controlling up to five ES 1.11 units. The basic ES 1.11 synchronizer retails for \$3,950.

Audio Kinetics' Pacer is a low-cost, single-rackspace unit designed for

simple, two-machine synchronization tasks that do not require the power of the ES 1.11 system. Pacer is priced at \$2,950; the Pacer Pad II (\$795) is an optional remote controller.

Audio Kinetics is distributed in the U.S. by 21st Century Limited, 2002 N. Beachwood Drive, Los Angeles, CA 90068; (213) 465-2002.

The Shadow II (Model CDI-4800) is the latest synchronizer/controller from **Cipher Digital**, offering intelligent control of multiple film, audio or video transports in any combination. Based on the same adaptive loop techniques developed for the original Shadow, the Shadow II adds selectable RS-232/422 computer compatibility, an improved time code reader, additional memory locations, and variable park tolerances. Universal transport adaptability makes the Shadow II capable of controlling virtually any transport on the market.

Fostex Model 4030 synchronizer with Model 4035 controller



Shadow II accessories include the Phantom II VTR emulator, Shadowpad Mini (\$695) and Maxi (\$995) remote controllers, and the Softouch™ II. The latter is a microprocessor-based edit controller that can control up to four audio or video transports, and is available in two versions, using either the Phantom II VTR emulator or Shadow II synchronizer as the interface. Other Softouch II features include disk storage, full-screen RGB color display, printer interface, list compatibility, soft keys and the ability to display operations (and pull-down menus) on a standard color RGB monitor. Shadow II prices begin at \$3,395; Softouch II is \$4,995 for the Phantom II emulator version and \$4,595 for the Shadow II version.



Cipher Digital, Box 170, Frederick, MD 21701; (301) 695-0200.

The 4030/4035 synchronizer/controller system from **Fostex** is compatible with virtually all current audio and video recorders. The 4030 rack unit features resolution of up to 1/100th of a frame, with 24/25/30 fps and drop-frame formats. A serial interface allows the connection of a PC for loading edit decision lists. The 4035 controller is a full-function remote for controlling up to one master and three slave transports. Other 4035 features include a large LED time/event display and SMPTE-based punch-in/out. The 4030

retails for \$1,500; the 4035 controller is \$500. Also available is the Model 4011 VTC reader/character inserter and cables for a variety of audio/video transports.

Fostex Corporation of America, 15431 Blackburn Ave., Norwalk, CA 90650; (213) 921-1112.

The MMC-1 Master Motion Controller from **Nacwestrex** interfaces any combination of film and audio/video tape transports, with user-friendly control panels providing control of motion, presets and SMPTE time code or frame/footage displays. The system includes master and remote motion

control panels, preset control modules and under-screen and remote counter displays. Sync sources can be video sync, pilotone, power line or crystal, and serial and parallel interface ports are included. Four separate bus signals can control any number of transports on 4,000 feet of cable. Price is \$11,800.

Nacwestrex, 1011 W. Alameda Ave., Suite F, Burbank, CA 91506; (818) 840-6990.

New from **Peavey Audio Media Research** is the SyncController Version 2.0, a new version of the two-machine (master-slave) synchronizer. The SMPTE-based system also uses tempo mapping (with up to 99 programmable tempo changes), with MIDI time clock and MIDI song position pointer derived from the slave machine's SMPTE time code for synchronizing MIDI sequences to the audio tracks. SyncController also acts as a tape locator, and events can be assigned as punch-in/out and looping points. This data can also be stored on the head of the audio tape for later recall. Full chase and tachometer display modes are also available. Retail is \$999.99.

Priced at \$599.99, Peavey's SyncLoc is a no-frills SMPTE synchronizer for locking two audio or audio/video transports. Features include 24/25/30/30DF rates, a jam sync mode and an offset trim facility.

Peavey Electronics, 711 A Street, Meridian, MS 39302; (601) 483-5372.

The **Soundmaster** Integrated Audio Editing System takes a modular, software-based approach to synchronization. With up to 140 installations worldwide, Soundmaster can control up to eight transports simultaneously (each with eight GPIs), with onscreen display of status, such as lock parameters, real-time machine tallies and EDL scrolling. Features include patented Smart Sync™ (for varispeed sync with constant offset correction); support of audio, video and film transports; and Shut™ programmable soft keys. Complete turnkey pricing (with all cables and machine interfaces) for a two-machine system is \$17,000; a three-machine version is \$22,000, and each additional transport adds \$4,000. Optional Syncram™ modules bring 16-bit, disk-based record/play capabilities to the system.

Soundmaster U.S.A., 900A Hampshire Road, Westlake Village, CA 91361; (805) 494-4545.

The **Tascam** MIDiiZER functions as an autolocator for tape transports, a

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Then came the **CB-4 Headphone Cue Box**. With four outputs independently controlled by conductive plastic stereo power controls, the CB-4 allows up to four headphones to be driven from the same amplifier. A three-position switch selects left mono, right mono, or stereo mix, and XLR input/output connectors are provided for paralleling additional cue boxes. It's no wonder why the CB-4 has become a standard in the industry.

The tradition of excellence continues with the **RDB-400 Integrated Direct Box**. Based on the same design technique which made the DB-1A the premier direct box of the industry, the AC powered RDB-400 is four direct boxes in one. It can be rack or floor mounted and has countless uses. It features line level output mode with infinitely variable trim, attenuation mode with stepped variable trim, input overload LED, speaker level input pad, balanced and unbalanced buffered outputs with front and rear XLR connectors, ground isolation switch, and a toroidal power transformer.

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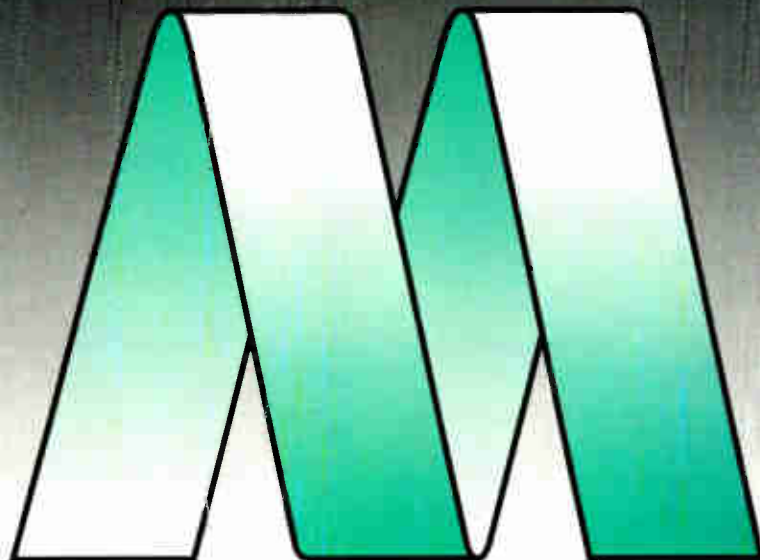


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MIDI synchronizer that locks MIDI sequencers and devices to SMPTE time code, and a transport synchronizer that chase-locks between two separate audio (or audio and video) transports. MIDiIZER also offers record function selection, auto punch-in/out and the ability to reference recorder controls to MIDI bar beat points. Other features include subframe sync accuracy, 20-point cueing, tempo mapping and a constant LCD status display. Retail pricing is \$1,999.

Offering the ability to read any SMPTE time code format at a rate from 1/20th to 100-times normal speed is Tascam's ES-50, which can be used alone as a transport synchronizer or in conjunction with the ES-51 remote unit for more complex control/editing functions. The ES-50 features master/slave chase-lock, slow sync and jam sync with continuous time code, along with five contact closures that can be triggered by preset addresses. The ES-51 can control up to four audio or video transports, and offers a 20-point autolocator and five time code-triggered events, including record in/out.

Tascam, 7733 Telegraph Road, Montebello, CA 90640; (213) 726-0303.

The **TimeLine Lynx Time Code Module** (\$2,559) forms the basis of a modular, expandable system where a single unit could act as a machine resolver, a chase-lock synchronizer or as part of a large post-production network. Lynx is available in two versions: Lynx SAL (stand-alone chase synchronizer), or Lynx VSI (video systems interface) for use with video edit systems or the Lynx Keyboard Control Unit (KCU). One Lynx is required for each transport, and up to 32 modules can be used in a chase-lock system. Lynx Film Modules integrate sprocketed film transports into a time code system and can be fitted with SAL or VSI software.

Priced at \$3,450, the Lynx KCU controls up to six machines and two GPI relay closures using large transport keys, a jog shuttle wheel and a bright alphanumeric display. Transports can be operated solo or in groups. The capabilities of the KCU can be increased by adding the Lynx System Supervisor (\$3,950), which can integrate console automation into the synchronization system, along with MIDI ports, eight GPIs and four RS-422 ports for controlling up to 16 transports.

TimeLine Vista Inc., 2401 Dogwood Way, Vista, CA 92083; (619) 727-3300. ■

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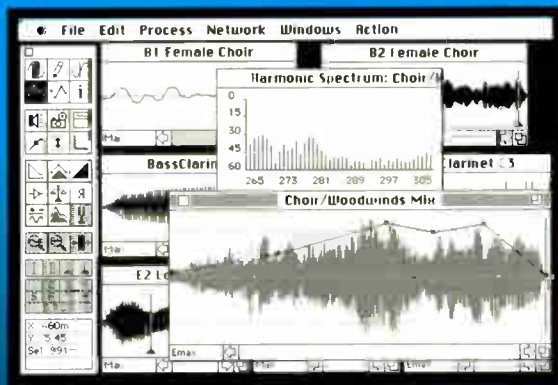


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**Into the
Future
With an Eye
on the Past**

BMG Studios

BY HANK BORDOWITZ

**A
Quick
Tour
Through
New York's
Biggest
Studio
Complex**

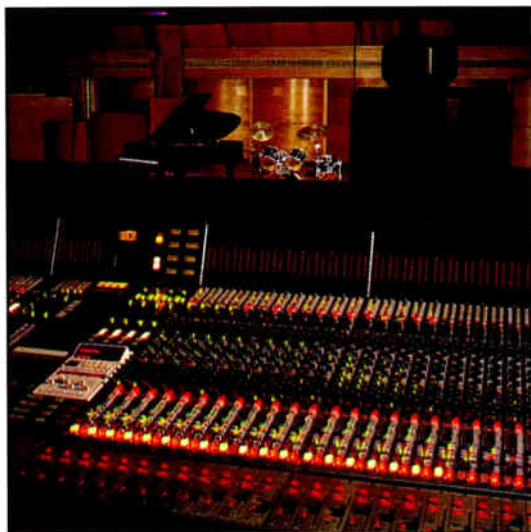
“John Snyder does a lot of work here,” BMG studio manager Hank Meyer says as we start to tour the huge midtown Manhattan recording complex, formerly known as RCA Studios. “John McClure is another person who does a lot of work here. So I see the same people a lot. We have Spike Lee coming back. I think this is the third or fourth film that we’ve scored with him. Personally, I think that one of the most interesting things about the place is that we do so many different things, and everybody wants something different. Usually, we can give them just what they want. In a lot of studios, things are set up in a particular way, and they don’t change—where the piano is, it’s stuck.”

As we walk into Studio A, Brian Sperber, one of the trainees, is seated at a 7-foot grand piano, helping engineer Dennis Ferrante get a level. While the large grand is the sort of instrument that would dominate another studio, BMG A, at 60x100-feet, is bigger than many New York City nightclubs. The man and the piano are dwarfed by the room. Across the studio, an even larger piano—a 9-footer—is set up. The 40x19 control room, where Ferrante is making

adjustments on the new Neve VR 60 console, actually could accommodate both the studio and control rooms of many New York City recording facilities. Much of the outboard equipment juts out at odd angles to the board. This would be unusual if they were permanent placements, but closer inspection reveals that the racks are actually on wheels.

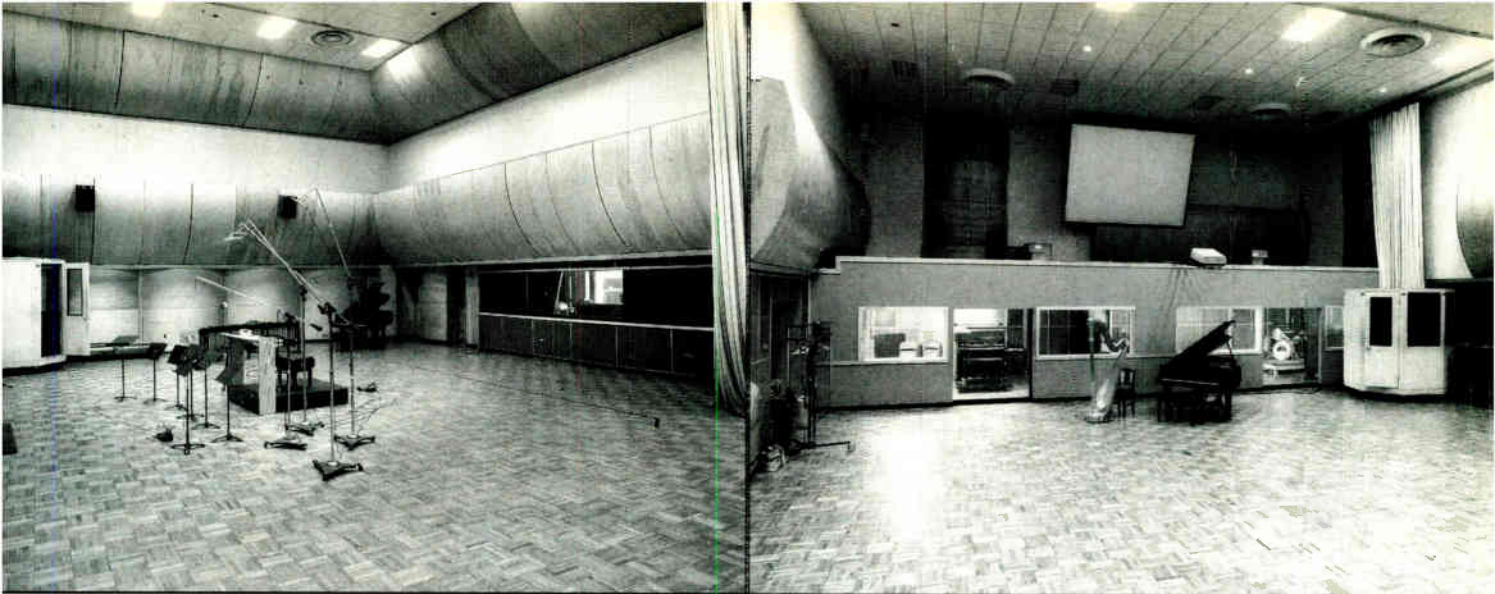
“We put them on wheels so it’s easier for us to get to them,” Ferrante explains. “With a console this big, we can move them out of the way to put in outside gear.”

“These are all dedicated to the



Studio A

PHOTO: TERI BLOOM



room," Meyer adds, pointing to the effects rack.

"But this cassette rack," Ferrante points out, *that* can move. The 1630s are on wheels and move from room to room. Every room has a dedicated stack like that, but the wheels are just to move them around."

"Obviously, in this room, because of its size, we don't do a lot of mixing," Meyer remarks. "So there is no need to keep a lot of outboard gear here. Next door, in the SSL room, we mix, so we've got more stuff. Part of the idea behind putting everything on wheels is flexibility."

Flexibility is a watchword at BMG Studios. As we walk through this biggest recording facility on the East Coast, it would also seem the busiest and most diverse. Projects range from cutting LPs on lathes to preparing CDs with the latest digital technology. The much-heralded upgrade of the whole studio that started around the time Bertelsmann bought RCA and redubbed it Bertelsmann Music Group is still going on. The halls are lined with machines, ranging from vintage Ampex 1/2-tracks to some fairly new multitracks. Rooms are still in the process of being refit and refurbished. People are laying carpet padding in one room, while another is being measured. Both rooms are empty, their past and future uses a mystery. We pass another room with a row of six very old transcription turntables. Further back in a corner, there's a PCM.

"That's going to be our new room for transferring from

metal parts or vinyl," Meyer points out. "The CEDAR [Computer Enhanced Digital Audio Restoration] stays in its own room, but you have to transfer from the metal parts first, just to get it on digital tape. We'll do that here."

Down the hall, Studio D looks like a mecca for audio engineers. This impression turns out to be well-founded. Decks of every size, shape and age, from 30-year-old 3-track machines to a well-worn 8-track, pack the room.

"We do a lot of recording in here," Meyer notes, leading the way through the labyrinth of recorders, "but for the next couple of days we're mixing, so I can store that stuff in here. That's why some of the other rooms are empty. We're moving stuff around until I can get rid of it. It'll be out of here by next week."

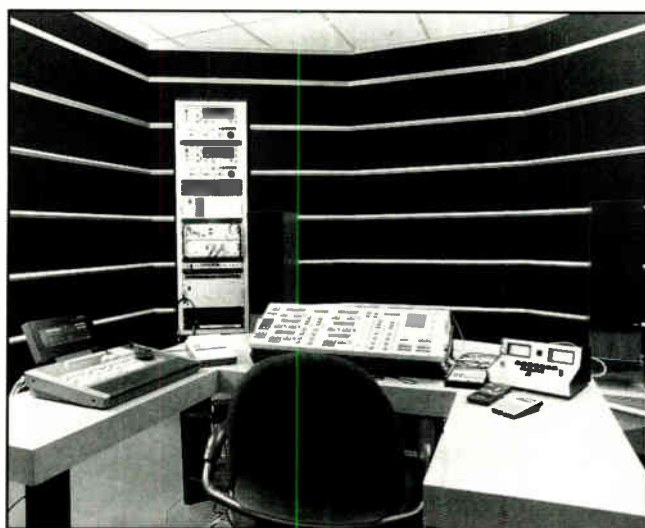
Wending our way through the maze of recorders for sale, we get to the newly

refurbished Studio D control room. D is the rock room, the studio RCA built for the Jefferson Airplane. Refitted, the control room more closely resembles a standard issue New York studio than any of the other rooms at BMG. Ronnie Olson, a maintenance engineer, is tweaking some of the outboard gear, but D looks ready to use.

"This is where you'll find a lot of the outboard stuff," Meyer says. "Here is your SSL G Series, 56 inputs. This is bigger than your average room in New York."

A lot of effort has been put into updating the equipment in the recording rooms, at least as far as the control room

Above, soundstages for Studio B and Studio C; below, one of the twelve digital mastering suites



gear. Yet, as we wander through the studios, there are several grand pianos, a marimba, a B3 organ, a vibraharp, even a celesta. However, there is not a synthesizer in sight.

"We deal mostly with live musicians. We do have a couple of electronic keyboards; we try to keep them hidden," Meyer jokes. "But it's basically due to the size of the rooms and the nature of what we record. We're not doing a lot of synthesized, technopop recordings here. We're doing straight jazz. Broadway soundtracks, film scoring. We're doing full finals for ad agencies, commercials and jingles. These all involve live musicians versus having one guy and a programmer, or a MIDI kind of situation. At this point, the facility does not attract that kind of clientele. Still, with the rooms that we've got, it can be adapted very easily to it. But most of our work is done with the musicians in the studio, not in the control room."

That, at least, accounts for the bulk of the original recording work that goes on at BMG. And, certainly the studio rooms are huge by any standards, but there are only four main rooms, along with the two smaller studios, E and F. Yet BMG Studios occupies one entire floor and parts of two more (not counting three-story ceiling heights). The complex employs nearly 40 engineers. Most of them keep busy with other facets of BMG Studios' capabilities. All told, there are a dozen mastering rooms, and they see huge amounts of work. The current influx of CD reissues has to be mastered somewhere, and a lot of that work gets done at BMG.

We walk into one mastering suite that resembles a cross between an office and a living room; a multitrack console is conspicuously absent. Instead, on one table sits a Sony DAE-3000, on another a Harmonia Mundi digital processor. Dick Baxter plays a circa 1920 Cole Porter piece. The voice still sounds like it was recorded through a megaphone to a moving diaphragm and needle. The source is an original acetate, but the digital version lacks the noise usually associated with a recording of this age. "This is something that we CEDARized," Baxter remarks. "This is what it was."

He plays the same track, but before the computer process. It is hissy; there

are pops. Cole Porter, brought to you by the folks who package Rice Krispies. This is going on a compilation that features Porter in all vintages and vanities, from this venerable recording to music as up-to-date as Patti Lupone's version of "Anything Goes," from the show by that name recorded in BMG A only a year or two ago. In that context, the original would stand out sonically.

"If you listen to it with the rest of the record, it comes across," Baxter insists.

**The current influx
of CD reissues has to be
mastered somewhere,
and a lot of that work gets
done at BMG.**

"It's just beautiful. There is a slight change. We had to take a little bit away from his voice, but it's not bad. We had to run it through three times. There's the de-scratcher, which knocks out the ticks and a lot of the pops and things like that. Then there's the de-hisser, which takes out the majority of the hiss. We discovered if we take all the hiss out, it sounds terrible! We took out all the hiss and we could hear the squeak of the turntable. Then, we put some hiss back in and it sounded more real. We don't want to fool anyone. People know it was recorded back in the 1920s."

Another mastering suite bears a closer resemblance to a recording studio, centering on a Sony MXP-3000 console. Here, Tony Salvatore is taking a break from remastering some of BMG's ambitious Toscanini reissues. By next Christmas, they hope to have half of the maestro's RCA recordings out on CD. Salvatore has been with the studios since 1956.

"From about 1958," he recalls, "I did most of the operas. They would send us to Rome or London. All the operas and some cast albums—*Sweeney Todd*, *Lobengrin*—I can't remember them all. We would ship all our equipment over there to do it. It was a regular job,

every summer. We would be there for about two months and come back with three operas, two aria albums, something like that."

"So Tony is, very often, transferring stuff he did in the '50s," Meyer says with a laugh. "You can see him in the room going, 'God, if I'd only miked that differently!'"

Repairing the audio quality of older masters is a major preoccupation at BMG. They have laid in the equipment to do a first-rate job of it. The studio

boasts as much Sony digital gear as any other company in the world (besides Sony), with ten editors, eight consoles and ten R-DATs. But that's only the beginning. As in Baxter's room, most of the editing suites pair the Sony DAE-3000 with the equally remarkable Harmonia Mundi.

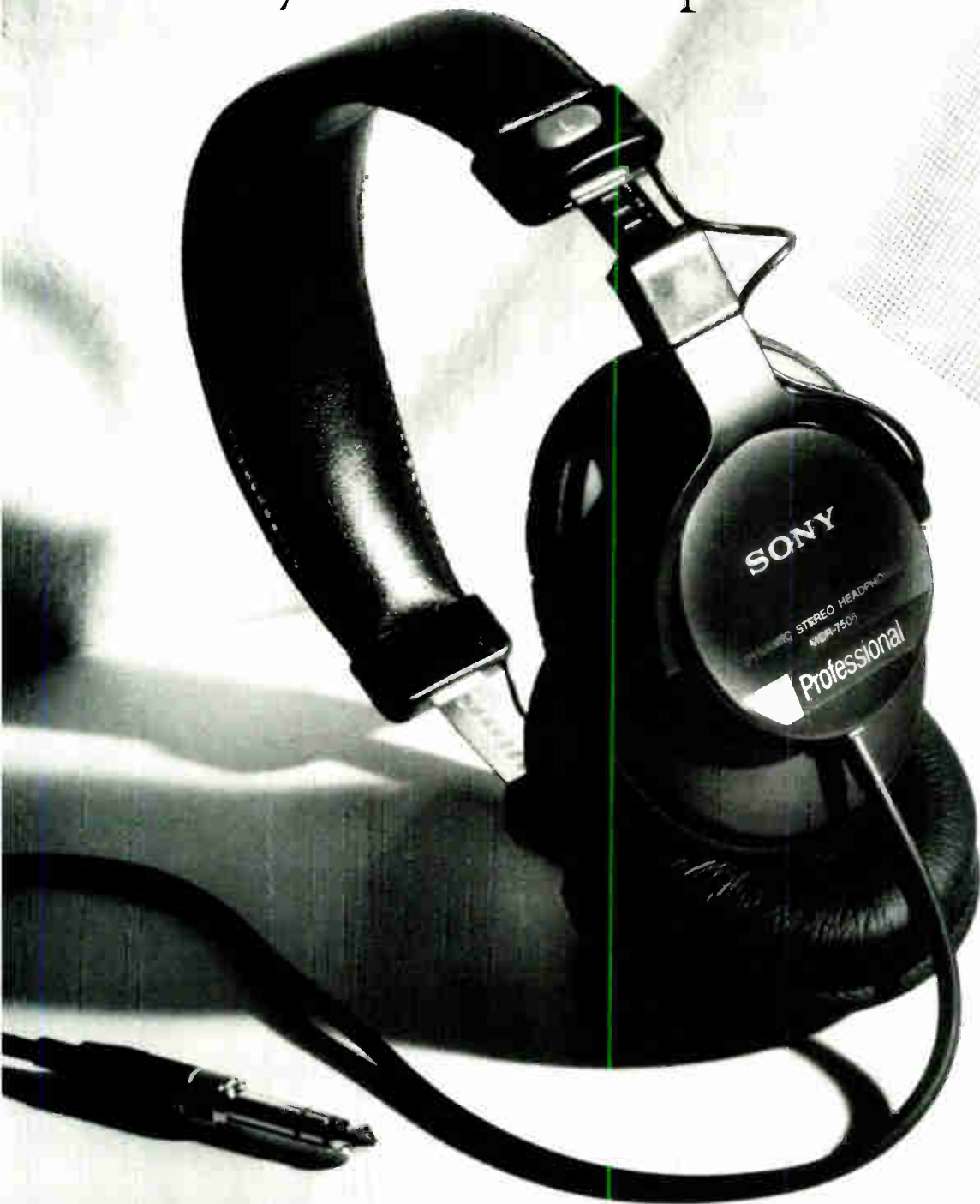
"It's an all-digital console," Jim Crotty says, pointing to the piece on the counter beside him in another console-less mastering suite, similar to Baxter's. "It's really a fantastic instrument. We've had it now a couple of years. This is

really the key: the digital equalization. It took me awhile to get used to hearing the digital equalization. It's so different from analog. When they say one dB, it's exactly one dB. It doesn't vary one little bit. In the old days, you used to put it through a Pultec and roll it in arbitrarily by ear. You can still do that with this, but generally it's not broad. We have five rooms with this equipment. When you think about what we can do with this and the size of it, it's really unique."

One thing that Bertelsmann bought when they acquired the RCA studio and record company were masters that date back to the turn of the century. Of course, masters this old were almost always recorded direct-to-disc, like the aforementioned Cole Porter. Some come on more primitive media, like cylinders. Much of this music is of tremendous historical significance, and BMG is expending a great deal of energy to get it out on CD. Yet, as the Porter project brings home, many of these recordings just don't stand up to digital scrutiny. For this reason, BMG has invested in all of the previously described digital editing equipment. They also now have an in-house CEDAR system.

Paul Brizzi sits at the processor's console. "The CEDAR is programmed

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with algorithms of what natural sound should be," he explains. "We load a program into it in the digital domain, load it onto the hard disk of a computer.

"It's amazing to see, when you CEDAR-process this stuff, just how much information is on these old discs. We go back as far as we can to get original parts. If we can get to a plastic disc, that's good. If we can get to metal parts, that's better still. The crisper the stuff is, the better time the machine has with it. When it de-scratches and de-crackles, it compares the sound that it's seeing with its models of what natural

sound should be. It excises anything that doesn't match. So the sharper and crisper the ticks and scratches, the easier it is to use this machine to take them out while keeping the program intact."

If CEDAR represents the last word in digital technology, BMG also has the equipment that represents the first word. Before Soundstream—the company that pioneered digital audio—went out of business, they made three digital editing systems. One is in boxes in Canada, one is in similar disrepair in Germany. The only existing *working* version of the system takes up two

rooms at BMG. This is Tom MacClusky's singular domain.

"There are still certain people," MacClusky notes, "producers and certain artists, who swear by this and feel that the Sony 3000, or the Opus, or the various other ones, can't do the things this can do. One of the specific things this has, that to the best of my knowledge the other systems don't, is a long crossfade value. I can do a 17-minute crossfade if I want to. Obviously, who wants to? But the point is, I really can."

The Soundstream is an astonishing piece of equipment, even just for the way it points out how rapidly technology has changed digital recording. The Soundstream system consists of software and an interface. The machines that it is designed for, however, take up an entire room: a digital PDP1160 with Braegan disk drives.

"It's so interesting," MacClusky muses, "because in the late '70s and early '80s everyone was in awe of Soundstream. Now, it's just ancient city."

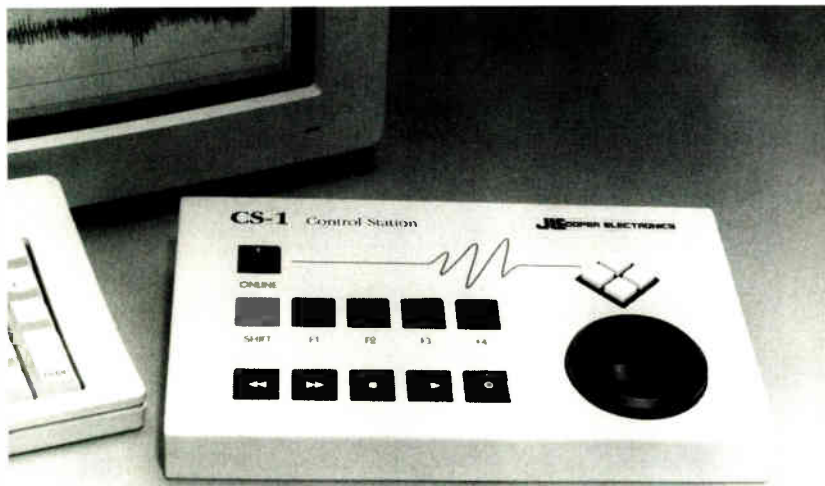
"These are 300-megabyte disks," MacClusky says, pulling one out of a storage cabinet. "Each of these will hold 21 minutes of 2-track at 44.1. When I'm doing 8-track, these will hold a little less than five minutes worth of data."

Sadly, even MacClusky realizes that with the passage of time there will be machines that will make the Soundstream as functionally archaic as it looks. NED and Opus are rapidly making inroads on his workhorse. It's a tribute to how advanced Soundstream was that despite the probable absence of any microprocessors in the system, MacClusky is busy on it, full time. "I'm sure," he concedes, "that within a year or two, or maybe three, this will be surpassed."

Yet, in a place where people spend months at a time bringing metal pressing masters to a point where they can compete in the digital marketplace, the continued success of the Soundstream is fitting. BMG Studios has a place for Studer record lathes and CEDAR processing equipment, metal masters and digital editors, 40-year-old Ampex tape decks and 48-track Sony DASH recorders, classical maestro Arturo Toscanini and rapper D-Ski.

Meyer smiles, "We've come a long way."

Hank Bordowitz is a New York-based freelance writer.



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ROCK IN RIO II

B

illed as "Nine Days of Music and Peace." Rio de Janeiro's recent mega-event seemed to deliberately echo the billing of the 1969 Woodstock Festival ("Three Days of Peace and Music"). Rock In Rio II was staged January 18-27, 1991, in Rio's Maracana Stadium by Brazilian promoter Roberto Medina and his advertising agency, Artplan, at a cost of \$20 million. It offered Brazilian musicgoers a rare chance to see international rock and pop headliners such as Prince, George Michael, INXS, Guns N' Roses, a-ha and New Kids on the Block. Crowds exceeding 100,000 per day attended the event.

While Rock In Rio I (January 1985) was televised to viewers in Brazil, Rock In Rio II was broadcast to approximately 50 other countries around the world, including live to Brazil. MTV excerpted portions of the event, and multitrack recordings were made of the proceedings.

The well-attended, eclectic festival offered a sampling of nearly every style of music, including reggae (Jimmy Cliff), heavy metal (Judas Priest, Queensryche and Megadeth), hard rock (Billy Idol), dance funk (Deee-Lite), classic rock (Santana and Joe Cocker), teen pop (Debbie Gibson) and rap (Run D.M.C.). Other international participants included Faith No More, Information Society, Colin Hay and Lisa Stansfield. The festival also showcased a diverse selection of Brazilian artists, from the thrash-rock group Sepultura, to popular singer-lambada dancer Elba Ramalho and the jazz-influenced Moraes & Pepeu.

To ensure world-class live audio production of the festival,

Showco Inc., of Dallas, was contracted to provide sound reinforcement. Showco sent a 12-person sound crew under the direction of Mike "Dr. Funk" Ponczek, who was house sound mixer and Showco crew chief for Paul McCartney's world tour when it touched down at this same stadium in the spring of 1990. That concert engagement drew the largest crowd ever to a stadium event, carving out a spot in the *Guinness Book of World Records*.

"In planning for Rock In Rio II, we were fortunate in that we had already put the same type of Prism™ stadium-format system into this same venue for McCartney," Ponczek notes. "We knew what to expect...the weather, the labor force, the crowds, the building architecture. It gave us an edge in deciding how to approach this festival."

by Mike Stande

The Site

Maracana Stadium, located in suburban Rio, is a huge, oval-shaped concrete bowl that encompasses a grassy soccer field. It is the site of epic soccer matches, and is equipped with ten-foot-deep concrete moats to control unruly crowds.

In this huge sports venue, all distances are figured on a grand scale. The ellipse of the massive stadium is about 1,000 feet across at its widest point, and the perimeter around the top of the ten-story grandstand measures nearly 3,000 feet.

A soccer field's greatest asset is its grassy playing field; for Rock In Rio II, that field would be sacrificed. In fact, \$200,000 was included in the event budget to replace the ruined field with new sod after the end of the festival, which tied up the facility for over six weeks. Mid-December saw the beginning of stage construction and the in-

—CONTINUED ON PAGE 75

The house mixing position featured multiple Harrison HM-5 mixing consoles and SM-5 extender panels. In the center, sound mixer Bruce Jones readies a desk for the upcoming Santana soundcheck, and in back, Showco system engineer Jeff McGinnis (blue shirt) and Collin Ellis, sound mixer for INXS, survey the stage area.



PHOTO: MIKE STANDE



Left, Prince; far right, Billy Idol; center photo, overhead of the Maracana stadium field shows the stage and scaffolding complete, with the Showco Prism system arrays in place. The entire soccer playing field was covered with wooden decking for the event.



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stallation of special audience ramps to span the moats. The final show took place on January 27, and teardown commenced immediately thereafter.

In the Southern Hemisphere, January means summer. But, summer in Rio can mean both hot and humid days, and torrential downpours with high winds. To allow a million or more people to walk about on the potentially muddy playing field, labor crews covered the grass with wooden platforms, providing a hard surface that made the daily trash cleanup go more quickly. Trenches were cut into the sod to enable snake cables, communication and electrical lines to run underneath the wooden deck between the stage and the sound and lighting scaffolding towers.

Advance Planning

The Showco staff began planning early for the logistics needed to ship four large sea-cargo containers full of audio gear on the 6,000-mile trip to Rio. Nearly a month prior to the first show, these rugged steel modules, each almost the size of a semi-trailer unit, were carefully packed, inventoried and sealed for the ocean voyage to Brazil.

Once they reached the backstage loading area, forklifts and Brazilian laborers assisted the Showco crew in moving things into the stadium.

The sound system equipment list was extensive: 60 power amplifier racks, over 150 microphones, 32 direct boxes, 70 stage monitor wedges, 16 Clear-Com beltpacks, 21 chain motor hoists, six Harrison mixing desks and three auxiliary Yamaha consoles, 16 digital reverbs, 266 main system loudspeaker enclosures and subwoofers, and more than 1,600 feet of 48-pair multicore snake cable made up just a portion of the 50-ton cargo load.

"We got as much information as far in advance as we could from as many of the artists in the show as possible," says Showco staff engineer David "Gunque" Selg, who together with Mike Ponczek and crew chief Leon Hopkins worked for many weeks to formulate and compile information about the sound system for Rock In Rio. "We like to provide as many of the tools for a particular band's sound team as we can. If they say they want an AKG D-12 on the kick drum, that's what we give them. Or a Sennheiser 421. Or whatever. We want them to have the

items they need to do the best job they can. Many of these bands are our clients, like INXS and George Michael. But many of them aren't. Even though this is a festival situation, where you have to hit the ground running, we try to give them every possible advantage. That's just our philosophy."

Notebooks were compiled with daily schedule sections that included all stage plots and mic input charts. Computer-generated system wiring diagrams, crew job assignment flowcharts and cargo container load plans were drawn up. The sound system team was carefully chosen, and it included Randy Bryant, Jeff Cohen, Mark Harvey, Leon Hopkins, Paul Kalenak, Robert Kosloskie, Andy Moore, Mike Ponczek, Jim Putnam, David Scheirman, "Gunque" Selg and Randy Williams.

With the festival in the hands of GLS Productions Inc., Showco knew that the crew, stage and other venue facilities would be well under control. In preparation for tropical weather conditions and the unexpected, the sound system cargo load included a variety of spare parts, radio communicators, tarps, rope, tape and work lamps. "We knew that we didn't want to spend time

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looking locally for something we might need in a pinch," Ponczek explains. "We took whatever we might need down there with us."

Sound System Format

For Rock In Rio II, Showco supplied a 12-column Prism system per side arranged in identical left/right arrays. The boxes were hung six deep from custom aluminum hanging bars. Each array was supported by six 2-ton chain motors. Special Aeroquip locking braces with metal supports were used to firmly hold the arrays in place, anchored to the scaffolding structure for the duration of the event. A total of 32 subwoofer enclosures per side were grouped in double-tiered stacks below the main Prism arrays. The total distance from the ground to the top of the array was 76 feet.

An "elevator bay" was provided beside each array position, so that the Showco crew could use a chain motor hoist mounted on a rolling headblock to get speakers and cable bundles up to the higher scaffolding levels.

"We've gotten things worked out to a quick and reliable system for putting this rig into a stadium," offers Showco

staff engineer Leon "Bone" Hopkins, who was in charge of the P.A. drive system and overall system maintenance. "The particular scaffolding in use for this event is not optimum. There are more cross-braces in the way than you would typically see used in the U.S., and the overall bay structure is not quite as spacious as we would like. But the relatively compact size of our enclosures, combined with our vertical-column approach to array design, lets things work out just fine. We get a good curved wrap on the overall system, so the left and right arrays are each giving us a realistic 165-degree horizontal coverage angle, yet the rig has a relatively small footprint—just about six meters wide [nearly 20 feet] as viewed from the front."

Showco's half-size Prism enclosures were employed to form delay fill arrays. These were located 30 feet above ground level on decks high above the sound and lighting control positions, approximately 180 feet out from the front edge of the performance stage. Midrange and high-frequency program information was fed to these auxiliary systems, effectively moving the virtual image of the show's sound closer to the

rear audience seating areas.

Mix Position

Despite advance efforts by the production staff to convince the event promoters to place the sound mixing position in the middle of the audience area, it was constructed off-center, directly in line with the house right speaker array. The lighting scaffold tower was positioned opposite this, in front of the house left array. Television cameras were positioned on platforms above both sound and lighting control areas, with spotlights on even higher decks. A radio broadcast booth was constructed directly above the sound mixing area. Steel scaffolding sections faced with plywood panels were used as crowd control devices and to offer privacy to the mix position, which was equipped with a 3/4-inch plywood roof, refrigerated drink cooler, portable toilet area and a hammock or two. Roll-down plastic siding was in place to offer protection from the frequent rainstorms.

While this off-axis location took the sound mixer's visual attention off the stage, it also worked out quite well by promoting attention to the detailed mix

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information that was being presented directly in front of the console setups. Up to three main consoles, each with a 20- or 32-channel extender panel, were lined up in a row, with the rear board group slightly elevated.

Typically, the front guest console was preset during a morning soundcheck for the final headline act of each day's show. The upper console was typically patched and preset for the next-to-last major act(s) during afternoon soundchecks. The center console functioned as the "show master" desk, offering control of other inputs such as an announce mic, audio-visual playback feeds, and cassette decks, DAT player and compact disc units for playback material. The upper rear console sometimes functioned as a "scramble" desk for up to five acts per show—those on the program that did not soundcheck during the day.

Two 300-foot lengths of 48-pair Mogami input snake cable were run from the stage to the front-of-house position. Military-grade, hermaphroditic, sliding aluminum connector sleeves with waterproof/gasproof characteristics were used for system cable links. The A and B snake lines were switched to the appropriate board group during set changes.

Each console position was treated as a self-contained mixing station, complete with channel-insertable signal processing devices (including noise gates and compressors from dbx and Drawmer) and an effects rack that contained reverb and delay devices. These included Lexicon 224X1s, PCM70s and PCM42s, Yamaha REV5s and SPX90-IIs, Roland SDE-3000s, Eventide H3000 and 949 Harmonizers, and the AMS RMX 16 stereo digital reverberator and DMX 15 delay/pitch changer.

The Harrison HM-5, specially built by the manufacturer for Showco, is a 32-input mainframe with eight assignable VCA groups and mute groups, eight stereo audio subgroups, 16 auxiliary sends and 16 auxiliary returns. Harrison SM-5s were used as extender panels, offering a total of 64 inputs per console location. Showco also used short-frame 20-channel HM-5 extender panels. Each console sat on a wheeled table-rack loaded with full patch bay facilities and the Harrison console power supply.

The Showco Prism digital control system [winner of the 1990 TEC Award for Sound Reinforcement Product of the Year—*Ed.*] was used to drive the

main system. Located in a rack at the house position along with Showco-customized Industrial Research T.E.Q. graphic equalizers and a Klark-Teknik DN60 real-time analyzer, the electronics drive package presented a visual overview of system performance. A backup drive rack was located onstage.

Ponczek, Scheirman and Cohen took rotating turns of duty at the house mix position. The consoles were typically staffed from 7:00 a.m. until 5:00 a.m. the following morning—about 22 hours straight—as the team did each day's system check, prepared for the primary headliner's early

soundcheck and worked on through the day and night. Crowds usually arrived at about 3:00 p.m., with showtime at 6:00.

A wide variety of visiting sound mixers arrived with various bands during the course of the festival to mix different acts on the show. For those Brazilian sound mixers arriving to work with their artists, the event promoter provided a sound engineer/translator (Franklin Garrido) to work with the front-of-house crew, whose efforts were much appreciated. Major Brazilian acts took the opportunity for a soundcheck on January 15, the day that

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Broadcast and Recording Facilities

Rock In Rio II reached hundreds of millions of people around the world. Television licensing rights were sold in 50 countries, with several special prime-time events on the docket (including a-ha live to the BBC on January 26).

The sound reinforcement mics onstage were used to supply individual input signals for broadcast; additional audience microphones were set in place. A 48-pair splitter feed from Showco's patching facilities was fed by trunk line over to a patch bay location that was then split for recording and broadcast needs.

Audio and video broadcast production was handled by Brazil's TV Globo, the country's national television network. The audio-for-video mix was crafted in a specially constructed, modular building room. Mixing equipment included a pair of Yamaha PM3000-40 consoles, patchable Yamaha digital reverbs and dbx compressor/limiters rented to TV Globo by Transicom of Sao Paulo, Brazil. Mid-format JBL studio monitors and Yamaha NS-10 reference monitors were supplied to the audio-for-video sound mixers.

"We met the Showco audio team last year when Paul McCartney was here," says Carlos Ronconi, audio director for TV Globo. "This event is much more complex, yet things are working very smoothly. We are doing audio mixing for both simulcast and videotape for later release."

Remote recording services were handled by Robert Margouleff & Associates of Hollywood, Calif., with Margouleff and engineer Brant Biles supervising a mostly Brazilian crew. A separate room was set up for tracking that included a pair of Soundcraft 6000 consoles, rented from Gadisom Audio Equipment of Sao Paulo. Recording facilities included two Otari MX-80s and a Sony BVW-75 VCR. A Casio

—CONTINUED ON PAGE 80

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Stage Monitors and Input Format

Onstage, Showco's festival sound strategy centered around an A/B monitor mix position setup. A Harrison SM-5 with Yamaha 1642 auxiliary desk was set up on the stage-left deck, with an identical console position directly above it on a scaffolding and plywood shelf. Depending on the day's activities, one console might be preset and left for the final headliner, or upstairs/downstairs flip-flops might take place. In some instances, arriving tour groups (such as Prince, INXS and George Michael) carried their own monitor mixing gear, which was placed on a rolling riser adjacent to the downstairs Showco position.

Randy Bryant, Robert Kosloskie, Paul Kalenak and "Gunque" Selg ramrodded the monitor mix area. Mark Harvey acted as "Patchmaster," coordinating all mic charts and input lists for use by the sound reinforcement, broadcast and recording crews. Showco supplied Brooke-Siren active splitter systems to ensure mic line signal integrity.

Andy Moore, Jim Putnam and Randy Williams kept stockpiles of mic stands, subsnakes and monitor wedges handy for use in the three different staging areas. Upstage center became the preparation area for rolling risers and band gear used by the Brazilian bands. Offstage left and right areas were used to preset and wire large rolling risers for drum sets, keyboard and percussion positions, etc., used by headline acts.

A preliminary plan to use massive rolling risers on steel tracks broke down at the last minute, and sound crew, stage hands and production managers alike were kept scrambling to make the best use of limited space, since some shows like Billy Idol, Prince and a-ha brought in major set pieces that had to be assembled and left in place.

A wide variety of monitor speaker systems were supplied, with most being the popular BFM-600 (42 onsite). BFM-100s, 300s, 400s and 450s were also available. Drummers received full-range wedges on each side with Showco's B-1 subwoofer beneath them; as many as 16 or 20 wedges were strung along the front edge of the stage for larger, louder shows like Guns N' Roses.

Showco also supplied a massive flying sidefill system to the stage, with

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six Prism enclosures suspended on each side from custom steel hanging frames flown about 20 feet above the stage deck. Double-high, full-size, low-frequency cabinets were available on rolling dollies for stage left and right. An A/B switching network allowed the sidefills to be changed over instantly from one monitor mix position to the other. This switcher also controlled crossover feeds to the five downstage edge monitor zones.

"We came prepared to adjust the sidefill rig to suit different headline acts," explains sound crew electrician Andy Moore. "We can reset the height

or side angle easily, or even change the enclosure configuration. I left the chain motor power lines ready to go in case we needed a quick adjustment. As things turned out, nearly every act was very pleased with the sidefills. I think we only made one minor adjustment the entire time."

System Power Requirements

Showco relies on power amplifiers from Crown International. PSA-2s and Macro-Tech 1200s were mounted typically in modular, rolling amp racks that received rugged 10/5 power feeds directly from meter-equipped, three-

phase AC power panels located beside the amplifiers. These units were connected with 2/0 cable to four of Showco's "disco" power distribution panels, which were linked via 4/0 cable to a pair of 300 KVA transformers, 800 amps per leg (one for each side of the P.A.).

Electrical power generation for Rock In Rio II was provided by Showpower of Santa Ana, Calif. Self-contained generator plants with oversized fuel tanks were shipped to the site in sea cargo containers.

Showtime

After final technical preparation on January 16, the sound crew came in early the following day for soundchecks with Prince and Joe Cocker. The first performance day was January 18, with these artists and Colin Hay being the featured international stars. The Brazilian act Gal Costa opened the

—CONTINUED ON PAGE 107

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—FROM PAGE 78, FACILITIES

DA-22 DAT recorder was the "drop-dead" safety unit. Klark-Teknik Jade studio-powered monitors and Tannoy PBM-8s were available.

"Our main effort here is to produce a digital 2-track recording of the international artists at this event," advises Brazilian engineer Carlos Freitas. "We are doing layback mixdowns in real time, then going into a local studio and coming out with our finished mix of each day's events within about 48 hours."

A typical day for Bob Margouleff consisted of working from about 9 p.m. to 3 a.m. at Maracana, supervising the live recording; then speeding over to Impresario Digital (also in Rio), where Biles was usually already at work mixing and helping him until about 7 a.m. Margouleff brought two BASE units down from the States to aid in his mixes, one to enhance reverb and ambience, the other to pump up the instruments a bit. In all, Margouleff and his team produced 27 bands and remixed a total of 181 songs.

Artplan, the event promoter, plans to have a commercial recording project of selected segments of Rock In Rio II available for release in Brazil. ■

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by Bob Hodas and Paul Stubblebine

FIVE OUTBOARD A/D CONVERTERS

TESTING SYSTEMS BY SINGULAR SOLUTIONS, YAMAHA, PYGMY, BTS AND DCS

Oh Lordy, thank you for digital, the perfect medium. We keep seeing these ads for the perfect sound of the new DAT recorders, just as perfect as CD. Yeah, sure.

This article began as a DAT recorder review, but the DAT didn't sound that good to us. So we listened to just about every DAT on the market and couldn't find one that sounded like the source material. We came to the conclusion that we should look into more sophisticated converter technology for an explanation, and so here we go.

A listening test was set up with the five outboard converters currently in production. Listening was conducted at San Francisco's Rocket Lab mastering studio (see *Mix*, December 1990, "Rocket Lab Launches in San Francisco") on Meyer HD-1 speakers. Our source material was analog tape recordings: one pop, one spoken voice, one choir and one orchestral. The first three recordings were at 15 ips with Dolby SR, and the last was at 30 ips with no noise reduction. Recordings were made through the converters at 44.1 kHz into a Studer Dyaxis and played back through an Apogee D/A 1000 converter. We started off with a more expensive D/A "audiophile" converter, but determined through careful comparisons that the Apogee provided a more accurate representation of reality. The converters were always compared directly with the source material, not with each other. The idea was to find out which ones most closely reproduced the analog source. Let's look at the converters we used, listed here in order of ascending price:

Singular Solutions

The A/D 64X from Singular Solutions

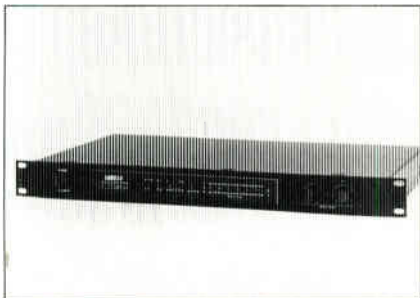


(Pasadena, Calif.) is certainly the most unique converter we tested. It was designed to interface with the NeXT computer, but also works as a stand-alone unit. It is also unique in that it contains a pair of mic preamps, in addition to stereo line-level inputs. Conversion technology is Delta-Sigma and claims 16-bit operation.

The 1.9 x 15 x 7.5-inch, table-top model weighs seven pounds and is available now in a rack-mount version, too. The front panel contains two continuously variable mic pre-amp gain pots, matching line gain pots, an input select switch with LED indicators for analog or digital inputs, left and right overload LEDs, and a power LED.

The rear panel contains the AC cord receptacle with accessible fuse cover, two XLR mic input connectors (pin 3 hot) and low cut filter switch, a phantom power switch, two XLR fixed line-level input connectors with +4dBm/-10dBm switch, and two variable line-level RCA input connectors. These RCAs are tied into the front panel gain pots. The DB25 connector interfaces with the NeXT computer or a Loopback adapter. This adapter (for stand-alone operation) contains a switch to select 44.1kHz or 48kHz sampling frequency. There is also a switch for external clock

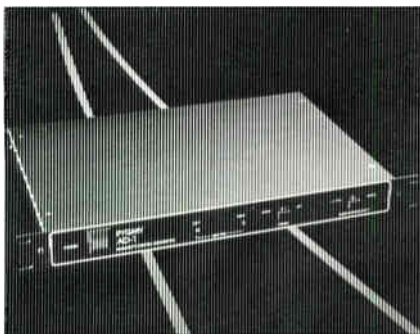
(slaving several units together) with RCA clock in/out connectors. Curiously, the digital I/O contains an RCA input connector and a *female* XLR output connector. This is the first time I've ever seen a female line-level output connector, but I guess these guys are into computers and aren't familiar with audio standards. Also, the digital *input* is S/PDIF while the *output* is AES/EBU. Retail price is \$1,295 (\$95 extra for rack-mount option).



Yamaha

The Yamaha AD2X is a 1U x 11.5-inch unit that weighs almost ten pounds. The front panel contains a power switch, four LEDs indicating external clock, 44.1kHz or 48kHz sampling frequency and emphasis. There is a 12-segment LED input level meter and two stepped-input level pots. Conversion technology is Delta-Sigma, claiming 19-bit operation.

The rear panel contains an attached power cord, two +1dB XLR input connectors (pin 2 hot), emphasis on/off switch, XLR connector for AES/EBU digital out, DIN connector for Yamaha digital out, RCA connector with on/off switch for S/PDIF out, BNC connector and in/out/off switch for word clock and a switch to select 44.1 or 48kHz sampling frequency. Retail price is \$1,695.



Pygmy

The AD-1, from Miami's Pygmy Computer Systems, is a 1U x 13-inch unit weighing 7.5 pounds. The simple front panel hosts a power switch, two gain

pots, a phase switch with dual LEDs indicating normal/inverted phase, and another switch with dual LEDs indicating 44.1kHz or 48kHz sampling frequency. We were disappointed that there was no overload indicator. Conversion technology is Delta-Sigma and claims 16-bit operation.

The rear panel houses the AC receptacle with accessible fuse, two XLR analog line inputs (pin 2 hot), and an XLR AES/EBU digital output. S/PDIF is supported by a switch inside the AD-1, but you must build an XLR/RCA adapter. Three BNC connectors support SDIF-2 word sync out and left/right digital audio. Word sync in is not supported. Five BNC connectors support two or more AD-1s operating together for multichannel use: system clock, two for external clock and two for word sync in. S/PDIF operation is available with an internal switch and by building an adapter for the AES connector. Retail price is \$3,995.

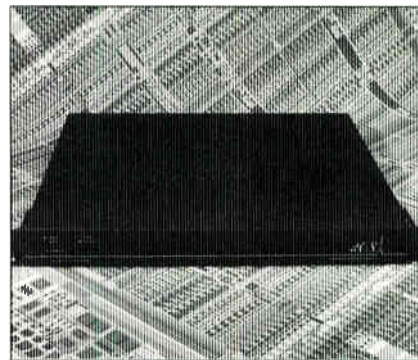


Broadcast Television Systems

The BAC-3000, from BTS of Salt Lake City, is another unique unit in that it contains two separate stereo pairs of A/D as well as D/A converters. This unit was designed to run very long lines in broadcast situations. It is a 1U x 16-inch device that weighs 16.3 pounds. The front panel contains two sets of identical controls. Backlit buttons select left/right/stereo operation for each pair. Each channel has three LEDs, sensing level at -25/0/+14dBu, but there is no overload indicator. Although the BTS has no variable input pots, internal jumpers allow you to set input sensitivity in four increments (-10, 0, +4, +8dBu). Conversion technology uses 128x oversampling and claims 20-bit operation.

The rear panel contains a barrier strip for wiring analog line-level inputs and outputs. There are XLR ins and outs for each AES/EBU pair and a sync input. A DB-9 connector for serial control

is provided, as well as ground jumpers (remember, this is designed for broadcast). A power receptacle and accessible fuse panel are also present. Retail price is \$6,000.



Data Conversion Systems

The 900A from British manufacturer DCS (distributed by Sonic Image/Focusrite USA, of Wheaton, Ill.) is a 1U x 15.25-inch unit weighing 15.4 pounds. The uncluttered front panel contains only five LEDs: These indicate overload, 44.1 or 48kHz sampling frequency, and master/slave operating mode. Conversion technology uses 128x oversampling, claiming up to 24-bit operation.

The rear panel contains XLR analog line inputs (pin 2 hot), input gain trims, AES/EBU XLR in/out connectors, S/PDIF RCA connector, a switch to select 44.1 or 48kHz sampling frequency, DB-9 remote control connector (several units can be slaved together), and a switch to select 16-/18-/24-bit operation. The four BNC connectors for SDIF-2 are for channel 1/2 out only and word clock in/out. An AC power receptacle and a power switch round out the panel. Retail price is \$10,000. By the way, for \$10,000, they don't give you a power cord; you have to buy your own.

Comparisons

All but the BTS have some type of variable level trim on the input. The input stage implementation is quite different on these units. And on two, undesirable results could occur unless you're careful. On both the Singular Solutions and the Yamaha, the input stage can overload without displaying this on the overload indicators, which only indicate DAC overload. This is poor design in our book and dangerous for the operator. To avoid this potential problem, the Singular Solutions should always be operated with the input pots at 1 o'clock or above.

The Yamaha pots should be set to 3 o'clock or above.

Regarding bit rate, we obviously got a truncation to 16 bits in the Dyaxis, but decided that this represents a real-world situation for most people, especially those recording to DAT. Those of you who use a Mitsubishi X-86 can take advantage of those converters offering extra bits while recording, but it still comes down to the 16-bit CD in the end. However, this doesn't mean that these extra bits are just provided for marketing purposes. For instance, the DCS can operate at either 16, 18 or 24 bits. Through listening, we determined that even with truncation, 24-bit operation was superior. So we did all recording in the 24-bit mode.

After critically listening to the units, test measurements were made using the new Audio Precision system to see if there was any correlation to what we heard. That will be discussed later in an amalgamation of both our impressions, addressing the most important question, "How did they sound?" If we had distinctly different impressions, they were noted.

The Listening Tests

The first piece we listened to was "Waiting Song," a current folk-pop release by Barbara Highbie. Instrumentation was piano, vocal, electric bass, drums, congas, percussion and acoustic guitar.

Singular Solutions: Top has a distinct edge, a bit harsh, tonal balance is shifted, lo-mid richness reduced, imaging precise, lots of low bottom.

Yamaha: Treble edge, bite on top, vocal tone change, lost warmth, mid-bass resonances, "where's the beef?," no reverb definition, imaging good.

Pygmy: No tonal skew, good dynamic impact, good bass and good bass pitch definition, good imaging, missing just a bit of warmth, slight loss of life.

BTS: Low bass undefined, lacking lo-mid richness, felt masked, hard to hear into reverb, reverb mushed together, imaging less precise, treble a little clangy.

DCS: Lack of deep bass effects impact, good imaging, shimmer and life of source reduced a bit, loss of sibilance present on tape, slight reduction of low-level detail and differentiation.

Score (highest rating first):

1. Pygmy
2. DCS
3. Singular Solutions
4. BTS
5. Yamaha

The second recorded piece was a mono narrator reading copy from a magazine. Half of this selection included some background room noise that added some dimension to the piece.

Singular Solutions: Hard treble edge, warmth a bit reduced, sibilant splash.

Yamaha: No sparkle, low level background noise missing, pops less dynamic, warmth gone, not live.

Pygmy: Warmth reduced slightly, treble exaggerated slightly, good pop reproduction, slightly nasal.

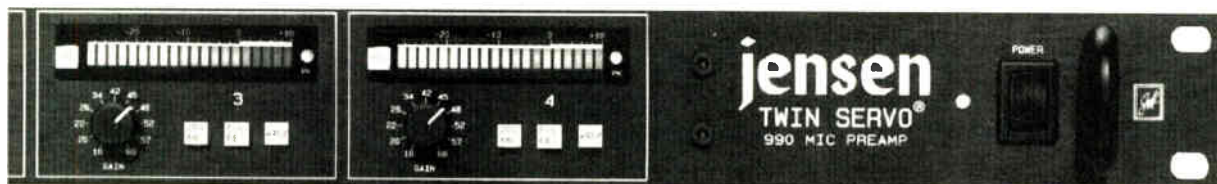
BTS: Tonal change, nasal, not live, warmth reduced, very high treble gone.

DCS: Top rolled off a little, presence a little reduced, warmth slightly boosted, tone good, good pop.

Score:

1. DCS/Pygmy (tie)
2. Singular Solutions
3. BTS
4. Yamaha

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The Question of Digital Transfers

When this project was completed, we decided to store our musical selections from the Dyaxis disk to PCM-1630 for comparison to units in future listenings. This was a digital transfer, of course: just ones and zeros. Lo and behold, something occurred that wasn't supposed to happen. When we transferred the 1630 back into the Dyaxis, we found that our signal was somewhat degraded. We were now only two digital generations down, and yet some of the life and air was gone and the stereo soundstage had collapsed a bit. This was universal for all of the converter recordings.

One of the advantages we are supposed to have with digital is the ability to make multiple dubs with no noticeable signal loss. Wrong! In our exploration of this dilemma, we have found that we are not the first to run into the problem. Recording notables such as Bob Clearmountain, Doug Sax, Bernie Grundman and George Massenburg have all made similar observations. This appears to be an issue that mixing engineers need to be aware of, and that equipment manufacturers should start to address.

—BH

Our next piece was the Slavyanka Millenium Chorus of 50 male and 50 female voices recorded at the Stanford University Memorial Chapel.

Singular Solutions: Grainy, voices not distinguished, too blended.

Yamaha: Unpleasant, certain intervals in voices caused distortion or beating, crowd noise and clapping less real—more like spurious noise, air in hall gone, tone change.

Pygmy: Very detailed, a little bright, lacks a bit of richness and warmth.

BTS: Image good, tonal change, some beating, top air gone, a little smeared, some detail missing, bright noise on forte section.

DCS: A little warmer but pleasing,

very top slightly rolled off.

Score:

1. DCS/Pygmy (tie, see final evaluation)
3. Singular Solutions
4. BTS
5. Yamaha

The final test was a Mozart piece recorded at the Oklahoma Mozart Festival.

Singular Solutions: As above.

Yamaha: As above.

Pygmy: Good detail, slight lightening of orchestral weight.

BTS: As above.

DCS: Slight reduction of image size, warmer, slight lightening of orchestral weight, slight reduction of transparency.

Score:

1. DCS
2. Pygmy
3. Singular Solutions
4. BTS
5. Yamaha

The Measurement Tests

Did the measurements reveal anything significant that could explain this cult of personality? The answer is a positive "maybe." Some of the measurements that would support our listening results were very slight, leading us to believe that the industry still needs to do some homework on what is significant when measuring digital.

Frequency response: Everybody was pretty flat out to 20 kHz, so that doesn't seem to be much of a factor. The only possibly significant correlation to what we heard is that the DCS was 0.25 dB down at 20 kHz, with the roll starting around 7 kHz (Fig. 1). Hardly signifi-

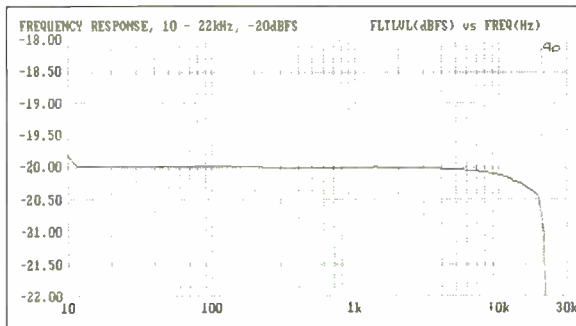


Figure 1

cant, but this could account for the smoothness that the DCS exhibited throughout the tests. Also, Yamaha appears to roll off steeply just before 20 kHz (Fig. 2).

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FIELD TEST

THD+N vs. Frequency: This was a best-case measurement. The DCS was clearly superior, followed by Pygmy.

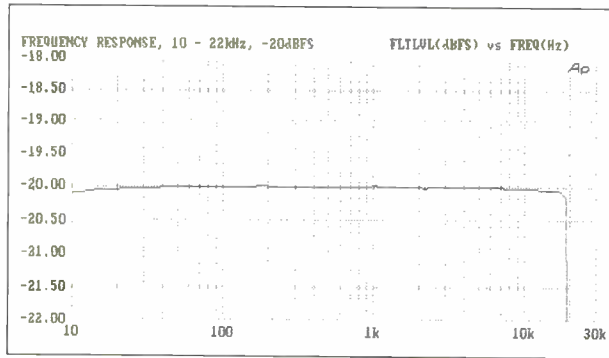


Figure 2

then BTS, with Yamaha and Singular Solutions almost identical.

THD Spectrum: Once again the DCS proved superior, followed by Pygmy, Singular Solutions, BTS and Yamaha. Measurements were taken at -6/-20/-80 dB below full scale. One significant characteristic showed up in the Yamaha that might contribute to its sonic performance: There is at least a 20dB change in the noise floor when the input signal passes a threshold between -18 dBFS and -20 dBFS. We could not measure how fast this change ramped up or down. Although Yamaha feels measurements would improve with low-level inputs, the sudden noise floor change could be

these spikes from out-of-hearing-range artifacts significant? An example of this would be the Yamaha measurement (Fig. 4). The full-spectrum reaction was significantly higher than the other units, only about 9-dB down from 20-800 Hz. Above 800 Hz, there was an abundance of high-level spikes, many only 60 dB down (well within hearing range). The worst spikes were -35 dB at 16 kHz and -50 dB at 800, 7k and 8.5k Hz.

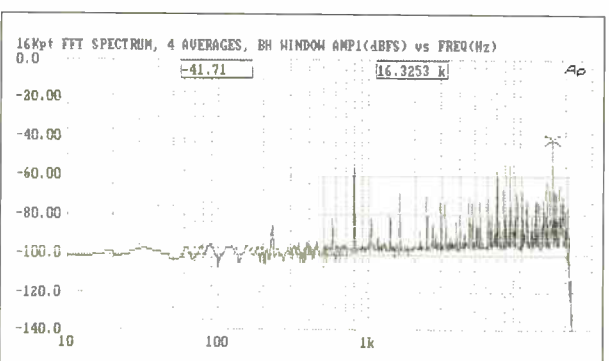


Figure 4

disconcerting to the listener. Could this be why air and background noise became lost on the Yamaha recordings?

Alias Spectrum: We fed a 2-kHz tone into the units and examined the results. The Pygmy and Sonic Solutions both had some full-spectrum activity about 120 dB down (which could just be noise) with a 20kHz spike down 95 dB and 101 dB, respectively. A good showing. The BTS spectrum was way down in the noise, but its 20kHz spike was only 65 dB below signal. The DCS spectrum was out of sight as well, but its 20kHz spike was only down 30 dB and it had additional spikes at 6 kHz, 9 kHz and 16 kHz, all down at least

90 dB (Fig. 3). This seemed curious, since the DCS had measured so well in other tests and sounded so good.

Unless the spectrum is gross, are

these spikes from out-of-hearing-range artifacts significant? An example of this would be the Yamaha measurement (Fig. 4). The full-spectrum reaction was significantly higher than the other units, only about 9-dB down from 20-800 Hz. Above 800 Hz, there was an abundance of high-level spikes, many only 60 dB down (well within hearing range). The worst spikes were -35 dB at 16 kHz and -50 dB at 800, 7k and 8.5k Hz.

Alias Level: A tone was swept from 22k-200k Hz while we looked at the output. Only the BTS and the Yamaha showed abnormal and higher-than-average responses. Fig. 5 shows these outputs along with the more

Yamaha showed abnormal and higher-than-average responses. Fig. 5 shows these outputs along with the more

mix•er

(mik'sēr) *noun*. An electronic device used to *mix* music. Must be clean, transparent and punchy. See **Alesis 1622 Mixer**. Better yet, listen to it.



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* Total Harmonic Distortion + Noise: too low to measure.* Keyboard Magazine July 1990.



FIELD TEST

typical output of the Singular Solutions.

These last two tests seem to indicate a specific problem that can appear in Delta-Sigma designs: Out-of-band artifacts can cause beating (harmonics) within audible frequencies. This was apparent in our listening tests in both the BTS and Yamaha, which developed strange beatings especially audible on the complex waveform of the Slayanka vocal chorus. We feel that we did see some correlation between listening and measurement here. The other tests are hard to quantify.

Our results did form a pattern that gave us a fairly unified conclusion in the lower ranking:

3. Singular Solutions
4. BTS
5. Yamaha

The upper ranking was a little less clear in some cases. On the pop piece, we definitely liked the Pygmy better: You could dance to it. On the Mozart, the DCS had the edge: You could dance to it, in your seat of course. On the voice and Slayanka, it was hard to make a choice: a question of warmth (DCS) vs. detail (Pygmy).

We can say without qualification that even the units of the lower ranking make some improvement, however small, over the sound of DAT. The

Each unit had its own personality. We could see some people choosing a converter personality for a certain type of music, just as one would make a microphone selection. If

we had to make a decision, it would be the Pygmy for pop/rock and the DCS for classical and possibly jazz. We also felt that the Pygmy and DCS were significantly better than those units of the lower ranking.

There are now several more converters coming on the market. At this time we know

of future products by Apogee, Drake, Neve, Quantec and Vacuum Tube Logic. In our ongoing search for digital perfection (is this an oxymoron?), we will test these and give you a report as soon as possible. ■

Bob Hodas is a San Francisco Bay Area recording engineer and Mix contributing editor. Paul Stubblebine is chief mastering engineer at Rocket Lab in San Francisco.

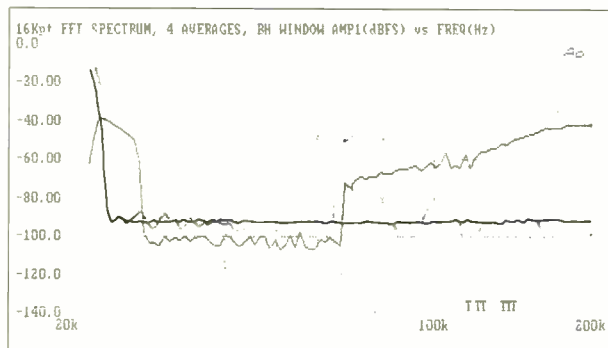


Figure 5

question is, how much is a small improvement worth? In the lower ranking, the Singular Solutions provided the most noticeable improvement in quality. But the real improvement comes with the higher ranking units. We believe that one of these is necessary, if you want to accurately represent reality in your recordings.

The significant finding was that none of the units hit the nail on the head as an exact duplication of the source.

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EVEN WALTER BECKER IS TALKING ABOUT SOUNDTRACS.

Soundtracs IL Series

“ You have to be careful about what you spend for a console in a home studio. You want as clean a signal path and as versatile a board as you can get. The Soundtracs IL 4832 is logically laid out, easy to get around on, has great sounding EQs and prints a very clean signal to tape.

We use a 32-track digital recorder — the IL 4832 made the most sense. It provides a 32 buss design in an extremely affordable package. It looks great in the room, too. ”

As a founding member of Steely Dan, Walter Becker is known for his uncompromising point of view. So choosing a console for his personal studio in Maui was a carefully considered decision.

Soundtracs IL 4832 features an inline design that produces a pure, transparent sound. Its 32 Busses allow total flexibility for maximum ease of use in a variety of recording situations.

The IL 4832 comes standard with patchbay and delivers up to 104 inputs with EQ and Aux on mixdown. The board is also available in a 36 mainframe format.

Sonic purity, versatility, maximum inputs and operational flexibility. These are the reasons why even Walter Becker has so many good things to say about recording with the IL 4832.

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Soundtracs distributed exclusively in the United States by:
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TEL (516) 932-3810 FAX (516) 932-3815

NEW PRODUCTS

ARTEFX HEADPHONE CONTROLLER

Artefx of Oakland, Calif., has unveiled the SB-2300 (\$159), a studio headphone cue controller priced at \$159. Each SB-2300 provides level control, mixing and channel selection for up to four headphones, and multiple units can be daisy-chained using standard XLR mic cables. The SB-2300 includes accessory mic stand mounting brackets, and internal fuses protect headphones from overload damage.

Circle #275 on Reader Service Card



AVALON MIC PREAMP ▲

New from Australia's Avalon Designs (distributed by Audio Intervisual Design of Los Angeles) is the M2, a stereo rack-mount mic preamp featuring a fully discrete, symmetrical Class-A design, with low-ratio input transformers and dual discrete DC power regulators. Priced at \$2,850, the M2 also offers LED metering, phantom powering, stepped gain controls, -20dB attenuators and a stated noise spec of -126 dB.

Circle #279 on Reader Service Card

UPTOWN MOVING FADERS

Capable of controlling up to 96 channels is the PC-based Uptown moving fader automation system from Audiomatic of Sudbury, Mass. Accuracy is said to be within 0.2 mm (1/10 dB), while touch-sensitive faders provide immediate manual override during mixdown. An onboard microprocessor on each fader controls up to four switches per channel, triggered by SMPTE, and when used with a synchronizer, Uptown

can control tape machine autolocation, cue points and MIDI events.

Also offered are subframe-accurate muting, free grouping and editing via mouse, keyboard or trackball.

Circle #276 on Reader Service Card

DIGITECH DSP 256XL ▼

The new DSP 256XL from DigiTech (Salt Lake City) offers 24 different effects, including stereo ping-pong, multitap and slap delays; chorus; large and small rooms; gated, reverse and ultimate reverbs; flange; and graphic and parametric EQ. Up to four effects can be used simultaneously, and 256 memory slots (128 factory, 128 user) are provided. Bandwidth is 20-20k Hz. The DSP 256XL retails for \$439.95.

Circle #280 on Reader Service Card

ART MULTIVERB ▼ ALPHA

Applied Research & Technology of Rochester, N.Y., has enhanced the functions of its



DDA PROFILE

Designed for 24-bus recording applications is the Profile from DDA (distributed by Klark-Teknik, Farmingdale, N.Y.). This compact (2.4 meters for 56 channels with patch bay) board uses a "Splint" design combining aspects of both the split and in-line formats. Features include 4-band parametric EQ, ten aux buses and an aux return routing—allowing up to 136 inputs in remix. A color, PC-based automation system is optional for control of faders, mutes and seven switches on each channel.

Circle #277 on Reader Service Card

popular Multiverb, while reducing its price. The new Multiverb Alpha offers 50 programmable effects (including 24 reverbs, pitch transposer, flanger, 21 stereo delays, sampling, stereo panner, equalization and a new acoustic environment simulator; up to six effects can be accessed simultaneously). The single-rackspace unit features stereo inputs/outputs, 20kHz bandwidth, 200 memory locations and MIDI control.

Circle #278 on Reader Service Card



AMEK HENDRIX ▲

Launched at AES Paris was the Hendrix multitrack recording console from Amek (North Hollywood). Based on the technology developed for the successful Mozart console, yet at a lower price, Hendrix has 40 in-line, dual-path input channels with eight stereo

returns, 4-band parametric EQ, 24-bus routing, 12 aux sends and multimode panning for 3-channel surround sound film mixing. Amek/Steinberg Supertrue automation (with real-time control of eight switches per input channel) and built-in patch bay are standard.

Circle #281 on Reader Service Card



SOUNDCRAFT SAPPHYRE

New from Soundcraft (Northridge, Calif.) is Sapphyre, an in-line, modular recording console capable of handling 2- to 32-track production duties. Available in 25- through 49-slot mainframes, each of Sapphyre's combination input/output modules features 4-band sweepable-mid EQ, six aux sends, eight group buses and a built-in noise gate. Each module also has a 20-segment LED meter in the large meter bridge. Dual-line input and dual-stereo input modules are offered as options.

Circle #282 on Reader Service Card



NEVE A/D-D/A RACK

The HRC-1 A/D-D/A rack from Neve (Bethel, Conn.) has stereo 20-bit analog-to-digital and digital-to-analog converters based on Neve's existing EV11323 and 11324 high-resolution circuits, with additional synchronization, digital interfacing, DC-processing and digital re-dithering functions. Analog I/Os are balanced line-level; digital ports are AES/EBU with channel-status support.

Circle #283 on Reader Service Card



YAMAHA EMP100

The EMP100 from Yamaha (Buena Park, Calif.) is a versatile digital signal processor in a half-rack package. The \$345 unit offers four types of reverb, two pitch change programs, delay, chorus, flange and symphonic, arranged singly and in combinations, in 100 presets, with space for 50 customized user presets. Other features include stereo outputs, MIDI program recall and a tap-in function for matching delay times to a song's tempo.

Circle #284 on Reader Service Card

DIC BACKUP TAPES AND CLEANERS

Designed for workstation or computer backup (CBU) applications is the Platinum Series of 4mm DAT (1.3 gigabyte) and 8mm (2.3 gigabyte) cartridges from DIC Digital, of Fort Lee, N.J. The tapes have a metal-particle formulation, and an anti-static shell design improves reliability. DIC also offers wet system cleaning kits for 4mm and 8mm drives, including cleaning cartridge, fluid and blower brush.

Circle #285 on Reader Service Card

HOT OFF THE SHELF

Updated versions of the Tannoy PBM-6.5 and PBM-8 monitors now feature Medlite cabinets with radius-fold edging to reduce diffraction effects. At your dealer now, or call (519) 745-1158 for info... Sequoia Electronics has a large inventory of parts, manuals and heads for Scully, Broadcast Electronics (Spotmaster), Metrotech and Dictaphone loggers, recorders and cart machines. Call (408) 356-3232... East-West Communications ProSamples 2 (\$129) is a CD with dozens of percussion and bass samples recorded by Bob Clearmountain in QSound™ 3-D stereo. Call (213) 659-2928... The acclaimed

Russian Dragon is now available in a scaled-down, half-rack version priced at \$249.95. Call (512) 525-0719 for info... The Spectrum DSP56001 PC-based processor board is now available in a 27MHz version that achieves 13.5 MIPS. Prices have been reduced on the DSP56001 System Board, with onboard 16-bit, 150kHz dual-channel ADCs and DACs. Call (800) 663-8986 or (604) 438-7266... The MCM Electronics Catalog features test gear, speaker components, semiconductors, tools, VCR parts and more. Call (800) 543-4330 or (513) 434-0031 for a free copy... "How to Solder and

Make Cables Like the Pros" (\$39.95) is a 90-minute instructional video, available through RMS, (818) 609-7915, or Mix Bookshelf, (800) 233-9604... The Denecke Cine Sync™ EC-2 TC is a footage/frame counter/display for 16/35mm film with time and frame data at 24 or 30 fps. A time code output can drive remote under screen time displays. Call (818) 766-3525... The Personal Music Library from FirstCom/Music House/Chappell allows clients to pick and choose from 5,000 tracks on 200 CDs to create a custom production library. Call (214) 934-2222 or (800) 858-8880... The Analog Devices

AD1879, a high-performance, dual 18-bit analog to digital converter chip, features a differential, sigma-delta architecture with 64-times oversampling in a 28-pin DIP package. Call (617) 329-4700 for details... A free Shure catalog of sound reinforcement products, circuitry and microphones for recording, broadcast and live sound (including wireless) can be yours by calling (800) 25-SHURE or (708) 866-2200... A free Ampex catalog of accessories for pro tape users includes maintenance products, reels, reference tapes (including DASH and PD), storage systems and more. Call (415) 367-3888 for your copy. ■

by George Petersen

PRODUCT

CRITIQUES AND COMMENTS

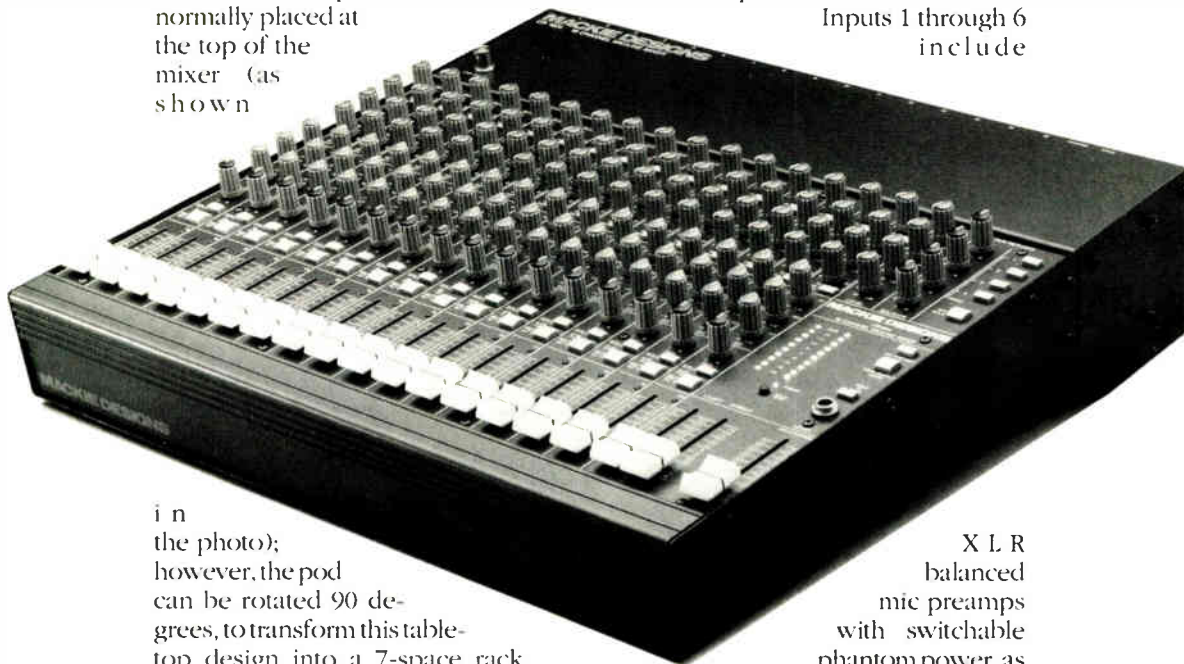
Mackie Designs CR-1604 Mixer
 Just ten years ago, this product would not have existed. With 16 inputs, seven aux sends, three-band EQ, in-place solo and four stereo aux returns in a rack-mount package, the Mackie CR-1604 is designed to meet the needs of audio production in the 1990s, whether used in small studios, video or broadcast production/post facilities, remote vans, sound reinforcement, musicians' racks, and so on.

Physically, the CR-1604 consists of a main mixer section and a "connector pod" with all inputs, outputs, trims and power (AC and phantom) controls. The pod is normally placed at the top of the mixer (as shown

an *internal* power supply—without any of the hassles of an external power supply. A fuse is recessed into the AC receptacle, although no mention is made of this in the owner's manual. While otherwise well-written, the manual could use some setup and applications diagrams for the novice user. Also, no block diagrams or schematics are included—the unit must be returned to the manufacturer if service is required. However, the CR-1604 is protected by a three-year warranty—if the registration card is returned.

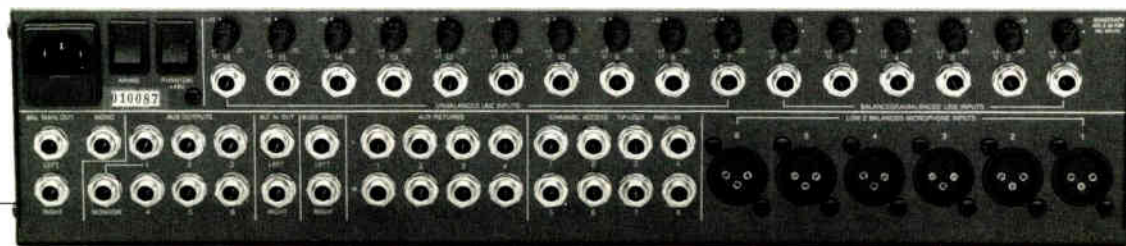
With 16 inputs and four stereo returns, the mixer is capable of handling up to 24 channels of audio.

Inputs 1 through 6 include



in the photo); however, the pod can be rotated 90 degrees, to transform this table-top design into a 7-space rack mixer with all connections facing the rear. The three-minute conversion process requires only a screwdriver. Despite its compact size, the mixer has

XLR balanced mic preamps with switchable phantom power, as well as balanced 1/4-inch line inputs; inputs 7-16 are fitted with unbalanced line inputs only. Each input channel provides four aux send



controls—the first can be switched to pre-fader/pre-EQ for cue and monitor functions or set up as a post-fader effects send—and switches are provided to route sends 3/4 to aux 5/6 bus. Theoretically, the mixer has seven aux sends, but only four can be accessed by any input at one time.

Unbalanced line jacks are provided on all of the aux outs, returns and the channel insert in/out points. The latter (available only on channels 1-8) are the ubiquitous 1/4-inch TRS type. Direct outputs for these channels can also be accessed without interrupting channel flow by plugging halfway into the jack and stopping at the first click (the “ring” connection). The main mix outputs are balanced 1/4-inch types that can accept unbalanced connections; a summed mono output is also provided.

The equalization is 3-band, with shelving LF/HF sections and peak-type midrange. While simple in design, the fixed EQ frequencies are logically chosen and musically useful. For example, the mid control is centered on 2.5 kHz, which is just right for adding clarity to vocals or making a lead guitar part stand out; the 12kHz high EQ is high enough to cut hiss without cutting sparkle, and when used as a boost,

is just right for adding zing to cymbals and hi-hat.

The solo functions are extensive. Pushing any solo button on a channel or aux return activates a flashing LED, and the solo (normally sent through headphones) can be routed through the main mix bus if desired. Best of all, the mixer incorporates “solo in place,” where stereo elements are heard in their left/right positionings in solo.

While the CR-1604 does not have any true subgroups, any channel is routed to an alternative 3/4 bus when the mute button is pressed. If nothing is connected to the 3/4 bus outputs, then the mute acts in normal fashion. However, if you are doing a project that doesn't require muting, then the mute buttons can be used to set up a subgroup or alternative mix, which could be returned to two channel inputs or a stereo aux return pair. An “alt preview” switch acts as a solo switch, routing the 3/4 bus to the headphone jack.

This mixer does have a couple of quirks. The short-throw faders take a bit of getting used to; the difference

between the “on” and “off” positions on the switches is about 1/16-inch, which can be tough to work with in poor lighting; and the channel trim pots are located on the *back* panel when the mixer is rack-mounted.

Overall, though, I was quite impressed with the Mackie CR-1604. Designer Greg Mackie (who founded Tapco in 1969) has paid extensive attention to detail in this mixer, from the high-quality construction (including sealed pots!) and meticulous approach to gain structure, to little touches like a 12 VAC BNC lamp socket on the top panel. By the way, if the mixer is rack-mounted, a right-angle adapter and lamp can be fitted, for illuminating the back of the rack, where you always seem to need it. At \$1,099, this is a versatile, great-sounding and affordable little powerhouse that is well worth checking out.

Note: At press time, Mackie Designs announced the availability of two accessories for the CR-1604: The “XLR-10” is a bolt-on unit that adds ten additional mic preamps; the “Mixer Mixer” allows the electronic linking of up to three CR-1604s for 32- or 48-input applications.

Mackie Designs, 3910 148th Avenue NE, Redmond, WA; (206) 885-7443.

New Product

The first Automatic Feedback Controller we've seen – and it actually works!

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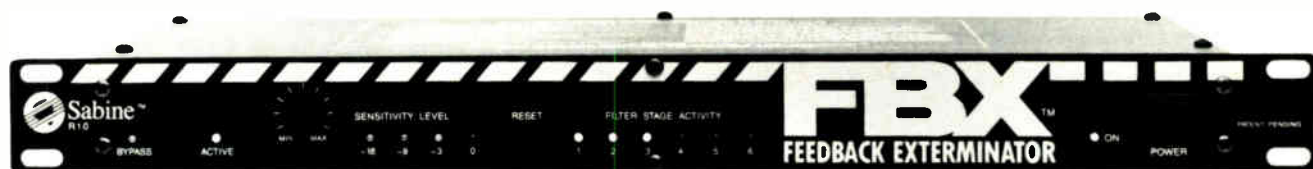
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Meridian Distramix™

Maybe it was the name of this product, or maybe it was just me, but when I first heard about Distramix, I wasn't too fired up about it. It was probably the words "distribution amplifier/mixer combination," "room combining" and "teleconferencing" in the literature that scared me off. Eventually, I got past my

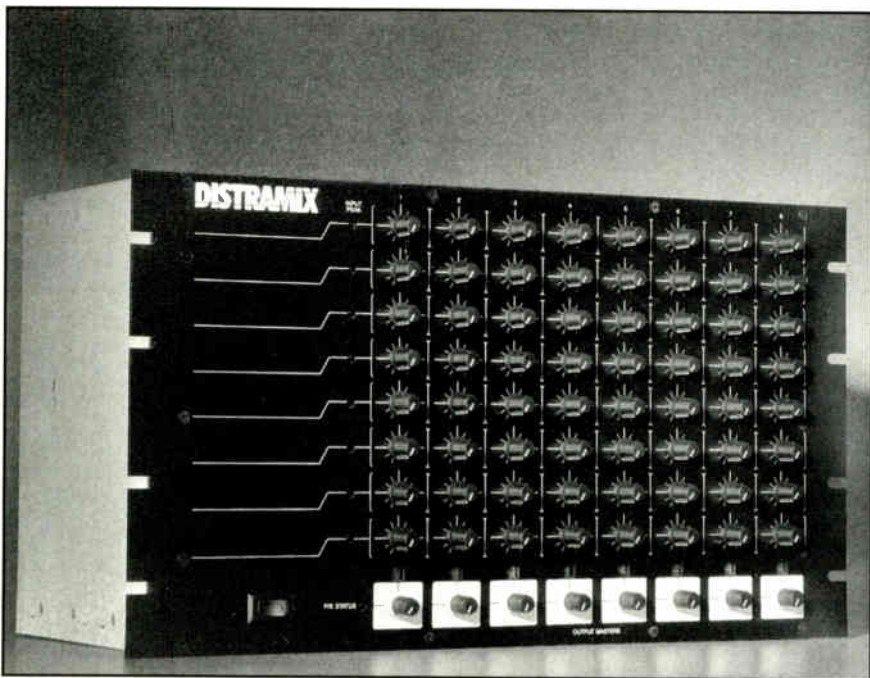
are +4 balanced XLRs (with polarity reverse switches) and buffered, unbalanced 1/4-inch jacks. Also on the rear panel is a unique linking system for combining multiple Distramix units to expand the number of available inputs or outputs *ad infinitum*. Combinations such as 8 x 16, 8 x 24, 16 x 8, 24 x 8, 16 x 16, etc. are all possible with several units.

The physical layout of Distramix is

console or other requirements.

At \$2,675, Distramix provides an affordable solution to a lot of pro audio dilemmas, and since it's an out-board unit, it can be moved around to different rooms in a studio, or sent out on various live sound gigs without needing to buy matrix versions of every console in your inventory.

Meridian Communications, Box 97, Alameda, CA 94501; (415) 769-1515.



Distramix

neuroses and had a chance to check this out. Boy, was I wrong! Let me explain.

First of all, Distramix is an 8 x 8 matrix mixer, offering numerous creative applications. In the studio, it provides flexible headphone cue mixing on a tracking date, and later offers eight additional aux sends when mixing. In theater or concert sound reinforcement, it offers a versatile matrix to mains, center clusters, surround (effects) speakers, stage mixes, lobby feeds, etc. In a broadcast facility, Distramix could handle foldback feeds to talent or tech staff, multiple mixes, mix-minus and more.

Second, the audio quality and construction—with gold-contact relays and switches, conductive plastic pots and banded toroidal power transformer—is top-notch throughout. And little touches, such as the ferrite beads on the inputs, are sure to be appreciated by anyone working sound reinforcement in a high-RF area.

The eight inputs and eight outputs

straightforward and logical: The eight inputs are arranged in horizontal rows (with space for labeling each), and the eight outputs are outlined in white at the bottom of each unit. Output mute switches are provided; when selected, these flash a red LED in the three-segment output meters, which are not designed for critical metering, but offer a quick way of keeping track of levels and gain. Each input has a bi-color LED

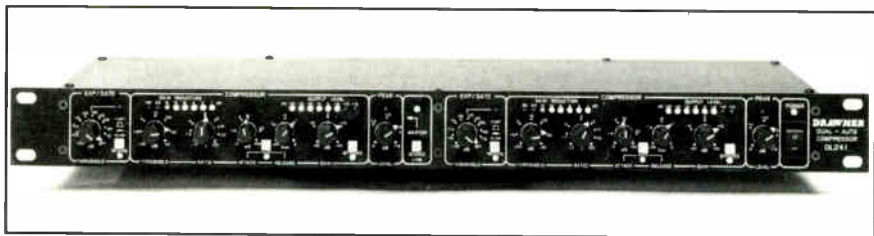
Drawmer DL241 Auto-Comp

Whenever "Drawmer" is mentioned in pro audio circles, words such as "world class" usually come up. So when Drawmer introduced a 2-channel, stereo-linkable expander/gate/compressor/limiter at last year's AES, and priced the unit at \$699, it attracted more than casual interest from showgoers.

The DL241 features automatic program-dependent compression (switchable) that combines the characteristics of "soft-knee" and traditional "ratio"-type processing, along with an auto-attack expander/gate with switchable fast/slow release time. A peak limiter section is also included on each channel. The single-rack-space DL241 also provides four bright eight-segment LED indicators for each channel's output level and gain reduction functions.

On the rear panel are balanced 1/4-inch input and output jacks, which can also function with unbalanced sources. The levels for each channel can be switched to +4 or -10 dB. Another version of the DL241 is the DL241X, which is similar but substitutes XLR connectors for an additional \$150. The DL241 does not include any connectors for sidechain access—no doubt, this was one of the frills that had to be sacrificed so the unit could come in at such an affordable price point.

Operationally, the DL241 is no



Drawmer

that glows green at -15 and red at +8 dB.

Operation is extremely fast—just plug in and go. Depending on your needs, it would be a simple matter to make a harness to suit your patch bay,

sweat. Both of the unit's channels are identical and can be used independently or linked for stereo. In the latter mode, the channel controls on the left serve as the master, although the by-

pass switches remain independent. In linked mode, the unit tracked flawlessly, without any trace of image smear.

Since the expander ratio is automatically controlled by program level, setup is a breeze, and the user merely has to set the threshold and select the required release time. Generally, on transient material—such as taking tom and hi-hat bleed out of a snare track—the fast setting is preferred. The slow release times are more suited for sustained notes, background vocals and material with longer decays or reverb tails.

The compression section is pretty straightforward. The threshold control has a wide +20 to -40dB range and soft-knee action occurs on signals exceeding the threshold by up to 10 dB; after this point, conventional “ratio” compression is applied, with a user-selectable ratio ranging from a mild 1.2:1 to a true hard limiting of ∞:1. Attack and release times can be manually or automatically controlled depending on user whims, but generally I was quite pleased with the smoothness of the DL241’s auto control. A ±20dB gain control makes up for any overall gain or loss in overall level if caused by the compression or limiting. The bypass is a true hard-wired type (it functions even when the unit is powered down), and provides a handy way to make quick A/B comparisons of processed vs. unprocessed signals.

The DL241’s peak limiter can be set to provide protection against any output signal that exceeds a range of 0 to 16 dB. If the peak LED begins lighting on a semi-continuous basis, then the limiting artifacts become apparent; however, if used sensibly it’s virtually unnoticeable.

While the Drawmer DL241 has no sidechain facilities, it can handle 95% of all typical dynamics control situations found in studio or sound reinforcement without even working up a sweat. Overall, the DL241 is a user-friendly unit that sounds good and has a per-channel pricing that should put a scare into the competition.

Drawmer, distributed in the U.S. by QMI, 15 Strathmore Road, Natick, MA 01760; (508) 650-9444. ■

In addition to writing for Mix, George Petersen is a musician, producer, engineer and operator of a Third World-class recording facility in the San Francisco Bay Area.

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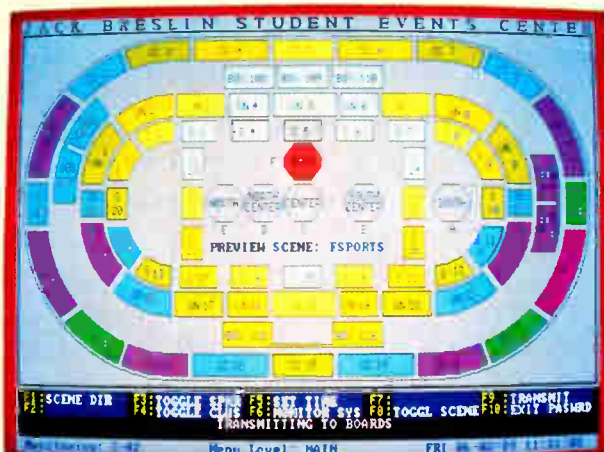
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by David (Rudy) Trubitt

FOCUS ON FIXED INSTALLATIONS



View of computer screen showing stage and cluster location options. This allows the delay settings and on/off status of clusters, horns and satellites to be altered.

A Multipurpose Solution

Bob Coffeen, of Coffeen Frickie Associates, has worked in the world of arena and stadium fixed installations for 26 years. During that time, the firm has designed or updated sound systems in facilities all over the country, including San Diego's Jack Murphy Stadium, the Thompson-Boling Arena at the University of Tennessee at Knoxville (the country's largest arena), the Hartford Civic Center Arena in Connecticut, Kansas City's Royal Stadium and many others.

A recent example of the firm's work can be found on the campus of Michigan State University at East Lansing. The Jack Breslin Student Event Center is a new, 16,000-seat multipurpose arena. The facility was designed primarily for

sporting events, but can also accommodate performing arts and smaller events. The room can be divided by drapery to form a theater setting, with a stage and seating at opposing ends of the reduced space. The challenge was to design a system that could adapt itself to these varying requirements while maintaining consistent performance standards and keeping life simple for the system operators.

Step one was to evaluate the room acoustics. "The room had a midrange RT60 of about 2.2 seconds unoccupied," Coffeen says, "which is okay for an arena of this size. The time was established by ceiling absorbers that were large panels of glass fiber ceiling board in sections between the trusses. Vertical surfaces were treated with Tectum panels, which are

inexpensive and tough. Also, although the seats were hard, some absorption was built in under the seats, so

we were getting some absorption in the seating area even when empty."

Because of the room's flexibility in stage and audience location, two options were available. First, a portable system could be used, but that would require much more work for the system operators and couldn't guarantee consistency. Instead, Coffeen and Frickie designed a central cluster capable of automatic movement in both horizontal and vertical directions. To supplement the moving cluster, 24 stationary satellite clusters provide sound to the mid- and upper-seating areas, and a number of 8-inch speakers fill the space under the balconies.

The brain of the system is a computer controller from Innovative Electronic Design (Louisville, Ky.). The IED system includes line amps and a 16 x 16 solid state audio switch matrix. This unit selects and routes signals to the 25 delays, which align the fixed loudspeakers with the current location of the mobile central cluster. An additional 12 delays are used for speakers in the concourses.

A total of six preset system configurations are currently stored in the control computer. Depending on the event, the operator simply chooses a setup by pushing a button. Then, all aspects of the scene are automatically set, including cluster position, delay routing and drivers within each cluster to use. "What took us three weeks of testing and alignment," Coffeen adds, "can be recalled in a few seconds by the operator."

The computer controller is located at the mix position, which is in the seating area. The 32-input Yamaha 1800 console, other program sources and the IED



Two views of the Yamaha PM1800 mixing console area, showing the retractability of the setup.



system are built onto a sled that, at the touch of a button, is retracted by a chain drive and stowed under the seating area. The system is still accessible when in the stowed position, so events requiring background music, but not mixing, can be run without exposing the console. Other equipment in the installation includes QSC power amplifiers, Audio Digital delays, and a variety of Electro-Voice gear, including microphones, large- and small-format CD DH1As and low-frequency TL606Ds for the clusters, and Pro 8As under the balcony.

The opening ceremony for the hall turned out to be a showcase for the system's flexibility. The program opened with speeches and was followed by a performance by the school's wind ensemble. Next came music from the school's symphony and chorus at the other end of the room. After the wind ensemble finished playing, a brief intermission allowed for the reconfiguring of the sound system. While playing a CD of a brass ensemble, the center cluster glided from one end of the hall to the other, taking about two-and-a-half minutes for the trip. The system was ready for the downbeat of the orchestra as soon as it stopped. Finally, it was moved to the center of the room as the event concluded with the school's marching band.

On a related subject, Coffeen shared some thoughts on improving the relationship between touring and fixed sound companies. "We need better cooperation between house and the outside user, because many times the fixed systems are the only thing that will cover the room. For example, we recently did a

remodel of the sound system in the Charlotte Coliseum in North Carolina. The second show with the new system was Frank Sinatra, and their touring company, a very professional group, hung their boxes center stage."

"I said, 'You're not going to cover those upper seats—see that satellite cluster? What if we tell our computer where the stage is and you give us a feed? You supply sound for lower seats and we'll do upper areas.' We did and it worked very well. With the proper combination of a fixed and traveling system, we can do a marvelous job. But it takes cooperation between two opposing views of how sound should work."

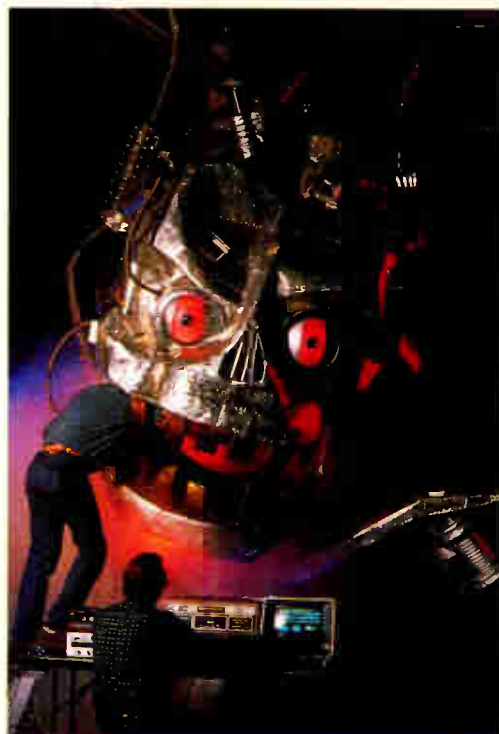
A Natural Experience

"All of the things we do are sound sculptures," answers Bernie Krause when asked to describe the work of Wild Sanctuary Communications of San Francisco. Specifically, his company has designed a number of unique environmental sound installations in zoos, aquariums and museums. In addition to design, Wild Sanctuary provides the sounds themselves, logging thousands of hours of field recording from all over the world.

Wild Sanctuary's first major natural sound installation was for the California Academy of Sciences at Golden Gate Park in San Francisco. A 24-hour sound cycle of an African watering hole was condensed into 16 minutes.

Multitrack tape was used for playback, and tracks not containing audio held control signals to change lighting levels to match the exhibit's accelerated "day." Although the exhibit has been successful and long-running, Krause found some elements lacking. "It was very boring for the staff," he says, as the same audio events repeated endlessly. Also, volume levels were fixed, and changing crowd conditions resulted in levels that were either too loud or too soft.

A more ambitious installation followed several years later at the St. Louis Zoo. Eight speakers were placed inside a hemispherical,



Top photo: Side view of rainforest exhibit under construction. **Above:** Sequoia's star performer snacks before his flight to France (see page 105).

PHOTO: MARK RICHARDS

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domed exhibit area. An 8-track deck provided a variety of moving animal voices, ranging from a fly to a killer whale. Unfortunately, the audio program still repeated without change, and finding a nominal volume level again proved difficult.

To overcome these limitations, Krause and his team took a fresh look at the problem, and the results could have wide applications to sound for public spaces. The Intelligent Sound System™ features two major improvements. First, hard disk-based digital audio will allow for a constantly changing audio program; and second, a variety of motion, infrared, light and ultrasonic sensors will monitor crowd conditions and adjust levels and program content accordingly. The entire system will be under computer control, with software currently under development.

The system will debut at a new exhibit at the Cleveland Zoo, which is expected to open in fall 1992. A stand-alone building is being transformed into a variety of rainforest environments. The 20,000-square-foot building will house 23 different animal exhibits, from binturongs to butterflies. Wild Sanctuary will create three distinct sound fields: an Amazonian rainforest, a tropical storm, and a Southeast Asian rainforest. Each field will cover captive animals native to the environment being re-created. The authenticity of the sounds are as important to the resident animals as to the visitors, since Krause has found that familiar sounds of a creature's natural habitat reduce the stress of captivity.

Controlling spill from one area to another is always a concern. In many cases, speaker position and limiting bandwidth from 100 Hz to 14 kHz reduces leakage. However, this is not always practical. For example, a monitor lizard exhibit will be the site of

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occasional thunderstorms, complete with wind and temperature changes. In this case, an 18Hz-23kHz bandwidth at somewhat higher SPLs will be required. "Thunder was the most problematic of all the sounds, but it's in the first floor area, which is more of a gallery than an animal exhibit environment," says Korey Kruckmeyer, project architect with The Larson Company (Tucson, Ariz.), the designers of the exhibit space. Double-pane glass will also help control leakage into other areas.

Interactivity is a key goal of the Intelligent Sound System. Some subtle sounds may only happen if a few visitors are present, while others occur only when large crowds fill the area. The sounds vary in length from 20 minutes to brief recordings of individual animal voices. Storing audio digitally on hard disks allows any combination of sounds to be played together, avoiding the static quality of earlier exhibits. Up to 40 discrete output channels are possible (with sufficient plug-in D/A cards in the PC-compatible computer). Each audio channel includes digital EQ and level controls, and will feed its own amplifier/speaker combination with no mixer required. About 175 speakers will be used in the installation, and each must be specially treated for protection from moisture and insects.

Aside from the Intelligent Sound System's custom software, components are mostly off-the-shelf. The Cleveland installation is expected to use JBL cabinets, including Control 5s and Control 1+s, Rane ME15 2/3-octave graphic equalizers and ME6 power amps, and custom subwoofers for the storm room.

The disappearance of the Earth's natural sounds are a major concern for Krause. He used to spend 20 hours in the field to get 15 minutes of usable material; it now takes

—CONTINUED ON PAGE 105

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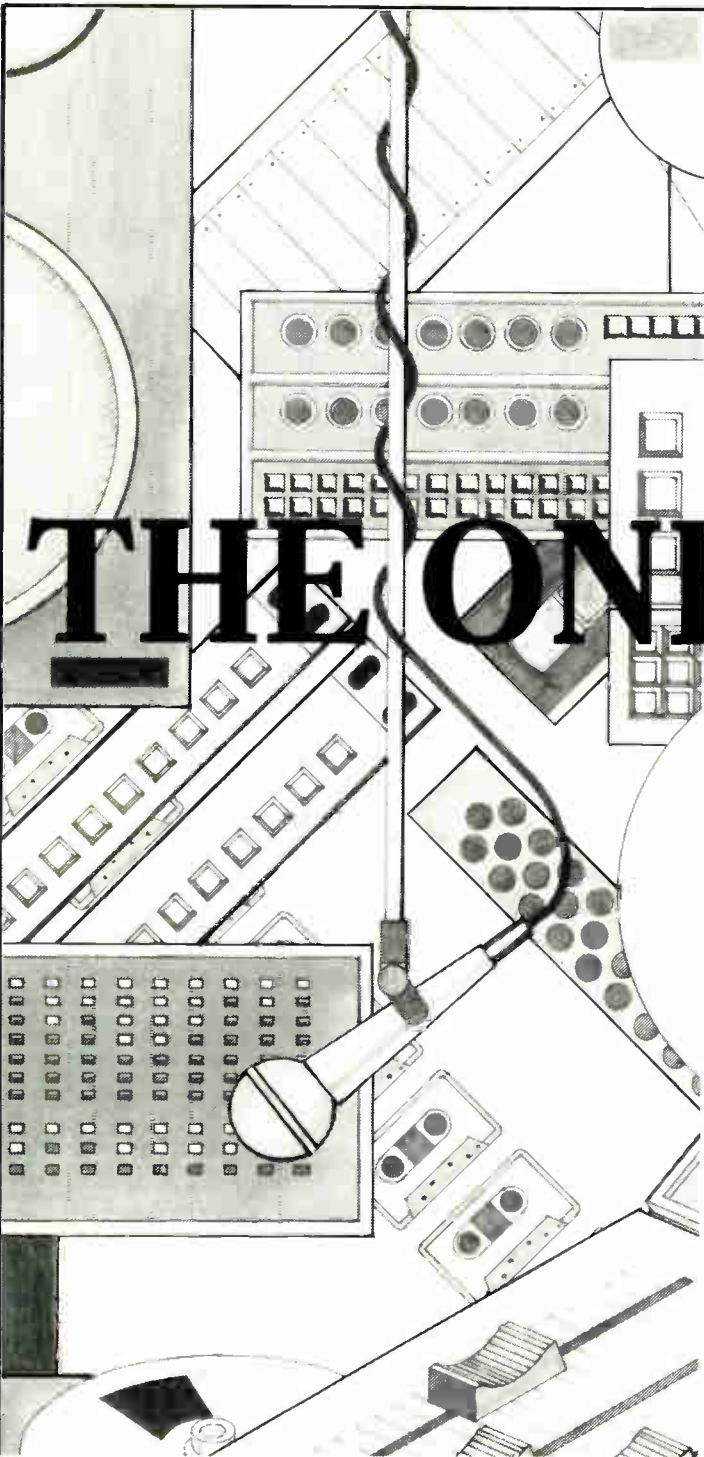


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Taking Care of Business

For a business perspective, I spoke with two companies with somewhat different backgrounds. The first was Maryland Sound Industries West Coast's Tony Gould, and the second was Jerry Van Dyke, with Genesis Communication of Edmonton, Alberta.

Gould notes, "MSI has been in the permanent installation business for over eight years. We're a self-running organization within MSI, and we've successfully transferred MSI's touring reputation into the fixed-install market. This business takes a different mentality than touring, since you're working with architects and owners or representatives of buildings and projects, as opposed to tour managers—it's a different type of relationship.

"This business is long-term, and you're under more scrutiny, either when you're dealing with a city or a corporate owner. With a long-term relationship, you'd better be good or you're not going to get much further."

MSI has done a wide range of installations, including stadiums, theme parks, churches, boardrooms, theaters and entertainment spaces. Recent installations include the Anaheim and Baltimore Stadiums, and the Universal Theater theme park in Orlando, Fla.

Gould notes the increasing understanding of customers when it comes to recognizing differences in sound quality. "With most clients, the level of sophistication is fairly high. Since everyone is familiar with high-quality CD and motion picture audio, they expect good results in boardrooms, houses of worship or public spaces. And they want something better than what they have at home, which is a lot better than it was ten years ago."

MSI Permanent Installation Division relies on its touring department to test products, and

also draws on tour experience for assessing product reliability. "Service calls are everyone's biggest enemy," says Gould. "The fewer calls the better."

Genesis Communication is only one year old, although its founders have many years of sound experience. Genesis' business includes corporate and government facilities, churches, nightclubs, schools and hotels. "We've experienced tremendous growth because of our service orientation," says Jerry Van Dyke. "For example, where some contractors try to lead a customer to whatever speaker line they sell, we have access to Altec, Community, Electro-Voice and Apogee speaker systems. We try to find our customer's real requirement, and let them help us make that decision by extensive listening tests. We bring a lot of speakers for them to listen to, hang them, and let them make their choice.

"When you're dealing with churches, there comes a point where that extra sonic quality isn't worth five times the money for a processor-controlled box," he continues. "It comes down to them saying, 'Look, we've got so much money and that's all we're spending, and we can't hear the difference.' It comes down to, 'Are we giving our customers the best value for their dollar?' Too many guys will try to low-ball on the price, but if there's no profit in the job, you can't afford to go back and service the customer. We don't go on price alone."

Van Dyke also echoes Gould's comments on customer perception of fidelity. "With the advent of digital technology, customers are accustomed to a certain level of quality. Nightclubs are also becoming more demanding, and they're often the ones who are willing to spend." While Van Dyke anticipates some difficult economic times ahead, he's optimistic about Genesis' future, and sees new growth areas, such as home theater sound systems. "We've also taken on a larger company as a partner, which provides us a stable base to grow and expand on." —RT

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World Radio History

—FROM PAGE 101, *FIXED INSTALLATIONS*
500 hours. Wild Sanctuary also produces natural-habitat CD and cassette recordings, setting aside 5% of the proceeds for the Nature Conservancy, which buys land for conservation purposes. "Wild Sanctuary's ultimate purpose," Krause explains, "is to find a way to prevent the gentle, wonderful voices from disappearing altogether."

Variations on a Theme

"The biggest obstacle was justifying why this kid from Hawaii was involved," Randy Bauske says, describing his design of a theater sound system for the theme park *Le Nouveau Monde Des Schtroumpfs* (The New World of the Smurfs) in Metz, France.

The 2,000-seat "Time Tunnel Theater" presents a show geared to the environmental sensibilities of its European audience. The performance opens with a young Frenchman riding a motorcycle through pristine villages and forests. However, he soon encounters the results of his (and our own) environmental carelessness. The forest trees vanish, and "Poullite," a pollution-spawned beast, rises from the ground, causing an earthquake that shakes the entire building. The youth vanquishes the monster, but learns a lesson in environmental responsibility in the process. In deference to the various languages spoken by the park's visitors, the performance has no dialog. Instead, a score composed by Georges Delerue, performed by the Toulouse Symphony Orchestra and mixed by Craig Huxley at The Enterprise in Burbank, provides a dramatic background to the presentation.

The theater was designed by Sequoia Creative of Burbank, Calif., which is perhaps best known for its three-story, hydraulically controlled King Kong at the Universal Studios tour.



Sequoia Creative in turn called on Baus Engineering of Honolulu to design the theater's sound system. There were three criteria: the first was high-quality playback of the show's orchestral score; second, sound effects that had to appear to pass over the audience required a surround system; finally, subwoofers mechanically coupled to the building's foundation were needed to create the earthquake effect felt during the monster's entrance.

Creation of the earthquake effect was one of the more unusual parts of the job. First, four Meyer 650-R2 subwoofers were entombed in the stage and sealed with special foam, which structurally coupled them to the building. (See photo below.) Then, a TEF™ analyzer sweep was used

to identify the resonant frequencies of various parts of the building, including lighting trusses, catwalks, audience seating and doorways. Then, a 60-second sound sequence was created using the TEF and a Macintosh computer running Wave-

maker software. The TEF was programmed to sweep a continuous range that included all of the resonant points, while the Mac sounds hit the specific frequencies associated with doors, chairs, etc., one after the other.

The two sounds were recorded together on a DAT, and the completed earthquake segment was stored in the EEPROMs of a 360 Systems Permanent Playback system, a device capable of producing multiple channels of CD-quality audio under computer control. Additional sound effects, including helicopter and jet fly-bys and monster noises were also loaded on the device. Digital audio storage was also employed for the show's musical score, which was stored on 2-channel laserdisc.

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VCA panning unit built by Dr. Michael Morgan of Valley People. The unit contains two externally controllable 1-in, 3-out panners. The three outputs are directed to the theater's left, right and rear speakers, providing the illusion of motion. Both audio playback systems and the VCA panner are under the control of one of Sequoia's show control computers.

Audio from the laserdisc player, EEPROM playback unit and VCA panner then makes its way to a 12-channel custom console built by Acoustic Technical Laboratory of Kaifu, Japan. "The ATL mixer is a really high-quality mixer without any acoustic signature," Bauske explains. "The clarity of the effects make it into the theater, which explains the audience's reaction—2,000 people all ducking at once!" An additional Yamaha M406 was used as a submixer, helping to accommodate the system's total of 22 input channels. All this audio ultimately hits the air through four Meyer MSL-3s (mains) and six UPA-1 A surround loudspeakers powered by 12 Yamaha M85 audiophile amps.

"A big plus for the project came on the first day we fired the system up," says Bauske. A morale boost was welcome, as work had been slowed by freezing temperatures and some friction between French labor and foreign experts. "I hooked up a CD player and had one of the supervisors hit the play button," Bauske remembers. "It was Earth, Wind & Fire playing 'Got To Get You Into My Life,' and everybody stopped working and had a party. Once the other teams realized that one element of the theater was working, it gave them a real boost. After starting three weeks behind, that sound motivation helped everything get done on time." ■

David (Rudy) Trubitt is an upright young man of sterling moral fiber, despite his fondness for unsalted macadamia nuts.

—FROM PAGE 80, ROCK IN RIO II

festival. For the next ten days, the crew worked long hours with only a single-day's break in the action. Despite the recent start of the Persian Gulf war, and rumors of terrorist actions that might affect air travel, nearly all of the contracted acts arrived for the festival. The only artists not able to perform were Robert Plant and Jody Watley.

All shows took place close to schedule, thanks to a veteran GLS Production staff that included Gerry and Sylvia Stickells, Rick O'Brien, Charlie Boxhall, Michael Wiesman, Tim and Chris Lamb, and Karen Gault.

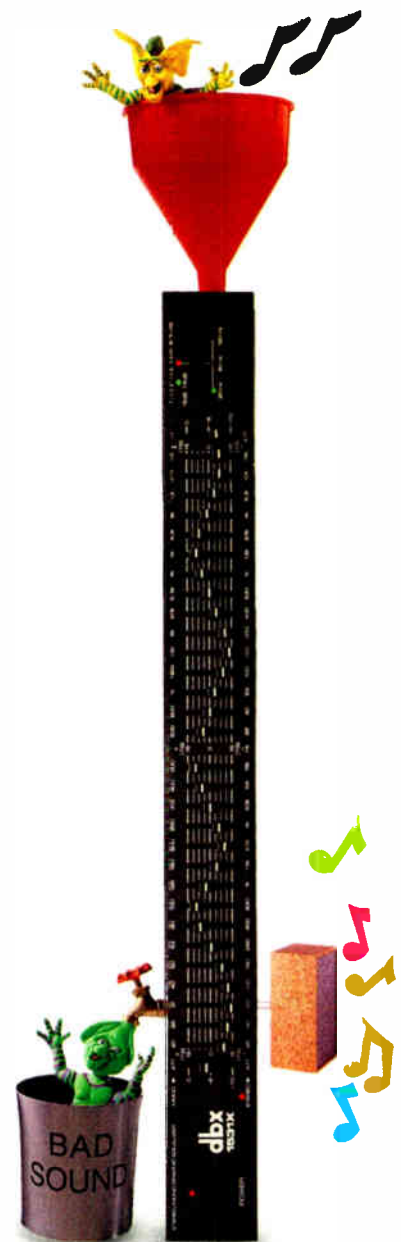
While the crowds varied from night to night based on the different headline attractions (New Kids On The Block drawing a different audience than, say, Guns N' Roses and Judas Priest), their enthusiasm never waned and neither did sound system performance. As one *New York Times* observer reported, "An enthusiastic audience of 100,000 people ready to dance, sing, shout, wave their arms or light matches on cue was dazzled by...laser light...giant video images...[and] a sound system with remarkable punch and sonic detail."

Rock In Rio II was a success by any standard, according to Brazilian sound engineer Franklin Garrido. "This is the best sound we have ever had in this country. The low end is particularly impressive for outdoors. Engineers for many of our national acts tell me that they are quite happy with the sound, the Showco team cooperation and the whole experience."

For the 12 sound crew members, success was measured by the runway lights of Rio's airport receding in the background as a jumbo 747 lifted off. "A project like this one works only because we like doing what we do," Ponczek noted. "If you try to figure out your pay scale by the number of hours worked, or expect all of the conditions to be perfect, you'll be disappointed. But in our industry, an event like this is a marathon race. Just knowing that you, your crew and sound system not only finished the race, which is winning in itself, but also came in first—that's what makes it worthwhile. We're just doing our job the best that we can, and we're glad to be here." ■

Mike Stande, a well-known consultant specializing in large-scale concert sound, is currently contesting the patented microphone support assembly that bears his name.

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by David (Rudy) Trubitt

SOUND CHECK

Ramsa WR-S840 monitor consoles at the 1990 Billboard Awards Show.



With a Little Help from His Friends

"We said to the producers, 'You can't do a show here with live bands!' Of course, we knew they were going to do it anyway, so our task was to make the best of a bad situation." That's how Jim Showker of Audio Tech (North Hollywood, Calif.) summed up his feelings about the recent *Billboard* Awards show, held in an airplane hangar at the Santa Monica airport.

To analyze the room's problems, Showker took a speaker, amp and TEF[®] machine into the cavernous space. "Determining the RT60 of a room is not easily done," Showker says. "High-frequency roll-off is always smoother in books than in reality. At 1 kHz, the room's RT60 was over six seconds. They gave us carte blanche to fix the problem, as long as it didn't cost hundreds of thousands of dollars."

Showker began calling in

favors. Lighting and stage crews responded with enormous quantities of black cyc cloth, which each crew hung everywhere while putting up their own equipment. Main speakers were aimed at a carpet brought in for the show. Finally, a member of the production staff suggested opening the rear door, allowing sound from the mains to bounce off the rug and out the door.

Showker was pleased with the results. "We ended up with a very good sound in the room, in fact, better than a number of other arenas we work in! We weren't geniuses. We just asked our friends to help us out and it worked."

Trucking Expenses Slain for Testament Shows

Sun Sound is on the road with the Slayer and Testament tour. In an effort to travel more efficiently, they're hauling only enough boxes for the smaller and medium-sized shows. However, at their February 14 date at the Nassau Coliseum in Long Island, N.Y., they called in the resources of other EAW users' group members to bolster the speaker count by 50% to a total of 64 KF850s and 36 SB850s. The boards included a 40-channel AT1 Paragon and Yamaha PM3000, with Crest 8001s for the mains, and a 40-channel TAC Scorpion with KF850 sidefills and 12 Sun custom wedges driven by Carver 1.5s for the monitors.

AB 1200C Power Amp

The Professional Series Model 1200C (\$2,649) from AB Systems, Roseville, Calif., is a 2-channel modular power amplifier designed for sound reinforcement applications. The 1200C features dual LED level/clipping meters, front panel output level controls, XLR and 1/4-inch inputs, and Neutrik Speakon output connectors. Features include internal variable peak ("soft clip") limiters, switchable highpass filters, and each amplifier channel is

mounted on slide-drawer modules that are easily removed for servicing. Power ratings are 800, 1,350 and 1,950 watts per channel, respectively into 8-, 4- and 2-ohm loads.

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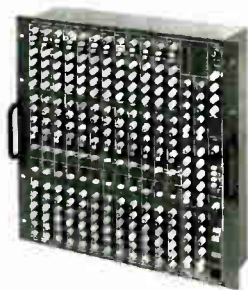


◀ Furman 30-Amp Power Conditioner

The AR-PRO AC line conditioner (\$1,749) from Furman Sound (Greenbrae, Calif.) handles up to 30 amps through a twist-lock

input (also includes a mating connector). The two-space device delivers clean, regulated, 120-volt AC power to 12 rear and two front panel outlets, from any input voltage of 88 to 264 volts. Special features include 21-step LED meters for input and output voltage, as well as spike/surge suppression and RFI filtering. The AR-PRO can be remotely turned on or off, and multiple units can be turned on simultaneously or in delayed sequence by switching an internally derived control voltage.

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Allen & Heath Monitor Mixer

New from Allen & Heath of Orange, Conn., is the Scepter rack monitor (\$2,800), a compact 12x10 mixer with internal passive mic splitting. Features include 2-band sweep EQ on six inputs, with 3-band sweepable mid (with selectable LF shelving and low-cut filter) on individual inputs, as well as the new PMI/Solid State Microsystem integrated mic preamps. Electronically balanced inputs and main outputs are standard; transformers are optional.

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NEWS FLASHES

Burns Audio handled sound duties for the third straight year at the Grammy Awards, this year held at New York City's Radio City Music Hall. To support its growing East Coast business, Burns recently expanded to a third facility, located in Washington D.C. ...The NSCA's Product Safety Group has a new chairman: Altec Lansing's John Shepherd has accepted the position for the coming year. ... Macpherson LPM2 low-profile monitor cabinets have been purchased by ABC Television for *Rick Dee's Into the Night*. Les

Club Sound Spotlight

NYC's Bottom Line

"Best of all," jokes the Bottom Line's Terry Gabis, "I get to announce all the acts!" Gabis does much more than that as the full-time sound engineer for New York City's venerable nightclub, The Bottom Line. Gabis started mixing bands in 1975, and five years later moved to the club. "I mix the bands that don't have a mixer, and if they do, I'll show them the ropes of the room. I also handle maintenance and equipment, and generally keep things running." Although the room seats just over 400, regular broadcasts from the club bring shows to NHK-TV viewers in Japan, and listeners of local FM station WNEW.

"When I first started, I tried to approach everything in the same way," Gabis says, "but I found that didn't work. Sometimes we'll get fusion bands with no stage amps and everything going through the monitors. On the other hand, someone like [jazz artist] Phil Woods doesn't want *any* mics on stage! We'll give him one mic with an on/off switch to *intro* the band.

"Country acts are the easiest to work with," he continues. Another



PHOTO: CHUCK PULIN/STAR FILE

favorite is Sun Ra. "It's probably the most fun show to work because you never know what they're gonna do. Sometimes they won't even soundcheck; they'll just show up a half-hour before the show starts with two or three drum sets, three bass players, a couple of guitarists—19 or 20 people onstage. You just put the mics up hoping that they'll use them."

The house system is a four-way flown PA, with JBL and Gauss drivers, Crown Macrotech amps, Soundcraft 500B main mixer, and a Yamaha 2408 for monitors feeding Turbo and Community wedges. Outboard gear includes dbx limiters, a new BSS crossover—"with nice lights that go on and off!"—and Klark-Teknik, Rane and dbx EQ.

"As long as you do the best you can do, you should be all right," Gabis says. He pauses and laughs. "Or at least make it *look* like you're doing the best you can do!"

Harrison of Hollywood Sound handled the installation. ...Rat Sound Systems (Sun Valley, CA) has been replacing older 18-inch speakers with Electro-Voice EV180s and, more recently, TAD1801s. ...McCauley drivers were used by sound company Music Technologies (Shreveport, LA) at a show by Bo Diddley at the Cowboy's Nightclub in Boissier City, LA. After the show, Diddley rated the system, "Superb!" The company also announced the opening of McCauley Australia, located in Queensland. ...Audio Concept Inc.

(Montreal) has placed Australian Monitor amps at the 20,000-seat Calgary Stampede Park. ...Gand Sound (Northfield, IL) has taken delivery of the first Soundcraft Delta 40x12 monitor console to be sold in the States. ...Correction: In our "Lifting the Iron Curtain" article last February, we implied that Laurie Anderson's Eastern European tour used an overseas system and crew. While Meteorlight of London did provide personnel, ProMix (New Rochelle, NY) supplied the same Apogee system that was used on Anderson's North American tour. ■

Warner Bros. Studios

STILL ON THE CUTTING EDGE OF FILM SOUND

BY
AMY ZIFFER

**Their
new
Studio B
elevates
the state
of the
art**

Nineteen twenty-seven was a landmark year in movie history. In that year Warner Bros. released *The Jazz Singer*—the world's first "talkie" feature—giving birth to the field of motion picture sound.

Flush with money from that success and ten years of financially rewarding silent films, Warner left the lot it had outgrown on Sunset Blvd. in Hollywood and bought out Burbank's First National Studios, recently built on farmland. Warner Bros. Studios is on the same site



PHOTOS
BY
ED FREEMAN



today, backed up against the Hollywood Hills, its facade and billboards dominating the main road into Burbank from Hollywood and the Caluenga Pass.

As you might expect, the company that gave the world "talkies" feels a certain responsibility to maintain leadership in the area of motion picture sound. According to Tom McCormack, head of the Warner Bros. sound department and vice president of post-production, the studio wants to make every sound service—

what he calls "the complete package"—available to its clients. This spring Warner Bros. is unveiling a new scoring stage that represents a total investment of approximately \$2.5 million.

Scoring Stage B will complement existing Warner facilities. In addition to Stage A, an even larger scoring room dating from the early '30s that can accommodate 125 musicians, the lot is home to five high-speed stereo dubbing rooms, two ADR/Foley stages, 12 mag transfer rooms, two optical rooms, five video tape-to-tape

Above, the control room for Scoring Stage B; (far left) Scoring Stage B, at Warner Bros. Design by Jeff Cooper Architects, A.I.A., Calabasas, Calif.

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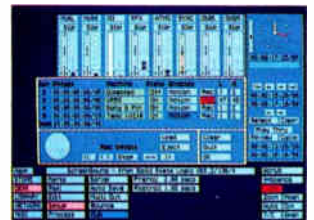
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World Radio History

transfer suites, 22 screening rooms that seat from 50 to 250, and 200 editing rooms, some of which are outfitted with electronic systems by WaveFrame, LarTec, Lasercrit and Montage. With the construction of Stage B, it will be possible, according to McCormack, to start and finish a production without leaving the lot.

McCormack is a 25-year veteran of Warner Bros. Born in Ireland, he came to the company from Disney in 1966, taking a job in sound maintenance. Eventually he became chief engineer, then assistant head of the department, and ultimately worked his way up to the posts he holds now.

Background

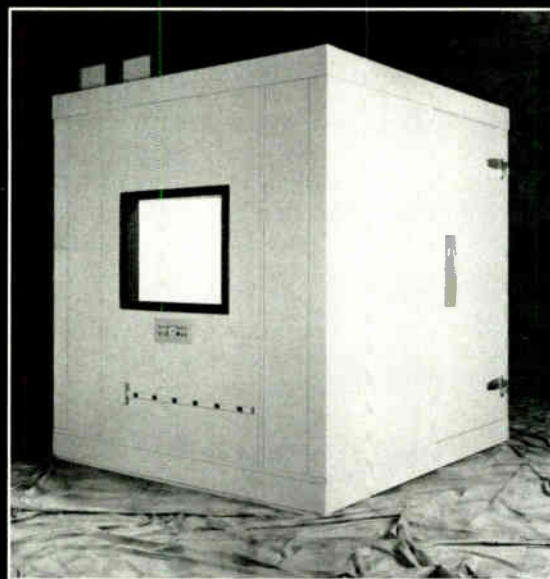
Scoring stages are not money-makers, typically. They incur high staffing costs and are almost always affected when studios decide to trim budgets, because scoring is often the first area to see cuts. In the past, studios sometimes kept break-even scoring stages around just to keep customers happy, while profits were made elsewhere.

The use of electronic instruments in composition has not affected large stages as much as one might guess. While it can't be said that money is no object for the type of films that will be scored on Stage B, it is true that a different mentality reigns. Electronics are an adjunct to the orchestra rather than a replacement for it.

In fact, what some perceive as a "sameness" in electronic scores may be causing a push back toward acoustic scoring in general, at least on the very large stages. Nonetheless, as one insider put it, "the grief per square foot" is higher for scoring stages than perhaps any other type of sound facility.

Some other studios gave up trying to run scoring stages long ago, but Warner Bros. has a unique history that has given its scoring operations a long life. In 1972, Columbia Studios moved onto the lot, and the resultant partnership—known as The Burbank Studios—became a service organization for Warner Bros., Columbia and their affiliated independents, which theoretically made it a rental facility. "As The Burbank Studios," McCormack explains, "we went to whoever wanted to use the facilities—independents as often as in-house productions. As a rental facility, we had to be able to supply everything."

In a swap worked out in 1990, Columbia took ownership of the former Lorimar/MGM lot in Culver City and



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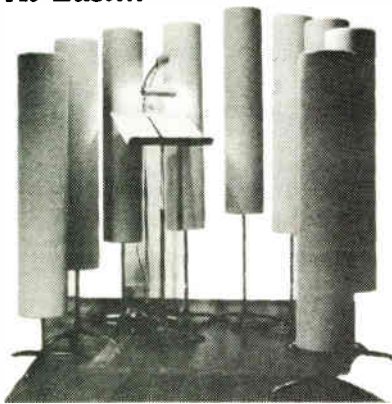


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“THE NATURE OF THIS BUSINESS DOESN'T LEND ITSELF TO PLATEAUIING.”

moved its operations. Lorimar was purchased by Warner and moved into the Burbank lot, and the studio once again became known as Warner Bros. When Lorimar moved in, according to McCormack, business for sound services increased due to their 12 to 14 hours of television programming. In addition to Warner and Lorimar, a host of independent filmmakers on the lot (Clint Eastwood's El Paso, Mel Gibson's Icon Productions, and Phil Silvers' Silver Pictures are just a few) also place demands on the sound department. “We still cater to outside clients if the space is available,” McCormack adds. “In essence, we're still a rental facility.”

Recording Area

The pre-existing building that houses Stage B had only two walls intact from the original structure. The first Stage B was a small room dating from 1973, built to cater to groups of ten to 20 musicians for television scoring. It was shut down two years ago when its size finally became too limiting. Construction on the new stage began in January 1990, and wiring and equipment installation was expected to be completed in the first quarter of 1991.

Jeff Cooper Architects, A.I.A. (Calabasas, Calif.) did the design, and construction was carried out by Synergetic Building Systems, a joint venture between Cooper and contractor Tony Letizi. Among other projects, Cooper is known for the Capitol Studios remodeling, the Director's Guild Theater, and the Academy Theater currently being built in association with the National Academy of Television Arts & Sciences (NATAS).

Cooper stresses what he calls the “acoustical palette” of the space as its most interesting aspect. “Stage B gives the composer options for everything from extremely tight drum sounds and ambient vocal sounds to a reverberant, live orchestral sound.” Cooper built these options into the stage in a number of ways.

The main stage, for example, features a raised foundation. Four feet of dirt was excavated in the stage area, and a raised wooden frame was built on concrete pilasters. Over that went a wooden subfloor and a finish of strip hardwood flooring. The hollow floor, according to Cooper, creates a reso-

nant quality that enhances orchestral recordings. “It's like having a little concert hall in the middle of the recording studio,” he contends, pointing out that Stage A was built in the same manner.

The hollow floor of the main stage posed a challenge in the area of sound-proofing, since the same qualities that enable orchestral sounds to travel and blend also allow unwanted sounds to do the same. Outside noises are stopped around the perimeter of the orchestral space by a concrete stem wall. Eighteen-inch-thick perimeter walls are composed of nine layers of sheetrock, each one sealed with rubber from top to bottom.

Interior treatments vary from space to space. In the main room, fixed acoustic diffusers consist of triangular oak panels that randomly reflect high- and mid-energy back into the scoring stage to create ambience. The reverberation time is in the range of 0.9 to 1.0 second. In the drum booth, movable wooden slats, covered on one side with plastic laminate for a very hard sound, can be positioned to create either a live or dead room ambience.

The emerald-shaped, 27-foot domed ceiling of the main stage has been constructed as a huge bass trap, containing a chamber of 1,440 cubic feet that selectively absorbs unwanted boominess. The trap is covered with wool cloth and hardwood slats placed in such a way as to reflect mids and highs back into the room and increase diffusion as a result of thousands of hard/soft surface variations.

All the finer points of the room's look and operation display forethought and finesse. Ventilation panels are handmade of oak with diffusers; all the audio and video wall panels are hidden behind cabinetry; even the sprinklers have “phantom” covers that pop off if water pressure is applied. Clean power is provided by a large isolation transformer and voltage regulator, and “trap doors” in the stage floor allow access to power, mic lines and other necessities for the conductor and music editor.

Control Room

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lexicon
The Art and Science of Sound

reproducers are intended to operate at a remote location in the second floor machine room," Cooper says. "However, for those who prefer them to be within arm's length, connector panels are provided." An elevator is conveniently located just off the loading dock and opposite the loading area for Scoring Stage A. Equipment can be moved in and out, or transferred from one stage to another, without having to pass through the studio or control room.

Cooper built the room with a proprietary Expansion Ceiling™ that slopes up toward the middle to a height of just over 16 feet, promoting exceptional stereo imaging and providing the volume necessary to best reconstruct rich orchestral sounds. A 300-cubic-foot bass trap in the rear is tuned to the room dimensions using the formula for a membrane resonator.

The control room window is, in Cooper's words, "the biggest one I've ever seen." Its size allows mixers and producers to see nearly every stage area and the full height of the Stewart 11x27-foot screen from the console position.

The V Series custom film scoring console just installed is the largest Neve board ever shipped to North America. "It's a one-of-a-kind at the moment, but I'm sure it will set the pace for other people," McCormack says. Based around a standard VR 60 with Flying Faders automation, substantial modifications were designed by Warner Bros. staff with assistance from Neve engineering. In addition to the normal in-line monitors, it contains a second 64-input monitor side with extensive matrixing capability. The talkback switching allows control room personnel to select specifically to whom they will talk, and while most consoles are built to switch between two multitracks, this one will switch among four. Taking into account all possible returns, the mixer has 184 inputs, making it one of the largest anywhere.

Flanking the console on either side of the glass are one of the iso booths and a producer's booth, both of which are accessed through double sliding-glass doors separated by one foot of air space. Each of the thermopane doors consists of two layers of 1/4-inch glass with one inch of air space in between. The producer's room is outfitted for video and audio monitoring, and is intended to allow production staff to conduct business during sessions without interruption.

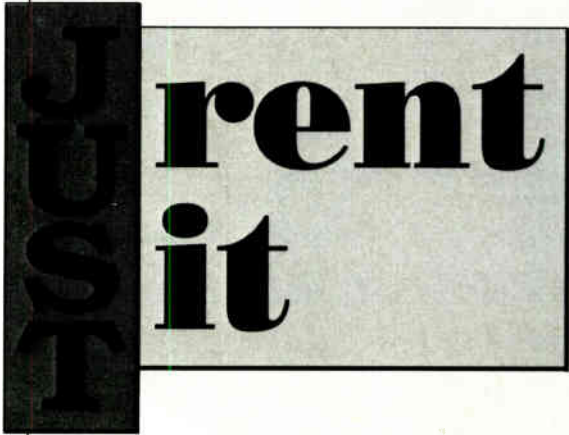
Left, center and right monitors will

be English-made ATC 300s wired with Audio Quest Lapis speaker cable. Four surround speakers are JBL 8330s, and for monitoring on the stage itself, JBL 4675s. One of the two Sony 32-XPR video monitors will be for automation, the other for program. Peripheral equipment will go in a rack at the center-rear of the room, which, McCormack points out, serves two purposes. "It's not only a patch bay, but a desk, so the copyist or arranger can do their writing or changes back here." The patch bay is in a rack rather than in the console; with over 2,000 patch points, it allows access to signal

at almost any stage.

Some 140,000 to 150,000 feet of Mogami wire were used between the console, the stage and the machine room. "You usually find something like this in a dubbing room, but not a scoring stage," McCormack says proudly.

An elevator ride away is the last component of the stage: the upstairs machine room/projection booth. McCormack has chosen Otari MTR-90, Studer A820 and Mitsubishi X-880 digital multitrack recorders to go with Albrecht sprocketless mag machines, Australian Perreux amplifiers that have been



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The sound department is currently evaluating two German projectors: the Kinetone and the Perfectone. "Nobody is using them in this country at this moment," explains McCormack. "We have the only ones in captivity."

Cost vs. Benefit

There is a trade-off involved in running a full-service sound department. "There's the theory that says equipment you order today is almost obsolete by the time it's delivered, because the next wave [of technology] is out," McCormack says. "We try to keep abreast by looking at innovative equipment that takes into account technology coming down the road. Examples are enough inputs in the console, switching capabilities for multitrack machines and the digital domain."

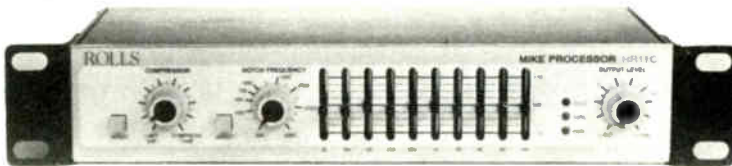
In Warner's dubbing rooms, the consoles have all been fitted with GML automation, and the sound department has embarked on a plan to install even more electronic editing systems. "Over the next 30 to 60 days, we'll be changing one of our present ADR facilities, incorporating the LarTec to give us greater flexibility both for video and film." These and other purchases represent a financial commitment that is ongoing.

"The nature of this business doesn't lend itself to plateauing," McCormack says. "You may stop major construction, but equipment all has a lifespan. It takes a lot of punishment, and at a certain point, it just gets tired. Between the maintenance and the mileage, it's more advantageous to just upgrade. You can't afford to have a 100-piece orchestra on the stage and have the console go down, because you can't pick up the phone and say, 'Hey, I want to rent a console. Can you have it here in an hour?'"

The up side of the struggle to remain state-of-the-art is that it keeps the facility on top. One example McCormack cites is transfers from digital multitrack to 35mm. Warner Bros. can perform this service for other studios because they've kept the machinery up-to-date.

"We still try to keep up that tradition [of firsts]," McCormack asserts. "We are one of only a few facilities in existence with complete sound capabilities. This way, we have control over the end product. We furnish the best equip-

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ment available to do the job, we maintain it, and we do any modifications that are needed. If a production on the lot has a problem, we're only a phone call away. If they go out on location, we furnish backup equipment and resolve problems if they run into difficulties.

"In order to offer clients something from beginning to release, and give them control over it all the way through, it's vital to keep all this together, rather than do as some other studios have: get out of the scoring business and production sound."

More To Come

Future plans for the lot include a 60,000-square-foot post-production facility for which Jeff Cooper Architects has just finished drawings. McCormack hopes to begin construction in early 1992. When finished, it will expand their capacity for film-to-tape and tape-to-tape transfers, ADR, prelay and electronic editing. Dubbing Stages 2, 3 and 5, and Scoring Stage A are also scheduled for upgrades.

Another major project is a large theater for which drawings were sitting in McCormack's office the day of this interview. "One goal of management is to have a 400- to 600-seat theater on the lot," McCormack says. It will undoubtedly include some digital sound system, although he declined to speculate on whose would be selected.

So while sound recording at Warner Bros. has gone from disc to digital, the impetus behind the newest wave of building and acquisition is the same as in the past: the desire to remain an acknowledged leader. It is this mentality that has brought the studio kudos for everything from award-winning classic scores like *My Fair Lady* to Disney's *The Black Hole*—the first score to be recorded digitally, on a 3M machine in the late '70s—to two of this year's Oscar nominees: *Ghost* and *Avalon*. Looking over the new stage, McCormack nods with satisfaction and concludes, "We're trying to live up to the Warner Bros. name by being number one in the sound department area."

(For cooperation above and beyond the call of duty, special thanks to Chris Chigaridas, assistant director of post-production sound at Warner Bros., and Jeff Cooper, owner of Jeff Cooper Architects, A.I.A.).

Amy Ziffer writes a monthly column for Mix on Los Angeles recording facilities and industry events.

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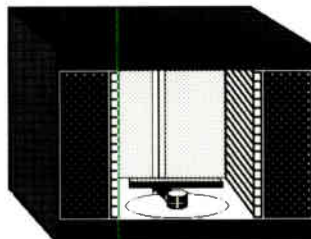
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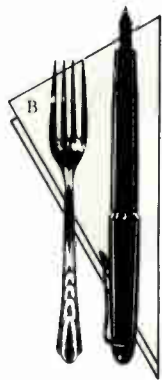
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by Mr. Bonzai

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If you pull out a few of your vintage Yes albums, you'll notice the credits read, "Produced by Yes and Eddie Offord." Starting out as a musician in the late '60s, Offord quickly switched to engineering and then assumed the new and coveted role of engineer/producer.

Offord was at the center of the seminal English sound of the early '70s, producing and engineering seven monsters for Yes and a couple for Emerson, Lake and Palmer. He engineered Pink Floyd for Antonioni's *Zabriskie Point*, worked on *The Last Waltz* and Showtime's *Synchronicity World Tour* for the Police. Other notable credits include several tracks on John Lennon's *Imagine*, riding herd on the R.C.O. Allstars, featuring Dr. John, Booker T., Levon Helm, Steve Cropper and Donald "Duck" Dunn, as well as respectable projects with Todd Rundgren, Thin Lizzy and the Dregs. He recently moved to Los Angeles with his family and will pursue new projects after completing an ambitious collection of old and new Yes recordings.

Ah, Yes. The band began its classic rock odyssey in 1968, progressing through various line-ups, including

distinctive vocalist Jon Anderson, keyboardists Rick Wakeman and Tony Kaye, drummers Bill Bruford and Alan White, guitarist Steve Howe and bassist Chris Squire. In checking the many branches of the family tree, it's notable that Squire has been at the bottom of things through every incarnation.

When I think of Yes, I hear the angelic choruses balanced with the dark rumblings of British power rock. The music cranks up a mighty machine and then drops down to Earth with delicate acoustic passages and baroque synth excursions. Offord lets you catch your breath, leaving space in the drama. The rhythm and dynamics slap you around, creating an operatic, quick-cut cinematic effect.

I was invited to meet with Offord at Hollywood's Cherokee Studios during mix sessions for the Yes reunion. Old tracks are being cleaned up, new tracks are being created, and the gang is getting together to take their history on the road. When I arrived early in the evening, Offord was hovering over the console with Tony Kaye, Chris Squire, and a newcomer to the team, Billy Sherwood. Offord snaps the caps off a

Left to right:
Eddie Offord,
Tony Kaye,
Billy Sherwood
and Chris
Squire at
Cherokee
Studios.

PHOTO: MR. BONZAI

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LUNCHING WITH BONZAI

couple of Coronas, and we start to chat.

Bonzai: You're most associated with Yes...

Offord: Along with Emerson, Lake and Palmer, I would say so.

Bonzai: Do you like that identification?

Offord: Yes, because that kind of music was very acclaimed for its sound: the clarity. That kind of music really lends itself to exploration for an engineer.

Bonzai: When you refer to that clarity of sound, what years are you thinking of?

Offord: The early '70s, 24-track and sometimes even 16-track recording. I've seen the whole recording scene change in the time I've been involved.

Bonzai: Let's go back to your formative years. You were a musician first, a guitar player.

Offord: I used to play in a band, starting in the English equivalent of high school. I always loved music. And just by coincidence I was looking for a holiday job and saw an ad for a sound engineer trainee. I thought I'd give it a shot, and when I got in the studio and saw the musicians playing, and those big speakers, I was sold. At night I'd

finish a session and have my band waiting around the corner. We'd pretend like we were closing up the studio, and then I'd play guitar, record and mix in the off time.

Bonzai: Did you have an engineering instructor, or were you self-taught?

Offord: When I first started, there weren't any recording schools like we have today. Basically, you got a job as an apprentice.

Bonzai: Did you have a mentor?

Offord: There were a couple of influences in the beginning, but I think I pulled away on my own fairly soon.

Bonzai: Did you feel satisfied with your new role as engineer, or sad that you gave up the guitar?

Offord: I wouldn't switch sides of the control room window to save my life. I prefer being on this side.

Bonzai: I've been listening back to some of those early recordings, and what strikes me is the *wham-bam, bam!* *hard left, hard right, sweep across the speaker's stereo.* I miss some of those wild things we used to hear, like footsteps going from one side of the room to the other, lead vocals hard right and chorus hard left: a real cinematic feeling to sound.

Offord: Obviously, since I first started

there have been many developments in the way in which things are recorded. Unfortunately, I think it has become a little bit too homogenized. Every sound is so huge that you can hardly tell one band from another. Guitars tend to be multilayered, and the drums might be live but they have samples added. Everything sounds bigger than life. This is cool, but I think there is a tendency to lose the identity of the band behind that wash of sound, if you know what I mean.

Bonzai: Exactly. In listening to your work, there is an impression of an immense sound, but when you start analyzing it, there are relatively few elements involved.

Offord: Yes, you can actually tell what each member of the band is playing.

Bonzai: In the Yes recordings, there is dramatic buildup, and then suddenly the bottom will drop out and you showcase one lone acoustic instrument. A lot of dynamics and space. Were you responsible for that?

Offord: Yes.

Bonzai: I mentioned to a seasoned engineer, Bill Dooley, that I was going to be meeting you, and he said, "He's my idol! He's the reason I got into this business."



Offord: Oh dear.

Bonzai: He felt that you were one of the first engineers to get credit where credit was due. Is that true? Are you one of the guys who elevated the position of the engineer?

Offord: I would say so, yes. Way back when I started, the engineer was more of a technician and didn't really contribute that much artistically. He was just told to do what he did. I think Glyn Johns and myself were among the first crop of engineers that turned into producers.

Bonzai: Did you push for it, or was it the chemistry of the situations you found yourself in?

Offord: It was the chemistry. I had engineered one album with Yes, called *Time and a Word*, which didn't do very well at all. Then Phil Carson from Atlantic said that the band didn't really need a producer. I was asked to co-produce with them. The very first album that we did together was a big hit, *The Yes Album*.

Bonzai: How did that relationship fit with the bandmembers?

Offord: Basically, there were a lot of different factions in Yes, and they had contrary tastes and feelings about the music. I would try to channel all this

high energy of wanting to do everything and act as a mediator, a referee, trying to figure out what ideas were good and which were bad.

Bonzai: Were there ever any arguments?

Offord: Yes. [laughs] And I was the one who was called on to make the peace, as it were.

Bonzai: Let's talk about ego—for the artist, the engineer, the producer.

Offord: Purely as an engineer, you must have very little ego, because you are dealing with big enough egos as it is and another one just doesn't help. As an engineer/producer, you have to be a little more forceful and stand up for what you think. But I've always been flexible. I've always gone by the philosophy that if someone has an idea, it takes just as long to argue about it as it takes to try it. If you try the idea, the speakers don't lie. Either it works or it doesn't.

In the band, 90% of the ideas were terrible, but there was that 10% that were really great. If you rejected every idea from a particular member, you could lose out on something that might really work. I kept an open mind about other people's suggestions.

Bonzai: So there was a certain amount

of experimentation going on?

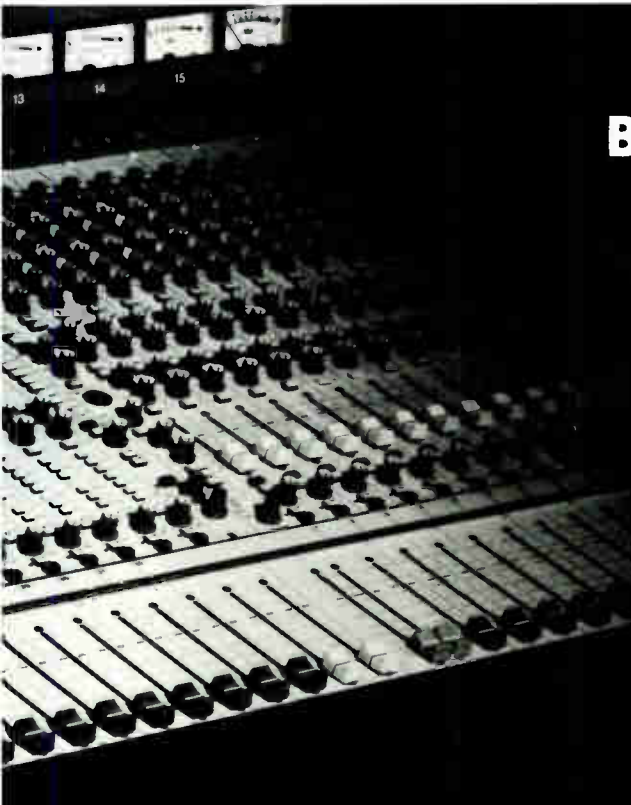
Offord: Yes, we did all sorts of wild things.

Bonzai: Did you keep the outtakes?

Offord: Not really. With Yes it was a very different process. Some of the songs were 20 minutes long. They never played the song from top to bottom. We'd do the first musical section, which might be 30 seconds long, and work on it until they were really happy with it. We'd do it section by section, so there were no outtakes. The 24-track was a series of splices.

Bonzai: Didn't that cause trouble in re-creating it on stage?

Offord: No, not at all. Once the album was finished, the band would have to learn how to play it. [laughs] Having done that, at some point after the *Fragile* album, they talked me into coming on the road with them and doing live sound and making them sound like they did on record—even better, hopefully. I had two tape machines so that I could just cue in—although it wasn't a Milli Vanilli-type thing—certain overdubs that they couldn't accomplish all at the same time. Maybe a church organ here, or a vocal part there to add a touch of the record.



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LUNCHING WITH BONZAI

Bonzai: This was in the period of the *Yessongs* live triple album?

Offord: Yes, and I was on the road with them for four or five years. It changed my life totally. I was just this young kid who had grown up in a recording studio. All I'd seen in my life were those four walls, and suddenly I was touring America, Japan, Europe, Australia. Doing a lot of partying, meeting girls. One thing it did teach me was that when you go out on the road with a band, when you do the same show every night, most times it's good, a few times it's terrible and a few times it's really magical. You can't forecast it. On those magical evenings you come off feeling so uplifted.

Bonzai: One of your hits: "Roundabout." That's a backward tape at the beginning?

Offord: Yes, a backward piano. It took quite a long time to assemble it, because it meant picking the right notes and editing it all together.

Bonzai: When you take it apart, it's a pretty strange combination: an acoustic guitar with a backward tape, a technical maneuver. One of the most distinctive instrumental hooks in popular

music.

Offord: Well, in some ways, people were a little more daring, more creative back then. I love the bigness of the sounds today, but like anything else, it gets overdone. The first time the flange was invented, it was like you soon heard flanging on every record. I guess the first ones were Small Faces on "Itchycoo Park." They did a very tasteful thing, and then, of course, it was all overdone and everyone phased everything up the wazoo. Every new recording technique that comes out usually starts very tastefully and then gets overdone.

I would like to see a situation where the new technology could be right alongside some of the earlier technologies so that you get the feeling of hearing a band. Places in the song without huge drum sounds—clean and clear, so you can hear what the drummer's inflections are. And maybe in other parts of the song you can go for the wall of sound, or whatever. But to have that wall there all the time gets extremely boring.

Bonzai: In that era of Yes, Emerson, Lake and Palmer, Pink Floyd, Moody Blues and Genesis, there was a very powerful thing happening in England.

I imagine that there was a healthy competitiveness, of trying to top one another, which resulted in all these seminal records. What's your take on that time?

Offord: I think we took more chances back then. We really got 110% out of the equipment, which was pretty meager back then. We were forced to be innovative. Yes, there was competition. Especially for me, working with Emerson, Lake and Palmer and Yes at the same time. They were jealous of one another when I was working with one or the other. They all had their own individual sounds, but they were competing to a certain extent.

In general, I would say that my success comes down to my ability to get along with people and make them feel good and create the right atmosphere, more than it is my engineering expertise. That's the most important quality someone in my position can have.

Bonzai: Right now you're doing a boxed set, a Yes collection?

Offord: You know, it's a funny situation. I worked with a band a few years back called Platinum Blonde, and they went five times platinum. I did an album with Billy Squier. Some albums go straight up the charts and then straight

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down the charts. You never hear from them again. If you're *lucky*, they go straight up.

With Yes, I keep hearing this bloody music on the radio. It does sound a bit dated to me nowadays. On this boxed set I'm actually going in and remixing a few tracks, like "Close to the Edge." I don't want to lose the integrity of what was happening back then, but I know that with the modern devices around today, I can make it sound even better.

Bonzai: So you're not going to offend the religious fans?

Offord: I'm going to be extremely careful not to! No, I'm not going to put drum machines all over it. I just want to do it tastefully, but better.

Bonzai: That was an interesting period. Do you think audiences today are as profoundly moved? Back then the music was a lifestyle. You locked onto bands.

Offord: I think the younger generation has its heroes as much as we had back then. And I also think that things are starting to change a bit in the music business. Bands like R.E.M. don't go for this heavy production stuff. They just want to do their thing. I think there is a cycle going around, and as each gen-

eration comes up they go through what we did. I have a 20-year-old step-daughter, and she cries when she sees some bands. She went to see a U2 concert and she was crying all the way through it. It was so emotional. So, I guess it's the same for them, too.

Bonzai: Is Yes getting together for a tour?

Offord: The idea of a reunion tour has been proposed, and I assume it will come about. The whole band, old and new, will get together and do a massive tour. They'll do some songs where Rick Wakeman, Tony Kaye, Trevor Rabin and Steve Howe join up, and smaller groupings. It should be quite interesting. The dates are all booked. I hope it all comes off.

The actual physical part of putting all those people on stage is not going to be easy, from a staging point of view. I think the plan is to use a revolving stage.

Bonzai: Will you be engineering?

Offord: I would definitely like to be involved to some extent, to make sure it all runs smoothly.

Bonzai: Let's touch on some of the other people you've worked with. Tell me about the *Synchronicity* world tour.

Offord: We did live recording. I went

out on the road with the Police and studied all the musical cues for four or five dates, made notes, and when I was together on it, we brought in a huge truck and recorded for two or three weeks. Then we went into the studio and fixed a few bum notes here and there, and Sting resang some vocal parts. We had women singers on that tour and we double-tracked them back in the studio. I think it came off very well. It sounds good.

Bonzai: John Lennon?

Offord: I recorded "Jealous Guy" and "I Don't Want to Be a Soldier Mama" for the *Imagine* album. What happened is that I started the album out and it was going really well. It was a very magical experience for me, but I was so into the progressive rock thing at the time that I told John and Yoko that I couldn't continue on with the album because I had prior commitments. I started the album and then had to withdraw from the project.

Bonzai: Had you known John back in the early days?

Offord: I'd met him briefly at parties, but you never really get to know anyone that way. I didn't really get to know him until I started to work with him in the studio.



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Bonzai: What was he like?

Offord: It was really great. He had a sixth sense and an awareness about him that you could feel. Although he hadn't gone to great schools or studied, and wasn't extremely sophisticated in terms of some things, he had this soul that just shone through everything. Yoko was really the intelligent one in the family: a smart lady, and a nice lady. I liked her, although I hated it when she sang.

When we would have a break in the studio, John would say, "Well, let's do some stuff with Yoko." She would go and scream into this mic while the band was playing. To me, it sounded pretty bad, you know? I'm sure she wouldn't mind me saying that, and I respect her as a person. I think John and Yoko were just made for each other.

Bonzai: You've worked with a few other people whom I greatly admire. What about Dr. John?

Offord: Oh, yeah, it was great working with him. It was up in Woodstock, New York. I had my own studio there for about 15 years, a unique place in the sense that I set up in the same room with the musicians. And Levon Helm had this huge barn and house, which we used. Levon played drums. Steve Cropper on guitar, "Duck" Dunn on bass, The *Saturday Night Live* horn section. It was a great assemblage of musicians, and a lot of fun. The hardest part was getting them all to be in the same room at the same time to play. Before we started recording, Dr. John actually did an hour's ritual where he went around the outside with incense and blessed the studio.

Bonzai: I bet it helped.

Offord: [laughs] I think it did, yeah.

Bonzai: How about Paul Butterfield?

Offord: Oh, he was in the band, too. Paul was a very close friend of mine. We used to hang out all the time and terrorize the people in Woodstock. He's one of those sad cases of someone who really wanted to die.

Bonzai: Remember the *East-West* album?

Offord: Yes. He was definitely the best white harmonica player that I've heard. John Mayall comes a close second, maybe.

Bonzai: No doubt you're fairly wrapped up in today's technology. Have you got any new tricks up your sleeve?

Offord: There is a whole array of toys out there. So many signal processors,

which I think people tend to overuse. I would like to mention the speakers that I'm using, though—Radian.

Bonzai: These are near-field monitors?
Offord: Yes, but while using them I've heard comments like, "Let's hear what it sounds like on the little speakers." And I say, "Well, those are the little speakers." I think they give you a tendency to put a little bit more middle and high-end than you would with the Yamahas, which are sort of the industry standard. I like them very much.

Right here, I'm using this new device, a processing thing called Spherical Sound. There are other systems that are similar, like QSound, which Madonna used. Roland is supposed to be bringing one out. This one is quite sophisticated. It's a nice addition as a processing thing, to space a sound out if you like. The object of the exercise is, if you have the mix set up perfectly and you close your eyes, you can't tell where the speakers are.

Bonzai: Of all the people you've worked with, who is the most outstanding, the most amazing artist, the genius?
Offord: There have been a few, but David Sancious is one for sure. He's not very well known, but he's an incredible

keyboard player—one of the best ever. He's on tour with Sting right now, and he's played with Peter Gabriel. I did two solo albums with him. They weren't phenomenal commercial successes, but a lot of musicians enjoyed the albums.

There's also the technical genius: someone like Keith Emerson or Rick Wakeman, who can play that really fast stuff. Emerson would play in 7/8 or a really weird time signature with his left hand, and he'd be drinking a beer with the other hand and carrying on a conversation with someone at the same time. The guy's technique is incredible.

It isn't always how much you play, but how much you don't play. Rick Danko used to say, "Hey man, I don't play bass, I play space." And Lennon really blew me away. Chris Squire is an amazing bass player, one of the best in his class. Those are a few names that come to mind.

Bonzai: Any advice for those aspiring to your position? Is there any shortcut?
Offord: You must stop copying other bands. I have this theory: England is about the size of one of your states here in America, but so much innovative music has come out of England. The reason is partly the lousy weather, and

that the pubs close at 11, and that the TV and radio are totally screwed up. You can't just switch on the radio and get whatever you like. They play a little bit of this and a little bit of that, and it drives you around the bend. So, bands go into their garages and come up with things that are new.

American bands are so exposed to radio and MTV that they try too much to copy. Obviously, you have to draw from your influences, but there is a fine line between that and sheer copying. You have to believe in what you are doing, and you have to have your own sound and approach to music. Draw influences, but don't emulate.

I also think that the music business has changed a lot. Earlier on, people were more daring and adventurous. Today, if Yes was a new band and they came to the record company with 15- and 20-minute songs, they'd say, "Get outta here!" The record companies are responsible for saying to an artist, "Listen to Madonna, Michael Jackson—that's what you should be doing." They are also culpable. ■

Roving editor Mr. Bonzai denies that in the early '70s he had higher platform shoes than Keith Emerson.

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by Peter Caranicas



STARTING FROM SCRATCH

HOW SYNC SOUND ANTICIPATED THE FUTURE

Ken Hahn says he never intended to get into the facilities business. Eight years ago, after building a good client base as studio manager of New York's Regent Sound, he wanted to become a freelancer. Why, then, did he and Bill Marino, who was Regent's chief engineer, start Sync Sound, the New York audio post house?

"Because we couldn't find an audio-for-video facility to work in that we thought would be able to grow into the future," Hahn says. "We looked at existing houses and didn't like them. It seemed best to start from scratch."

So Hahn and Marino came up with a plan for a new audio post house. Now co-owners of Sync Sound, they run a facility with about 30 full-time employees that occupies 11,000 square feet on Manhattan's west side. To build it, they got financial backing, but it's really their careful planning that made Sync Sound a success.

That planning was built upon certain rules.

First, don't make clients pay for more than they need. If a client is just doing voice-over, he or she doesn't want to pay for equipment in a room that's not being used.

Second, give clients options. "Inevitably, they come up with new ways of shooting things," Hahn says. "You'd think that by now they'd have it together. But they'll come in and say, 'I've recorded on F1, and backed it up on DAT, and shot some Beta, some 1-inch, and some D2—oh, and I've got this film stuff, too.' You need some of everything."

But if you get some of everything to please everyone, how can you keep costs down? Hahn and Marino wrestled with this quandary. "It's a hardware-intensive business and you need to have a lot of formats available," Hahn says. "Do you put them all in one room?"

Ken Hahn and Bill Marino, co-owners of Sync Sound Inc. in their new Studio J editing suite, featuring their fourth AMS AudioFile Plus system.

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If you do, it ties that room up, yet every job eventually entails some voice-over, some music editing, some effects editing and some dialog editing."

Which led Sync's founders to the third rule: Look before you leap.

There's the easy way to get into audio-for-video, Hahn says, and there's the right way. "The easy way is to start with a recording studio, add a monitor and a 3/4-inch deck, and put in a synchronizer to let your multitrack chase your videotape machine. All of a sudden you're in the video business. Then you realize you need to edit sometimes, so you add another audio tape machine you can edit to. Then you need to mix to 4-track, so you add in a third machine. All of a sudden you need interfaces, rehearse capabilities, and this machine has to talk to that machine."

The right way is to design the facility for audio post right from the beginning. From its inception, what has set Sync Sound apart is its central equipment room. "Back then, it made us different from other facilities," Hahn recalls. "We knew that equipment was getting bigger, noisier, hotter, requiring

more pampering. Plus, people were changing formats. One day they'd do 24 tracks, the next 16, then 32- or 48-track digital. You couldn't have a room with all that stuff, nor could the client afford it. Now, inside the suite, you can switch from one format to another any time you want."

Sync Sound's strategy—not so obvious in audio post at the time—was to have the equipment room wired in such a way that any machine can be accessed from any of the facility's suites via a patch bay with 32-track patch cords. Two operators talk to the suites via intercom. VTRs in the room include Sony BVH-2000 and BVH-2830 1-inch, Sony Betacam SP and Sony D2 composite digital machines, and JVC 8250 3/4-inch decks to make work copies. A Magna-Tech 16/35mm mag recorder handles film work. The room also contains a Sony PCM-3324, PCM-1630, F1 and R-DAT recorders, an Otari MTR-90, a variety of Nagra's and a new Sony PCM-3348 digital 48-track machine.

"Even though we designed the central machine room eight years ago, its configuration is still optimal today," Hahn says. "We couldn't foresee the

exact direction technology would take, but we knew that maintenance will always need to walk behind equipment."

Studios and workstations served by the machine room include: Studio A, equipped with an SSL 4000 E Series, Foley stage and video projection; Studio B, Sync's earliest suite, equipped with an SSL 6000 E Series console; Studio C, Sync's smallest room, equipped with a Soundcraft 24-track and used mainly for sound effects, voice-over and smaller programs; and Studio D, Sync's first AMS AudioFile room, used extensively for dialog editing, splitting of tracks, sound effects and music editing.

In addition to pioneering the central machine room in audio, Sync Sound was one of audio's earliest users of digital, having conducted its first digital audio mixing session nearly seven years ago. Now it has four AMS AudioFile Pluses. Their hard drives are in the machine room, but their creative ends are scattered throughout the facility.

A newly completed area into which Sync Sound has expanded contains one of the AudioFiles and includes a room with an NED PostPro SD. This area has its own, smaller machine room with 3/4-inch, Beta and 1-inch decks, and is also interconnecting with the main machine room. "We built this area for those who want to be able to do it quickly and make it work artistically. The PostPro and the AudioFile are here. Inevitably, as much as you don't want to do editing in a mixing room, you always end up doing it. Once you get all the tracks up, you hear, 'We've got to move that voice-over two frames earlier.' That's a lot easier nowadays. Before, the client would say, 'Can we just hear this one more time?' You'd give him a look that says, 'It's gonna take awhile.' He'd say, 'You know what, let's forget it.' But if you can give him what he wants, he's that much happier. He'll say, 'Now I can tell my client that we've tried everything.'"

Much of Sync Sound's business consists of audio post for long-form programming, which means lots of episodic TV, concerts, TV specials and sports programming. One of Hahn's favorite projects was *Billy Joel Live at Yankee Stadium*, shot at the ballpark last summer. "It let us put together all the things we've learned about how to mix and sweeten for picture," Hahn says. "We shot picture of the audience one night, the performance the next.

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We recorded sound both nights on 48-track [analog with Dolby] SR and later bumped over to 48-track digital." Hahn mixed the audio on a Sony 3348 using the SSL in Studio B. *Billy Joel* has been released as an 85-minute home video, as well as a concert on cable's Disney Channel.

Hahn's and Marino's foresight eight years ago enabled them to build an audio post facility that, in Hahn's words, "grew into the future." But now they have to think about the *next* eight years. How can they keep and increase their clientele?

Hahn believes the best way to court producers is to approach them as filmmakers. He points out that, for historical reasons, television and film have inherited different attitudes toward post-production. When it was live, television used no post at all. And after video recording was invented, "It was possible to do a videotape edit and walk out with a finished audio track, which is a mixed blessing. In film you would never finish cutting your picture and release it. It's unheard of not to do some sort of mix.

"A lot of our clients," Hahn continues, "prefer to shoot, edit and mix on film. But the fact is that for economic reasons, many who used to shoot film now have to shoot Betacam. But they still call it film. They want their tracks treated as though it were film. These are filmmakers, making films—on videotape. They want the dialog split. They want extensions put onto tracks. That's one of the things this facility does better than most." ■

Peter Caranicas is a freelance writer living in Pleasantville, N.Y. He is the former editor of Millimeter magazine.

POST NOTES

National Moves into Audio

National Video Center, one of New York's largest video facilities, has formed National Sound, an audio division offering musical services ranging from original compositions to audio post. National Sound is headed by creative director Peter Fish, scorer of numerous commercials and TV shows, and spouse Jennifer Fish. The opening of National Sound follows an upgrade of National's digital audio Studio 4 and the arrival of senior audio engineer Doug Di Franco, former audio pro-

ducer for several MTV projects. The suite includes an NED PostPro SD workstation, a direct-to-hard disk editor with recording capability integrated with a Synclavier 3200, Sony PCM-3324A 24-track digital and SSL 4000 console. National Video VP Andrew Lustig, who put together the deal setting up the new division, was motivated by what he calls "a need to keep our video clients under one roof. We



Senior audio engineer Doug Di Franco at the controls in National Video Center's new all-digital audio suite.

did a lot of business with clients who went elsewhere for audio, primarily because we didn't offer them a good alternative. Prior to this we offered only mixing, and people were looking for a more creative atmosphere." Lustig underscored National Video's financial commitment: "In addition to purchasing two PostPro units, an SSL console and all-digital mixing for one of the rooms," he says, "there are tremendous salaries associated with our music division. We've hired top people, with clientele, and they're worth it. You can't bring in top creative people without giving them the best toys. And you can't have the best toys unless you have the best people running them."

Superdupe Meets Back to Back

New York-based Superdupe, in busi-



ness 22 years, has signed a deal with Back to Back Productions, the four-year-old team of composers/arrangers Chris Andromidas and Richard Fiocca. In addition to activities in high-speed duplication and spot trafficking, Superdupe operates six interlinked audio post suites. Thirty-five percent of its business consists of audio-for-video, according to manager John Adelman, and clients include CBS Sports, MTV Networks, Young & Rubicam, DDB, Needham, Saatchi & Saatchi and HBO. Superdupe gear includes two Sony BVH-3000 1-inch machines that can be patched to any of the rooms for video interlock. Four rooms have Lynx synchronizers; the other two are equipped with Adams-Smith. The facility's digital workstations include an SSL ScreenSound and DAR Soundstation

II. "Clients love them," Adelman says. "Even though there's an extra \$50 charge in those rooms for using that equipment, they think it's worthwhile because it can save you time, and it can give you more creative possibilities." Andromidas and Fiocca have scored and written title songs for dozens of TV shows, documentaries and films. In addition to composing, they offer clients sweetening and sound design, and have established audio and video links plus full SMPTE time code interlock with Superdupe's studios.

Wetzler/Transcom Collaboration

Composer/sound designer Peter Wetzler recently completed three widely contrasting TV and video projects in conjunction with New York facility Transcom Digital. He scored some acts of PBS's *The Colored Museum* for the network's *Great Performances* series, with Transcom's Richard Fairbanks coordinating audio post. Wetzler also scored the opening of Worldvision's video re-

Chris Andromidas and Richard Fiocca of Back to Back Productions



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release of the TV series *One Step Beyond* and added original underscore to each episode upon editing to D2 at Magna Sound and Video and digital remastering at Transcom. Finally, he scored the investment video *Indonesia: Islands of Promise* for Hill & Knowlton. Wetzler works out of his scoring suite with tielines to Transcom's 24-track digital recording studio, which houses an SSL console and Compusonics disk recorder with ASR editorial software.

POST BRIEFS

An Avid Media Composer random-access, nonlinear Macintosh-based editing system is now available at **Digital Multi-Media Post** in Orlando, FL, for film and video post...International Video Network did the post-production on *Scenic Wonders of America*, three hour-long videos released by *Reader's Digest*, at San Francisco's **Pacific Video Resources**. For six months, PVR night editor Hank Duderstadt worked in Betacam SP with IVN's Marianne Gammon and Chris Valenti to condense 150 hours of

source material into three. PVR graphic artist Caitlin Content designed and created opens, maps and effects using an Abekas A60 digital disk recorder and transferring digitally to D1 component digital tape...**Cycle Sat** of Forest City, Iowa, has launched a high-speed delivery service for TV commercials. Called Satellite Shuttle, it links New York and L.A. with 21 other centers in North America for turnkey delivery of video in two hours or less. Cycle Sat picks up a tape of the spot, uplinks it to satellite, and duplicates it at the downlink. The cost: \$460 for a spot transmission from coast to coast; duplication and physical delivery are extra...A milestone was passed recently when **Mitsubishi** digital multitracks (X-800/850/880) and 2-track mastering recorders (X-80/86) entered their tenth year on the market. The latest buyers: T&R Trilogy of Somerville, New Jersey, and Javelina Recording Studios in Nashville. Both bought an X-880. The 200th Mitsubishi X-86 to be sold worldwide went to 321 Studios, New York...**Howard Schwartz Recording** audio mixer John Alberts recently completed audio post for *Nine*, a one-hour prime time

special about abused kids, produced by Oprah Winfrey's Chicago-based Harpo Productions and syndicated nationally on over 200 stations by King World. Working with Harpo producer/director Lloyd Kramer, Alberts used a Sony PCM-3348 digital multitrack and an SSL 6048 G Studio Computer to conform and clean up dialog, then combine it with an original score. Video offline was done by Patrick Sheffield in Chicago, with online completed at New York's Broadway Video...Group W's **WMMR-FM** (Philadelphia) has purchased a 4-track upgrade kit to boost its Digital Dynamics 8-track ProDisk-464 digital audio recorder and editor to a 12-track version...Meanwhile, **Digital Dynamics** has released advanced operating system software for the ProDisk-464 family. Dubbed Series III, it provides speed capabilities said to approach those of RAM-based editors. The new software is being shipped free to all ProDisk-464 customers on record...**Communications Engineering Inc.** in Alexandria, VA, is designing and building a complete turnkey facility for Gannett Broadcasting TV station WUSA, Washington, DC. ■

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Starr goes on to say, "We just did a new theme for the Arsenio Hall show, and we did fantastic things on the intro with the new Akai sampler. It wasn't a case of eliminating musicians, but of adding elements that we could only imagine before. Also, I am just finishing my first solo album in which I used the Akai sampler for a wide variety of instrumental, vocal and percussion tracks!"

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by Philip De Lancie

TAKING STOCK

TAPE SUPPLIERS ASSESS THE CASSETTE



The compact cassette is kind of like the Rodney Dangerfield of prerecorded music. It's been the largest-selling configuration for years, but it still can't get much respect.

The compact cassette eclipsed vinyl without inheriting the LP's hi-fi mantle, having never lived down the poor reputation it acquired early in the development of high-speed duplication. It's a multipurpose workhorse for everyman, but it lacks the high-tech allure that has made the CD the format to watch for nearly a decade. Even now, at what may be the peak of the cassette's popularity, the big question is not if that popularity will begin to decline, but when.

Nobody's claiming the cassette is on the verge of following vinyl into the void. But the CD, having finished off the LP, has begun to look like more of a threat lately. As of this writing, final RIAA figures for 1990 have yet to be released, but it's safe to say that the climb in CD sales continues to be fairly robust, while growth in cassettes remains comparatively flat.

The CD, the more expensive format, has already surpassed the cassette in terms of the dollar value of U.S. sales, according to articles in *Billboard* surveying both record companies and retailers. On the other hand, those same reports had label executives denying any erosion in the actual number of cassettes being sold. And given the variety of the applications it fills, it's hard to see any format—CD, DAT or DCC—that could drive the cassette into an LP-like tailspin in the near future.

Perhaps the clearest indication that it's far too early to dwell on the cassette's demise is the positive attitude toward the format evidenced lately by major suppliers to the duplication industry. BASF's recent acquisition of Agfa's mag-

netic tape business, including its duplication lines, is just one example. The company also plans a \$5 million expansion at its plant in Bedford, Mass., to allow increased chrome audio tape production.

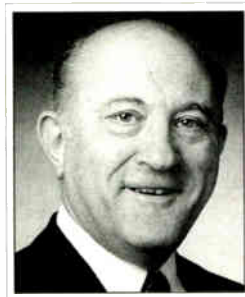
BASF's competitor Sunkyong is also putting its money on the continued health of the cassette. Last November, the company, which has sought to raise the profile of its chrome duplication products, brought a brand new tape plant online in its home base of South Korea. In the following twin interviews, senior U.S. technical personnel from the two companies offer upbeat assessments of the cassette's future, and share their observations on developments in hardware (digital bins, DCC) and tape formulations.



What are the most important factors duplicators should consider in choosing tape formulations?

Joseph Kempler, Technical Director, Sunkyong Magnetic/America Inc., Long Beach, Calif.: First of all, their recording needs. If they are using digital bins, they should use a tape capable of recording the information, particularly high-frequency transients, that are found on the masters. Beyond that, the tape should be reliable and trouble-free.

Among the various grades of tape, ferric oxide is still the most popular, and it is going to stay that way for some time to come. So ferric tape should normally be the workhorse of the installation. And with careful attention to detail as far as level is concerned, it can be made to sound excellent. But for those tough



Joseph Kempler

applications where ferric oxide can no longer handle the high frequencies and tends to saturate, the next step would be to go to chromium dioxide, or some of the newer cobalt tapes.

Peter Piotrowski, Technical Services Manager, BASF Corp. Information Systems, Bedford, Mass.: The biggest factor is quality. Number one, that means the quality of the electro-acoustical performance. Number two, and probably even more important, refers to the mechanical properties of the tape—how it performs during loading and duplication, and also how it performs during use of the cassette as a final product.

As far as choosing a specific tape stock, that depends on who the customers are out in the field. For instance, spoken word tapes may not require high electro-acoustic performance compared to music. So you have to determine what kind of recordings make up the mainstream of the duplicator's business: Is it words or music? If music, is it more toward the high end, meaning classical, and therefore more targeted to people interested in high quality? That's what decides what kind of tape to use as far as electro-acoustic properties.

Once you've decided electro-acoustically, you need to decide which brand is likely to give the most consistent overall performance. That's what makes it complex, because cheap tape might give you the performance you want electro-acoustically, but not mechanically. Anything can happen with a cheap tape: bad slitting or rub-off of the coating. So the tape should come from a reputable supplier who offers a wide range of tapes for different applications.

—CONTINUED ON PAGE 138



The Versadyne PT-250 in action
(see page 147)

Tape & Disc News

DCC Launch Set?

Following its introduction of the Digital Compact Cassette at January's Consumer Electronics Show, Philips has become more open about its plans for the new format. Even so, a number of uncertainties remain. For instance, Wim Wielans, managing director of Philips Audio, is reported by *Billboard* to have specified a launch date of April 1992. But David Birch-Jones, marketing manager for Philips Audio in the U.S., subsequently told *Mix* that "it's still a little early to start talking about exact months or dates. Nobody could possibly know that yet. Just 1992 is the best information we have available today."

Philips' plan is to launch DCC first in one of three major markets (Europe, North America or the Far East) with the others to follow, rather than attempting a simultaneous global rollout. Birch-Jones says, "We don't know which country will be the launch country yet."

Philips plans initial pricing on DCC hardware to be in the \$600 range. Software prices are beyond the company's control, but are expected to fall between those of prerecorded cassettes and CDs.

Perhaps the biggest question remaining about DCC is how the hardware and software communities will handle the copyright/home-taping issues that have proven so divisive in the case of DAT. Philips

devised the Serial Copy Management System, which was supposed to be a technical fix for the problem. The company was able to incorporate SCMS into the specifications for DCC, meaning that licensees of the format will be obliged to include SCMS in all DCC hardware.

Unfortunately for Philips, SCMS has already failed to placate representatives of publishing and songwriting interests, who seek levies on hardware and blank tapes as compensation for revenue allegedly denied them through home taping. Led by the National Music Publishers Association, pro-levy forces last year took Sony to court, maintaining that the company's importation of DAT machines contributes to the infringement of copyrights, even though those machines are SCMS-equipped.

It could be a long time before the verdict is known, though it seems unlikely that the NMPA will ultimately prevail. In the meantime, however, just the existence of the suit is having some effect, though not necessarily the effect intended by its backers. The RIAA has reportedly dropped plans to pursue legislation in the current session of Congress requiring the inclusion of SCMS in consumer digital recorders. That's probably because the NMPA's legal battle provides a pretext for Congress to avoid taking any potentially unpopular action, either on SCMS or levies, by claiming that the court should be allowed to decide first.

—CONTINUED ON PAGE 144

—FROM PAGE 137, TAKING STOCK

What's the breakdown of current duplicator demand for Type I and Type II formulations, and how do you expect that to change over the coming years?

Kempler: In the U.S., Type I ferric oxide is probably still at least 85%, maybe more, with the balance being Type II. As time passes, there will be more Type II, specifically because of the need to handle high-frequency information that the ferrics can no longer handle comfortably. It's going to be gradual, but I think some of the major duplicators will find it necessary to do substantial increases in Type II. I can't predict what it is going to be, but I could visualize 30% within the next two years.

Piotrowski: I would guess that the ratio for BASF varies between 60/40 and 70/30 in favor of Type I. I absolutely expect Type II to grow, based on the higher quality of tape that is being asked for now. Chrome is growing, and I would think that other Type II formula-

tions would probably grow too because of this growing demand for higher quality.

What affect does the use of a "digital bin" have on the performance requirements of a duplicator's stock?

Kempler: The advantage of the digital bin is that it carries the full dynamic range of the program, including all those transients that cannot be accurately transferred to an analog cassette. That means that if they make an improvement in the equipment, they also need to upgrade the tape so the improvement can be heard.

High-frequency transients were always the weak link in cassette duplication. It's just that now it is getting more severe than it was before. It will require tape with higher coercivity, specifically Type II tapes like chromium dioxide and cobalt. Beyond that it would also be possible to use metal tape, which has even better qualities in this respect, but that would mean changes in the type of heads that are being used in present slaves.

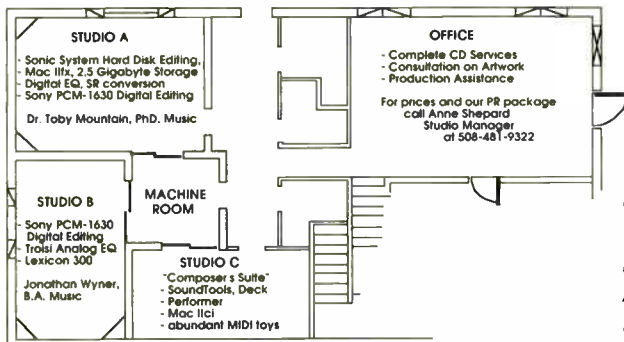
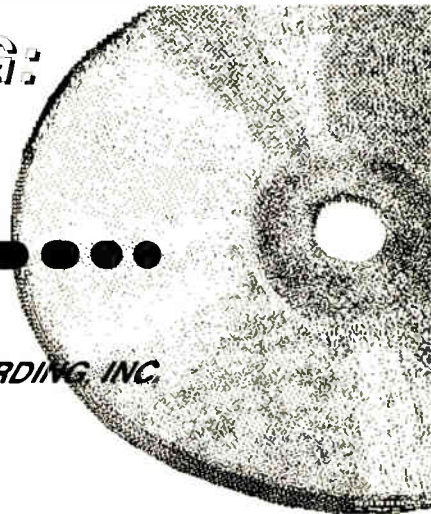
The high-frequency levels coming off the digital bin strain some tapes more than others. And I've heard rumors, though I have no direct information, that chromium dioxide may strain more in the mid/high-frequency range than some cobalts. But the people I have spoken with on the subject have tried only one type of chrome, so one can't necessarily categorize chrome, on the whole, as being deficient based on their observations.

In our technical center we are doing some investigation into exactly what is happening with the digital bin, because the whole process still has not been sufficiently explored. We are studying all tapes as to how they respond to high-level, high-frequency signals. There are all kinds of formulations, and very often the formulation that has better high-frequency response may actually produce more of this mid-high distortion. With ferric oxide, the output diminishes as the tape overloads, so you don't hear the distortion components. However, if the tape is better in its satu-

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ration properties, it will self-erase less, and some of the components that are still saturating may reproduce with more distortion. So a "better" tape may produce some by-products which are less desirable to the ear.

Piotrowski: The digital bin requires a higher performance from the tape. In the past, the running master, being an analog version of the duplication to be made, basically acted like a filter. With the digital audio bin, this filter has disappeared, because the signal on the digital master goes through the D/A converter and then directly to the slaves, making the cassette tape the first analog generation. Because the digital master tapes are usually prepared more for CD than cassette, we are seeing that the cassette tape cannot handle that load.

What is needed is higher response at both the low and high ends of the spectrum. As far as higher maximum recording level for high frequencies, our chrome would be just perfect for this application, though there is still a possibility of saturation in the low end and the midrange, which is true to some degree with every type of formulation. Even the ferric-cobalt tapes that are on the market today cannot handle completely the digital bin using masters made for CD. But we have a new cobalt-ferric, which is currently available only in a limited supply, just for feeling out that market. And development goes on to improve our chrome to better deal with the digital bin.

A lot of energy has gone into developing better prerecorded cassettes, so that the best cassettes duplicated now are potentially far better than those of a decade ago. Is the average music consumer fully benefiting from these efforts, or are there areas in which more could be done to implement improvements?

Kempler: Today's cassettes are tremendously better. Any cassette from any major duplicator will be much better than any tape that was available even five years ago. All the major duplicators we deal with are concerned about quality, and in most cases they are breaking their backs to do a good job. The

standards they apply for tapes, shells and equipment are improving all the time, and they sound great. How much the consumer ultimately gets out of this depends on his or her equipment, and things like azimuth adjustment. But if you have top-notch equipment, then you can get sound that is just about as good as a digital source.

Cost is always a factor, even a penny or a fraction of a penny per cassette, because you are talking about hundreds of millions of these things being made. So cost is important. But in cases where it is necessary to use chrome or cobalt or metal, because they no longer use ferric with the digital bin, they will do it even though the cost will be higher.

Piotrowski: The major duplicators have all done a tremendous job of improving their quality compared to a decade ago. The average consumer has very much benefited from all the effort that has been put in. It's not only at the highest quality levels; the whole average has been raised. The consumer has rewarded these efforts by making the cassette the most popular prerecorded configuration.

Among the tape manufacturers, BASF specifically has influenced very heavily the C-0 manufacturers by providing a standard for azimuth, which is very important. In addition, BASF was the leader in introducing chrome tape, to fulfill requests for higher quality.

There is still room for improvement, but the bulk of the easy things have already been done. We are reaching a point where the benefits become smaller and smaller in relation to the effort put in. For instance, I personally think that the digital bin represents tremendous progress in cassette quality. But if you consider what it costs compared to a normal loop bin, and you talk to duplicators in the field, you find different perspectives. The question becomes, "How fast a return do I need on the investment I put in?"

How do you think DCC will affect duplicators, and what can they do to prepare for it?

Kempler: Things of this type are hard to predict, and it's certainly



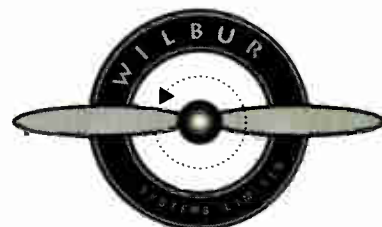
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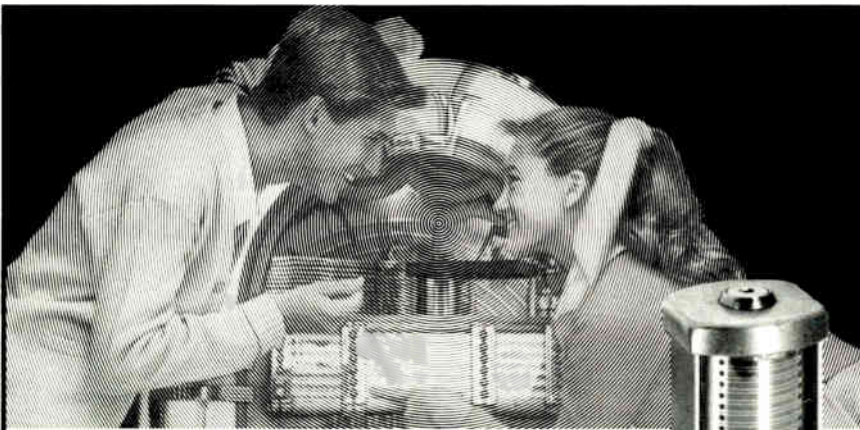
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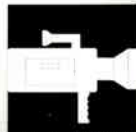

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premature. So I don't know that I can advise duplicators. I can only say what I think is the most likely scenario. The duplicators have spent and continue to spend a lot of money on improving and enlarging their analog facilities, even knowing that DCC is coming. So DCC, when it shows up, is not going to displace analog. Rather, the analog duplicators will be trying very hard to match the sound of digital, so that people who like cassettes and have cassette equipment will not necessarily be tempted immediately to switch to DCC, because they will be satisfied with the cassette. So I can see a continuation of the great effort being expended to improve the quality of analog and maintain its market share.

DCC won't show up for maybe another two years, and it will coexist with analog. It will gradually make inroads, simply because it is a digital system that is backward-compatible in playback. As such, it's not going to get the same resistance as DAT, especially if the price is lower. Eventually, though it may be well into the 21st century, analog will give way to DCC. That may be a very slow process, but digital with good quality and reliability will eventually prevail, because it is ultimately a better system.

Piotrowski: I don't know how DCC will be accepted by the market. It depends what the system offers beyond what cassettes can give right now. But I'd like to see a system that is backward-compatible with the existing tapes out in the field. If you compare DCC with DAT, you see that DAT gives no possibility whatsoever of playing back whatever cassettes have been accumulated over time in a consumer's household.

Duplicators should be thinking ahead about how easily and quickly they could change over from the processes they use now for analog to duplication for digital. Ideally, this conversion would go step-by-step, with DCC gaining at the expense of the analog cassette. The systems

				
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would not be in competition. Rather, they would just be different generations, allowing the nice things about the old to be carried on into the new.

It would probably be interesting for any duplicator right now to get informed by contacting Philips for information on what needs to be done to existing equipment to be able to duplicate DCC. Then, if Philips is able to push the system through, duplicators can begin talking about budgets and planning modification or changeover.

How do you see the market for pre-recorded cassettes developing over the next few years, and what affect is that likely to have on your company's product lines?

Kempler: We visualize continued growth, though it may be affected somewhat by recession or other things. In other words, the peak hasn't been reached yet, and probably won't be before 1995, or maybe beyond. And with the efforts to make the cassette sound still better,

there will be increased needs for newer and better-quality tapes. The emphasis will gradually move toward Type II, with possibly a "Type 1-1/2," which could be a replacement for ferric. It would be a somewhat higher bias tape, made just for duplication, with much better high-frequency response than regular Type I.

Standard ferric tape will continue to be used for spoken word, but the products we see as the future are chrome and cobalt-ferric. There is also a chance that there will be mixtures of magnetite and cobalt, and perhaps metal tapes. These materials, some of which are well-known and others not, are the ones that will dominate the markets for years to come. There are other possible formulations, but they are too exotic and expensive to consider at this point, especially for analog.

DCC will also require new tape, but ultimately good analog and good DCC tape may very well be the same. We have new facilities in Korea, and new R&D groups working on what we hope will be better

tapes. We will supply whatever is necessary—whatever the duplicators and the market are ready for.

Piotrowski: I think there is still quite a potential in the compact cassette. BASF is watching very closely what is going on, and responding to changes in the market by offering the widest range of duplicator tapes available. We'll continue to support our customers by meeting, and exceeding, their electro-acoustical and mechanical requirements with the highest quality possible—at a price that is reasonable for their applications. ■

Tape & Disc editor Philip De Lancie is a mastering engineer at Fantasy Studios in Berkeley, Calif.

—FROM PAGE 137, TAPE & DISC NEWS

Until somebody acts to resolve the issue, there's little prospect of converting publishing interests into home digital recording enthusiasts. That poses a dilemma for major labels like EMI and BMG, which have responded positively to DCC. They appear to be eager to see the new



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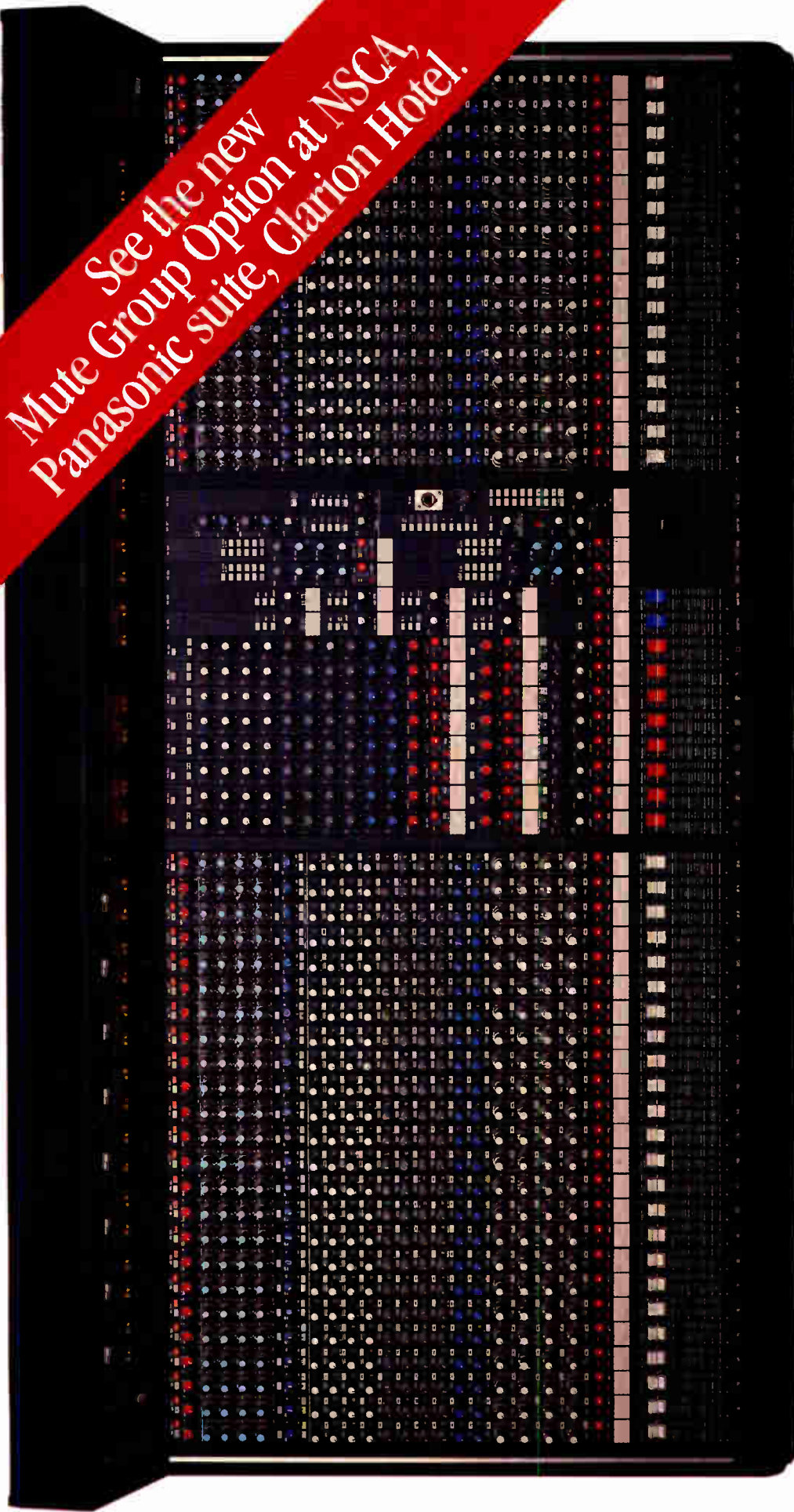
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format succeed as heir to the analog cassette, but they've qualified their support for DCC with assurances of continued support for efforts to require levies. So it would seem that Philips' ability to rally crucial label support for DCC will depend largely on how the levy initiative develops.

Presumably, vigorous support from Philips, as a hardware maker and developer of DCC, would add great weight to the pro-levy effort. And according to company statements, PolyGram, which is 80% Philips-owned, is, like other major labels, "committed to securing an appropriate levy on hardware and blank cassettes."

But Birch-Jones betrays a different slant on the issue from Philips itself. Of the publishers, he says, "They want money, bags of money." Philips, he continues, "neither opposes nor embraces royalty schemes. If they want royalties, they shouldn't come to us. It's not our position to say yes or no, because only governments can grant royalties." Asked

if anything might change to mollify the publishers before DCC's projected launch in 1992, Birch-Jones inspires little hope with his response: "You have to ask them."

BASF Restructures

BASF has released further details on U.S. restructuring in the wake of its takeover of Agfa's magnetic tape business. A new division, BASF Audio Video Professional Products, has been created to encompass the formerly competing operations. Terry O'Kelly will continue to direct the national sales effort, while Jeff Brown has been named marketing manager. BASF and Agfa technical service staffs have been combined under the name BASF Technical Support Services (BTSS), with management shared by John Matarazzo and Peter Piotrowski.

As previously reported here, BASF will, for the time being, retain all duplication products from both company lines. Product distribution has been expanded to six U.S. cities, and a new direct customer service line has begun operating at

(800) 225-4350. Facilities at the company's Bedford, Mass., headquarters are to be upgraded with a \$5 million expansion of chrome tape capacity, a new tape laboratory and a 24-track studio. The company also intends to initiate a BASF Forum, which will follow in the footsteps of the Agfa Forum with professional seminars and achievement awards.

Allied Goes DAAD

Allied Record Company has completed a four-day installation of digital mastering, transfer and duplication gear from Concept Designs. Los Angeles-based Allied, the West Coast division of WEA Manufacturing, follows Pennsylvania sister company Specialty Records in converting to duplication from the DAAD "digital bin." The bins are high-speed loaded from Concept's MTS (Master Transfer System) units, using tapes made in the facility's mastering rooms on an MMS (Master Making System). Concept's total for DAAD units in production now stands at 36.



SPLICES

Studer Revox has introduced the model D740 CD Recorder, an optical drive for Red and Orange Book-compatible write-once discs. The single-package, rack-mount unit, operated from an integral control keyboard, includes conversion from and to analog, as well as a built-in PQ editor. First deliveries of the D740 are planned for late summer 1991, with pricing yet to be determined...

Loran Cassettes and Audio Products has completed duplication of six DAT titles for GRP Records in its recently upgraded DAT production facility in Warren, PA. The company duplicates in temperature- and humidity-controlled clean rooms, using Sony DRD-100 recorders to produce tapes from any digital source in custom-loaded lengths. The 1991 edition of the ITA International Source Directory is now available, free of charge to the industry. The annual directory lists ITA member companies and the products or services they offer, categorized by type. The ITA may be reached at (212) 643-0620...

BJM Duplicators has installed a Versadyne PT-250 Production Totalizer at its North Hollywood, CA, plant. The device, which provides a running readout of total copies duplicated on up to 12 slaves, is designed to cut waste from overproduction. Telex Communications (Minneapolis, MN) has introduced a new in-cassette duplicator, the Stereo Copyette 1&3. The unit handles one master and three copy cassettes per pass, duplicating both sides simultaneously. It runs at 16-times real time, copying a C-60 in less than two minutes...

The RIAA has begun a campaign to involve retailers in the fight against street vendors of counterfeit prerecorded music. A flyer is being distributed to record stores outlining procedures that can be used, in cooperation with law enforcement agencies, to shut down sellers of pirate products. For more information on the Street Vendor Alert Program, contact the RIAA Anti-Piracy Unit at (800) 223-2328. ■

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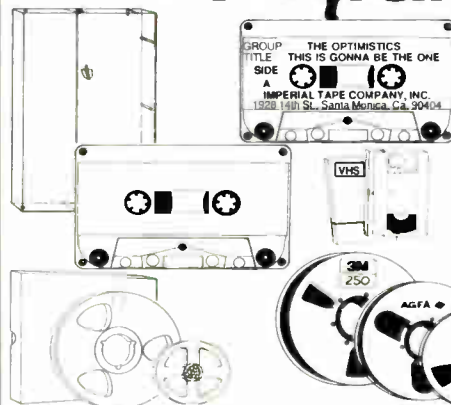
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C O A S T

L.A. GRAPEVINE

by Amy Ziffer

As I write, it's the middle of March and hail is falling outside my window. This wouldn't ordinarily be worthy of mention except for the fact that after five years of drought and mere weeks before the institution of a mandatory water rationing plan, Los Angeles finally saw some water falling from the sky in the form of a torrential two-day downpour. Nonetheless, water rationing is now in effect, and studios will have to cut back like everyone else or face fines. The city has plenty of information on how to reduce water use by the required amount, so let this be a reminder to all L.A. studio managers to save some future heartache and give the board of public works a call.

One thing the rain didn't hamper was the Grammy awards celebration held by the local chapter of NARAS February 20 at Telly's in the Sheraton Universal.

—CONTINUED ON PAGE 153

At the L.A. chapter NARAS Grammy party were (L to R) Dave Pell, Nina Simone and Morris Diamond.



PHOTO: PAT LUBOFF

SESSIONS & STUDIO NEWS

NORTHEAST

Walter Sear, owner/operator of midtown Manhattan's SearSound, has been in the business as a musician and engineer for 30 years. Sear, who sold Moog synthesizers in New York when they first came out, helped usher in the age of electronic music. Yet, he has grown tired of synthesized sound and

complete microphone collections in New York, including many classic vacuum tube and ribbon mics. "Ninety percent of what you get on a recording," Sear explains, "is the microphone and where it's placed. If you have the right mic placed in the right direction, you won't need any EQ." But if you still need to tweak that signal, Sear has six vacuum tube limiters as well as EMT vacuum tube plates.

Recent projects at Sear Sound in-

PHOTO: JEAN HANGARTER



(Left to right) Engineers Jim Anderson and Lance Duncan with guitarist Reeves Gabrels at Sound Techniques recording studio, Boston, MA.

is a strong advocate of tube equipment.

Sear explains, "I've used vacuum tube equipment for years because I always thought it sounded best. When people were throwing away Fairchild limiters I was buying them. It took me 20 years before I was able to get away from my vacuum tube console (I built it 20 years ago and it's still in operation) and get used to the sound of transistors."

Along with the homemade tube console, Sear Sound possesses the "57 Chevy" of Neves—all class A amplifiers, all discrete components—a custom modified 8038 with Studer and Ampex multitrack machines.

Sear Sound offers one of the most

clude Leon Redbone recording a project for August Records; DRG Records recording the *Forbidden Broadway* show with Cynthia Daniels engineering and Hugh Fordin producing; and Sear engineering and producing the *Griffon String Quartet*.

In Englewood Cliffs, NJ, engineering legend Rudy Van Gelder has been busy with various projects: John Snyder produced Hilton Ruiz for BMG/RCA Records; Peter Leitch produced Kenny Barron on a Criss Cross Records project; and alto saxophonist Chris Hollyday recorded an album for BMG, which was produced by Chris and his father, Richard Hollyday...At Sound Techniques in Boston, guitarist Reeves Gabrels of David Bowie's Tin Machine

C O A S T



Oz Recording Studios recently opened in Baltimore. With more than 3,000 square feet, Oz is a 24-track facility featuring an automated TAC/Amek Matchless console and a Studer A827.

was working on new songs with his band The Atom Said with Jim Anderson engineering and Jennifer Saziani assisting... At Power Play Studios (Long Island City, NY) Dece Lite were remixing their new single entitled "Good Beat" with Pal Joey assisting... John Cale was at Baby Monster Studios (NYC) recording a Leonard Cohen tune with just piano and voice. Bryce Goggin engineered... In Philadelphia, the alternative music scene is alive and well. At Third Story Recording Studio, Scott Herzog, Adam Lasus and Ben Vaughn have been engineering and producing these alternative bands: Pink Slip Daddy, Naked Twister, Substance-D, The Big Thing, Go To Blazes and King Carcass... Also in Philly, Taj Mahal cut and mixed his new album at Studio 4 Recording, with producer Skip Drinkwater and engineer Phil Nicolo...

SOUTHEAST

At Crescent Moon Studio (home of Miami Sound Machine), John Haag and

Eric Shilling remixed "Seal Our Fate," the new release from Gloria Estefan... Lady Luck joined producer Rick Lee at Reflection Studios (Charlotte, NC) to record a new demo. Mark Williams engineered the session... Doppler Studios in Atlanta had Pebbles in recording overdubs for her album. Dallas Austin produced with programming by Rick Sheppard, and Darin Prindle engineered with assistance from Mitch Eaton... In Lithia Springs, GA, progressive country singer Chris Mercure finished mixes on his latest project at Transmedia Studio. Production was handled by World Productions. Engineering and mix was by David Norman...

NORTH CENTRAL

Chicago White Sox pitcher Jack McDowell recorded and mixed three new songs for his upcoming CD release at Seagrape Studios of Chicago. The band

N.Y. METRO REPORT

by Dan Daley

Like long-dormant crocuses, New York's existing facility base is showing signs of revitalization with the arrival of spring. Howard Schwartz Recording will have its ninth room up and running as of May 1. Designed by John Storyk, the room is equipped with a fully automated SSL 4040 G console, Studer A827 analog and Sony 3348 digital multitrack decks, an Adams-Smith 2600 sync controller, an Otari 4-track and Sony video machines, including D-2.

According to owner Howard Schwartz, the \$1 million-plus room was designed for once and future in-house mixer George Meyer, who is returning to the studio after a five-year stint elsewhere. Meyer will be bringing his television production and commercial clients with him—a base large enough to warrant the new investment, Schwartz says.

—CONTINUED ON PAGE 154

Dizzy Gillespie and Jon Faddis at The Edison recording studio (a division of National Video Center) in New York City.





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features Jack on guitar, lead vocals and songwriting, left-handed pitcher Wayne "Goatnuts" Edwards on drums and St. Louis pitcher Lee Plemel on bass. The tracks were engineered by Tom Haban, but he ran into trouble and had to be relieved by Mike Konopka for the mix... At B.L.R. Studio of LaPorte, IN, guitarist Chuck Galloway and country singer Linda Bond were working on an album project for Wenco Records. Brian L. Roseman engineered the project, and Galloway produced...

SOUTHERN CALIFORNIA

At Rumbo Recorders' (L.A.) Studio C, Jeff Lynne completed the mix on an unreleased Roy Orbison song that was sung with Del Shannon: "I Drove All Night"... Guitarist Sandy Bull completed his latest CD project at Trolleybarn Studios in Venice. Featured artists include drummer Bernard Purdie, the Brecker Brothers on horns and pianist Hilton Ruiz... Dread Zeppelin were in at Sound Chamber Recorders (Pasadena) mixing their new project with

Lee Manning engineering and Rusty Striff assisting... Jody Watley was at Studio Masters of L.A. doing vocals with producers Jon Nettlesby and Terry Coffey for her next release. Wolfgang Aichholz engineered the project... Ivan Neville mixed his Polydor album at Scream Studios (L.A.) with producer Hawk Wolinski. The album was mixed by David Leonard...

NORTHWEST

At Fantasy Studios in Berkeley, CA, Boz Scaggs has been working on a song to benefit the homeless; Kevin Elson is handling production duties and Tom Size is engineering. Also at Fantasy, Joe Satriani worked on overdubs in Studios B and C with his longtime producer John Cuniberti and engineer Michael Semanick, for a forthcoming solo project on Relativity Records... The Monks of Doom, which contains former Camper Van Beethoven musicians, were at mobius music (San Francisco) working on a four-song demo with Oliver DiCiccio producing and Jane

—CONTINUED ON PAGE 155

SPARS



B E A T

by Dave Teig

In the nearly 12 years that it has served as the voice of the audio industry, SPARS has gone far beyond its original goals. The studio owners at that first meeting knew a national force was needed, but the growing strength of the organization was unexpected. The board of directors overcame many obstacles in those early years, meeting four times annually at their own expense.

Our New York studio community acted on its own initiative to further the SPARS dictum of "Innovation and Education Through Communication." The Northeast regional group decided on a monthly luncheon that continues today, with an average of 60 to 70 members representing music studios, mastering facilities, production and post-production facilities, manufacturers, pro audio dealers and allied industry personnel. These meetings have fostered a spirit of cooperation in one of the industry's major com-

petitive marketplaces.

On the evening before the group lunches, studio owners get together to discuss business and technical matters, including the economic climate, taxes, insurance and product/service efficiency.

"What's surprising to me," says Lee Murphy, owner of Brigg's Bakery and newly elected member of the board of directors, "given the state of the economy and concerns voiced by some studio owners, is that the beginning of 1991 is actually ahead of last year. Was it wise for me to trim budgets as I did last fall? Comments from other SPARS members alerted me to the potential negative trends, and I feel a great deal more comfortable today because of that. It's all a matter of communication."

And that's what SPARS is all about here in New York—honest talk and then some. ■

Dave Teig is SPARS Northeast coordinator.

Q. What do The Boston Pops, Maurice Starr, The New Orleans Jazz & Heritage Festival, and American Playhouse have in common?

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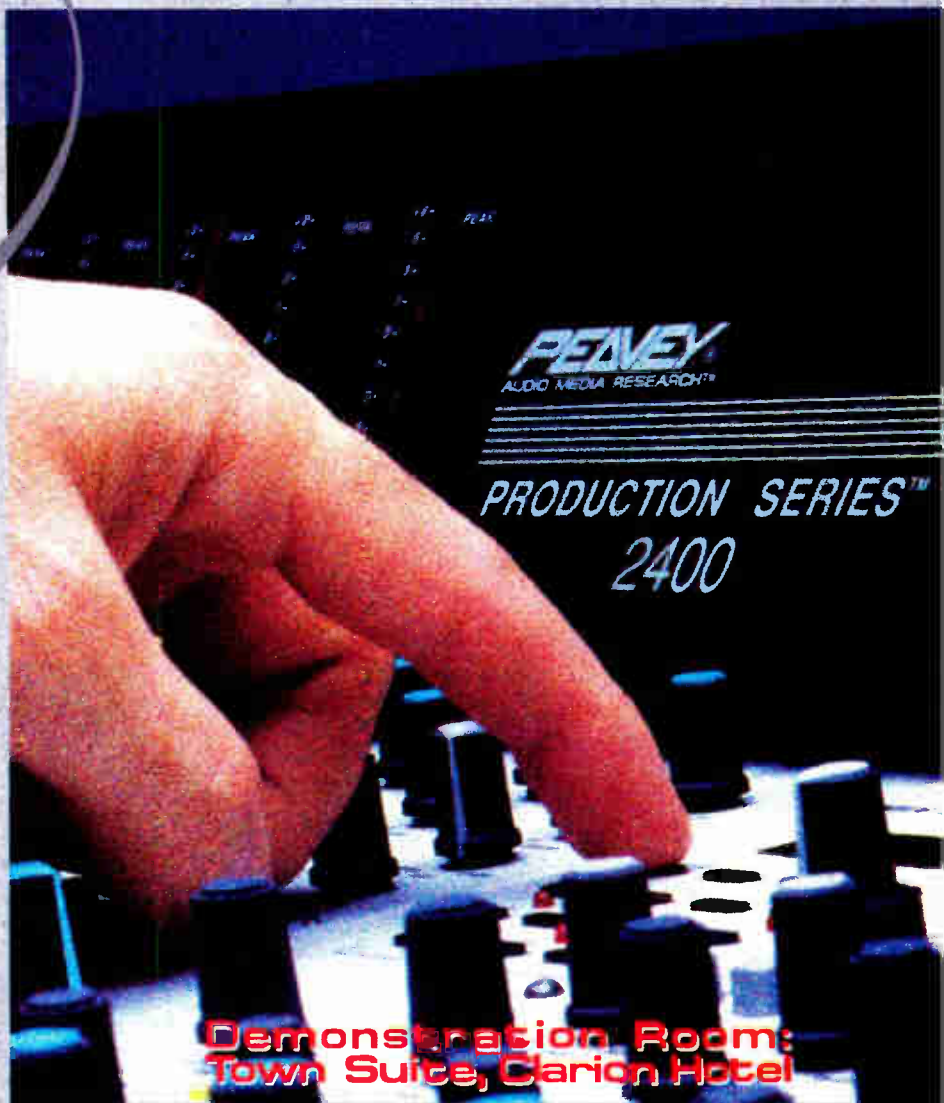


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—FROM PAGE 148, L. A. GRAPEVINE

Roughly 300 people were treated to a surprise guest appearance by Nina Simone, and KLOS DJs Mark and Brian reading the pre-telecast Grammy winners. It was the next best thing to being there.

Colleen Creamer has taken the position of studio manager at Burbank's Red Zone Studios. In her former life, Creamer was a journalist for *Dark Room Photography* magazine, and is also a screenwriter.

Get out the Rolodex! As of April 1, Fred Jones Recording Services is now known as Hollywood Recording Services. Although CEO Barry Skolnick says the choice of dates was completely coincidental, I think he gave in to temptation. After all, the studio changed hands on Halloween. This could only be topped by a name change on April Fool's Day. The studio celebrated the occasion with an open house and "christening" party April 9, with the theme, "We're bringing the excitement back into Hollywood." To refamiliarize yourself with the staff and studio, call them at (213) 467-4122.

As the saying goes, better late than never. Last summer, well-known former A&M mastering engineer Frank DeLuna, together with other investors, opened his own facility in North Hollywood. Hot Tin Roof is a one-room studio with a CD mastering facility incorporating a Sonic Solutions hard disk editor.

In the short time it's been open, DeLuna says Hot Tin Roof has gained a reputation as "the best-sounding room in the area for drums"—no doubt partly due to the 18-foot ceiling. The 45x55-foot control room is based around a Trident V-80 series console and Studer 827 24-track. Jack Edwards of Jack Edwards Architects did the design, which DeLuna calls "very modern."

Another one bites the dust?...Branam's Fox Run Studios are for sale in the North San Fernando Valley. The complex is 15,000 square feet, with three rooms and soundstage, and a Neve VR 60. Interested parties should contact agent Bruce Conover at (213) 306-0204.

And now, before I say goodbye, I'm going to abuse my journalistic privileges just slightly by imploring all of you to beg, entreat, beseech and plead ABC Television to retract the misguided decision to cancel *Twin Peaks*—a show that won two Emmys!

—CONTINUED ON PAGE 154



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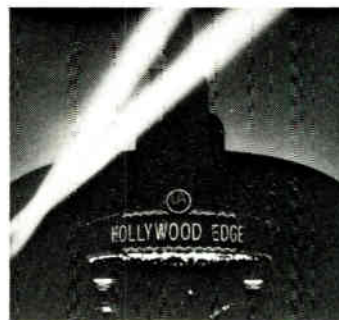
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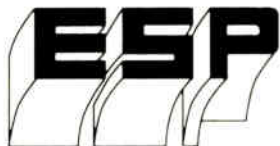
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—FROM PAGE 153, L.A. GRAPEVINE

Might I add, without suggesting anything, of course, that dead rodents would also be appropriate. Next month, look for a recap of my St. Patrick's Day party, in which lumpy green mashed potatoes will figure prominently.

Send L.A. studio news to Amy Ziffer, 19725 Sherman Way, Suite 380, Canoga Park, CA 91306, or call (818) 567-1429 or fax (818) 709-6773. ■

—FROM PAGE 149, N.Y. METRO REPORT

"My first priority is people," he says, "and when you have a good mixer who is also a good salesman, you invest in him when the opportunity arises."

In another local expansion, Chung King House of Metal opened a new Studio A in March. Designed by Frank Commentale, the room is equipped with a Neve VR 60 with Flying Faders automation, two Studer A827 multitracks and PAD main monitors. Owner John King says he's looking to move to genres beyond the rap music that has been Chung King's anchor for several years. The \$1.5 million addition brings the total number of rooms at the studio to three, and the earliest of those is getting an update—to a Trident 80C—and a facelift this spring as well. The studio has also opened its own production company to develop artists. All this was unveiled at a pretty chillin' soiree that was attended by the first tier of rap, including Third Bass, LL Cool J, Run DMC, Big Daddy Kane and Brand Nubians.

Yet another move—this time by Phillip Glass, whose long-time personal studio The Living Room will close and reopen in larger quarters on the site of the former Sanctuary Studios at 632 Broadway. The new studio, a two-roomer named Looking Glass, will hold an SSL 4000 Series console mainframed for 48 inputs and a 32-input MCI Series 600 console. The multitracks will be Otari MTR-90 Mk II decks, and Digidesign Sound Tools will be part of the studio package. The installation is being overseen by Kurt Munkacs, president of Glass' Euphoria Productions company. Looking Glass, which will open this spring, will be owned by Glass in conjunction with two members of The Poppies, a N.Y.-based band signed to Sony/CBS Records. According to studio manager Rory Johnston, the studio will be pri-

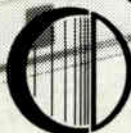
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marily for the use of the artist/owners, but time will be sold commercially as well.

National Video Center has formed National Sound, an audio division for scoring, composition and sound design, as well as audio post-production. Peter and Jennifer Fish are heading up the new division as creative director and managing director, respectively. Their staff will include engineers Ed Campbell, Chazz Menendez and Jimmy Douglas. Five of National Video's six audio studios, one of which houses National Video's first PostPro SD system, will be turned over for National Sound's use, and another one will be built later this year. Studio 4, which was recently upgraded with an SSL console and a second NED PostPro SD, will remain the domain of senior audio engineer Doug Di Franco.

Peter Fish said this enhancement of National's audio capability differs from the current video-house-adds-audio trend because National has had some audio capability since its inception. "It also has multiple rooms, which was important for the large number of clients I'm bringing in with me," Fish says. "The other difference is that while

many video houses bring in audio mixers, in this case they've brought in a creative audio team; composers who can also mix."

Send New York studio news to Dan Daley at 147 E. 30th St. #5A, New York, NY 10016. ■

—FROM PAGE 150, SESSIONS AND STUDIO NEWS
Scolieri engineering...Paradise Sound Recording of Index, WA, reports the following activity: David Duvall continued work on a 33-song project; Pat Barson recorded his fourth album; and Legacy, an established Seattle band, completed a project...At Ironwood Studios in Seattle, engineer Jay Follette was working with avant garde jazz artists Wayne Horvitz, Bill Frisell and Robin Holcomb...

SOUTHWEST

The Rodeo Love Gods recorded their polished covers of a few Doors tunes at Planet Dallas (Dallas)...Reelsound's mobile, out of Manchaca, TX, provided audio mixing for the 1991 Texas Governor's Inaugural Gala. Gordon Wynne produced the two-hour special

that featured over 1,000 performers and a 450-voice gospel choir. Headlining the Texas musical review were Willie Nelson, Dolly Parton, Jerry Jeff Walker, Asleep at The Wheel and Kris Kristofferson. Malcom Harper mixed the show with the assistance of Gordon Garrison and Greg Klingensmith...


STUDIO NEWS

Right Coast Recording Inc. (Lancaster, PA) announced the availability of its new remote recording system. The Right Coast system is totally modular and portable and offers 24-track analog or digital recording. For more info, call Dave at (717) 560-1530...A new all-discrete console from API Audio Products was built for installation at Pinebrook Studios in Alexandria, IN...Studio Works in Island Park, NY, installed a Trident Series 80C with Megamix VCA automation...Showplace Studios opened in Dover, NJ. The studio features an automated Amek Mozart console fitted with all Rupert Neve modules...

Send nationwide sessions and studio news to sessions editor Jeff Forlenza, c/o Mix magazine, 6400 Hollis Street, #12, Emeryville, CA 94608. ■

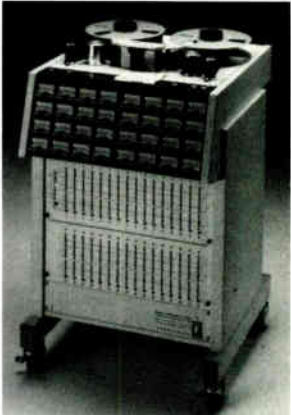
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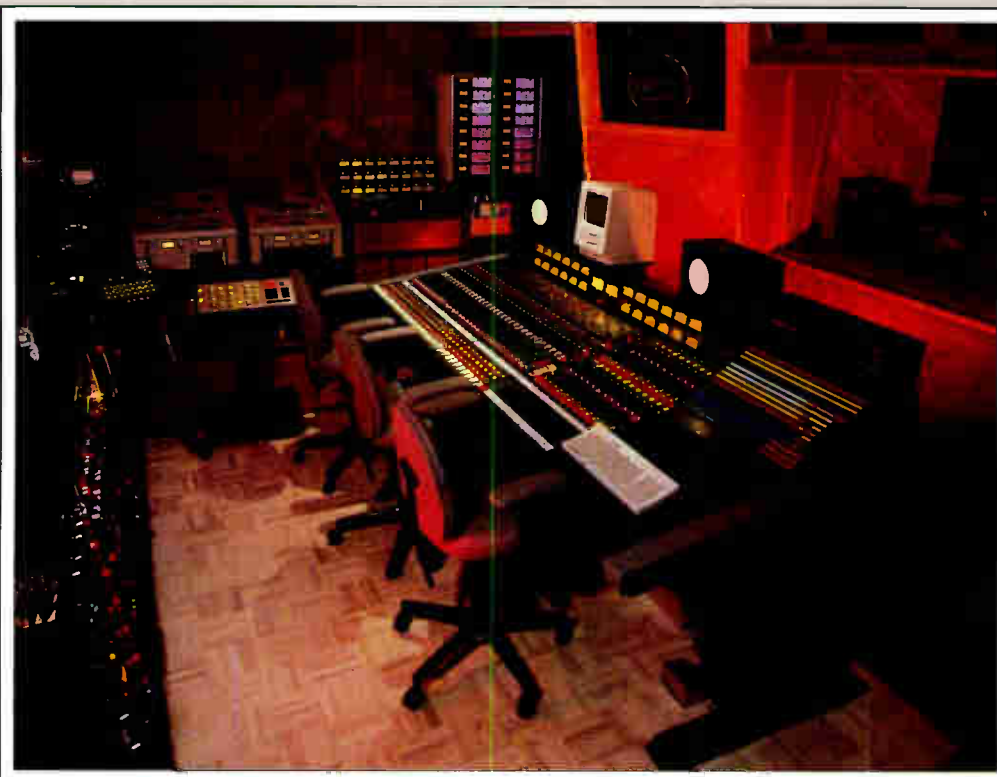
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NORTHEAST STUDIOS

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.



Island Park, N.Y. is home to Studio Works Two, designed for owners Peter Kuper-schmid and Mitch Diamond by William B. Titus. The main control room is equipped with a 32 x 24 Trident 80C console with Megamix inboard series automation, Studer A80 and Sony JH-24 multi-track machines, and UREI 813C monitors. Adjacent to the control room are a 700-square-foot live area as well as two Iso booths and a MIDI room. The facility is used by PolyGram, CBS, Elektra and other record labels. **Photo:** David Scudder.



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Upcoming Directory Deadlines:

Facility Designers & Suppliers: **May 16, 1991**

Southern California, Southwest & Hawaiian Studios: **June 17, 1991**

New Products for 1992: **July 16, 1991**

Mix listings procedure: Every month, *Mix* mails listing applications to recording studios and/or other vital facilities and services for the recording, sound and video production industries. There is a nominal charge to list a Boldface Listing (name, address, contact) and an Extended Listing (equipment, credits, specialization and photo or logo).

If you would like to be listed in a *Mix* Directory write or call the *Mix* Directories Department, 6400 Hollis Street #12, Emeryville, CA 94608; toll free 800-344-LIST!

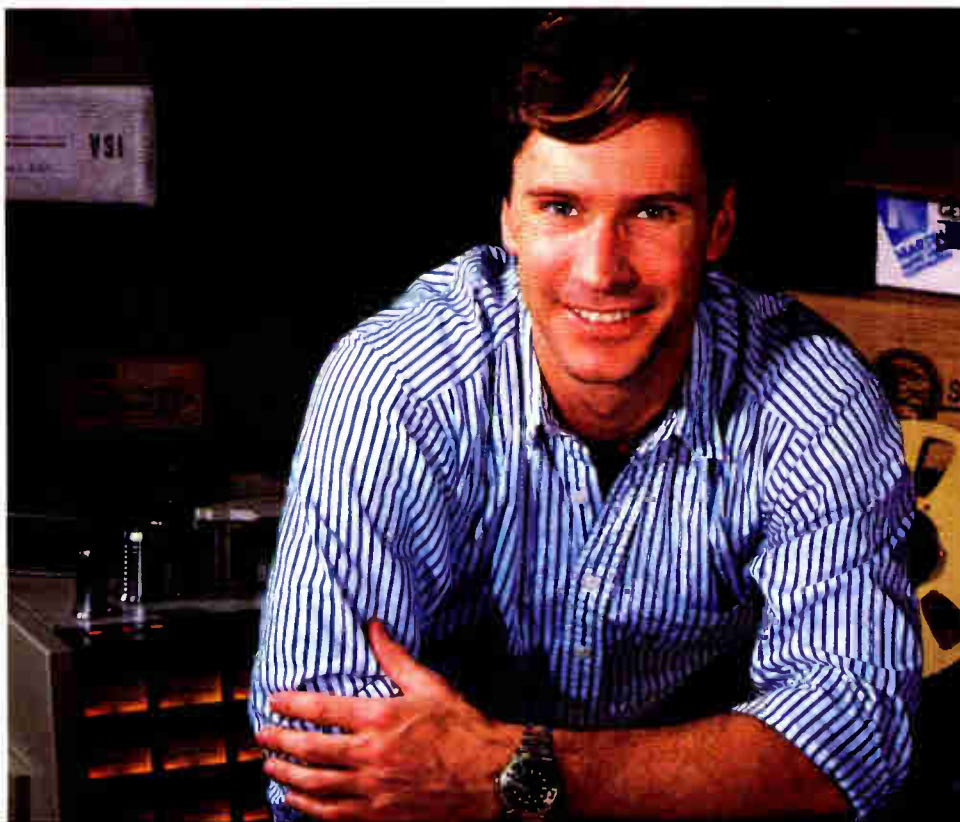
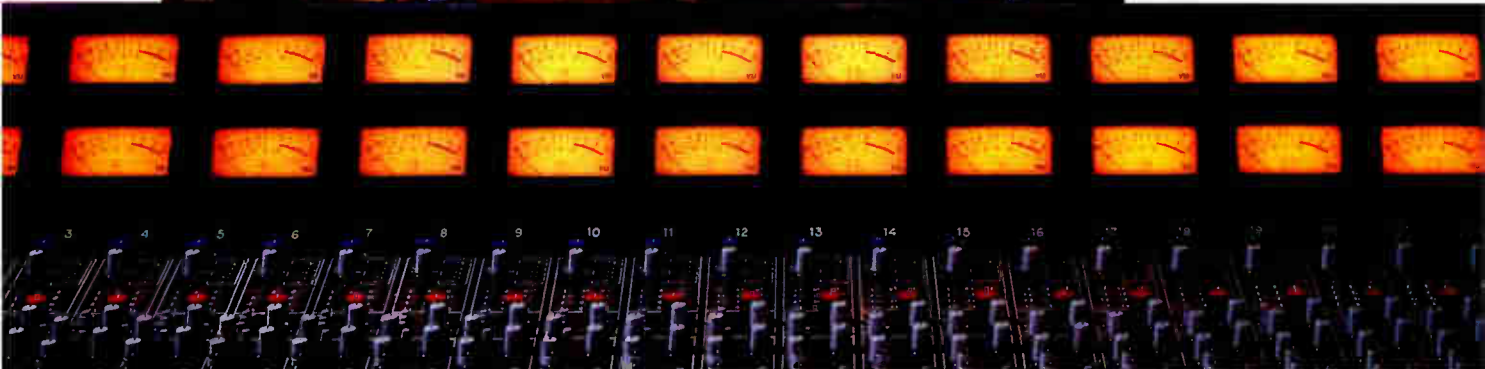


Photo: Wyman Studios, New York

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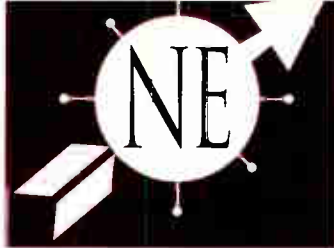
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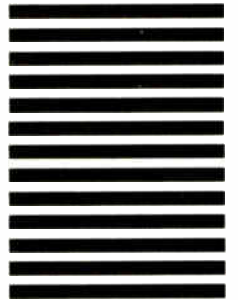
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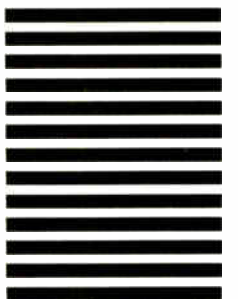
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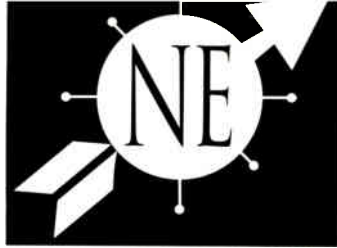
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NORTHEAST 24-TRACK STUDIOS

A



ACME RECORDING STUDIOS
Mamaroneck, NY

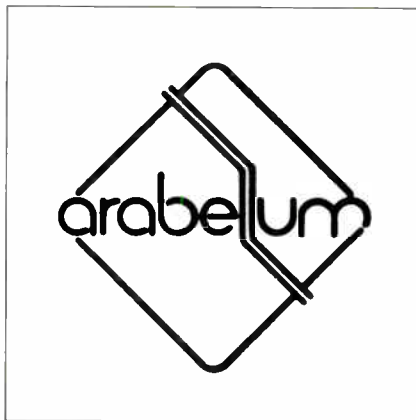
[24+] **ACME RECORDING STUDIOS**; 112 W. Boston Post Rd.; Mamaroneck, NY 10543; (914) 381-4141; FAX: (914) 381-4543. Manager: Peter Denenberg. Engineers: Rory Young, Peter Denenberg, James Brown, Thom Leinbach. **Dimensions**: Room 1: studio 25x28 w/(2) iso booth, control room 12x18 w/machine room. Room 2: studio 12x12, control room 12x20. **Mixing Consoles**: ACME design 56x48 w/discrete signal path, CTI disk-based automation (in-board) w/56 fully automated gates, V.U. and PPM metering, stereo spectrum analysis, complete automation display. **Audio Recorders**: Otari MTR-90 MkII 24-track, Ampex 24-track, video layback, 1/2" 2-track, 1/4" 2-track, Sony 1000-ES DAT. **Cassette Recorders/Duplicators**: (4) Yamaha, Sony DAT 1000ES. **Noise Reduction Equipment**: 24-channels of Dolby SR or dbx on request. **Synchronization Systems**: BTX, Cipher Digital 2- to 4-machine lockup, 1" layback to modified audio transport. **Echo, Reverb & Delay Systems**: EMT stereo plate, Lexicon 224, Lexicon PCM70, Lexicon LXP-5, Lexicon LXP-1, Lexicon MRC, Eventide H3000 w/sample board, Eventide 910, Yamaha RE7, various other delays. **Other Outboard Equipment**: Pultec, Lang and Altec EQs and filters, (2) UREI 1176, (2) UREI LA-4 limiter, Aphex gate, Drawmer gate, (56) channels in-board automated gate, (4) dbx 166, dbx 900 rack w/limiters/gates/de-essers. **Microphones**: AKG C-12B, Beyers M100, 160, 260, 130, 61, etc., Neumann U67 tube, Neumann 87 FET, Neumann KM84, AKG The Tube, (3) AKG 414, 412, (2) AKG 451 w/CK1 or CK6, Calrec, Sennheiser, Shure, Crown PZM and others. **Monitor Amplifiers**: Crest, BGW, Crown, Yamaha. **Monitor Speakers**: Sequera MET-7 nearfield, Biamp 604 w/sub-woofer, Yamaha NS-10, Tannoy, Auratone. **Musical Instruments**: Steinway vintage B piano, Gretsch drums, Marshall amp, Fender amp, Ampex amp, Leslie cabinet, large selection of guitars on request. **Other MIDI Equipment**: Atari 1040ST w/HD, Steinberg and Q-Base software w/SMP24, Akai S950 sampler, Akai S900 sampler, Korg M1R, Roland D-110, (2) Oberheim Matrix 1000, Oberheim x-pander, Yamaha DX7IIDF, (2) Yamaha TX812, E-mu Proteus, Fender Rhodes, Leslie cabinet. **Video Equipment**: JVC 8250 3/4" VCR, Sony monitor. **Other**: Capability of automating MIDI outboard equipment. **Rates**: \$125/hr. 24-track w/engineer and assistant, \$90/hr. w/assistant only. Block rates available. **Specialization & Credits**: Acme Studios overlooks the Long Island Sound and is 35 minutes from NYC. Client list includes: Warner Bros., Sire, Atlantic, Capitol, A&M, Island, HBO, Chrysalis, SOS, Rhino, Sonographica, Arista, Tommy Boy, Teldec, RCA, MCA, Next Plateau, Polydor, Chetnick, Enja, Passport, CBS, London, Schrapnel, Relativity, Epic, Justice, Windham Hill. Credits: Atlantic Starr, The Roches, Willie Colon, Glenn Alexander w/Randy Brecker & Mino Cinelu, Company of Wolves, Tom Stacy, Kati

Mac, Silent Running, Cornell Dupree and Who It Is, The Spin Doctors, Blitzspeer, Dirty Looks, Nana Vasconcelos, Devon Square, Jeff Beal, Samuel Zyman, Mitch Ryder, Nicolette Larson. Dr. John, Geri Allen, Roland Vazquez w/Anthony Jackson, Rob Mathes. Complete production services are available, and great food or the beach is right up the street.

[24+] **A.D.R. STUDIOS INC.**; also *REMOTE RECORDING*; Skylight Run; Irvington, NY 10533; (212) 486-0856; FAX: (914) 591-5617. Owner: A.D.R. Studios Inc. Manager: Jack Davis.

[24+] **AIR CRAFT RECORDING STUDIO**; also *REMOTE RECORDING*; Dormont Square; Pittsburgh, PA 15216; (412) 343-5222; FAX: (412) 341-0889. Owner: Bernard Lee. Manager: Eric Lemley.

[24+] **ANTLAND PRODUCTIONS INC.**; 231 East 55th St.; New York, NY 10022; (212) 355-1600 x255; FAX: (212) 355-2638. Owner: Roy B. Yokelson. Manager: Susan Pelino.



ARABELLUM STUDIOS
Albany, NY

[24+] **ARABELLUM STUDIOS**; 654 Sand Creek Rd.; Albany, NY 12205; (518) 869-5935. Owner: Art Snay. Manager: Yvonne Bautochka.



ASL MOBILE AUDIO
Flushing, NY

[24+] **ASL MOBILE AUDIO**; *REMOTE RECORDING only*; P.O. Box 791; Flushing, NY 11352; (718) 886-6500; FAX: (718) 886-7214. Owner: Aura Sonic Ltd.

[24+] **AUDIBLE IMAGES**; also *REMOTE RECORDING*; 22 Cambria Point; Pittsburgh, PA 15209; (412) 821-2648. Owner: Jay Dudd. Manager: Jay Dudd.

[24+] **AUDIO INNOVATORS INC.**; 216 Boulevard of the Allies; Pittsburgh, PA 15222; (412) 471-6220. Owner: Norman J. Cleary. Manager: Tim Benedict.

[24+] **AUDIO MASTER INC.**; 7101 Wisconsin Ave., Ste. LL01; Bethesda, MD 20814; (301) 294-2222. Owner: Jeff Kidwell, president.

[24+] **AUDIOMATION**; 922 W. North Ave.; Pittsburgh, PA 15233; (412) 231-7767; FAX: (412) 231-3575. Owner: Gregg Vizza. Manager: Gregg Vizza.

[24+] **AURA SONIC LTD.**; *REMOTE RECORDING only*; P.O. Box 791; Flushing, NY 11352; (718) 886-6500; FAX: (718) 886-7214.

[24+] **AXIS STUDIOS INC.**; 254 W. 54th St.; New York, NY 10019; (212) 262-3120; FAX: (212) 262-3942. Owner: Francois Kevorkian. Manager: Robert Sperte. **Dimensions**: Room 1: studio 8x10, control room 17x22. Room 2: studio 21x16, control room 18x14. **Mixing Consoles**: SSL 6064E 64-input w/G Series computer and Total Recall, Amek Angela 47-input w/faders & DiskMix automation, Roland M16E. **Audio Recorders**: Mitsubishi X-800 32-track digital, (2) Studer A-827 24-track analog, Studer A-80RC 2-track 1/2" and 1/4" master, Studer A-80 MkIV 24-track master. **Cassette Recorders/Duplicators**: Panasonic SV-3500 DAT, Sony DTC-1000 DAT, Sony DTC-500 DAT, Sony PCM-2500 DAT, Sony DTC-300 DAT, Nakamichi DMP-100 F1 2-track digital, (3) Nakamichi MR-1, Studer Revox. **Synchronization Systems**: (2) TimeLine Lynx. **Echo, Reverb & Delay Systems**: Lexicon 480L, (2) Lexicon PCM70, TC Electronic 2290 digital delay w/11 sec. sampling, AMS DDL, AMS reverb, Yamaha SPX1000 digital effects, (2) Eventide H3000 Ultra-Harmonizer, (2) Lexicon PCM42, Yamaha SPX90 Mk II. **Other Outboard Equipment**: (10) Neve 1073 and Neve 1080 EQ, (6) API 550 EQ, (3) Pultec EQ and filter, Neve 33609 stereo compressor/limiter, (8) Kepex II noise gate, (2) Drawmer noise gate, Summit Audio limiter, K&H UE 100 EQ. **Musical Instruments**: Roland Dimension D. **Other**: Digidesign Sound Tools editing system w/650MB HD DAT I/O, Macintosh IIcx w/4MB RAM, color monitor and over 1/2 of digital audio storage.

B

[24+] **BABY MONSTER STUDIOS**; also *REMOTE RECORDING*; 645 Broadway; New York, NY 10012; (212) 260-5226; FAX: (212) 982-8384. Owner: Jamie Burgh. Manager: Evan Player. Engineers: Bryce Goggin, Steve Burgh, Steve McAllister, Garis Shipon, Jeff Jones, Evan Player. **Dimensions**: Room 1: studio 15x20, control room 16x18. Room 2: studio 8x10, control room 15x12. Room 3: control room 14x16. **Mixing Consoles**: Neve 8036 52x8x2 28 EQ 4 limiters, Trident 65 52x8x2. **Audio Recorders**: Studer A80 MkII 24-track analog, Sony JH-24 24-track, (2) Sony 5002 2-track 1/2" and 1/4", Sony 2500 DAT, Panasonic 3500 DAT, Otari MTR 12 24-track and 2-track 1/2", Sony 1630 system, Sound Tools digital recorder/editor. **Noise Reduction Equipment**: (2) Dolby A. **Synchronization Systems**: Adams-Smith Zeta-3, Roland SBX-80. **Echo, Reverb & Delay Systems**: Lexicon 480L, (2) Eventide H3000SE Harmonizer, (2) Yamaha SPX900, Yamaha SPX1000. (2) Bel delay. **Other Outboard Equipment**: (12) Pultec tube equalizer, (4) Lang PEQ-2, (4) UREI LA-3A, UREI LA-2A, (4) UREI 1176, (4) UREI 175B tube limiter, (4) dbx 160, dbx 162, (3) dbx 160X, Drawmer gates, (4) Gatec gates, Dynamic limiter/gates, Langwin mic pre's. **Microphones**: (6) Neumann U47 tube, AKG C-12 tube, AKG C-24 tube, (2) Neumann U64 tube, Neumann KM56 tube, (2) Neumann U87, (4) AKG 414EB, (2) AKG 460, (2) AKG 451E, (2) Audio-Technica 4000, AKG D-112, (5) Sennheiser 421, (4) Shure SM58, (4) Shure SM57, Beyers M-88, Beyers M-260. **Monitor Amplifiers**: McIntosh 2205, McIntosh 2100, McIntosh 250, Hafler 500, Bryston 2B. **Monitor Speakers**: (4) Altec 604E Big Reds w/Mastering Labs x-over, (4) Yamaha NS-10M Studio, (2) Tannoy Little Gold 12", (2) Auratones. **Musical Instruments**: Steinway B, Korg M1, Yamaha DX7IIDF, Alessi HR16, Akai S900, Hayman Vintage drum kit. **Other MIDI Equipment**: JVC Sequencer, Opcode Studio III. **Video Equipment**: Vision 8250 3/4" deck. **Other**: Marshall 50W Vintage amp, Fender 1961 Deluxe amp, Fender 1961 White Twin amp, Tony Bruno 50W amp.

[24+] **THE BARGE SOUND STUDIO INC.**; 92 Lionshead Dr. W.; Wayne, NJ 07470-4014; (201) 835-2538. Owner: Jim Barg. Manager: Jim Barg.

[24+] **THE BAT CAVE**; also *REMOTE RECORDING*; 50 Donna Court, Ste. #11; Staten Island, NY 10314; (718) 698-4641. Owner: Carlton Batts. Manager: Carlton Batts.

[24+] **BATTERY STUDIOS**; 137-139 W. 25th St.; New York, NY 10001; (212) 627-8200; FAX: (212) 627-5285. Owner: Zomba Recording Corp. Manager: Christopher Rich. Engineers: Tom Vercillo, Barbera Aimes. **Dimensions**: Room 1: studio 30x30, control room 22x18. Room 2: control room 22x18. Room 3: control room 16x18. **Mixing Consoles**: Neve 8068 54-input w/GML automation, SSL 4064 G Series 64-
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input, DDA APR-24 36-input **Audio Recorders:** (3) Otari MTR-100, (2) Studer 827, (2) Studer A820 1/2", Panasonic SRV-3700, (4) Panasonic SRV-3500, (2) Otari MTR-12, Otari 4-track 1/2", DMR 4000, 1630, (3) X-880 w/Apogee filters, Sony PCM-3348, (2) Sony PCM-3324A. **Synchronization Systems:** (2) Lynx TimeLine. **Echo, Reverb & Delay Systems:** (2) Lexicon 480L, (9) Lexicon PCM42, (4) Lexicon LXP-1, (2) Eventide H3000 SE, (2) AMS RMX, (2) AMS DMX, (4) Lexicon PCM70, (3) PanScan, (4) UREI 1176, (4) LA-2A, (10) Drawmer gates, (4) Pultec EQP-1A, (3) Yamaha SPX900, (2) Lexicon Prime Time II, Klark Teknik DN36. **Monitor Amplifiers:** (2) Perreaux 9000, (3) Bryston 4B, (2) Crown D-75. **Monitor Speakers:** (2) Tannoy FSMU, (2) Tannoy 6.5 & LGM, (4) Yamaha NS-10M. **Musical Instruments:** Juno-106, D-550, DX7, SP1200, MPC 60, Roland RB. **Other MIDI Equipment:** SBX 80, MC500, S-100 w/hard drive, Mac SE w/Opcode Vision, Atari 1040 w/Notator, Matrix 1000, Proteus. **Video Equipment:** JVC 850. **Other:** Digidesign Sound Tools Editing system.

[24+] BAY FARM SOUND STUDIO; also *REMOTE RECORDING*; PO Box 2821; Duxbury, MA 02331; (617) 585-9470. **Owner:** Paul Caruso. **Manager:** Paul Caruso.



BEARVILLE STUDIOS
Bearsville, NY

[24+] BEARVILLE STUDIOS; PO Box 135; Bearsville, NY 12409; (914) 679-8900. **Owner:** Estate of Albert Grossman. **Manager:** Ian Kimmeth. **Engineers:** George Cowan, Chris Laidlaw, Michael Reiter. **Dimensions:** Room 1 studio A: 60x40, control room 20x19. Room 2: studio B: 30x24, control room 23x18. Room 3: barn: 30x40. **Mixing Consoles:** Neve 8088 40x16x40, SSL 6000SE 56x32x56 w/G Series computer, custom Bearsville 40x8. **Audio Recorders:** (3) Studer A800 MkIII 24-track, (2) Sony PCM 2500 professional R-DAT, Studer A820 2-track 1/2", Studer A810 2-track 1/4", Studer A80VU 2-track 1/2", Studer A80RC 2-track 1/2", Studer B67 2-track 1/4". **Cassette Recorders/Duplicators:** (4) Tascam 122 MkII, (3) Tascam 122B, (6) Technics M85, (2) Nakamichi MR-1B. **Noise Reduction Equipment:** Dolby A 24-channel, (2) Dolby 361, dbx 206 24-channel, dbx 187 2-channel. **Synchronization Systems:** (2) TimeLine Lynx. **Echo, Reverb & Delay Systems:** AMS RMX, (2) AMS DMX 15-80S, Lexicon 224XL, Lexicon PCM70, (4) Lexicon PCM42, Lexicon Prime Time II, Lexicon Prime Time, Publison Infernal Machine, Yamaha SPX90, (3) Yamaha REV7, (2) EMT 140ST, EMT 240, Live Chamber, (3) Yamaha SPX1000, Yamaha REV5, (2) Eventide H3000. **Other Outboard Equipment:** (2) Eventide H949, Eventide H910, (2) Klark-Teknik DN 34, DMP Cyclosyncs panner, (5) Pultec EQP, (3) Pultec MEQ, (8) Drawmer DS-201 gate, (6) Neve 32264 comp/lim, (4) UREI 1176LN, (2) UREI 1178, (3) Teltronix LA-2A, (4) UREI LA-3A, (2) Valley People rack, (4) dbx 160, (2) dbx 165, dbx 162, (4) Aengus graphic EQ. **Microphones:** Neumann assorted, AKG assorted, EV as-

sorted, Sennheiser assorted, RCA 77-DX, Sony ECM assorted, Shure assorted, Sanken CU-41, Beyer assorted, B&K 4011, PZM 130. **Monitor Amplifiers:** Perreaux, Crown, Yamaha, UREI. **Monitor Speakers:** UREI 813A, UREI 813B, Tannoy SRM12B, NFM8, Yamaha NS-10M, Boston Acoustics A60, R,O,R, cubes, EV Sentry 100, Visonik David 7000. **Musical Instruments:** Bosendorfer grand piano, Yamaha grand piano, Yamaha DX7, Yamaha CP70 electric piano, Roland Jupiter-8, (2) Hammond B3, Leslie 122. **Specialization & Credits:** Bearsville Studios provides world-class recording and rehearsal facilities in a relaxed country setting just two hours north of New York City. Spacious lodging with 32-channel cable TV on 100 acres with pool. Convenient-to-excellent restaurants and shopping in Woodstock. Fully equipped rehearsal barn complete with custom console, EOs, amps and speakers. Individual cue mixers in both studios.

[24+] BEARTRACKS; 278 Haverstraw Rd.; Suffern, NY 10901; (914) 362-1620; (800) 288-2335. **Owner:** Jay Beckenstein. **Manager:** Chris Bubacz. **Dimensions:** Studio 47x30, control room 24x22, 3 iso booths. **Mixing Consoles:** SSL 4000 E (w/G upgrades) 48x32. **Audio Recorders:** Studer A820 24-track, Studer A80 24-track, Studer A80 16-track, Studer A80 2-track 1/2", Studer A80 2-track 1/4", Panasonic 3500 DAT. **Cassette Recorders/Duplicators:** (4) Nakamichi MR-1. **Noise Reduction Equipment:** (24) Dolby SR, (2) Dolby 361 A/SR. **Synchronization Systems:** TimeLine Lynx. **Echo, Reverb & Delay Systems:** AMS RMX 16, AMS DMX 15-80S, Publison DHMB2, Lexicon 480L, Yamaha REV7, (2) Yamaha SPX900, EMT 240, (2) Lexicon PCM42, Lexicon PCM70. **Other Outboard Equipment:** (12) Focusrite mic pre/EO mod, (2) Drawmer DS 201 gate, (2) Teltronix LA-2A limiter, (2) UREI 1176 limiter, (2) Pultec EQP-1R EQ, Pultec MEQ-5 EQ, (2) Fairchild Instruments tube limiter, (2) dbx 165 limiter, Drawmer 1960 stereo comp., dbx 162 stereo limiter, (2) dbx 902 de-esser. **Microphones:** (2) Neumann U87, (2) Neumann U89, (2) Neumann TLM170, (2) Neumann KM84, Neumann U47 tube, Neumann U47 FET, (4) AKG 414, (7) AKG 451, (2) AKG 460, AKG D-12, (2) Sennheiser 416, (9) Sennheiser 421, EV RE20, (5) Shure SM57, (2) Beyer 160, (2) Crown PZM, (2) B&K 4011. **Monitor Amplifiers:** McIntosh MC2500, (2) Ashly Audio 200FET, (3) Crown DC-300A. **Monitor Speakers:** (2) Tannoy SGM-10B w/Doug Sax upgrade, (2) Yamaha NS-10M studio, George Augsburger custom design, JBL, TAD components. **Musical Instruments:** E mu SP-12 drum machine, LinnDrum machine, Yamaha DX7 synth, Yamaha TX MIDI rack, Yamaha RX21L drum machine, Kurzweil 1000-PX, Korg M1, **Other MIDI Equipment:** Macintosh Plus w/Performer software, J.L. Cooper MSB MIDI patch bay. **Rates:** Block rates available. **Specialization & Credits:** Since its opening, BearTracks has gained a reputation as a state-of-the-art music production studio that offers a comfortable, relaxed and creative atmosphere to its clients. Located in the woods on the edge of Harriman State Park and conveniently only 30 minutes from midtown Manhattan, this unique facility, built within the existing frame of a huge stone barn and farm complex, has a remarkable acoustic quality that has found great favor among both pop producers for the explosive drum sounds that can be obtained, and jazz and classical artists for its smooth, warm ambience. This spectacular acoustical quality, combined with the commitment to provide its clients with the very best equipment current technology has to offer, places BearTracks among the most exclusive and unique recording facilities in the world.

[24+] BIG CITY MUSIC INC.; 15 Gloria Ln.; Fairfield, NJ 07004; (201) 808-8280. **Owner:** Gary Rottger. **Manager:** Christa Spadino.



BIOYA RECORDING STUDIOS
Paterson, NJ

[24+] BIOYA RECORDING STUDIOS; 32 Hoxey St.; Paterson, NJ 07501; (201) 742-7704. **Owner:** Len and Lou Argese. **Manager:** Len Argese. **Engineers:** Lou Argese, Len Argese, Ron St German, Miguel Otero. **Dimensions:** Studio 24x26, control room 20x20, (3) iso booths, drum booth with closed-circuit TV. **Mixing Consoles:** Sound Workshop Series 34 74x24 automated. **Audio Recorders:** Akai Digital A-DAM system 24-track, (2) Otari MTR-9011 24-track, (2) Otari MTR-12

2-track 1/4", Otari MX-5050 MkIV 4/8-track, Mitsubishi X-80 Pro-Digi 2-track digital, (2) DR-1200, Sony F-1 2-track digital processor. **Cassette Recorders/Duplicators:** (2) Tascam 122B. **Noise Reduction Equipment:** dbx 216 16-channel, (5) dbx 180 10-channel, (2) Dolby Type A 361 2-channel. **Synchronization Systems:** (2) TimeLine Lynx, Roland SBX-80 SMPTE/MIDI sync box. **Echo, Reverb & Delay Systems:** Quantec QRS room simulator, Stocktronics 4000 echo plate, Yamaha REV7, Yamaha SPX900, (2) ART 01A, (2) Roland DEP-5, (2) Roland SDE-3000 DDL. **Other Outboard Equipment:** Drawmer stereo gate, (4) Valley People Dyna-Mite stereo malleffects, Fostex stereo limiter/compressor, Yamaha stereo compressor/limiter, BBE 802 stereo audio processor, Aphex Type B stereo Aural Exciter, Rocktron Hush IIC stereo noise eliminator, Roland vocoder, (2) Yamaha 8-channel mic preamp. **Microphones:** Neumann, AKG, Sennheiser, Sony, EV, Crown PZM, Shure. **Monitor Amplifiers:** Halfer, BGW, Carver, SCS. **Monitor Speakers:** Yamaha NS-10, Auratone, JBL, Impact Audio, Emilar, Renkus-Heinz, TOA. **Musical Instruments:** Roland S-550 sampler, Oberheim DPX-1 sampler, Casio FZ-1 sampler, Roland D-50 synth module, ESQ-M synth module, Yamaha DX7 synth, (2) Yamaha TX7 synth module, Oberheim OB-8 synth, Roland MKS-20 piano module, Yamaha FX5 drum machine, Dynacord digital drum module, Roland MKS-80 synth module, Roland MKS-50 synth module, Korg M1-R synth module, Casio VZ-1 synth, Casio CZ-101 synth, Kawai 5'10" MIDI grand piano, Tama full drum set, Roland DDR-30 digital drums. **Other MIDI Equipment:** Roland MC-500 MkII micro-composer/sequencer, Roland MKB-300 keyboard controller, Roland A-110 display/thru box, Roland Pad 80 Octapad II. **Video Equipment:** Available upon request. **Other:** The "BIOYA Bear." **Rates:** Available upon request.

[24+] BLANK PRODUCTIONS; also *REMOTE RECORDING*; 1597 Hope St.; Stamford, CT 06907; (800) 969-LOLA; FAX: (203) 329-7193. **Owner:** Bob and Lola Blank. **Manager:** Bob Blank. **Dimensions:** Room 1: studio 12x12, control room 42x23, Room 2: studio 12x15, control room 28x17, Room 3: studio 12x12, control room 15x18. **Mixing Consoles:** (7) Yamaha DMP7D. **Audio Recorders:** (2) Akai A-DAM digital 36-track, Studer A80 Mk III 24-track analog, (2) Panasonic SV3500 DAT, Sony 300ES DAT, Awa HD10 DAT, Sound Tools 2-gigabyte hard disk, Fostex E2 2-track w/center-channel time code. **Cassette Recorders/Duplicators:** Nakamichi MR1, Denon HR3030, Tascam T-2640 high-speed duplication system, Yamaha MT100 4-track. **Noise Reduction Equipment:** Dolby SR Model 363, dbx Model 150. **Synchronization Systems:** (3) TimeLine Lynx. **Echo, Reverb & Delay Systems:** (7) Yamaha DMP7 digital mixer processor, (2) Yamaha SPX900 digital effects processor, Lexicon PCM70 digital effects processor, Alesis MIDverb II, Korg A3 digital effects processor. **Other Outboard Equipment:** Yamaha GC2020 B stereo compressor, dbx 166 stereo compressor, (4) Drawmer 201 noise gate, (24) Audio Logic 202 noise gate, (2) Roctron Hush 201 noise gate, (2) Valley People Gan Bran II, Rane ME30 31-band graphic equalizer, (2) Symetrix 201 vocal processor. **Microphones:** Bruel & Kjaer 4011, AKG C-451EBU, Crown PCM 100, (3) Crown 200, Shure SM57 Beta. **Monitor Amplifiers:** Carver 2.0, (2) Halter 2400. **Monitor Speakers:** (2) UREI 813, (4) Yamaha NS-10M. **Musical Instruments:** Kurzweil MIDI board, Korg M1, (3) E-mu Emax SE, (2) Proteus 1, Proteus 2, (2) Roland R-8 wall cards, (2) Oberheim Matrix 1000, Yamaha TX802, (2) Yamaha TX812, E-mu Performer, Roland D550, Roland Juno-106, Casio CZ-101, Tama drum kit w/Zildjian cymbals, Roland JX-10. **Video Equipment:** Panasonic AG1960 S-VHS, digital F/X editor, Future video editor. **Other:** Olympic swimming pool, 50-inch TV.

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[24+] **BLANK TAPES/BLANK PRODUCTIONS;** also *RE-MOTE RECORDING*; 395 South End Ave., Ste. 31F; New York, NY 10280; (800) 969-LOLA; FAX: (203) 329-7193. **Owner:** Bob, Lola and Ken Blank. **Manager:** Bob Blank. **Specialization & Credits:** Bob Blank has 16 gold and platinum records to his credit. Our 17-year commitment to quality continues with state-of-the-art digital recording and mixing in our 100-year-old farmhouse located on two wooded acres, complete with Olympic swimming pool, catered meals and sleeping accommodations. Over 100 TV spots, four Top 20 records and four film scores were produced and recorded here. Digital hard disk multitrack, all-digital console, computerized digital mixing and editing, 48-track recording and mixing. Three complete facilities including over 250 online synth voices, syn-to-pic and all the latest technology. Rates are per project only; producer arranging, musicians and vocalists available as well. Project coordination and outside work available as well. Call or fax for demo R-DAT or analog cassette.



BLUE JAY RECORDING STUDIO INC.
Carlisle, MA

[24+] **BLUE JAY RECORDING STUDIO INC.;** 669 Bedford Rd.; Carlisle, MA 01741; (508) 369-2200; (508) 369-0766. **Owner:** Robert and Janet Lawson. **Manager:** Bob Lawson. **Engineers:** Mark Tanzer, Mark Wessel, Tina Hansen. **Dimensions:** Studio 38x28, control room 18x19. **Mixing Consoles:** SSL 4056 E56 56x32 w/Total Recall & G Series computer (56-channel). **Audio Recorders:** (2) Studer A800 24-track, Panasonic DAT, Studer A820 2-track 1/2" w/center time code, Studer A80 2-track 1/2", Studer B67 2-track 1/4", Sony JH-110B 2-track 1/4", dbx 700 digital, Sony PCM-2500 DAT. **Cassette Recorders/Duplicators:** (7) Tascam 122. **Noise Reduction Equipment:** Dolby A 4-channel, Dolby SR 2-channel w/Dolby SR XP-24, dbx 180 stereo. **Synchronization Systems:** Time-Line Lynx. **Echo, Reverb & Delay Systems:** Lexicon 224XL, Lexicon PCM60, AMS RMX 16, EMT 140 stereo tube plate, AMS DMX 15-80, Lexicon Prime Time II, (2) Lexicon PCM42, Lexicon Prime Time, AKG ADR-68K digital effects proc., Yamaha REV7, many others. **Other Outboard Equipment:** (4) Pultec EQP, (3) UREI LA-2A, (2) Drawmer DS-201 stereo, (4) Ashly Audio SC34 stereo, (2) dbx 165A, (2) dbx 160X, (2) UREI 1176, UREI LA-4A stereo, Eventide Ultra Harmonizer H3000, Yamaha SPX90, many others. **Microphones:** Telefunken 251 tube, AKG C-12 tube, Neumann U47 tube, (2) Bruel & Kjaer 4006, Bruel & Kjaer 4007, (2) Neumann U87, (2) Neumann KM86, Neumann KM84, (2) Neumann U64, AKG C-451E, (3) AKG 414, (2) Schoeps and many others. **Monitor Amplifiers:** (3) Bryston 4, (3) BGW-250, McIntosh 2100. **Monitor Speakers:** UREI 813B (customized), Klipsch Cornwall studio, EV Sentry 100, Acoustic Research 18, (3) Yamaha NS-10M, Auratone. **Musical Instruments:** Falcone 7" grand piano, Kurzweil 250 (advanced sampling model), Fender Stratocaster, Gibson Hummingbird guitar, Alesis HR-16 drum machine, percussion and snare. **Other MIDI Equipment:** Mac Plus computer w/Mark of The Unicorn Performer Series software. **Specialization & Credits:** Located 30 minutes from downtown Boston, Blue Jay offers state-of-the-art equipment and superior acoustics in comfortable, private surroundings. Constructed in 1979, the uniquely designed, earth-sheltered facility reflects a commitment to technical excellence as well as attention to the needs of creative artists. Credits include: Roy Orbison, Britny Fox, NRBQ, Alice Cooper, Terrence Trent D'Arby, Boston Pops & producers. Neil Dorfman, Tom Lord-Alge, Peter Asher, soundtrack for *Dick Tracy*.

[24+] **BMG STUDIOS;** only *RE-MOTE RECORDING*; 1133 6th Ave.; New York, NY 10036; (212) 930-4000; FAX: (212) 930-4679. **Owner:** BMG. **Manager:** Hank Meyer, Susan Planer—gen. mgr. **Dimensions:** Room 1: studio 100x60, control room 40x19. Room 2: studio 50x75, control room 35x19. Room 3: studio 50x75, control room 35x19. Room 4: studio 30x40, control room 28x20. **Mixing Consoles:** Neve VR Series VR 60 w/Flying Feders, (2) Sony MXP-3036 36x24, (2) Sony MXP-3020 20x20, SSL G Series 56-input, Cedar de-noising. **Audio Recorders:** PCM-1630, DMR-4000, DAE-3000, Sony PCM-2500 DAT, Studer A827, Otari 24-track, MCI 24-track, nu—
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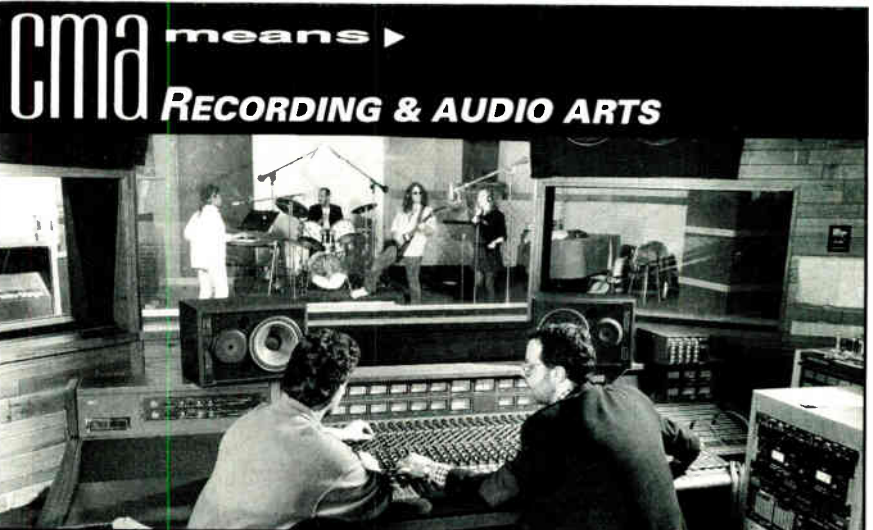
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merous Ampex 2-track 1/4" and 1/2". **Echo, Reverb & Delay Systems:** Lexicon 480L. **Microphones:** Large array. **Monitor Speakers:** B&W 801, UREI 813, UREI 809. **Video Equipment:** JVC 3/4" decks. **Other:** Harmonia-Mundi BW102 equalizer, Timeline Lynx Lockup.



[24+] CABIN FEVER RECORDING; also REMOTE RECORDING; PO Box 735; Fishers, NY 14453; (716) 924-0728. Owner: Bob Potter. Manager: Dillon.



CARRIAGE HOUSE STUDIOS
Stamford, CT

[24+] CARRIAGE HOUSE STUDIOS; 119 W. Hill Rd.; Stamford, CT 06902; (203) 358-0065. Owner: Johnny Montagnese. Manager: Patricia Spicer.

[24+] CEDAR SOUND; also REMOTE RECORDING; 90 West St., Ste. 2210; New York, NY 10006; (212) 227-3896; FAX: (212) 227-3896. Owner: Regan E. Freedman. Manager: Psquani Frates.

[24+] CELEBRATION SOUNDS; 26 Summer St.; Pawtucket, RI 02860; (401) 728-0780. Owner: David Correia, Dan Moretti. Manager: Catherine Correia.

[24+] CHESTNUT SOUND INC.; also REMOTE RECORDING; 1824 Chestnut St.; Philadelphia, PA 19103; (215) 568-5797; FAX: (215) 568-5911. Owner: Joseph F. Alfonsi. Manager: Joseph F. Alfonsi. Engineers: Jeremy Birnbaum, Chris Gately, Michael Harmon. Dimensions: Room 1: studio 36x16, control room 17x14. Room 2: studio 6x6, control room 8x18. **Mixing Consoles:** Sound Workshop Series 30 28x8 w/52 return in mixdown, Hill Multitrack 16x4. **Audio Recorders:** Sony APR-24 24-track w/autolocator, Ampex ATR-800 2-track, Ampex ATR-700 2-track, Otari 5050 MkIII 2-track, Tascam 32-2B 2-track, Panasonic SV-3500 R-DAT. **Cassette Recorders/Duplicators:** (3) Tascam 122, Otari DP-4050 C2, Tascam 122 MkII. **Noise Reduction Equipment:** dbx 190. **Synchronization Systems:** J.L. Cooper PPS-100. **Echo, Reverb & Delay Systems:** AKG ADR 68K digital reverb/effects, Lexicon PCM60 w/2.0 update, Yamaha REV7, Ecoplate III, Ibanez SDR-1000, Alesis MIDVerb, Lexicon LXP-1 and LXP-5 w/MRC controller. **Other Outboard Equipment:** Eventide H910 Harmonizer, Aphex Aural Exciter, dbx 906 flanger, (2) dbx 904 gate, (2) dbx 905 EQ, dbx 902 de-esser, (2) UREI LA-4 comp, (2) UREI 545 EQ, (4) USAudio Gate gate, TC Electronic 2240 parametric EQ, UREI 1176 comp, Lang PEQ-2 EQ. **Microphones:** Neumann TLM170, (3) Sennheiser 421, (2) RCA BK-5, (2) Beyer M500, Altec 150A BASE tube, AKG: 414ULS, 414EB, (2) 460, D202, Shure: (2) SM81, SM61, SM57. Electro-

Voice RE20 and RE11. **Monitor Amplifiers:** Hafler 250, Yamaha P2200, Yamaha P2100, Yamaha P2050, Carver PM-175, Crown DC-150. **Monitor Speakers:** Altec Big Reds w/Master Lab crossovers, JBL 4311, (2) Yamaha NS-10, Auratone 5C. **Musical Instruments:** Yamaha G3 grand piano, Sonor drum kit, Korg DDD-1 digital drum machine, Casio CZ-101 synth, Emax digital keyboard/sampler. **Other MIDI Equipment:** (2) Macintosh Plus w/Southworth MIDI interface, Performer sequencing software Version 3.42, complete disk library for Emax, control room-to-studio MIDI tie-lines, Roland Octapad II, Roland D-110 multitimbral sound module, Opcode editor/librarian software for D-110, Composer Music Printing software. **Video Equipment:** NEC DX-1000U VHS, Commodore monitor, additional rentals upon request. **Other:** Studio Technologies Mic PreEminence, Monster ProLink Series I phase-aligned for Mic PreEminence, Gallien-Krueger bass amp, Fendr Twin Reverb guitar amp, Technics SL-1200 MkII turntable, Sony CDP-102 CD player, Traynor Block 100G guitar amplifier. **Rates:** Available upon request.

[24+] CLUBHOUSE STUDIOS; also REMOTE RECORDING; Box 373; Germantown, NY 12526; (518) 537-6305; FAX: (518) 537-5829. Owner: Paul Antonelli. Manager: Joe Vaccarino. Engineers: Paul Antonelli, Greg Gruntler, Joe Vaccarino, Joe Hoffman. Dimensions: Studio 25x45, control room 25x27. **Mixing Consoles:** APSI 26 mic/52 line inputs. **Audio Recorders:** Sony/MCI JH-24 16/24-track, Sony PCM-2500 DAT, Otari 5050B 1/2-track. **Cassette Recorders/Duplicators:** (5) Tascam 122. **Synchronization Systems:** Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** AKG ADR 68K MIDI digital effects processor, Eventide H3000SE Ultra Harmonizer, TC Electronic 2290, Lexicon PCM70 processor, Lexicon LXP-5, Lexicon LXP-1, Lexicon MRC MIDI remote controller, Alesis Quadraverb, (2) Yamaha SPX90, Yamaha R1000 digital reverb. **Other Outboard Equipment:** (4) Focusrite ISA 110 mic/line preamplifier, (4) John Hardy M-1 mic preamplifier, Altec A322c tube limiter, (2) BSS 402 stereo compressor/limiter, (3) BSS 502 MIDI noise gate, BBE 802 processor, (2) Passac resonance systems. **Microphones:** (2) Neumann U87, (2) AKG C-414, (3) AKG C-451, AKG C-460, AKG D-112, AKG 747, AKG 310, (4) Sennheiser 421, Beyer M201, (5) Shure SM57. **Monitor Amplifiers:** Perreux 6000 MOSFET, (2) Crown DC-300, Crown PSA-2. **Monitor Speakers:** Tannoy NFM-8, Tannoy PBM-6.5, Yamaha NS-10s, Turbo TMS-1. **Musical Instruments:** Gretsch drum kit, E-mu Emulator II, Linn 9000 w/Forat update, Roland D-50, Roland Octapad, Korg Polysix, Marshall amp, Mesa/Boogie amp. **Other MIDI Equipment:** 360 Systems MIDI patch bay. **Video Equipment:** JVC CR6650U 3/4" VCR w/remotes, Sony 20" monitor. **Other:** Macintosh IIfx, CDC 600MB external hard drive, Digidesign Sound Tools, Opcode Studio 3 SMPTE interface, Opcode Vision sequencing software, 11" Radius monitor. **Rates:** Call for rates.

[24+] COURTLEN RECORDING; 149 MaQuan St.; Hanson, MA 02341; (617) 294-8316; (617) 294-1218. Owner: Frederick Danner. Manager: Patricia Danner. Engineers: Bob St. John, Fred Danner, Jeff Whitehead, Jon Finn. Dimensions: Studio 26x24, control room 18x15. **Mixing Consoles:** Klark-Teknik AMR-24 36x24, ARMS automation and disk mix. **Audio Recorders:** Sony/MCI JH-24 24-track w/ALI, Otari MTR-10 2-track, Otari MX-5050B 2-track. **Cassette Recorders/Duplicators:** Sony TC-W7R. **Noise Reduction Equipment:** Dolby SR 24-track. **Synchronization Systems:** Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** Lexicon 200, Lexicon PCM41, (2) TC Electronic 2290, (3) Yamaha SPX90. **Other Outboard Equipment:** (2) Teletronix LA-2A, Brooke-Siren DPR-402, (2) dbx 160, Symetrix 522, (2) Gatex, (2) Ashly Audio SG33, dbx 165, Aphex B, Loft 440, Klark-Teknik DN-360B. **Microphones:** (2) Neumann U87, Neumann TLM170, (2) B&K 4000, (2) AKG 414, (2) AKG 451, (2) AKG 452EB, EV RE20, (4) Sennheiser 421, AKG D-12E, (2) Shure SM57 and SM58. **Monitor Amplifiers:** (2) Ashly Audio 500 FET, (2) Ashly Audio 200 FET, Crown, McIntosh. **Monitor Speakers:** (2) Tannoy SGM-1000, (2) Yamaha NS-10M, (2) Tannoy SRM-12B. **Musical Instruments:** Anything upon request. **Rates:** Please call.

[24+] COVE CITY SOUND STUDIOS INC.; 7 Pratt Blvd.; Glen Cove, NY 11542; (516) 759-9111; FAX: (516) 759-4963. Owner: Richie Cannata. Manager: David Barratt. Engineers: Tom Yezzi, Bob Cadway, Dan Hetzel, Denny McNeerney. Dimensions: Room 1: studio 40x35x22, control room 30x18x12. Room 2: control room 17x15x14. **Mixing Consoles:** Neve 8068, Neve 8014. **Audio Recorders:** Studer A820, Studer A80, Studer B67 2-track. **Cassette Recorders/Duplicators:** (2) Tascam 122 Mk II, Nakamichi MR1, Panasonic 3500 DAT. **Noise Reduction Equipment:** dux 160 VU, (2) dbx 160X, (2) Neve compressor/limiter, (5) Kexep II, (4) Drawmer gate. **Synchronization Systems:** TimeLine Lynx lockup, Aphex Studio Clock. **Echo, Reverb & Delay Systems:** AMS reverb, RMX 16, Lexicon PCM70, PCM60, (2) PCM42, 224XL, Yamaha REV7, (2) SPX900, SPX90, Eventide 969, 949, H3000, Roland SRV-2000. **Other Outboard Equipment:** (6) Massenburg GML mic preamps, (8) Massenburg GML 5-band parametric EQs, (2) Pultec EQP-1A, (3) API 550A EQs, UREI 1176LN. **Microphones:** (3) AKG 414, (4) AKG 452, (2) AKG D112E, (2) Electro-Voice RE20, (2) Neumann U87, (15) SM57, (7) 421, 441, (2) AKG G460B, (2) SM81. **Monitor Amplifiers:** (2) McIntosh 225, Bryston 48, Crown DC-300A, Crown D-150, McIntosh 2155. **Monitor Speakers:** (2) UREI 813B, Westlake BBSM-5, (2) Yamaha NS-10M. **Musical Instruments:** (2) Akai S1000, Akai S-950, Roland R-8, Akai MPC60, E-mu Emulator II, all MIDI gear

available, live drum kit and various guitar amps. **Other MIDI Equipment:** All MIDI gear, sequencers, samplers. **Specialization & Credits:** Large room 22-foot high ceiling, excellent tracking, overdubbing and 48-track lockup. Credits: Taylor Dayne albums *Tell It To My Heart* and *Can't Fight Fate*, Mariah Carey *Donny Osmond*, Hall & Oates, Natalie Cole, Lisa Ford, TNT, Brenda K. Starr, Lisa Stansfield, Eric Carmen, Hunter Hanes, Remixes by Whitney Houston, Martika, KC Creole, Linear, Appollonia, Tracy Spencer. Two full MIDI suites with programmers for complete MIDI production. Call for full equipment list and studio rates.



CRYSTAL SOUND RECORDING
New York, NY

[24+] CRYSTAL SOUND RECORDING; 220 W. 19th St., 6th Fl.; New York, NY 10011; (212) 255-6745. Owner: Larry Suksbaum. Steve Vavagiatis. Manager: Todd Childress.



[24+] D & D RECORDING INC.; 320 W. 37th St.; New York, NY 10018; (212) 736-7774. Owner: Douglas Grama, David Lotwin. Manager: Barry Grama.

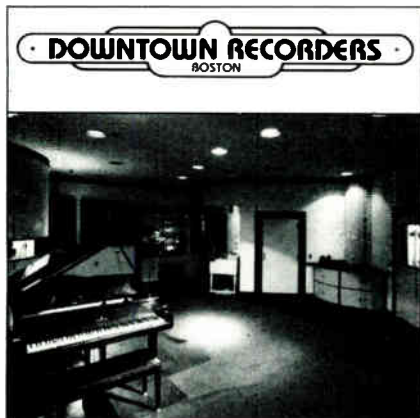


DAJHELON PRODUCTIONS INC.
Rochester, NY

[24+] DAJHELON PRODUCTIONS INC.; 234 East Ave.; Rochester, NY 14604; (800) 836-0438; (716) 232-1480 (local). Owner: David C. Schumaker. Manager: Robert V. O'Connor. **Mixing Consoles:** Amek Mozart 56-input frame w/full automation. **Audio Recorders:** Sony APR-24 24-track, Sony APR-5003 2-track w/SMPTE time code, Fostex 2-track w/SMPTE time code, Sony 2500 R-DAT. **Noise Reduction Equipment:** Dolby SR-A. **Synchronization Systems:** Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** Lexicon 480L reverb/delay/sampler, (2) Eventide HD3000 Ultra-Harmonizer, (2) TC Electronic 2290 delay/sampler, Lexicon PCM70 reverb, (2) Alesis Quadraverb multieffects, dbx 900 rack compressor/limiter/gate, Drawmer M500 dynamics processor. **Microphones:** Neumann TLM170, (4) AKG 414, (2) AKG 451, (2) Crown PZM, (5) Sennheiser 421, (4) Shure SM57, (2) Milab 96B. **Monitor Amplifiers:** (2) Hafler 500. **Monitor Speakers:** Tannoy 12B, Tannoy PBM-6.5. **Musical Instruments:** Emulator III sampler/synth, wide range of MIDI tone generators/controllers. **Other MIDI Equipment:** Macintosh IIfx w/hard disk recording/editing, Cubase sequencing software, Performer sequencing software, SMPTE-Trak sequencing software. **Video Equipment:** 1" VTR machine.

[24+] DAK AUDIO; also REMOTE RECORDING; 315 Rickert Rd.; Sellersville, PA 18960; (215) 723-1167; FAX: (215) 723-7727. Owner: Dan Kendra. Manager: Craig R. Shaffer.

[24+] **DESTINY CORPORATION VIDEO & FILM**; also *RE-MOTE RECORDING*; 376 Silas Deane Highway; Wethersfield, CT 06109; (203) 721-1684; FAX: (203) 563-8438. Owner: Dana Rafiee. Manager: R. Michael O'Briant.



DOWNTOWN RECORDERS
Boston, MA

[24+] **DOWNTOWN RECORDERS**; 537 Tremont St.; Boston, MA 02116; (617) 426-3455. Owner: Peter Cheung. Manager: Peter Cheung. Engineers: Joe Cuneo—chief engineer. Dimensions: Studio 23x28 plus four iso booths. Mixing Consoles: MCI 636 modified 28x4 fully automated. Audio Recorders: Panasonic SV-3500 DAT, MCI JH-24 24-track, MCI JH-110 2-track 1/2" and 1/4", Otari 5050E 2-track 1/4", Sony PCM-70 ES digital mastering. Cassette Recorders/Duplicators: Tascam 122 MkII, Akai F66C. Echo, Reverb & Delay Systems: Lexicon LXP-1, Lexicon LXP-5 w/ MRC controller, Alesis Quadverb, Lexicon 224XL digital reverb w/LARC, Lexicon PCM70, Lexicon Prime Time, Lexicon Super Prime Time, Lexicon PCM42, Korg DRV-3000, Yamaha SPX90, Alesis MIDverb II, TC Electronic 2290 16-bit amp/processor, DeltaLab DL-4. Other Outboard Equipment: BBE 802 exciter, Aphex B Aural Exciter, (2) UREI LA-4 compressor/limiter, (3) UREI 1176 compressor/limiter, (2) dbx 161A compressor/limiter, UREI 175 tube compressor/limiter, Altec 436B tube compressor/limiter, (2) Ashly Audio SC50 compressor/limiter, (2) Valley People Dyna-Mite stereo gate, (3) Ashly Audio SC33 stereo gate, (2) Ashly Audio SC66 full stereo parametric EQ, Orban 674A 8-band stereo parametric EQ. Microphones: (3) Neumann U87, (2) Neumann KM88, Neumann KM84, (3) Neumann KM85, (2) AKG 414EB, (2) AKG 451E, AKG D-12E, (2) EV RE20, EV RE15, EV 665, (2) Crown PZM, (6) Sennheiser MD-421, (2) Sennheiser MD-441, Beyer M260, (2) Shure SM81, Shure SM94, Shure SM53, (3) Shure SM57. Monitor Amplifiers: (3) Ashly Audio FET 500, Ashly Audio FET 200, Crown 300A. Monitor Speakers: UREI 813A custom bi-amp 800 watts per side, Yamaha NS-10M, Tarnoy PBM-6.5, Auratone, JBL 4311 studio. Musical Instruments: Roland D-50 synth., TR-808, TR-909, R8 drum machines, Roland MC-500 sequencer, Emulator II w/full sample library, Steinway B 1920 grand piano, Hammond B-3 organ w/Leslie, Emulator SP-12 turbo, FinnDrum, Yamaha DX7. Rates: Call for rates. Specialization & Credits: Clients: KP Posse, Arista, Atlantic Records Remix. Recent albums include The Pixies, Roger Miller and Marimolin w/Lyle Mays. National credits include Aerosmith, Peter Wolf, Nils Lofgren, Bon Jovi, Bonnie Bramlett. Director: We've always believed that a great performance makes a great recording, so we make sure that the entire recording process is relaxed and enjoyable, while keeping everything at the highest professional standards. Our room was designed for a comfortable feel and a great live sound. Our staff is experienced, knowledgeable, and they know music and the music business so they can give you all the assistance you desire. All of our engineers are also musicians so they know what it's like to be on the other side of the recording window. We're here to make your recording experience creative and enjoyable and, above all, to record great tracks. That's what we're best known for.

[24+] **DREAMLAND RECORDING STUDIO**; PO Box 383; Bearsville, NY 12409; (914) 338-7151; FAX: (914) 339-2505. Owner: Joel Bluestein. Manager: Joel Bluestein, Sarah F. Gross—assistant manager. Engineers: David Cook—chief engineer, John Yates—engineer, Harvey Sorgen—engineer, Jay Bender—technical engineer, Betsy Balzer—asst. engineer. Dimensions: Room 1: studio 40x50x33, control room 25x20. Room 2: studio 25x18x12, control room 25x20. Room 3: studio 15x15x8, control room 20x15x9. Mixing Consoles: API 312 32 36x16x32 with 40/554, 7/550A, 5/560A, 2/560B EQs; API 1604 15x16x4. Audio Recorders: Studer A820 24-track 2", Studer A80VU MkIV 24-track, Ampex ATR-102 2-track 1/4" and 1/2", Panasonic SV-250 portable DAT, Panasonic 3500 DAT. Cassette Recorders/Duplicators: (5) Tascam 122 MkII. Synchronization Systems: Lynx TimeLine. Echo, Reverb & Delay Systems: Two live rooms 40x50x33 and 25x18x12, (2) Lexicon PCM60 & 70, Lexicon 224, TC Electronic 2290, Eventide 3000 w/sample option reverb, (2) Yamaha REV7, (2) Yamaha SPX1000, Korg SDD-3000, (6) Drawmer DS-201 stereo noise gates, (2) Drawmer 1960 stereo tube, Neve 3.3609

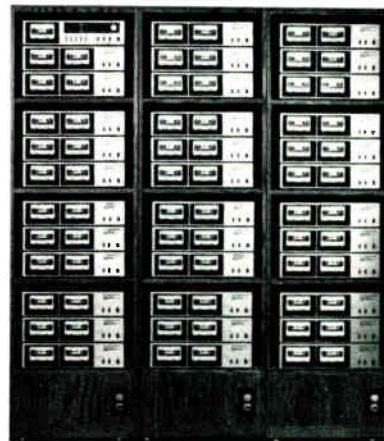
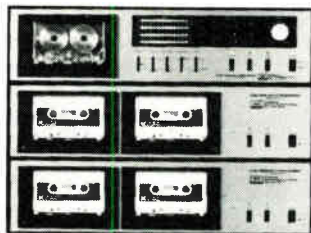
stereo comp/limiter, (3) Lydcraft CL-1A tube comp/limiter, Universal Audio 175-B tube limiting amp., (2) UREI 1176 & 1178 comp/limiters, (2) UREI LA-4 comp/limiter, (4) dbx 160X comp/limiter, (2) dbx 165A Over Easy compressor/limiter, Lydcraft PE-1A tube EQ, (5) Pultec EQ, (6) Neve 1073 I/O modified w/4-band EQ, (4) Focusrite ISA 116 mic preamp., (2) Lydcraft MP-1A stereo tube mic preamp, (4) GML mic preamp, GML Model 8200 dual 5-band parametric EQ, (2) MXR Model 126 flanger/doubler. Microphones: (14) Neumann, (10) AKG, (4) Schoeps, (8) Sennheiser, (5) Beyer, (3) Sanken, (3) Calrec, (5) RCA, (10) Shure, (2) Countryman, (3) Electro-Voice, Altec, Crown PZM, (4) Realistic. Monitor Amplifiers: (2) Perreux 6000B, Bryston 4B, (2) McIntosh 2100, (3) Crown DC-300. Monitor Speakers: Meyer HD-1, UREI 813-B studio, Yamaha NS-20M and NS-10M studio, Tannoy PBM-6.5, Westlake BBSM10. Musical Instruments: Steinway 1934 B grand piano, Hammond B-3 organ w/Leslie floor speaker unit, Yamaha DX7IIIFD, Roland Super Jupiter MKS-80, Roland D-550 linear synthesizer, Roland U 220 sample player, E-mu Proteus sample player, Forat F-16, Akai S900, Roland R-8 drum machine, (6) adjustable stereo cue station. Rates: Please call in for rates. Specialization & Credits: Accommodations, full kitchen, outdoor swimming pool, production assistance with in-house musicians and video support available. Dreamland Recording Studio has established itself as one of the premier cutting environments in

the country, with the ambience of a 100-year-old church and various acoustical environments to choose from. Dreamland has hosted clients such as the B-52s, 10,000 Maniacs, Hot Tuna, Graham Parker, Joan Jett, Jack DeJohnette, Pat Metheny, Bill Frisell, Marshall Crenshaw, NRBQ, Royal Crescent Mob, The Judy Bats, Syd Straw, Golden Palominos, The Flesh-tones, Joe Henry, Andrew Schulman and many, many more!



[24+] **EAST SIDE FILM AND VIDEO**; 216 E. 45th St., 3rd Fl.; New York, NY 10017; (212) 867-0730. Owner: The Gordon Media Companies. Manager: Lizzie Schwartz, Kathy Good. Engineers: Michael Barry, Bob Giammarco, Tom Jucarone, Glenn Laredo, Rod Zavala. Dimensions: Room 1: studio 10x15, control room 40x20, Room 2: studio 10x15, control room 40x20, Room 3: studio 10x15, control room 40x20, Room 4: studio 10x15, control room 19x25. Room 5: studio 1. Mixing Consoles: (3) Neve 51 Series, (2) SSL Series 6000. Audio Recorders: NED PostPro and (2) SSL ScreenSound digital workstations, (2) Studer A800, Otari MTR-90, (2) Studer A820, (10) Otari MTR-10 2/4-track 12 TC, (2) Nagra 4.2 IV-S, (4) Magna-Tech Series 2000 6-track and 30-frame capability. —LISTING CONTINUED ON NEXT PAGE

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—LISTING CONTINUED FROM PREVIOUS PAGE

Noise Reduction Equipment: (6) Dolby A and SR. **Synchronization Systems:** (6) Adams-Smith Series 2600. **Echo, Reverb & Delay Systems:** AMS RMX 16, AMS DMX 15-80, (2) Lexicon 224XL, Yamaha SPX1000. **Other Outboard Equipment:** Yamaha REV5, Aphex, Dynaflex, (2) Pultec EQ, (2) Neve compressor, (6) UREI 7110, (2) Eventide 3000. **Microphones:** Neumann U87, Neumann U67. **Monitor Amplifiers:** (4) Bryston 4B, (2) Hafler 500. **Monitor Speakers:** (5) UREI 813, (6) Yamaha NS-10M, (2) MDM 4, (10) Auratone. **Musical Instruments:** Akai S900 sampler, Ensoniq EPS, Voyetra 8 synthesizer, Roland 707 drum machine. **Video Equipment:** (2) Sony BVH-2000 1", (3) Sony BVW-70, Sony BVH-9850 3/4", (2) Sony BVH-5800 3/4", (3) Sony BVH-5600, (4) JVC and Panasonic VHS, Sony DVR-10 (D-2).

[24+] EASTSIDE SOUND; REMOTE RECORDING only; 98 Allen St.; New York, NY 10002; (212) 226-6365; FAX: (212) 226-0788. Owner: 98 Allen Opco Inc. **Manager:** Lou Holtzman, RJ Cicero. **Engineers:** Lou Holtzman, Nicholas Prout, A.W. Dick. **Dimensions:** Studio 25x45, control room 20x20. **Mixing Consoles:** Harrison Series Ten "B". **Audio Recorders:** (2) Sony APR-24 48-track, Studer A80 2-track, Sony 2500 DAT, Sony 1900 DAT. **Synchronization Systems:** Garfield Masterbeat, Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** Lexicon 480, Lexicon 42DDL, Eventide H3000, (2) Instant flanger, Boss DDL, TC Electronic TC2290 DDL, SPX 90, Proverb, Master Room C, Master Room MkII, Yamaha 1500 DDL. **Other Outboard Equipment:** (2) UREI LA-4, (2) JBL 7110, (2) dbx 160X, (2) BBE 202R, (4) Drawmer gates, Drawmer tube/complimiter, Symetrix EQ, UREI 530 EQ, Klark-Teknik EQ, Troisi EQ. **Microphones:** Wide variety of microphones. **Monitor Amplifiers:** (3) Harman, (2) Hafler. **Monitor Speakers:** (4) Roger Quested. **Musical Instruments:** Steinway B grand piano, DX7, TX 816, Akai 950. **Other MIDI Equipment:** Sound Tools S20-60 minutes Mac Wren, Garfield MB. **Other:** Macintosh IIx, Macintosh II, Macintosh SE/30. **Specialization & Credits:** Eastside Sound is the only studio on the east coast of America to use the first Mac II-controlled Harrison Series Ten Console. The Series Ten is the only console that is totally automated — not just recall windows or faders. The Series Ten literally remembers every move you make in a mix, everything from EQ-panning-buses-sends-everything in real time. You can put the file away and in less than two seconds it is put back into the console. The Series Ten sounds big. Mac users will love the intuitive offline Mac editing features that make all portions (real time automation) of multiple mixes merge into a new file. It is such an amazing console that it has to be experienced to be believed. Other so-called total automation systems are shallow in comparison with the Series Ten. Call Eastside for a demonstration on the board that is ready for the Nineties and beyond.

[24+] ECI RECORDS/PRODUCTIONS STUDIO; also REMOTE RECORDING; Box 265; Massapequa, NY 11758; (516) 795-4574. Owner: Michael Capitane.

[24+] EDISON RECORDING STUDIO; 228 W. 47th St.; New York, NY 10036; (212) 921-0505. Owner: National Video Center. **Manager:** Obie O'Brien. **Engineers:** Gary Chester, chief engineer. **Dimensions:** Studio 60x60x24, control room 22x22. **Mixing Consoles:** SSL 6000E 48-track, 56-input w/ computer automation, Total Recall and Dolby SR. **Audio Recorders:** (10) Otari and Studer 24/16/8/4/2-track, Nakamichi DMP-100 2-track digital, broadcast, audio cart machine. **Synchronization Systems:** Adams-Smith 48-track video/audio. **Echo, Reverb & Delay Systems:** (2) Lexicon Prime Time II, (2) Lexicon PCM42, (4) Marshall tape eliminator, (2) EMT 140, (2) AKG BX-20, AMS RMX 16, (2) Yamaha REV7, Roland SRV-2000. **Other Outboard Equipment:** (2) Pultec EQP1-A program equalizer, (2) Orban parametric equalizer, Eventide 949 Harmonizer, (4) Valley People Kepex II, J.L. Cooper time cube, UREI dual graphic equalizer, (20) helix for easy synth and drum machine hookup, (2) UREI 1178 stereo, (2) dbx 160X. **Microphones:** B&K 4006, Neumann U89, Neumann U87, Neumann U67 tube, Neumann U48A tube, Neumann FET 47, Neumann KM86, Neumann KM56, RCA 44-77, AKG 414, AKG 451, AKG 460, PZM300, Sony C-37P, Shure SM81, Shure SM58, Shure SM57, Beyer M260, Beyer M88, Sennheiser 441, Sennheiser 421, EV RE20, EV RE50. **Monitor Speakers:** UREI 813 w/(2) Bryston 4B, Yamaha NS-10, Auratone. **Musical Instruments:**



EDISON RECORDING STUDIO
New York, NY

(2) drum set, grand piano, tack piano, celeste, B-3 organ, xylophone, vibes, orchestra bells and temple blocks. **Rates:** Upon request. **Specialization & Credits:** The Edison's enormous Tom Hildy-designed recording space and control room make this studio ideal for acoustic recording of major acts, orchestras, jingles, etc. Also, at National Video Center: two interlock video sweetening rooms, five voice studios, time compression, reel-to-reel and cassette duplication, transfers, music and FX libraries, scoring and soundtrack design. **Videos:** three shooting stages (60x80x21, 40x50x21 and 17x28x10), seven online computer editing suites, two offline and interformat suites, negative color correction, remote production, videodisc premastering, computer graphics, animation stands, duplication—all formats.

[24+] ELECTRIC LADY STUDIOS; 52 W. 8th St.; New York, NY 10011; (212) 677-4700; FAX: (212) 228-8054. Owner: Alan Selby. **Manager:** Mary Campbell; Asst. manager—Marco Gaultens. **Engineers:** Michael White, Shannon Carr, Adam Yellin, Jen Betty. **Dimensions:** Room 1: studio 35x38, control room 16x26. Room 2: studio 19x21, control room 17x27, Room 3: studio 19x21, control room 14x23. **Mixing Consoles:** Focusrite 64x32 w/Massenburg automation, SSL 4000E 56x32 w/G computer and Total Recall, SSL 4064C, 64x32 w/G computer and Total Recall. **Audio Recorders:** (2) Studer A820 24-track, (4) Studer A800 24-track, (2) Studer A820 2-track 1/2", (2) Studer A80RC 2-track 1/2", Studer A80VU 2-track 1/2", (4) Studer B67 2-track 1/4", (2) Studer A810 2-track 1/4", (4) Sony PCM 2500 Pro DAT, Sony PCM 3348 digital multitrack. **Cassette Recorders/Duplicators:** (6) Sony TC-K950 ES, (6) Tascam 122B, (2) Nakamichi MR-1. **Noise Reduction Equipment:** Dolby A, Dolby SR. **Synchronization Systems:** Adams-Smith 2600. **Monitor Amplifiers:** Crown PSA-2, Crown PS-200, Yamaha P2200. **Monitor Speakers:** George Augspurger custom 2-way with TAD components, Westlake MX-1 2-way, Yamaha NS-10, B&W 550 Meyer HD-1, EV Sery 100A, Boston Acoustics A-60, Acoustic Research AF16. **Video Equipment:** JVC 8250 3/4", Sony BVU-800 3/4"

[24+] EMMAUS SOUND STUDIO; also REMOTE RECORDING; 533 Oak Terrace; Pt. Pleasant, NJ 08742; (908) 899-5586. Owner: Joe Saint. **Manager:** Jane Sartucci.

[24+] EPSILON RECORDING STUDIO; also REMOTE RECORDING; 16 Volusia Ave.; Hamilton, NJ 08610; (609) 586-6965. Owner: John Muradyan. **Manager:** John Muradyan



[24+] FAST TRACK STUDIO; 14 Northfield Avenue; West Orange, NJ 07052; (201) 669-8585. Owner: Neve/Studek

[24+] FILMSPACE; also REMOTE RECORDING; 615 Clay Lane; State College, PA 16801; (800) 346-8615; FAX: (814) 237-8588. Owner: Tom Keiter. **Manager:** Dave Paterson.

[24+] FISHTRAKS; also REMOTE RECORDING; 62 Congress St.; Portsmouth, NH 03801; (603) 431-5492. Owner: Thomas M. Daly. **Manager:** Thomas M. Daly.

[24+] FORGE RECORDING STUDIOS INC.; also REMOTE RECORDING; Lincoln & Morgan Sts.; Phoenixville, PA 19460; (800) 331-0405; (215) 935-1422; FAX: (215) 935-1940. Manager: Warren R. Wilson. **Engineers:** Mark McNutt, Warren Wilson. **Dimensions:** Studio 40x50, control room 40x30. **Mixing Consoles:** Neotek Elite. **Audio Recorders:** Sony 3324 digital, 3492, 1630, Ampex ATR-100s, Otari 5050. **Cassette Recorders/Duplicators:** MTI, Versydynne bin systems. **Noise Reduction Equipment:** Dalby—anal and dbx. **Synchronization Systems:** Audio Kinetics. **Echo, Reverb & Delay Systems:** Klark-Teknik DN780, Lexicon PCM70, B&F, EMT 258, Eventide Harmonizer, Valley People No se gates, dbx 161 limiters, Drawmer noise gates. **Microphones:** Neumann, AKG, Shure, Electro-Voice, Sennheiser, Crown, Sony—many modules. **Monitor Amplifiers:** Crown. **Monitor Speakers:** JBL and UREI 813. **Musical Instruments:** Kurzweil 250, Baldwin

grand, Emulator II, Rogers drum set, Octapad, Alesis drum machine. **Other:** Complete Sony digital editing 1630 premaster system. **Rates:** Call for brochure and demo.

[24+] FREDRICK LEE & LLOYD INC.; also REMOTE RECORDING; 235 Elizabeth St.; Landisville, PA 17601; (717) 898-6092; FAX: (717) 898-9384. Owner: John Rees. **Manager:** Terry Hartzell.

[24+] FRESH TRACKS STUDIO; also REMOTE RECORDING; 411 W. Cheltenham Ave.; Melrose Park, PA 19126; (215) 635-5500. Owner: Kevin Joella, Larry Spivack. **Manager:** Joanne Joella.

[24+] FUNKY RECORDS RECORDING STUDIOS; 244 Lyell Ave.; Rochester, NY 14608; (716) 458-5610. Owner: Boyd McCoy. **Manager:** Steve McNally.



[24+] GBH MOBILE; REMOTE RECORDING only; 125 West-ern Ave.; Boston, MA 02134; (617) 492-2777 x2302; FAX: (617) 864-7927. Manager: John Voci. **Mixing Consoles:** Amek 39x24x2, (4) Yamaha M406 submixer. **Audio Recorders:** (2) Otari MTR-901 24-track, (2) Panasonic SV-3500 DAT, (2) Otari Mark III 2-track. **Noise Reduction Equipment:** Dolby SR 24-channels. **Echo, Reverb & Delay Systems:** Lexicon 224 digital reverb, Lexicon PCM70 digital reverb, Lexicon PCM41 digital reverb. **Other Outboard Equipment:** (8) dbx 903 compressor/limiter, dbx 162 compressor/limiter, (2) Amek PMO1 Parametric EQ, (2) Amek BPF01 EQ, (2) Amek CL01 compressor/limiter. **Microphones:** Neumann KM83, KM84, SM23, U87, B&K 4006, 4011, Sennheiser MD-211, MD-421, 305, 315, 416, Electro-Voice RE20, RE15, RE16, RE50, DL42, Shure SM57, SM58, SM8, Crown PZM. **Monitor Amplifiers:** Bryston 4B, Crown D75. **Monitor Speakers:** (2) UREI 811A, (2) Auratone 5C, (2) Yamaha NS-10M. **Video Equipment:** Compick video monitoring capability. **Other:** Jensen 40-channel equipped microphone splitter, RTS TW intercom system, Countryman DI boxes. **Rates:** Rates are available on request. **Specialization & Credits:** Winner of 1989 Edwin R. Armstrong Award for Technical Achievement for Recording of the 1989 Ben & Jerry's Newport Folk Festival (American Public Radio), American Playhouse, Evening at Pops (Public Broadcasting System); New Orleans Jazz & Heritage Festival; Bluestage, American Jazz Radio Festival (National Public Radio); WGBH Radio & Television; Aerosmith; Maurice Starr; Peter Wolf; Darius Brubeck, Tom Rush; Henry Threadgill, David Murray, Mannheim Steamroller (Stoll World Music Series); Animal Logic, Little Feat, NRBQ, Georgia Satellites, 10,000 Maniacs, George Thorogood, Ziggy Marley (WBCN radio).

[24+] GET OUT OF THE WAY AUDIO/VIDEO PRODUCTIONS; also REMOTE RECORDING; 210 Tomahawk Trail; Sparta, NJ 07871; (201) 770-3208. Owner: Dan Eriksen. **Manager:** Stephen Betsy. **Engineers:** Dan Eriksen, Kevin Locke, Stephen Betsy, Jim Esposito, Gregg Hatten. **Dimensions:** Room 1: studio 20x30, control room 15x15. Room 2: studio 10x15, control room 10x20. Room 3: studio 20x35, control room 15x25. Room 4: studio 30x40, control room 15x20. **Mixing Consoles:** Trident 80B, Yamaha RM2408. **Audio Recorders:** Sony JH-24, Tascam 38-8, Fostex 1/4" w/TC, Tascam 32-2, JVC DST-900 DAT w/TC, Tascam Pro-DAT, Tascam 234 4-track. **Cassette Recorders/Duplicators:** Tascam 112. **Noise Reduction Equipment:** Dolby A, B, C, dbx. **Synchronization Systems:** SoundMaster 4-machine lockup, SMPTE, IBM PS-2, MIDI 2-system. **Echo, Reverb & Delay Systems:** (2) Eventide H-3000, Lexicon PCM42, (3) Roland SDE-3000, Ursa-Major REV, Roland SDE-3000, (2) Lexicon PCM70, (2) Lexicon LXP-1, Klark-Teknik DN-780 REV, (2) Yamaha REV7, (3) Yamaha SPX90II, (2) TC-2290 w/32 sec. **Other Outboard Equipment:** (8) Drawmer gates, (4) Gatec noise gates, Valley Leveler, Aphex Compellor, (4) Kepex gates, Aphex Type-B, exciter, (2) Rocktron exciter/imager and many dbx compressors. **Microphones:** (8) Neumann all types, (12) AKG all types, (4) EV, (16) Shure all types. **Monitor Amplifiers:** (3) Crown, (4) QSC-3500, (3) Carver Magnetic. **Monitor Speakers:** (2) JBL 4312, (2) EV SH-15 2, (2) Yamaha NS-10M, (2) Auratone, (2) Tannoy. **Musical Instruments:** (8) Yamaha TX816, (2) Roland S-550, (2) Yamaha TX16 w/st. samp., Baldwin 7' Grand, Prophet-5, Yamaha DX7, (2) Marshall amps, Ludwig 10-pc. drum set, Roland 909, Roland 707, Roland 727, Roland 808 w/MIDI. **Other MIDI Equipment:** Roland 808 w/MIDI, Roland Octapad, Roland MC-500, Voyetra Seq, Plus 64-track. **Video Equipment:** Sony 3/4 SP editing 2-system, (2) JVC CR-850U, (2) Chyron, Dubner CG-20K, Eclipse DVE, Valley 16-input SEG/switcher. **Other:** Soundmaster A/V w/sab frame accy, 4 machine. **Rates:** Call (201) 770-3208 for information.

[24+] GIANT RECORDING STUDIOS; 1776 Broadway; New York, NY 10019; (212) 247-1160. Owner: Douglas Pell. **Dimensions:** Room 1: studio 25x35, control room 20x30. Room 2: studio 18x22. **Mixing Consoles:** SSL 4056 w/48E and 8 G modules G computer and Total Recall. **Audio Recorders:** (2) Otari MTR-90, Otari MTR-12 11 2/4-track 1/2", Otari MTR-10 11 1/4", (3) Otari 5050B 2-track 1/4". **Cassette Recorders/Duplicators:** (2) Tascam 122 Mark II, (3) Tascam 122, Nakamichi MR-1. **Noise Reduction Equipment:** Telcom c4 28-channels, Dolby A 4-channels. **Echo, Reverb & Delay Systems:** (2) Lexicon PCM 42, Yamaha REV7, (3) Yamaha SPX90, Lexicon 480XL, AMS DMX 15-80S, AMS RMX 16, TC

Electronic 2290, Lexicon PCM42, Lexicon PCM60, Lexicon PCM70, Lexicon Super Prime Time, Lexicon Prime Time, (2) Yamaha SPX90, Marshall 5402 Time Modulator, Panscan, Aphex Studio Aural Exciter stereo, (2) Lexicon LXP-1, Lexicon MRC controller. **Other Outboard Equipment:** (2) Pultec MEQ, UREI LA-2A, (2) API 550, (2) Neve EQ w/mic pre, (2) UREI 1178, (3) Drawmer DS-201 noise gate, (2) Pultec EQP-1A3 EQ, (2) Valley People dual Dyna-Mite, (8) Metcer EQ w/API electronics, (2) Neve compressor/limiter, (2) UREI LA-3A, (2) dbx 904 noise gate, dbx 903 compressor, dbx de-esser, Trident stereo compressor, ADR Scamp rack w/compressor/delay line, Orban parametric EQ. **Microphones:** (2) Neumann M49 tube, (2) Sony C-37, Neumann U47 FET, (3) Neumann U67 tube, Neumann TLM-170, (4) Neumann U87, Neumann U89, (2) Neumann KM86, (2) Neumann KM84, (2) AKG 452, (2) AKG 224, (3) AKG 414, (2) AKG C-12A, (4) Sennheiser 421, (2) Sennheiser 441, (2) Sennheiser MD211, (2) EV RE20, RCA 77, RCA 44, Shure SM81, (2) Shure SM57, Shure SM58. **Monitor Amplifiers:** (2) Bryston 4B, McIntosh 250. **Monitor Speakers:** Yamaha NS-10, (2) Tannoy 6.5, (2) Meyer Sound Labs 833, (2) EV Sentry 100. **Other MIDI Equipment:** Yamaha DX7, Mac SE Performer MIDI Paint, Music Pros, Synclavier w/32MB RAM, 16 outputs, optical disk, 32 FM and 32 sampling, Korg M1R, Roland D-550. **Video Equipment:** JVC 6250, JVC 8250. **Other:** Plus much more.

[24+] GOLDEN HORN RECORDING STUDIOS; also REMOTE RECORDING; 97 West Second St.; Freeport, NY 11520; (516) 623-1672. **Owner:** Sami Uckan. **Manager:** Elizabeth Hope.

[24+] GRAMAVISION STUDIO; 260 W. Broadway; New York, NY 10013; (212) 966-3410; FAX: (212) 925-4253. **Owner:** Jonathan F. P. Rose. **Manager:** Tim Casey. **Engineers:** Tim Casey. **Dimensions:** Studio 10x20, control room 15x18. **Mixing Consoles:** Neve 8078 40x32. **Audio Recorders:** Panasonic SV-3500 R-DAT, Revox PR-99 2-track, Otari MX-5050 2-track, Studer A80 2-track, Studer A80 2-track. **Cassette Recorders/Duplicators:** Tascam 122 MkII. **Noise Reduction Equipment:** Dolby XP-24 SR, Dolby 363 SR/A. **Echo, Reverb & Delay Systems:** EMT 240 Gold Foil plate, Lexicon PCM70, Yamaha REV7, Lexicon Super Prime Time, Lexicon PCM41, Eventide H949, Quantec QRS room simulator. **Other Outboard Equipment:** (4) Drawmer gate, (8) Dyna-Mite gate, (2) Tektronix LA-2, (2) dbx 165A, Tube-Tech PE-1A, Tube-Tech ME-1B, (4) API 550 EQ, (4) API 560 EQ, (4) Sansui parametric. **Microphones:** Neumann U47 tube, Neumann U69 tube, Sony C-37 tube, (2) Neumann KM-84, (2) Schoeps CMC-5, Beyer M88, Beyer M734, (3) Beyer M500, Beyer M600, (2) Beyer M400, (2) Shure SM57. **Monitor Amplifiers:** Bryston 3B, Bryston 4B, BGW, Kenwood. **Monitor Speakers:** Meyer Sound Labs HD-1, KEF 101, Tannoy 6.5, Yamaha NS-10. **Musical Instruments:** Yamaha DX7S, Akai S900, Rhodes 88. **Rates:** \$75/hr. Lockout rates available.

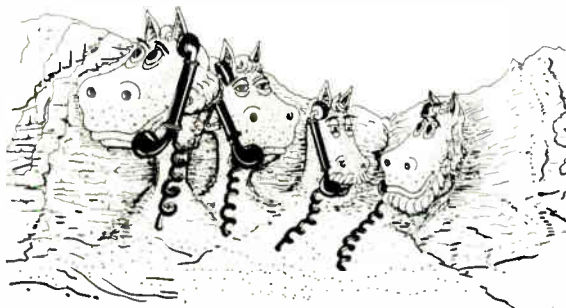
[24+] GRC STUDIOS; also REMOTE RECORDING; 1137 Fillmore St.; Baltimore, MD 21218; (301) 889-4228. **Manager:** Robert J. Friedman.

[24+] GREENE STREET RECORDING; 112 Greene St.; New York, NY 10012; (212) 226-4278. **Owner:** Steve Loeb. **Manager:** David Harrington. **Engineers:** Rod Hui, Nick Sansano, Chris Shaw, Dan Wood, Chris Chapon. **Mixing Consoles:** Amek GML APC1000 80-input, Trident TSM 32x24. **Audio Recorders:** Studer 800 24-track, Studer 820 24-track, Studer 827 24-track, Studer A820 2-track, Studer A802-track, AEG 2-track. **Cassette Recorders/Duplicators:** (4) Tascam. **Noise Reduction Equipment:** (24) Dolby SR. **Synchronization Systems:** (2) Lynx. **Echo, Reverb & Delay Systems:** Publison Infernal Machine, Lexicon 480L, (2) T.C. Electronic 2290, Lexicon 224XL, Lexicon PCM70, (2) Lexicon PCM60, (4) Lexicon PCM42, Eventide 3000, Bel BD8, AMS RMX 16. **Other Outboard Equipment:** Eventide H3000, (2) TC Spatial expander, (2) Tubeteck compressor, (2) Tubeteck EQ, (2) Barcus-Berry Electronics 802, Aphex II, Orban stereo EQ, (3) UREI 1176, (2) UREI LA-3A, (2) Brooke-Siren DPR402, Neve stereo lm/corrip, Kepex II/Gain Brain rack. **Microphones:** Neumann, AKG, Schoeps, Shure, Sennheiser. **Monitor Speakers:** Roger Quessted tri-amped 4-12", John Meyer 833, Yamaha NS-10A, EV Sentry 100. **Musical Instruments:** Korg M1, E-mu Emulator II, Akai S900, Yamaha DX7, Yamaha DX7II, Yamaha TX816, Roland Super Jupiter MKS-80, Roland Planet P MKS-10, Roland Planet S MKS-30, Roland D-50, Roland GR-707 guitar synth/controller, Oberheim OB-8 MIDI, Sequential Circuits Prophet-5 MIDI, Roland Juno-106, Roland SBX-80, Roland MKS-700, Kahler Human Clock, Akai seq/drum machine, Linn seq/drum machine, E-mu SP-1200, Roland TR-707, Roland TR-505, Roland TR-808, Oberheim DMX, Oberheim DX, Steinway grand piano, Tama drum kit, Fender Rhodes piano, Hammond C-3 organ. **Video Equipment:** Sony BVU-800 3/4" w/TBC, Videotek KV-25 XBR monitors.

H

[24+] HIGH HEEL STUDIOS INC.; 425 Fawcett St.; Baltimore, MD 21211; (301) 235-0920. **Owner:** Arnold Geher. **Manager:** Arnold Geher. **Engineers:** Arnold Geher, Victor Giordano, Chris Evans. **Dimensions:** Studio 35x16, 24x19. **Mixing Consoles:** Amek Mozart 32x32 fully automated. **Audio Recorders:** Sony APR-24 24-track, Otari MTR-12C 2-track. —LISTING CONTINUED ON NEXT PAGE

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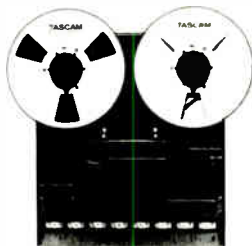
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Otari MTR-10 2-track, Sony PCM-2500 DAT, Sony DTC-D10 DAT. **Cassette Recorders/Duplicators:** (2) Nakamichi MR-1, Tascam 122. **Synchronization Systems:** (2) Adams-Smith Zeta-3 w/remote A-V synchronizers. **Echo, Reverb & Delay Systems:** Lexicon 480L digital effects system, Lexicon PCM70 digital effects processor, Lexicon PrimeTime II digital delay, Lexicon PCM42 digital delay, TC Electronic 2290 w/32 sbl memory delay/sampler, Yamaha REV5, Yamaha REV7, Eventide H3000 Ultra-Harmonizer, (2) Yamaha SPX90, Drawmer M-500, UREI 1178, dbx 165, (2) dbx 160-X, (4) dbx 903 compressor, (4) dbx 904 compressor, Valley People Dyna-Mite, Orban De-esser, BBE 802 Exciter, Orban 622B parametric EQ, (3) Ashly Audio Stereo gates, Symtrix Quad gates. **Other Outboard Equipment:** Sony ES CD player, Symtrix Phone patch. **Microphones:** AKG tube, (2) AKG 414, Neumann U89, (3) AKG 451, AKG D-12, (4) Sennheiser 421, Sennheiser 441, EV PL20, Crown PZM, (7) Shure SM57, (2) Shure SM58. **Monitor Amplifiers:** (4) Crown MT-120 LX, (2) Crown DC-300/DC-150. **Monitor Speakers:** UREI 813, (2) Tannoy PBM-6.5, Yamaha NS-10, Auratone. **Musical Instruments:** Korg M1 music workstation, Akai S900 sampler, Yamaha RX11 drum machine, Yamaha DX7 synth, Rockman guitar module, Roland JC120 guitar amp, Remo 5-piece acoustic drum set. **Video Equipment:** Panasonic AG-7500. **Other:** Sound Ideas sound effects libraries.



HIP POCKET RECORDING STUDIOS
New York, NY

[24+] **HIP POCKET RECORDING STUDIOS:** 37 W. 20th St.; New York, NY 10011; (212) 255-5313; FAX: (212) 645-1787. **Owner:** Bob Merrill. **Manager:** Jim Doherty. **Engineers:** Mark Zampella, Joe Ariotta, Butch Jones, Rich Oliver. **Dimensions:** Room 1: studio 35x45x15, control room 20x26. Room 2: studio 20x30x12, control room 18x22. Room 3: studio 8x10, control room 16x18. Room 4: program room 15x21. Room 5: studio 12x16, control room 18x21. **Mixing Consoles:** SSL 6056E 56x32 w/Total Recall/BG options/update, MCI JH-542C modified 42x32 w/options/updates. **Audio Recorders:** Otari MTR-90 MkII 24-track, Sony PCM-3324 24-track digital, (2) MCI JH-16 24/16/8-track modified w/16-track Wuelke and 1" Wuelke, Studer 2-track 1/2", MCI 110B 2-track 1/2" modified, (5) MCI 2-track 1/4" modified, MCI 4-track 1/2" modified, Otari 5050 4-track, Mitsubishi 32-track full SSL hookup available. **Cassette Recorders/Duplicators:** (7) Nakamichi MR-1. **Synchronization Systems:** (2) Adams-Smith full system. **Echo, Reverb & Delay Systems:** Lexicon 224XL, Lexicon PCM60, Lexicon PCM70, Lexicon PCM42, Audicon plates, Lexicon 200, DeltaLab AcousticComputer, Yamaha SPX90, Bel BD-80, Marshall AR-300 tape eliminators. **Other Outboard Equipment:** dbx 160, dbx 165, Orban 622B, Orban 516EC, Valley People Dyna-Mite, Panscan, Drawmer gates, Eventide Harmonizer/effects, UREI 1176, UREI LA-2A, UREI LA-3A, UREI graphics, Prime Time, Yamaha REV5, Yamaha REV7. **Microphones:** Neumann U87, Neumann U67, Neumann U47

original tube, Neumann KM84, AKG tubes, AKG 414EB, AKG 451, EVRE20, Shure SM57, RCA 44 ribbons, RCA 77 ribbons, Sennheiser 441, Sennheiser 421, Crown PZM, Beyers ribbons. **Monitor Speakers:** UREI 813A, UREI 813, (3) EV 100A, (2) Yamaha NS-10M, (6) Auratone cube. **Musical Instruments:** Synclavier 16 outs/16 FM/32 Poly/14MB RAM (optical disk drive, 4-track direct-to-disk), all SMPTE, MIDI and sampling, Yamaha DX7, Tama drums, Yamaha grand piano, Steinway grand piano, Roland Super Jupiter, Yamaha TX816, percussion. **Video Equipment:** JVC 8250U w/RM70, JVC 6650U w/RM70. **Other:** Resolver for Otari and all MCIs (60-line pilot, 60 xtal, 50 xtal, composite, video, 59.9), interstudio lines, multi-mix format layback for video and film, direct 1" video layback special request, MCI extra headstaps 1/4" mono and 1/4-track, surround-sound film mixing. **Specialization & Credits:** Hip Pocket Recording Studios has been dubbed by some New York producers as a "Synclavier supermarket," featuring seven New England Digital systems; four Synclaviers and three Direct-to-Disk recording systems. Video post-production services are available through Hans Tobesson, Inc.

[24+] **THE HIT FACTORY TIMES SQUARE INC.:** 130 W. 42nd St., Ste. 952; New York, NY 10036; (212) 354-2444; FAX: (212) 391-8060. **Owner:** Edward Germano. **Manager:** Danielle Germano.

[24+] **THE HIT FACTORY RECORDING STUDIOS INC.:** 237 W. 54th St.; New York, NY 10019; (212) 664-1000; FAX: (212) 246-2252. **Owner:** Edward Germano. **Manager:** Troy Germano.

[24+] **HIT AND RUN STUDIOS INC.:** also REMOTE RECORDING; 18704 Mucaster Rd.; Rockville, MD 20855; (301) 948-6715. **Owner:** Steve Carr. **Manager:** Steve Carr.

[24+] **HITHOUSE RECORDING:** 674 Long Ridge Rd.; Stamford, CT 06902; (203) 322-7340. **Owner:** John Silver, Scott Marzullo. **Manager:** Scott Marzullo. **Specialization & Credits:** Located in Stamford, CT, HitHouse Recording is a newly completed 24-track recording facility just 45 minutes outside of Manhattan. Geared toward the dance music industry, we feature one of the most diverse MIDI setups in the area. With over 20 synths on hand, we have such classics as the Moog Minimoog, Roland TR-808, and old Prophets up to the Korg M1 and Yamaha SY77. Whether it's a dance, rap, house, pop, or club, you will find the country setting takes nothing away from the big city sound you get when writing and producing at HitHouse Recording. And with our low overhead we can provide the same quality recording you would expect from the finer studios in Manhattan for about half the price. Introductory rates and full production packages available. Give us a call!

[24+] **HOME BASE SOUND STUDIOS:** 147 W. 24th; New York, NY 10011; (212) 691-7674. **Owner:** Claude Demers, Andrew Milano. **Manager:** Scott Anderson. **Engineers:** Frank Verderose, Warren Bruleigh, Claude Demers, Andrew Milano, Joe Bartolous. **Dimensions:** Room 1: studio 20x30, control room 20x20. Room 2: studio 10x8, control room 20x30. **Mixing Consoles:** Sony MXP-3036 36-input w/hard disk automation, TAC Scorpion 30x24. **Audio Recorders:** Studer A800 III 24-track, Studer A80 III 24-track, Studer A80 2/4-track 1/2", (2) Studer A80 2-track 1/2" and 1/4", Sony PCM-501 digital R-DAT. **Cassette Recorders/Duplicators:** (4) Nakamichi MR-2. **Synchronization Systems:** Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** Lexicon 480 digital reverb, AMS 15-80S 6.5 sec. memory, EMT 140 etc. plates, TC Electronic 2290 delay/EFX, (2) Yamaha REV5 digital reverb, (2) Yamaha SPX90II, (2) Lexicon PCM70 etc., Roland DEP-5, Roland Dimension D, Eventide Harmonizer phase/flanger, Korg SDD-2000. **Other Outboard Equipment:** (3) Pultec EQH-2 equalizer, (4) API 560 equalizer, (4) UREI LA-2A limiter, (2) UREI LA-4A limiter, UREI 1176 limiter, (2) dbx 160 limiter, dbx 160X limiter, (8) Drawmer gate, (4) Roger Mayer gate. **Microphones:** (2) Neumann 47 tube, (4) Neumann U87, (2) Neumann KM84, Neumann KM86, Neumann U47 FET, (4) AKG 414, (4) AKG 451/452, (3) AKG D-12, (5) Sony C-22, (2) Sony C-37, (3) Sennheiser 441, (6) Sennheiser 421, (4) Shure SM57. **Monitor Amplifiers:** Bryston, etc. **Monitor Speakers:** UREI 813B, (2) Yamaha NS-10 Studio, Tannoy SGM-3000. **Musical Instruments:** Kurzweil 250 synthesizer, E-mu Emulator II, Yamaha 816, Yamaha DX7, Yamaha DX7IFD, (2) Akai S900, Oberheim Matrix-6, Roland D-550, Oberheim DPX-1, Oberheim OB-8, Casio CZ-1000, Ensoniq Voyage, Voyetra, Roland JP-6, E-mu Emulator SP-1200, Steinway 7' grand piano, Fender etc. guitar amps. **Other MIDI Equipment:** Roland SBX-80, Garfield Masterbeat, J.L. Cooper MSB+ etc., Macintosh SE w/hard drive, Atari 1040ST, Compaq, etc. **Video Equipment:** JVC 6650 3/4" machine. **Specialization & Credits:** Home Base Sound Studios has a wide variety of clientele from R&B, jazz, rap, rock, jingles and film. Our credits include the most recent releases in R&B/rap by Sybil, Will Downing, Antonette, Chubb Rock; jazz by Onaje Gumbs, Art Farmer, Claudio Roditi, Jay Hoggard, Rod Williams, Rob Wasserman; rock by Violent Femmes, Damien; remixes by 24-7 Spyz, Cindy Valentine, Grace Jones and many more artists. Our Studio A offers a great-sounding live room for any acoustic recording, coupled with all Studer machines and the ultra-clean, quiet Sony MXP console with hard disk computer automation for perfect mixes. Our Studio B contains the maximum in MIDI variety and flexibility with 30 synths, either Mac, IBM or Atari computers, and an 80-meg drive filled with sound libraries. The large control room, vocal booth and separate lounge make for a very comfortable working atmosphere.

[24+] **HORIZON RECORDING;** also REMOTE RECORDING; 678 1/2 Cambell Ave.; West Haven, CT 06516; (203) 934-7186; FAX: (203) 795-3594. **Owner:** Vic Steffens, Ingrid Paaske. **Manager:** Vic Steffens.

[24+] **HOUSE OF MUSIC;** 1400 Pleasant Valley Way; West Orange, NJ 07052; (201) 736-3062. **Owner:** Charles and Irene Conrad. **Manager:** Irene Conrad. **Engineers:** John Rollo, Paul Higgins, Jim Bonnell, Nelson Ayres, Danny Grigsby, Mike Weisinger, Marc Marsaglia, Jeff Toone, Ron London. **Dimensions:** Room 1: studio 30x40, control room 18x22. Room 2: studio 18x23, control room 16x22. **Mixing Consoles:** Neve VR60 w/complete recall and Flying Fader Automation, MCI 528 w/automation, Yamaha RM2408 24x8x2, Soundcraft 600 16x8. **Audio Recorders:** Studer A800 MkIII 24-track, (2) Sony/MCI JH-24 24-track, (4) Studer A80RC 2-track, Tascam MS-16 16-track, Sony PCMF1, Sony PCM2500 Pro DAT. **Cassette Recorders/Duplicators:** (4) Tascam 122. **Noise Reduction Equipment:** dbx 310D 24-track, Dolby AM Series 24-track, dbx 310D 4-track, Dolby A 2-track. **Synchronization Systems:** Adams-Smith 2600, Sony/MCI JH-45, Echo, Reverb & Delay Systems: (3) EMT 140 plate, EMT 250 reverb, (2) AMS RMX 16 reverb, (2) AMS DMX 15-80S DDL, Lexicon 224XL reverb, (2) Lexicon PCM70 reverb, Yamaha REV7, (4) Yamaha SPX90, Lexicon PCM41, Lexicon PCM42, AKG BX20, Roland SRV-2000, Eventide H3000 B Ultra-Harmonizer, Eventide 949 Ultra-Harmonizer, (4) Eventide 910 Ultra-Harmonizer, (2) Fairchild 670 stereo limiter, (12) UREI limiter, (12) dbx 160, (4) dbx 165, (5) Pultec equalizer, (10) B&B equalizer, (16) Dyna-Mite gate, (4) Kepex II gate, (4) Drawmer gate, (6) B&B gate, Neve stereo compressor, (4) Aphex I Aural Exciter, (2) Aphex II Aural Exciter. **Microphones:** (140) assorted, Neumann tube, AKG, Shure, Crown PZM, etc. **Monitor Amplifiers:** (8) Crown DC-300, (2) McIntosh 2500, (8) Crown DC-150, Hafler 500. **Monitor Speakers:** UREI 813B, Westlake TM1, (6) Yamaha NS-10M, (2) Big Red, (2) Tannoy NFM-8, (4) ROR and Auratone. **Musical Instruments:** Yamaha 7'4" grand piano, Hammond B-3 w/ Leslie, drum kits and percussion equipment, assorted guitar amplifiers. **Other MIDI Equipment:** Atari, Macintosh hardware and software, comprehensive selection of state-of-the-art synthesizers and MIDI implementation, Yamaha grand w/Force MIDI retrofit. **Video Equipment:** Synchronization to Sony 3/4" Adams Smith lockup. **Specialization & Credits:** Comprehensive synthesizer consultation and production services available on arrangement with Larry Fast/Synergy. Available is a full range of digital and analog sampling and MIDI-linked synthesis. Full in-house production and arranging services available for all styles of music from an experienced staff who have impressive track records including Kool and the Gang, Bonnie Tyler, Jimmy Cliff, Peter Gabriel, Southside Johnny, Meat Loaf, Joe Cocker, Briny Fox, Paula Abdul, Corderella, Surface, Bang Tango, Buster Poindexter, Warrant, Quarterflash, Dirty Looks, and others. Scenic seven-acre site 25 minutes from midtown Manhattan with our own 24-hour car service, pool, jacuzzi, kitchen and residential facilities. House of Music provides a full range of client services for record production, audio-for-visual post-production for TV, music video, film and commercial advertising work.



[24+] **IMAGE RECORDING;** 1591 Lockport-Olcott Rd.; Olcott Beach, NY 14126; (716) 778-5683. **Owner:** Mitch Metzler. **Manager:** Mitch Metzler.

[24+] **I.N.S. RECORDING;** 19 Murray St.; New York, NY 10007; (212) 608-1499. **Owner:** Trude Kay. **Manager:** Mike French, Jason Vogel, Dan Sheehan. **Engineers:** Mike French, Seigi Motoyama, Winston Rosa. **Dimensions:** Studio 12x12, control room 12x17. **Mixing Consoles:** MCI custom 60-input, Sony PCM-2500 R-DAT. **Audio Recorders:** (2) Otari MTR-90 MkII, Panasonic SV-3700R DAT, (2) MCI 11 C 1/2", Otari MTR-12 1/2". **Cassette Recorders/Duplicators:** Tascam 122, (2) Nakamichi MR-2. **Synchronization Systems:** Adams-Smith Zeta-3, SBX-80. **Echo, Reverb & Delay Systems:** Lexicon 200, Yamaha REV7, Lexicon PCM70, AMS DMX 15-80S w/ pitch change & sampling on both channels, Lexicon PCM41, Lexicon PCM42, (2) DeltaLab 1024 Effectron II, (2) Korg SDD-2000, Roland SDE-1000, Lexicon 224X2. **Other Outboard Equipment:** API 5502 4-band parametric EQ, (2) UREI dual graphic EQ, (2) Valley People Maxi-C parametric, (2) BBE 802 EQ, (2) dbx 165A compressor/limiter, (2) dbx 160X compressor/limiter, dbx 166 dual compressor/limiter/gate, Valley People Gain Brain compressor/limiter, (4) Kepex noise gate, Drawmer dual noise gate, Dyna-Mite dual noise gate/compressor/limiter, Valley Gate 4-channel noise gate, Yamaha MEP4, Yamaha SPX90, Eventide Harmonizer, Roland Vocoder, Audio Logic noise gate, Eventide H3000 w/stereo sampling. **Microphones:** Neumann U87, AKG 414EB, Electro-Voice RE20, (2) Shure SM57, (2) Shure SM58, AKG 535EB. **Monitor Amplifiers:** Hafler, UREI. **Monitor Speakers:** UREI 813C, (2) Yamaha NS-10M, (2) Electro-Voice Sentry 100A. **Musical Instruments:** Emulator SP-12 drum machine w/turbo, Roland TR-808 w/ MIDI, Alesis HR-16, Yamaha DX7IFD, Yamaha TX812, Roland Super Jupiter, Roland Super JX, Roland D-550, Roland Juno-60, Ensoniq ESQ-M, Korg M1R, Oberheim Matrix-1000, Proteus XR, Akai S900, Akai S950, Simmons DSSS, Rogers drumset. **Other MIDI Equipment:** Mark of the Unicorn MIDI Time Piece. **Other:** IBM PC w/texture, sequencer+ and patchmaster, Macintosh Plus w/Performer & Vision, Macintosh IICI w/Sound Tools. **Rates:** \$75/hr. (24-track), \$90/hr. (48-track), \$30/hr. (digital edit).

[24+] IRIS SOUND; also REMOTE RECORDING; 237 Main St., Royersford, PA 19035; (215) 948-3448; FAX: (215) 948-3141. Owner: David Ivory. Manager: David Ivory.

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KAJEM STUDIOS LTD. USA
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[24+] KAJEM STUDIOS LTD. USA; 1400 Millcreek Rd.; Gladwyne, PA 19035; (215) 642-2346; FAX: (215) 642-3572. Owner: Sam Moses, Mitch Goldfarb, Joe Alexander, Kurt Shore. Manager: Monica Tannar. Engineers: Mitch Goldfarb, Joe Alexander, Brooke Hendrick's, Brian Stover, Ron Meersand; chief tech. Dimensions: Room 1A: studio 75x30, control room 20x20, Room 2A: studio 35x30. **Mixing Consoles:** SSL 248E/G w/ "G" computer. **Audio Recorders:** Otari MTR-90 24-track, Studer A80 MkIII 24-track, Studer A80 1/2", Studer B67 1/4", (3) Otari 5050BII 1/4" & 1/4-track, (2) Panasonic Sv-3530 DAT. **Cassette Recorders/Duplicators:** (6) Tascam 12.2/122MkII, Noise Reduction Equipment: (2) Dolby A/SF. **Synchronization Systems:** Adams-Smith synchronizer rack... **Echo, Reverb & Delay Systems:** Lexicon 480L, AMSRMX 1+, AMS JMX 15, EMT 251, Sony DRE-2000, (2) Lexicon PCM7+, Yamaha REV5, Lexicon Prime Time II, Eventide H949 Harmonizer, Eventide H3000 SEB Eventide flanger/phaser, Eventide DDC, Lexicon PCM42, Yamaha SPX1000, Yamaha SPX90, Dync My Trini Chorus, Roland Dimension-D, MXR 150D DAC, Rockman Sustainer/EFX rack, AD&R Panscan, DeltaLab ACM 1024 Effectron. **Other Outboard Equipment:** (4) Focusrite EQ, (4) Neve 1081 EQ, preamp/filters, Massenburg stereo EQ 82C0, (2) Pultec EOP-1A, (2) Pultec MEQ, (6) API 551A, UREI graphics 535, (2) Teletronics LA-2A, (2) UREI 1176LH, UREI LA-3A, Drawmer 1960 stereo valve compressor, limiter, preamp, ADR stereo EQ, ADR complex stereo limiter, compressor, expander, (2) Kepex II/3ain Brain, (2) dbx 163, (-) Aphex 612 gates/stereo, Drawmer DS-201, (2) Valley People Kepe II, (4) Omnicraft Gt 4 gate, (2) Scamp Exp/Gate, Scamp Lo Pass filter, (2) S-camp stereo D-SSS, BBE stereo processor, EXR Aural Exciter stereo, dbx Boonbox stereo. **Microphones:** Neumann, AKG, Sanken, RCA, Shure, Sennheiser, Beyer, Sony, EV 60. **Monitor Amplifiers:** (4) Halfer P-500, Haller 221, (2) Crown DC-30L. **Monitor Speakers:** UREI 813 modifier, Yamaha NS-10, Tannoy SRM-123, Tannoy PBM-6.5, Spica TC50, Visonik Lithe Davids. **Musical Instruments:** Marshall Preplexiglas amp w/ matched cabinet, Fender Deluxe amp 1977, Hammond Porta B w/ Leslie and Leslie preamp, (2) Premier and Tama drums. **Other MIDI Equipment:** Roland SBX-90. **Other:** 12-channel 400-watts per station, custom individual cusp mixers. **Specialization & Credits:** Kajem Studio is one of the East Coast's premier residential 48-track SSL studios. A six-bedroom Victorian home is now available exclusively for clients. Incredible 2,000-sq.-ft. ambient room with 25' ceiling for drum and guitar tracks. Vintage mics, limiters, EQ and more. Trout fishing, woods and waterfalls. Cinderella (both LPs), Queenenryche Doro, Metz church, Heaven's Edge, Tangier, Faith or Fear, Gorky Park, Teddy Pendergrass, Miles Jaye, Jazzy Jeff and the Fresh Prince.

[24+] KAMEN RECORDING STUDIOS; 701 7th Ave.; New York, NY 10036; (212) 575-4666. Owner: Roy and Marina Kamen. Engineers: Roy Kamen, Paul Urmon, Keith Goldstein, Scott Zootman. Dimensions: Room 1: studio 31x21, control room 19x20, Room 2: studio 38x22, control room 22x17, Room 3: studio 11x7, control room 16x13, Room 4: control room 10x17. **Mixing Consoles:** MCI JH-636 36-input automatic, Trident 803 32-input, TAC Scorpion 24-input, Hill 16-input, Roland M-15E 16-input. **Audio Recorders:** MCI JH-24 24-track, Ampex NIM 1200 24-track, Tascam 388-track w/ dbx, (2) Otari MTR-12 2-track, (3) Otari UX-55 2-track, Studer A810 2-track, Sony AFR-5000 2-track, (3) Fostex E-2 2-track. **Cassette Recorders/Duplicators:** (2) Nakamichi 700XL, (-) Nakamichi BX-300, (2) Denon DR-M24H, (4) Denon DR-DFRM-00, Sony DAT TCD-D10 Pro DAT. **Synchronization Systems:** Adams-Smith 2600, (3) Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** (2) Lexicon 224X reverb, (2) Lexicon REV7 reverb, (2) Alesis Quadraverb, (2) Lexicon LXP-1, (-)

—LISTING CONTINUED ON NEXT PAGE



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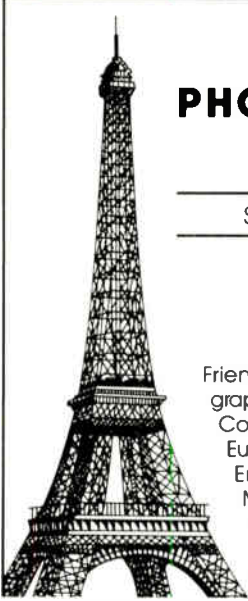
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Lexicon PCM42, (17) assorted reverb and delay, (10) Valley People Kepex II gate, (4) Valley People Gain Brain compressor, dbx 166 compressor, (8) UREI LA-4 compressor, (2) BBE 822 Sonic Maximizer exciter, (20) assorted processors. **Microphones:** (8) Neumann U87, (2) AKG C-414, (15) Sennheiser 421, (15) Shure SM57, (25) other assorted. **Monitor Amplifiers:** (3) McIntosh 2500, Bogan, Bryston, Haller. **Monitor Speakers:** Big Reds, UREI 813B, Yamaha NS-10M, Tannoy PBM-6.5 near-field. **Musical Instruments:** Yamaha DX71IFD, Akai S1000HD, Akai S900, Korg M1R, Roland D-550, Roland D-50, Oberheim Matrix-1000, Alesis HR-16, Roland MKS-50, E-mu Emax, Simmons TMI trigger, E-mu SP-12 drums, Kawai K1, (2) Steinway 7" grand piano, Hammond B-3 organ, guitar amps, drum kit, mic and music stands and perc. toys. **Other MIDI Equipment:** Mac Ix, Macintosh SE/30, Roland MC-500 sequencer, Opcode "Studio Vision" and other sequencers, Digidesign Sound Tools, Q-Sheet A/V. **Video Equipment:** Sony BVH-3000 1" recorder, (2) JVC CR8250 3/4" recorder, (2) NEC 26" color monitor. **Other:** (60) CD and LP music libraries, (17) CD and LP SFX libraries. **Specialization & Credits:** Music recording, tracking, overdubs, MIDI, jingles, scores, radio production, TV soundtracks, 1" layback, phone patch, voice-over casting and recording, engineering services, mix-to-pix, sound design, complete audio service for just about any job.

[24+] **KRYPTON STUDIOS; 150 Mercer St.; New York, NY 10012; (212) 219-1603. Manager:** Murray Weinstein. **Dimensions:** Studio 16x14, control room 22x14. **Mixing Consoles:** Amax Angela. **Audio Recorders:** Otari MTR-90 DAT (Sony professional) 75ES. **Cassette Recorders/Duplicators:** Nakamichi, Sony. **Synchronization Systems:** Roland SBX-80, Lynx lockup. **Echo, Reverb & Delay Systems:** Various processors including Yamaha, Lexicon, UREI LA-4, dbx, Roger Mayer. **Microphones:** Neumann, AKG, Sennheiser, Beyer, Tube avail. **Monitor Amplifiers:** MOSFET, Crown. **Monitor Speakers:** UREI 813C, NS-10, AR18. **Musical Instruments:** Korg T3, DX7, Emulator II, MIDI Prophet, MKS-Planet, MIDI bass, Drum cat made by Roland R8, vintage Gretsch drum kit, Coral electric sitar, various amplifiers and cabinets, E-mu Proformer. **Other MIDI Equipment:** Macintosh Plus w/hard disc, Performer software. **Video Equipment:** Sony U-matic V0 5800, Sony monitor, Lynx TimeLine/video lock up.

[24+] **LAVSKY MUSIC; also REMOTE RECORDING; 16 E. 42nd St.; New York, NY 10017; (212) 697-9800; FAX: (212) 983-3609. Owner:** Richard Lavsky. **Manager:** Fred Szymanski. **Engineers:** Jun Mizumachi, Adam Sobel. **Dimensions:** Room 1: studio 30x45, control room 16x20. Room 2: studio 8x10, control room 12x26. **Mixing Consoles:** Trident Series 80 32x24x24, Wheatstone MTX88 32x8x24. **Audio Recorders:** (2) Synclavier disk-based, Synclavier 64-meg 96-voice, Synclavier 32-meg 64-voice, Otari MTR-90, (4) Otari MTR-12 2/center channel SMPTE, Ampex MM1200. **Cassette Recorders/Duplicators:** Panasonic SV-3700/DAT, (8) Tascam 122. **Synchronization Systems:** (4) TimeLine Lynx time code SMPTE/video lockup. **Echo, Reverb & Delay Systems:** TC Electronic 2290, Ursa Major Space Station, Lexicon PCM70, Lexicon 200, (2) Yamaha REV5, Aphex Compeller, (2) Aphex Aural Exciter, (2) Yamaha SPX90, BEL BD-80, (2) Genter SPH-3 phone modules, (2) dbx 160X compressor/limiter, (2) dbx 165X compressor/limiter, Orban Parametric Equalizer, (2) Orban Dynamic Sibilance controller, (6) Valley People Kepex. **Microphones:** (2) Neumann TLM170, (2) Neumann U87, (2) AKG C-12, Shure SM61, (2) Shure SM57/6, (4) PZM. **Monitor Speakers:** JBL 4343, JBL L-100, Tannoy NFM-8, JBL Control 1, UREI 839. **Musical Instruments:** (2) Synclavier fully updated (208 tracks each), (2) Korg M1R, Roland D-50, (2) Yamaha DX7, Yamaha 81Z, (2) Proteus I, Proteus II, Korg DVP-1, Roland R-8M percussion sound module, Ensoniq VFX (SD), Yamaha CS80, Rhodes '88 electronic piano, Steinway model "B" 7" grand piano, Mason & Hamlin grand piano, Tama studio drum kit, Roto Toms, Musser vibraphone, Deagan xylophone, Fender precision bass, Gibson-Les Paul electric guitar, Coral electronic sitar, bass and guitar amplifiers, Tito Puente model

timbales. **Other:** 35mm Magnatech recorder/dubber, 35mm Moviola DD-20, Technics SL-P1200 CD player, Technics SL-P720 CD player.

[24+] **LEGEND RECORDING STUDIOS; 42 Belmont Ave.; Belleville, NJ 07109; (201) 751-9528. Owner:** Tony Pomponio. **Manager:** Tony Pomponio.

[24+] **LIEBERT RECORDING STUDIOS INC.; 16 W. 46th St.; New York, NY 10036; (212) 840-1350. Owner:** Bob and Carmen Liebert. **Manager:** Rosanne Zisa. **Specialization & Credits:** Catering specifically to the advertising industry. Four studios all lock to picture. Over 50 music libraries and 25 EFX libraries. Custom music scoring, v.o. casting, phone patches, car service available to downtown clients.

[24+] **LION AND FOX RECORDING INC.; also REMOTE RECORDING; 1905 Fairview Ave. NE; Washington, DC 20002; (202) 832-7883. Owner:** Hal Lion, Jim Fox, Sally Lion. **Manager:** Rick Starkweather.

[24+] **THE LOOKING GLASS STUDIOS INC.; also REMOTE RECORDING; 632 Broadway, 9th Fl.; New York, NY 10012; (212) 353-2000. Owner:** Euphorbia Productions Ltd. **Manager:** Rory Johnston.

[24+] **LYX MUSIC PRODUCTION & RECORDING STUDIO; 25 Foster St.; Worcester, MA 01608; (508) 752-6010. Owner:** Paul Weddie, Bob Gilpatrick, Andy Celley. **Manager:** Bob Gilpatrick. **Engineers:** Bill Robinson. **Dimensions:** Room 1: studio 60x25, control room 20x18. Room 2: studio 10x8, control room 12x8. **Mixing Consoles:** Amax 2500 36x24 upgraded w/CASS-1 automation. **Audio Recorders:** MCI JH24 24-track, Revox RP99 2-track upgraded, Otari MX5050 2-track, Technics RS-1500 2-track, Sound Tools (Mac II) 2-track digital sampler recorder/editor. **Cassette Recorders/Duplicators:** Tascam 122 MkII updated, Technics RST-80R, (4) JVC TDW-999 dual, Sony 55-ES DAT. **Noise Reduction Equipment:** Dolby SR2-channel. **Synchronization Systems:** (2) TimeLine Lynx VSI. **Echo, Reverb & Delay Systems:** (2) UREI 1176 limiter, (2) UREI LA-3 compressor, (2) UREI LA-4, (4) dbx 160, (4) Ashley 5633 dual gates, T.C. 2240 dual parametric EQ, Ashley PQ-66, Lexicon PCM70 dual reverb, Lexicon PCM60 digital reverb, Lexicon LXP-1, Lexicon LXP-5, Yamaha SBX-90, Alesis MIDVerb II, DeltaLab Compu-Effectron digital delay, DeltaLab ADM-64, (3) Lexicon PC4-41, Lexicon PC4-42, EMT stereo plate reverb, (2) IRP TEQ-4021 time-based room EQ. **Other Outboard Equipment:** ISS CASS-1 Sound Editor/Console Automation. **Microphones:** Neumann U87, Neumann U47, (2) Neumann KM84, AKG 414-EB, AKG D224-E, AKG C451-E, (2) AKG D140-E, AKG D-12, AKG C-61 (Norelco), (3) Sennheiser, Shure SM81, (6) Shure SM57, Beyer M88-N, (2) Crown PZM, RCA ribbon, EV RE20, Sony ECM 989. **Monitor Amplifiers:** Bryston, ABSystems, Yamaha. **Monitor Speakers:** UREI 813C, Yamaha NS-10, Auratone. **Musical Instruments:** Ludwig drumset, Kawai grand piano, Hammond B-3 w/Leslie, Memory Moog, Yamaha DX7, E-mu Proteus w/Prologix expander. **Other MIDI Equipment:** Opcode Studio III, Sound Tools (Mac II) w/Studio Vision Sequencer. **Video Equipment:** JVC 6600-U. **Specialization & Credits:** Overlooking the Centrum in downtown Worcester, MA, Lyx's automated 24-track offers its services to label acts, looking to record while in town. Five state-of-the-art acoustically designed rooms, excellent signal path integrity and a discrete loading access. Our studio services include 2- and 24-track recording, automated mixing, audio-for-video post, MIDI sequencing, digital editing, and real-time cassette duplication. We also offer creative services including full artist production, as well as custom music and audio production for advertising and industry.

M

THE MAGIC SHOP
RECORDING
STUDIO

49 Crosby Street
New York NY 10012
212.226.7035

THE MAGIC SHOP
New York, NY

[24+] **THE MAGIC SHOP; 49 Crosby St.; New York, NY 10012; (212) 226-7035. Owner:** Steve Rosenthal. **Manager:** Nina Marks. **Engineers:** Steve Rosenthal, Edward Douglas.

Joseph Warden, Sam Smith. **Dimensions:** Studio 42x23, control room 36x23. **Mixing Consoles:** Neve 80 Series custom wraparound 40-input, Trident Series 24 sidecar 24-input. **Audio Recorders:** Sony PCM-3324 24-track w/Apogee filters, Studer A80 MkIV 24-track, Ampex ATR-102 2-track 1/2", (1) Panasonic 3500 DAT, Tascam 22-2 2-track 1/4", **Cassette Recorders/Duplicators:** (10) TEAC U-670. **Synchronization Systems:** (2) TimeLine Lynx time code module. **Echo, Reverb & Delay Systems:** Lexicon 224 digital reverb, Eventide H3000 Ultra-Harmonizer, Lexicon PCM70 digital reverb, Yamaha REV7 digital reverb, (2) Yamaha SPX90, Alesis MIDVerb digital reverb, TEAC spring reverb, Lexicon PCM42 digital delay, Roland SDE-2500 digital delay, Korg SDD-2000 sampling digital delay, Multivoix MXP-5 analog echo, ART DR2 reverb. **Other Outboard Equipment:** UREI 1176, Lang EQ, Pultec EQ-PIA, (4) Neve 2254 limiter/compressor, (4) Neve width-enhancers, (4) Drawer DS-201 dual gate, (8) GateX 4-channel gate, Aphex Aural Exciter, (2) dbx 160X compressor, (2) dbx 163X compressor. **Microphones:** Neumann U47 tube, (2) Neumann U87/Neumann U67 tube, (2) Neumann KM56 tube, Neumann U87, (2) AKG 414EB, (2) AKG 451, EV RE20, AKG D-112, Beyer ribbon, (4) Sennheiser MD-421, (1) EV BK1, (2) Shure SM57, Shure SM58, RCA 77. **Monitor Amplifiers:** Perreux 9000B, (2) Crown Powerbase. **Monitor Speakers:** (2) Tannoy FSM-U, (2) Yamaha NS-10 near-field, (2) Tannoy 6.5, EV 100. **Musical Instruments:** Yamaha 6" baby grand piano, Korg M1 synth, Roland D-50 synth, Akai S900 sampler w/drum triggers, Oberheim DPX-1 sampler player, Roland Super JX synth, Roland digital piano, Roland Super Jupiter synth, Oberheim Matrix-6 synth, Yamaha TX2 16 synth. **Other MIDI Equipment:** Opcode Studio 3 interface, Akai patch bay, Macintosh SE 40MB w/Performer software. **Video Equipment:** Sony BVU-950 Umatic SP. **Other:** Mega-Mix 40-channel automation. **Rates:** Hourly, daily, weekly, monthly rates are available. **Specialization & Credits:** With the installation of our new Sony PCM-3324 24-track digital recorder with Apogee filters, The Magic Shop now offers the finest in quality tracking. By combining the PCM with our Studer multitrack we can now provide 48-track lockups. This, in addition to our complete equipment list, classic Neve recording desk and large, acoustically designed live room combine to give you the finest tracking room in New York City. A partial list of our clients includes Lou Reed, Charles Brown, Dr. John, Patty Smyth, O.C. Smith, Lee Konitz, Bob Halligan Jr., Chuck Jackson, Cuba Gooding, Grace Pool, John Zorn, Bill Laswell and John Cage plus projects for all major record labels.

[24+] **THE MAINFRAME; also REMOTE RECORDING; 2427 Maryland Ave.; Baltimore, MD 21218; (301) 467-1488. Owner:** George M. Hagegeorge. **Manager:** George M. Hagegeorge.

[24+] **MANHATTAN CENTER STUDIOS INC.; also REMOTE RECORDING; 311 W. 34th St.; New York, NY 10001; (212) 279-7740; FAX: (212) 465-2367. Owner:** One Up Enterprises. **Manager:** Steve Hone. **Engineers:** Roy Clark, Robert Carvell, Leon Harris. **Dimensions:** Room 7: studio 94x98 x45 w/54x95x30 stage, control room 18x28. Room 8: studio 24x28x12, control room 14x15. **Mixing Consoles:** SSL 4050 G Series 56x32 w/Total Recall, Neve VR 36x36 w/complete recall and Flying Faders, TAC Scorpion 28x12, Soundcraft 20x2. **Audio Recorders:** Sony PCM-3348 48-track digital, Sony PCM-3324 24-track digital, Otari MX-80 24-track analog, Otari MTR-10 2-track analog w/Dolby SR, Otari 5050 2-track analog w/dbx, NED Synclavier 9600 PostPro 16-ch Direct-to-Disk, Panasonic SV-3500 R-DAT, Panasonic SV-250 R-DAT. **Cassette Recorders/Duplicators:** Tascam, Nakamichi, Sony, KABA real-time duplication system. **Noise Reduction Equipment:** Dolby SR2 channels, dbx 2 channel. **Synchronization Systems:** Adams Smith Zeta-3. **Echo, Reverb & Delay Systems:** Lexicon, Quantec, TC Electronic, Eventide, Yamaha, Alesis, Summit Audio, UREI, dbx. **Other Outboard Equipment:** BASE stereo expander, Focusrite, Boulder, Tube-Tech, Aphex, Rane. **Microphones:** B&K, Schoeps, Neumann, AKG, Yamaha, Sennheiser, Shure, EV, and many others. **Monitor Amplifiers:** Perreux, Hot House, Carver. **Monitor Speakers:** Tannoy FSM-U, Tannoy 15B w/C150 subwoofers, Yamaha and Tannoy near-fields. **Musical Instruments:** NED Synclavier 9600 w/32 voices, 32MB, 16 outs, optical drive, Denny Yaeger library, many synthesizers, Steinway L 5'6", Yamaha professional drum kit. **Video Equipment:** Available upon request. **Rates:** Available on request.

[24+] **MANHATTAN CENTER STUDIOS REMOTE; REMOTE RECORDING ONLY; 311 W. 34th St.; New York, NY 10001; (212) 279-7740; FAX: (212) 465-2367. Owner:** One Up Enterprises. **Manager:** Robert Carvell. **Engineers:** Roy Clark, Robert Carvell, Leon Harris. **Dimensions:** Remote: 14x8. **Mixing Consoles:** Neve VR 48 with Flying Faders. **Audio Recorders:** Sony PCM-3348 48-track digital, Studer Revox C270 w/SMPTE, Panasonic SV-35000 DAT. **Cassette Recorders/Duplicators:** (2) Nakamichi MR-1. **Echo, Reverb & Delay Systems:** Lexicon 480L, Quantec, Yamaha SPX900, Yamaha REV5, TC Electronic 2290, TC Electronic 1210, Drawer M500, Drawer 1960, DigiTech IPS 33B, Eventide H3000. **Other Outboard Equipment:** Summit Audio EOP 2000, Tube-Tech PE 1B, Aphex Exciter, Roland GP-16, GK head. **Microphones:** Beyer, Sennheiser, AKG, Yamaha, Shure, Crown, Countryman. **Monitor Amplifiers:** Perreux, Hot House, Carver, Ransa. **Monitor Speakers:** Tannoy 15B, Yamaha NS-10, Tannoy System 2, Auratone 5C. **Video Equipment:** Minolta video camera, NEC video monitors. **Other:** Stage Box includ-

ing; Jensen mic splitters, Hardy M-1 mic preamps, Telxwreless intercom system, AKG 240 headphones, Beyer mic stands. The remote is housed in 1990 Prevost LeMirage '40' bus.



MARATHON RECORDING
New York, NY

[24+] **MARATHON RECORDING**; 12 W. 37th St., 6th Fl.; New York, NY 10018; (212) 967-1515. **Owner**: David Forrest. **Manager**: Susan Tobocman. **Engineers**: Will Schillinge, Maurice Puerto, Chris Savino, Jose Fernandez, Gordon Davies, Chris Albert, David Kingsley. **Dimensions**: Room 1: studio 25x20, control room 17x24. Room 2: studio 10x19, control room 14x19. **Mixing Consoles**: Neve V Series w/Flying Faders/60 inputs, Neve 8232 32 inputs. **Audio Recorders**: Otari MTR-90 MkII 24-track, Sony 3324 24-track digital, Studer A80 MkIII 24-track, (5) Studer mix machine. **Noise Reduction Equipment**: Dolby B A 24 channels. **Synchronization Systems**: (2) TimeLine Lynx. **Echo, Reverb & Delay Systems**: Too numerous to mention. **Other Outboard Equipment**: Too numerous to mention. **Microphones**: Too numerous to mention. **Monitor Speakers**: Tannoy FSMU, (2) Yamaha NS-1JM, (2) Auratone, Westlake. **Musical Instruments**: A complete host of

keyboards, sequencers, samplers, computers and drum machines—full MIDI capabilities. **Video Equipment**: (2) JVC 8650-U-U-matic 3/4" lockup. **Rates**: Call for rates. **Specialization & Credits**: Some of our clients include: Cheap Trick, Lou Gramm, Living Colour, The O'Jays, Roberta Flack, Teddy Riley, Paul Stanley, Vanessa Williams, Ernie Isley, Melba Moore, Regina Belle, Surface, Wynton Marsalis, Climie Fisher, Christopher Max, Neil Dorfsman, Oran "Juice" Jones, Stetsasonic, Mick Jones, The Cover Girls, Johnny Kemp, Keith Sweat, Gwen Guthrie, and Bill Cosby, as well as many others.

[24+] **MARK STUDIOS**; also *REMOTE RECORDING*; 10815 Bodine Rd.; Clarence, NY 14031; (716) 759-2600. **Owner**: Mark J. Morette. **Manager**: Frederick Betschen. **Engineers**: Fred Betschen, Bruce Leek, Glenn Bernardis, Hugh Bone, Tim Kiernan, Mark J. Morette. **Dimensions**: Room 1: studio 883 sq. ft., control room 303 sq. ft. Room 2: control room 21x15. **Mixing Consoles**: Amek M3000 42x24x4x2, Ramsa WR-S216, (4) Ramsa WR-133, Panasonic WR-450. **Audio Recorders**: Otari MTR-9024-track, Sony PCM-1630/DMR-2000 2-track digital, (2) Panasonic SV-3500 DAT, (3) Panasonic SV-255 DAT, (2) Panasonic SV-250 DAT, (2) dbx 700 digital audio processor, (3) Nakamichi DMP-100 2-track digital, Ampex ATR-100 2-track analog, Otari MX-5050B 2-track analog. **Cassette Recorders/Duplicators**: (50) Nakamichi MR 1 3-head, (50) Nakamichi LX-5 3-head. **Noise Reduction Equipment**: Dolby 361 Type A 2 channels. **Echo, Reverb & Delay Systems**: Lexicon 224XL digital effects processor, AKG ADR-68K digital reverb and effects, Lexicon PCM70 digital effects processor, Lexicon PCM60 digital reverb, (2) Yamaha SPX90II digital effects processor, Lexicon PCM42 digital delay, Roland SDE-1000 digital delay, MXR 175 digital delay, MXR flanger/doubler. **Other Outboard Equipment**: (2) dbx 902 de-esser, (2) dbx 903 compressor, (5) dbx 904 noise gate, (3) dbx 905 parametric EQ, (6) dbx 160X compressor/limiter, (2) UREI 1176 peak limiter, UREI LA-3 audio leveler, UREI LA-4 compressor/limiter, (3) UREI 535 parametric EQ, (2) Barcus-Berry BBE 802 Sonic Maximizer. **Microphones**: (2) AKG C-12 vintage tube, (2) AKG The Tube, (4) AKG C-414-P48, (4) AKG C-460, (2) Sennheiser MKH-40 cardioid, (4) Sennheiser MKH-20 omni-condenser, (10) Sennheiser MD 421, many others. **Monitor Amplifiers**: UREI many varied amps, Crown DC-300A. **Monitor Speakers**: (4) UREI 813A Time-Align, various near-field reference. **Musical Instruments**: Kimball 6'7" grand piano, Yamaha PF80 MIDI electric piano, Roland Alpha Juno-2 programmable polyphonic synth, LinnDrum computer w/MIDI retrofit, Yamaha

SP35 electric piano, any drum machine/synthesizer/sampler available on request. **Specialization & Credits**: We specialize in complete studio packages. Our compact disc premastering studio is available for immediate 1630 transfer. While working in the studio, you may go over to our fully staffed art department and plan your CD booklet, album jacket or cassette/DAT insert card. After your day has ended, we can run off up to 100 cassettes in our state-of-the-art cassette duplication facility. One hundred Nakamichi MR-1 and LX-5 cassette decks comprise our cassette duplication room. We custom-load only TDK high-bias cassette tape into the newly designed Shape Mark X shell. It's no wonder why Denny Laine, Richie Havens and author Geoffrey Giuliano referred to it as one of the truly unique studios they have ever been in. Mark Studios is also the launching pad of Rick James, Spyro Gyra, Jeff Tyzik, 10,000 Maniacs, New York Voices and Billy Sheehan.

[24+] **MARYLAND PUBLIC TELEVISION**; 11767 Owings Mills Blvd.; Owings Mills, MD 21117; (301) 581-4082; FAX: (301) 581-4338. **Manager**: Don Barto.

[24+] **MASTER SOUND ASTORIA**; 34-12 36th St.; Astoria, NY 11106; (718) 786-3400. **Owner**: Ben Rizzi, Maxine Chrein. **Manager**: Maxine Chrein. **Specialization & Credits**: MSA's studio A is New York's premier "BIG ROOM" music recording studio. It features a fully automated Neve V 60 console, 48-tracks of digital or analog and a full complement of outboard equipment. An unusually diverse music industry client base frequents the studio known for its acoustical integrity. Under the direction of co-owners Maxine Chrein and Ben Rizzi, MSA pioneered the world's first all-digital, bicoastal recording session via fiber optics and satellite. Additional studio facilities provide audio post-production services. Coming soon... Master Sound Riga in the U.S.S.R.

[24+] **MASTERBLASTER SOUND**; 5 E. 22nd St., Ste. 14M; New York, NY 10010; **Owner**: Joshua Tanner.

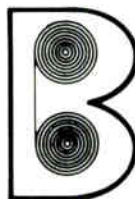
[24+] **MASTERVIEW SOUND CRAFTS RECORDING STUDIOS**; also *REMOTE RECORDING*; 1621 Ithaca/Dryden Rd.; Freeville (Ithaca), NY 14822; (607) 844-4581. **Owner**: Peter K. Hopper. **Manager**: Nina Lee Hopper.

[24+] **MEDIA ARTS CENTER/NICKEL STUDIO**; also *REMOTE RECORDING*; 753 Capitol Ave.; Hartford, CT 06106; (203) 951-8175. **Owner**: Jack Stang. **Manager**: Jon Bolduc.

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[24+] METROPOLIS RECORDING STUDIO; also REMOTE RECORDING; 54 School St. (rear); Middleton, MA 01949; (508) 777-6270. Owner: John Weston, Jim Lightman. Manager: John Weston. Engineers: Jim Lightman, John Weston. Dimensions: Studio 16x24, control room 17x20. Mixing Consoles: Allen and Heath Sigma 32x24 w/automation. Audio Recorders: Otari MX-80 24-track 2". Otari MTR-90 24-track 2". Otari MX-5050 2-track w/center track SMPTE. Panasonic SV-3700 R-DAT, 2 & 4-track hard disk recording system. Echo, Reverb & Delay Systems: Lexicon 224 with LARQ, Eventide H3000S Ultra-Harmonizer, 14 other processors from Lexicon, Alesis, Korg and Yamaha. Other Outboard Equipment: Summit Audio TPA 200 tube mic preamp, Drawmer M500 dynamics processor, various units from Aphex, Ashly, Barcus-Berry, dbx, Drawmer, Klark-Teknik, Orban, Symetrix and UREI. Microphones: Wide selection of Neumann, AKG, Audio-Technica, EV, Milab, PZM, Sennheiser and Shure. Monitor Amplifiers: Ashly Audio FET 2000, Bedini. Monitor Speakers: UREI 813C, AKG headphones, Tannoy PBM-6.5. Musical Instruments: Alesis HR-16, Alesis HR-16B, ARP AXE, Drum Kat, E-mu SP-1200, E-mu Proteus, Ensoniq ESO-1, Ensoniq Mirage, Kawai K1R, Korg MIR, Korg M3R, Korg SG-1D, Roland D-50, Roland D-110, Roland S-550, Roland JX-10, Roland R-8, Sequential Circuits 6-track, Simmons drumpad, Yamaha TX802, Marshall, Mesa/Boogie and Laney tube amplifier, variety of guitars and basses. Other MIDI Equipment: Macintosh IliX w/color monitor, 8 MB RAM & 700MB hard. Atari 1040 ST, all the major software packages including Opcode Studio Vision, Mark of The Unicorn Performer and Hybrid Arts SMPTE-track. Other: Digidesign Sound Tools 2 & 4-track digital recording and editing with more than 1-hr. capacity, sampling, remixing, time compression/expansion, CD premastering, sample rate conversion, extensive sound effects library, digital signal processing and much more. Rates: Please call for rates.

[24+] MIDIMATION INC.; also REMOTE RECORDING; 124 West 24th St., New York, NY 10011; (212) 620-0740. Owner: C. Martnak, P. Simpson, M. Weaver. Manager: Patrick Simpson.

[24+] MODERN AUDIO PRODUCTIONS INC.; also REMOTE RECORDING; 1650 Market St., 3rd Fl.; Philadelphia, PA 19103; (215) 569-1600. Owner: Modern Video Inc. Manager: Chris Quin. Engineers: Bob Schachner, Efrain Torres. Mixing Consoles: Soundcraft TS 24 28x24 automated, Soundcraft TS 24 8x24 automated, Soundcraft 200 8x4. Audio Recorders: MCI JH-24 24-track, Tascam Model 50 8-track, Otari MTR-12 3-track w/center-track, (7) Otari 5050 2-track, (2) SONY 1630 and DMR 4000. Cassette Recorders/Duplicators: (4) Aiwa F770, (2) Aiwa AD-515. Noise Reduction Equipment: (28) Dolby A, (8) dbx 1. Synchronization Systems: Boss automated editor w/(3) Adams-Smith synchronizer, Adams-Smith compact controller w/(4) Adams-Smith synchronizer. Echo, Reverb & Delay Systems: Klark-Teknik DN780, Yamaha REV7, Yamaha SPX90, Lexicon PCM60, Alesis Microverb II, Lexicon Prime Time II, Eventide 969 Harmonizer, Lexicon LXP-1, Lexicon LXP-5. Other Outboard Equipment: (8) dbx 160 limiter, Drawmer 201 gate, (2) Valley People gate, (2) Valley People Gain Brain, Valley People de-esser, (2) Orban de-esser, GML 8200 parametric, (2) GML mic preamp. Microphones: (2) Neumann TLM170, (2) Neumann U87, (2) Neumann KM84, (2) B&K 4007, EV RE20, (2) Sennheiser MD-421, Shure 57, AKG 422, Neumann U47 FET. Monitor Amplifiers: (9) Hafler P-250. Monitor Speakers: (2) Klein & Hummel 092, (2) Yamaha NS-10, (2) ROR, (2) Fostex, (2) Sony, (2) Tannoy 6.5. Musical Instruments: Yamaha recording drums, various amps, Tokai baby grand piano, Roland D-50, Yamaha DX7, Oberheim Matrix-1000, Roland Octapad, Proteus 1 & 2, Yamaha TG77, Roland S770 w/44 meg removable drive and CD ROM, Roland RBM, Ensoniq VF(X)SD. Other MIDI Equipment: Yamaha MSS1 MIDI/SMPTE synchronizer, Opcode Studio 3, Macintosh SE w/performer, KMX MIDI patch bay. Video Equipment: Complete post-production facility w/ (2) 1" edit bays, AVA paint system, Rank Cintel film-to-tape transfer, Montage picture editor, TDI software w/Silicon Graphics hardware & workstation. Other: (2) Technics SL-P1200 CD player.

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[24+] NEON CITY RECORDING; 627 Main Street; Simpson, PA 18407; (717) 282-0863; FAX: (717) 282-0362.

[24+] NEVESSA PRODUCTION; also REMOTE RECORDING; One Artist Rd.; Saugerties, NY 12477; (914) 679-8848. Owner: Chris Andersen.

[24+] NEW ENGLAND MOBILE RECORDING; PO Box 409; Stow, MA 01775; (508) 562-2111. Owner: Alan W. Goodrich. Manager: Jay W. Goodrich.



NEW MUSIC STUDIO
Agawam, MA

[24+] NEW MUSIC STUDIO; also REMOTE RECORDING; PO Box 243; Agawam, MA; (413) 789-2264. Owner: Kirk Cirillo. Manager: Susan Cirillo. Engineers: Kirk Cirillo, Mark Schunk. Dimensions: Room 1: studio 22X26, control room 16x18. Mixing Consoles: Soundcraft TS 12 56-input fully automated. Audio Recorders: Otari MX-80, Panasonic 3500 DAT, Otari MTR-15 2-track, Sound Tools direct-to-disk recording, 1 hr at 44.1. Cassette Recorders/Duplicators: (4) Nakamichi MR-2. Noise Reduction Equipment: All formats available. Synchronization Systems: Adams-Smith Zeta-3 w/Zeta remote. Echo, Reverb & Delay Systems: Lexicon 224X, (2) Eventide H3000SE, Klark-Teknik DN780, (2) Lexicon LXP-1, (2) Lexicon LXP-S, (2) Lexicon PCM70, Lexicon PCM60, Yamaha REV7, Yamaha SPX90, UREI 1176, (2) UREI LA-4, Drawmer M500, (4) Drawmer DL-241, TC parametric EQ, (2) Lexicon PCM42, (2) Audioarts compressor/limiters, (2) Valley People 440, (4) API Mic pre and EQ, (3) dbx 160X. Other Outboard Equipment: (4) API mic pre and EQ. Microphones: Neumann U89, Neumann U87, Neumann U47 FET, (2) Neumann KM84, AKG C-12 "tube", AKG C-414, AKG C-451, AKG D-112, (2) AKG C-457, (2) AKG C-460, (2) Sennheiser 441, (4) Sennheiser 421, (2) EV PL20, (2) EV PL10, (4) Shure 57, (2) Crown PCC-160, Beyer M500. Monitor Amplifiers: (6) Hafler P-500/2400. Monitor Speakers: JBL 4430 br-amped, Yamaha NS-10, Auratone. Musical Instruments: Memorymoog plus, Roland V-220, Yamaha TX802, Roland R-8, Digidesign SampleCell, ESQ-1, SQR-1, Kawai K3km, Roland D-550, Roland MKS-70, Roland MKS-80, Roland GP-16, Roland D-70, Opcode editor/librarians. Other MIDI Equipment: Roland Simmon's trigger kit, (8) LP Spikes. Video Equipment: JVC CR5000U 3/4", Audio: Macintosh IliX 640 meg, Macintosh SE, digital DAT editor. Rates: Private in-house service. Please call or write. Specialization & Credits: New Music Studios is one of the leading mixing suites and mini-production rooms in New England. We are fast becoming the choice room for CD prep/mastering and DAT digital editing. We can take your DAT tape and digitally edit or effect process in any manner. Audio-for-video or mix-to-pix is also an area of expertise. Full SMPTE lockup of any type is supported for your 3/4", 1/2", or 1" projects. We have done numerous jingle and soundtrack TV and radio campaigns for local ad and media agencies. The mixing down of your music to the end format is one of the most important parts of your musical project. Come mix with us and hear the difference a dedicated mixing room can make.

[24+] NEW YORK AUDIO PRODUCTIONS; also REMOTE RECORDING; 140 W. 22nd St.; New York, NY 10011; (212) 243-6826. Owner: NYAP Inc.

[24+] NEW YORK DIGITAL RECORDING INC.; also REMOTE RECORDING; 636 Sixth Ave.; New York, NY 10011; (212) 675-0600; FAX: (212) 675-3724. Owner: MacDonald Moore. Manager: Maura McGloin. Engineers: Paul Zinman, Jeff Zaraya, Nelson Wong, Daniel Kincaid, Marie Fontaine. Dimensions: Editing suite 1: 15.5x19. Editing suite 2: 15.5x19. Editing suite 3: 15.5x19. Vocal Booth: 7.66x5. Mixing Consoles: Studer 962 w/custom break-out boxes and Mogami cabling, Trench 961. Audio Recorders: PCM-3324 w/remote/V-clock/DABK-3003 w/rapid DAE-3000 edit/video lock/varisync, (2) DAE-3000/PCM-1630/DMR-4000/DATA-2000/DMU-30 edit system, DAE-1100A/PCM-1630/DMR-2000/DATA-2000 offline editing system, (3) Sony PCM-2500 Pro-DAT,

(2) Tascam DA 30 pro-DAT, (2) PCM-F1/PCM-601 F1 format Beta/VHS/U-matic, Ampex ATR-102 2-track, Revox PR-99 2-track, Sonic Solutions hard disc based editing system w/multitrack mixing and editing; format conversion; machine control; sample rate conversion; PO editing; sound-for-picture editing, Sony-start labs CD writer. Noise Reduction Equipment: (2) Dolby 360, (1) dbx 180A. Synchronization Systems: (2) Adams-Smith Zeta-3 w/Zeta remote/MIDI lock/3 transport control. Echo, Reverb & Delay Systems: Lexicon 300 digital effects system, (2) Yamaha SPX1000 multi-effect processor. Other Outboard Equipment: Roland E-660 digital equalizer, (2) Yamaha DMP7D digital mixing/EQ/format transfer/RTC-1 remote/interfaces, Benchmark MIA 4x4 mic preamp/mixer, Massenburg 8202 parametric equalizer. Microphones: AKG, B&K, Schoeps, Neumann Sennheiser, Schoeps, etc. Monitor Amplifiers: P.S. Audio, Adcom, NAD, Denon. Monitor Speakers: Thiel, Snell, Celestion. Video Equipment: JVC CR-600U U-matic VCR. Other: RTW-8804 F1 to 1630 digital format converter, Sony DFX-2400 sampling rate converter, Sony VSU-3310 vari-sync unit, (21) Stax SR lambda pro headphones, (6) Beyer DT990/770 headphones.

[24+] NORMANDY SOUND INC.; 25 Market Street; Warren, RI; (401) 247-0218; FAX: (401) 247-1280. Owner: Phil Greene, Ralph Petrarca, Ogden Fell. Manager: Ralph Petrarca. Engineers: Phil Greene, Tom Soares, Jamie Locke. Dimensions: Studio 40x28, control room 22X18. Mixing Consoles: Solid State Logic 4056E w/G computer, 56 automated channel w/Total Recall. Audio Recorders: (2) Sony JH-24 24-track, Studer A80 1/2" 2-track, Studer A80 RC 1/4" 2-track, (2) Panasonic SV-3500 Pro DAT. Cassette Recorders/Duplicators: (3) Tascam 122 decks. Synchronization Systems: (2) Lynx TimeLine synchronizer. Echo, Reverb & Delay Systems: Acoustic chamber, EMT 140s plate reverb, Lexicon 224X, Lexicon PCM70, (2) Yamaha SPX90, AMS RMX 16, Lexicon PCM60, Yamaha SPX900, Lexicon LXP-1, Yamaha REV7, AMS 15-80S w/ dual lock 6.5 sec per side, Eventide 949H harmonizer, TC Electronic 2290 stereo effects processor, Lexicon Prime Time, (5) Lexicon PCM42, Lott 440 delay line flangers, DeltaLab CompuEffectron CE 1700, DeltaLab 1024 effectron, Korg SDE 3000, ADR panscan. Other Outboard Equipment: Teltronix LA 2A, UREI LA-3A compressor, (2) UREI 1176LN, (2) UREI LA-4, (3) Orban de-essers, (2) dbx 902 de-essers, (2) Valley People dynamics, (2) Allison Gain Brain Limiters, Focusrite rack w/4 isa 110 mic pre/EQ modules, (2) Neve 1073 mic pre/EQ modules, (6) Dean Jensen/Boulder twin servo mic pre amps, Pultec EQP-1A, Tube-Tech PE 1A EQ, Scholz Rockman sustainer. Microphones: Neumann M49 (tube), Neumann M269 (tube), Neumann U47 (tube), (2) Neumann U87, (3) Neumann KM84, AKG C-12 (tube), AKG C-12A (tube), (4) AKG C 414 EB, (3) AKG C 451, AKG D-12, AKG C-1000S, AKG D-112, (5) Sennheiser MD-441, (5) Sennheiser MD-421, Beyer 160, Beyer 88, Shure SM56, (6) Shure SM57, (2) Shure SM58, (2) Shure SM53, Shure SM81, Shure SM7. Monitor Amplifiers: McIntosh, Brynston, Crown. Monitor Speakers: UREI 813 custom, Yamaha NS-10, Auratone. Musical Instruments: Yamaha C5 6'8" grand piano, Emulator II w/sample library, Yamaha TX16 rack, Roland D-50, 1960 Fender Stratocaster, Music Man Stingray bass, Yamaha and Guild acoustic guitars and various guitars amps. Rates: Upon request. Specialization & Credits: Normandy Sound has become celebrated for assembling a unique staff of innovative engineers whose credentials have become notorious for their non-stop flow of hits on *Billboard's* Hot 100 and Top Album Charts. The combination of top engineers, superlative equipment and a worry-free, retreat setting with free accommodations for up to eight people in a full efficiency apartment has catapulted Normandy into a new dimension of excellence in world-class recording and mixing. Located a short distance from Providence, Newport and Boston, Normandy Sound is close to major metropolitan airports and all travel arrangements can be made by contacting the studio manager.



NORTHEASTERN DIGITAL RECORDING INC.
Southborough, MA

[24+] NORTHEASTERN DIGITAL RECORDING INC.; also REMOTE RECORDING; 2 Hidden Meadow Ln.; Southborough, MA 01772; (508) 481-9322; FAX: (508) 624-6437.

Owner: Toby Mountain. **Manager:** Anne Shepard. **Engineers:** Toby Mountain, Jonathan Wyner. **Dimensions:** Room 1: Studio 20x13, Room 2: Studio 18x12, Room 3: Studio 16x12. **Mixing Consoles:** Trois SA 200 custom 12x4x2. **Audio Recorders:** (2) Sony PCM 1630 2-track digital processor, (2) Sony PCM 1610 2-track digital processor, Sony PCM 701 2-track digital processor, Sony PCM 501 2-track digital processor, Sony PCM F1 2-track digital processor, (2) Sony PCM 2500 DAT, Sony DTC 1000, Panasonic SV 3500 DAT, Sony APR 5002H 2-track analog 1/2" or 1/4". **Cassette Recorders/Duplicators:** (3) Denon. **Noise Reduction Equipment:** Dolby A, Dolby SR, dbx Type 1, dbx Type 2. **Synchronization Systems:** Sonic Solutions sonic premastering system w/ hard disk editing, Sony DAE 1100A digital audio editor. **Echo, Reverb & Delay Systems:** Lexicon 300, Lexicon PCM-70. **Other Outboard Equipment:** Digidesign Sound Tools Macintosh editing, processing, Digidesign deck Macintosh multi-track recording/mixing. **Microphones:** Schoeps, B & K, AKG 414, Sennheiser. **Monitor Amplifiers:** Bryston 4B, Perreaux. **Monitor Speakers:** Snell Acoustics Type C, Tannoy DMT-12. **Musical Instruments:** Yamaha DX7II FD, Roland D-50, Alessi HR-16. **Other MIDI Equipment:** Macintosh IIcx, Macintosh IIfx, performer and composer software. **Video Equipment:** (2) Sony DMR-4000 3/4" for digital audio/video, (2) Sony BVU-800 3/4" for digital audio/video. **Specialization & Credits:** We specialize in live remote recording and post-production. We also do CD premastering using the Sonic System and the Sony PCM-1630 including transfers from a wide variety of digital and analog formats. Full compact disc services including CD replication are also available. Our new composer's suite in Studio C offers digital editing and sequencing with Soundtools and MIDI recording and mixing with DECK. **Credits:** David Bowie, Frank Zappa, Nils Lofgren, Ario Guthrie, Ritchie Havens, Kingston Trio, Paul Winter, Rykodisc, Rounder, Omega/Vanguard Classics, Musical Heritage Society, New World, Atlantic, Chrysalis, RCA, Biograph, Northeastern, Newport Classis, Titanic.

[24+] **NORTHLAKE SOUND; 3 Lakeview Drive; N. White Plains, NY 10603; (914) 682-0842/43. Owner:** Elliot Rothpearl. **Manager:** John Stech.



[24+] **ODYSSEY SOUND STUDIO; 350 Chelsea Ave.; Long Branch, NJ 07740; (201) 870-3554. Owner:** Thomas Maggio. **Manager:** Thomas Maggio.



OMEGA RECORDING STUDIOS
Rockville, MD

[24+] **OMEGA RECORDING STUDIOS; also REMOTE RECORDING; 5609 Fishers Ln.; Rockville, MD 20852; (301) 230-9100. Owner:** Bob Yesbek. **Manager:** Bill Brady. **Engineers:** Bob Yesbek, Bill Brady, Tom McCarthy, Brian Smith, Chris Murphy, Andy Evans, Joe Mills. **Dimensions:** Room 1: studio 50x40x18, control room 24x27. Room 2: studio 26x25x12, control room 23x19. Room 3: studio 22x20x9, control room 20x15. Room 4: 27x27 (MIDI room). **Mixing Consoles:** Solid State Logic 4048 w/Total Recall and studio computer, API 2488 32x32 automated, Audiotronics 24x16x8. **Audio Recorders:** (2) Studer A80 MkIV 24-track, Studer A80 2-track 1/2", (2) Studer A810 2-track 1/4" w/center-track SMPTE, (6) Studer B67 2-track 1/4", Ampex A800 4-track 1/2", (4) Sony PCM-250 digital, Studer/Dyaxis direct-to-hard disk digital editor/recorder. **Cassette Recorders/Duplicators:** (9) Nakamichi MR-1 real-time. **Noise Reduction Equipment:** (2) Dolby M-24, dbx 216 24-track, (4) Dolby 361, dbx 187. **Synchronization Systems:** (2) TimeLine Lynx. **Echo, Reverb & Delay Systems:** TC-2290, AMS RMX 16 digital reverb, EMT 251 digital reverb w/250 software, (2) EMT 140ST plate reverb, EMT 240ST Gold Foil reverb, (5) Lexicon PCM70 digital reverb, (9) Yamaha SPX90, (3) Eventide Harmonizer, dbx Boom Box low-frequency processor, (3) Lexicon Prime Time, (4) DeltaLab Effectron, AKG BX-20E reverb. **Other Outboard Equipment:** (12) UREI LA 4 limiter/compressor, Sontec parametric equalizer, Sontec compressor/limiter, Neve stereo compressor/limiter, (12) Allison Research Kepex, (4) Drawmer gate, (2) Orban stereo parametric equalizer, Audioarts stereo parametric

equalizer, (2) dbx 110 comp/limiter, (2) dbx 162 comp/limiter, (2) Pultec equalizer. **Microphones:** (22) Neumann U82 condenser, (18) EV RE20 dynamic, (12) Sennheiser 421 dynamic, (14) Neumann FET47 and KM83 etc. condenser, AKG The Tube, (4) Neumann U47 and U67 tube, (4) AKG C-414 condenser, (2) Sony C-48 condenser, (4) Crown PZM. **Monitor Amplifiers:** (20) Bryston/Crown. **Monitor Speakers:** (2) Westlake TM-1, (4) UREI 813/811. **Musical Instruments:** Steinway grand piano, Kawai grand piano, Kurzweil 250, (3) Yamaha drums set, Roland D-50, Emulator II, Yamaha DX7/TX802, Oberheim DPX-1, (2) Akai S900, Hammond B-3 w/Leslie, Korg M1, M3. **Other MIDI Equipment:** Macintosh II w/380MB HD, (2) J.L. Cooper 16/20 MIDI patcher, Atari, IBM computers, Roland S-550, Akai S950. **Video Equipment:** (2) Sony VO-5850 recorder, Panasonic professional TV monitors built in to control rooms. **Rates:** Studio A—\$130/hr., Studio B—\$115/hr., Studio C—\$85/hr., Studio D—\$75/hr. Package rates available for block booking. **Specialization & Credits:** Each control room and studio separately air cond. and heated. Electrostatic air cleaners in all rooms, 48-line, building-wide tie-line system for audio and video, various music and SFX records and tapes available in music library and two lounges. **Producer's office in control room #1.** Omega Studios' huge studio #1 is for concert bands, marching bands, stage bands, choirs and orchestras of up to 100 pieces. Omega control #1 features a 10' producer/client's desk and an SSL console. Capable of 48 inputs, #1 is equipped for up to 48 tracks. Studio #2 offers 24 tracks. Grand pianos are available in both studios. Studio #3 offers 24 inputs and 2/4/8-track production. SFX and music libraries are available on CD, record and tape. Studio #4 is MIDI-based and features a Macintosh w/380MB hard disk. Digital editing is available using the Dyaxis direct-to-hard disk system featuring one-hour recording capability and direct-to-digital connection to the Sony PCM-2500s. Instruments include synthesizers listed under "Musical Instruments" section. Videolock to MIDI. Studio #4 is wired to dump MIDI and up to 48 channels of audio to Studio 1, 2 or 3. Omega's Recording Engineering School, now in its 15th year, offers seven levels of training and is approved by the Maryland Higher Education Commission and veteran's training. Omega Studios is celebrating its 23rd year in business.

[24+] **ONE WORLD RECORDING; 72 East Dedham St.; Boston, MA 02118; (617) 426-8078. Owner:** Steve Van Natta. **Manager:** Amy Satterthwaite. **Engineers:** John Breglia, Steve Van Natta. **Specialization & Credits:** Combining a vintage Neve/Studer room with contemporary production services and support, One World Recording offers its clientele the classic music recording environment for album or commercial projects. One World Recording is centrally located in downtown Boston, minutes from Logan, making it the ideal cost efficient and convenient alternative for both the national and international artist looking for a big city studio. Our Steven Durr-designed control room houses a mint, RCA-modified, overspecced Neve 8038 recording desk, supported by an extensive inventory of both state-of-the-art and vintage gear from all the top manufacturers. A Steinway grand piano highlights the largest live room in Boston. Completing the total One World package is our experienced in-house production and creative working environment for any album or commercial recording product. Contact Amy for references, rates and availability.

[24+] **OZ; also REMOTE RECORDING; 310 E. Biddle St.; Baltimore, MD 21202; (301) 234-0046; FAX: (301) 234-0048. Owner:** Voltage Studios Inc. **Manager:** Stephen Palmer.

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[24+] PARIS RECORDING; also REMOTE RECORDING; 466 Hawkins Ave.; Lk. Ronkonkoma, NY 11779; (516) 467-5143; FAX: (516) 471-4026. Owner: Brian Unger. Manager: Diana Perez.



PHOTOMAGNETIC SOUND STUDIOS
New York, NY

[24+] PHOTOMAGNETIC SOUND STUDIOS; 222 E. 44th St.; New York, NY 10017; (212) 687-9030; FAX: (212) 687-9298. Manager: Beverly Richter. Engineers: Rex Recker, Peter Holcomb, Steve Rosen, Terry Mader, K.C. Green—chief engineer, Anthony Pipitone. **Mixing Consoles:** (2) Neve V Series 48 input, Neve V3 film console 48 input, Neve V3 Series 36 input console, Neve 8058 24 input console. **Audio Recorders:** AMS AudioFile hard disk recorder, (2) Otari MTR-90 24-track, (2) Studer A820 24-track, (2) Studer A807 4-track, (2) Studer A807 2-track, Studer A810 2-track, (2) Otari MTR-12 4-track, (4) Otari MTR-12 2-track, (30) Magna-Tech 35mm PB dubbers, (4) Magna-Tech 35mm 6 & 4 track recorders. **Noise Reduction Equipment:** (4) Dolby SR-A 24-track. **Synchronization Systems:** (5) Adams-Smith complete for all rooms. **Video Equipment:** (2) Sony BVH-2000 1", (6) Sony BVU-800 3/4", Sony DVR-18 D-2 digital video recorder, Sony BVW-75 betacam recorder. **Other:** Magna-Tech high speed projector, Dolby surround for film or video. **Rates:** Call for rates.



PLATINUM ISLAND RECORDING STUDIOS
New York, NY

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[24+] PLATINUM ISLAND RECORDING STUDIOS; 676 Broadway; New York, NY 10012; (212) 473-9497; FAX: (212) 505-8277. Owner: RLK Enterprises. Manager: Richard Kessler. Engineers: Steven Wellner, Doug DeAngelis, Fernando Aponte; Independents: Jason Corsaro, Jay Healy, Bob Rosa, Michael Hutchinson, Steve Peck. **Mixing Consoles:** SSL 4056 E/G Series computer & EQ w/Total Recall, Amek Angela, Neotek Elite, (20) API mic pre. **Audio Recorders:** (2) Studer A800 mkIII 24-track, Studer A827 24-track, Studer A80 24-track, Studer A820 2-track, Studer A80 2-track, Studer B67 2-track, Studer A80 4-track, Tascam 122 MkII, Nakamichi MR-1, Panasonic 3700, (2) Panasonic 3500, Sony DTC-1000ES DAT. **Synchronization Systems:** (4) TimeLine Lynx. **Echo, Reverb & Delay Systems:** Lexicon 480I, (2) AMS RMX 16, (2) Lexicon 224XL, (2) EMT 140TS, Ecoplate I, (3) Lexicon PCM70, Lexicon PCM60, (4) Yamaha REV7, (2) SRV 2000, (2) DEP-5, MXR O1A, (2) AMS 1580, (6) Lexicon PCM42, (3) PCM41, Prime Time II, (3) Yamaha SPX9011, SPX900, (2) SPX90, Publison 90, Publison 89, SST-282, (2) MFX-Auto Phaser, (2) Auto Flanger, DBX 120 HS, (2) H-3000, (2) H-949, (2) H-910 Eventide Harmonizer. **Other Outdoor Equipment:** (3) UREI LA-2A, (3) Summit TLA-100, Spectrasonic 610, (4) UREI LA-4, (2) UREI LA-3, (3) UREI 1176LN, (7) dbx 160X, (2) dbx 165A, (2) dbx 160, dbx 166, (2) dbx 162, (3) dbx 902, BSS DPR-402, Neve 2254/A, (2) Trident "A" Range Limiter, (12) Drawmer DS-201, (4) Valley Dyna-Mite, (2) dbx 904 gate, (2) Pultec EQP-1A, (2) EQH-2, (2) EQP-1R, EQP-1, (3) MEQ-5, (2) Flockingers, (12) Neve 1066A Mic pre EQ, (4) Trident CB9066 EQ, (16) API 550A, (3) 560B EQ, Klark-Teknik & UREI graphic EQ, (2) White 4400 EQ, Rush EQ, (3) Aphex "C" exciter, (2) BBE-802, dbx 120HS processor. **Microphones:** Neumann U49, Neumann U48, (2) U-47 tubes, AKG "The Tube", Milab VIP-50, (6) Neumann U87, (2) U47 Fet, (5) AKG 414EB, (3) AKG 451 EB, AKG 452, (4) AKG 460, AKG D-112, D-12E, RCA 44DX, (2) RCAQ 77DX, Beyer M-160 ribbon mics, (6) Sennheiser MD 421, (2) M-409, 441, (5) Shure SM57, Shure SM58, (2) SM81, (2) PZM, Countryman Active and Jensen passive direct boxes. **Monitor Amplifiers:** Perreaux 9000B, (8) Brynton 4-B, (5) Crown DC-300, (4) DC-150. **Monitor Speakers:** (4) UREI 813-B, (8) Yamaha NS-10, (6) Tannoy PBM-6.5, (2) Tannoy LGM-12, (4) EV Sentry 100A, Auratone 5C, Kef101. **Musical Instruments:** Yamaha C7 & Young Chang grand pianos, DX7, Ampex B15 & Marshall amps, Leslie Cabinet, MIDI room: Korg M1, Roland D-50, Super Jupiter w/prog., Super JX, Juno 106, MKS-50, JX3-P, Minimoog with MIDI, Proteus XR, Yamaha TX81z, E-mu SP-1200, Roland R-8, Akai MPC60 drum machines, Akai S950, S900 and Emulator II samplers, Macintosh SE/30 & Atari 1040, JL Cooper MSB & KMS MIDI patchers. **Other MIDI Equipment:** Akai S900, D550, M1R, Super Jupiter w/Performer and Vision, Macintosh SE w/20MB hard disc, Atari 1040ST w/30 meg drive & Creator. **Video Equipment:** JVC-8250 Edit recorder w/remote, Sony monitors. **Specialization & Credits:** Platinum Island is a 3-studio complex, 48-track capable with 3/4" video lock available; featuring SSL 4056 E/G, Neotek and Amek consoles along with copious state-of-the-art outboard gear. Able to record/mix a chamber orchestra, smoothly interface a programmer's MIDI-recall, and everything in between. Go Platinum with us! Recent clients: Aretha Franklin, Chaka Khan, Vanilla Ice, C&C Music Factory, Human League, New Kids on The Block, Lisa Stansfield, Simply Red, The Replacements, RATT, Ryuichi Sakamoto, Mica Paris, Ginger Baker, SNAP, Traxter, Bootsy Collins.

[24+] POWER PLANT RECORDING STUDIOS AMERICA; also REMOTE RECORDING; 10518 Connecticut Ave.; Kensington, MD 20895; (301) 942-9007; FAX: (301) 622-4209. Owner: Mickey Rat Productions. Manager: Hyman Mandell.



POWER PLAY STUDIOS INC.
Long Island City, NY

[24+] POWER PLAY STUDIOS INC.; 37-20 30th St.; Long Island City, NY 11101; (718) 729-1780; (718) 729-9609; FAX: (718) 729-3193. Owner: Anthony Arf. Manager: Cary Dean Hart. Engineers: Anton Pukshansky, Yianni Papadopoulos, Ivan "Doc" Rodriguez, Rob Sutton, Norty Cotto, Bryan Martin, Patrick Adams. **Dimensions:** Room 1: studio 17x25, control room 12x17. Room 2: studio 9x10, control room 14x15. Room

3: studio 28x21, control room 21x22. **Mixing Consoles:** Solid State Logic SL 4056 E w/G Series computer and Total Recall, Solid State Logic SL 4040 E w/G Series computer and Total Recall, MCI 600 Series w/automation. **Audio Recorders:** (4) Sony APR 24 analog 24-track, (2) Sony APR 5002 1/2" 2-track analog, Sony 3202 1/4" 2-track analog, MCI JH-110C 1/2" 2-track analog, (2) Otari MTR-12 1/2" 2-track analog, (2) Panasonic SV-3700 Pro R-DAT, (3) Sony PCM-2500 Pro R-DAT. **Cassette Recorders/Duplicators:** (4) Tascam 122 MkII. **Synchronization Systems:** (3) Adams-Smith Zeta-3. **Echo, Reverb & Delay Systems:** Lexicon 224XL, AKG ADR-66K, Klark-Teknik DN780, Publison Internal 90, (3) Eventide H3000 w/sampler update, TC Electronic 2290, Assorted reverbs, delay lines & multi-EFX by: AMS, Lexicon, Yamaha, Sony, Alesis, Eventide and AKG. **Other Outdoor Equipment:** (12) Kepex gates, (8) Drawmer gates, (8) Drawmer gates, (8) Dyna-Mite gates, (12) Neve EQ, (4) Tube-Tech EOP1A3 EQ, (4) Tube-Tech CLIA compressors, (2) Pultec EQP-1A3, Assorted compressors by: dbx, UREI and Teletronix. **Microphones:** (17) Neumann, (12) Sennheiser, (18) AKG, (4) EV, (8) Shure, (8) Sony, (4) Crown. **Monitor Amplifiers:** (8) Haller, (4) Perreaux, (6) Crown. **Monitor Speakers:** Tannoy FSMU, (3) Tannoy LGM12, (4) Tannoy PBM-6.5, (3) Yamaha NS-10, (2) UREI 813B. **Musical Instruments:** Yamaha grand piano, (3) E-mu SP-1200, Akai MPC 60 w/ update & library, (2) Roland D-50, Korg M1, Yamaha DX711FD, Roland Juno-106, Yamaha TX816, Yamaha TX802, E-mu Proteus, E-mu Emulator II w/library, Akai S900 w/library. **Other MIDI Equipment:** Macintosh SE/30 w/Performer, Atari 1040ST w/ C-lab creator. **Other:** Tama 8-piece professional concert kit, assorted other drums & acoustical percussion, various guitar amplifiers. **Rates:** Available upon request. **Specialization & Credits:** Power Play Studios has established itself as a world-class facility catering to record labels, artists, and producers in all styles of today's music. Our highly trained staff of platinum engineers, producers, and programmers are here to help your creative flow, and add new dimension to your projects. Located just 15 minutes from midtown Manhattan, Power Play gives you a state-of-the-art facility without the hassle of midtown New York. We have four studios: two 24-track, one 48-/24-track, and an edit/copy suite; all with digital recording and mixing capabilities, and one of the largest, most comfortable, and acoustically designed 48-track SSL studios in the world. Located in a two-building complex with kitchen, TV lounge, video games, and many restaurants in our area, Power Play is the perfect recording environment for you. Our clients include: A&M, Atlantic, Ansta, Capitol, CBS, Chrysalis, Defjam, Elektra, EMI, Island, MCA, Motown, RCA/Sve, Select, Warner Bros. and Virgin.

[24+] POWER STATION INC.; 441 W. 53rd St.; New York, NY 10019; (212) 246-2900; FAX: (212) 586-0326. Owner: Bob Walters, Tony Bongiovi. Manager: Barry Bongiovi, Barry Kaye. **Specialization & Credits:** After establishing an unequivocal track record in contemporary music, Power Station has combined its expertise in sound recording with the world of audio post-production. Power Station consists of four studios: Studio A has an 8068 Series Neve 40 input 24-track custom console. Studio B has an SSL 6000E and Studio C an SSL 4000E series console with 48 inputs and 32 bus outputs. All are capable of video lockup. Studio D has a customized 80-input automated SSL 4080 G console equipped to synchronize up to 5 audio and video machines simultaneously. It has a 1" C format, D2 and 3/4" video formats, four 36" Mitsubishi Color Monitors plus a GE Light Valve Projection System with large-screen viewing. We have audio mixdown capabilities in mono, stereo, or stereo surround. A Synclaver 9600 and Post Pro Digital Work Station with a digital sound effects library rounds out the room.

[24+] PREMIER RECORDING INC.; 2121 Wisconsin Ave. NW, Ste. 250; Washington, DC 20007; (202) 333-5588; FAX: (202) 337-6928. Owner: Demos Chrissos. Manager: Lisa Giannini. Engineers: Demos Chrissos, Lisa Giannini, and freelance. **Dimensions:** Studio 22x14, control room 26x21, MIDI room 16x11. **Mixing Consoles:** Neotek Elite 36x36, Yamaha MS2404 (MIDI room). **Audio Recorders:** Otari MTR-90-II, Otari MTR-102-track, Otari MTR-102-track with center-track timecode, Otari MX-5050 MkIII-2. **Cassette Recorders/Duplicators:** Sony PCM-2500 R-DAT, Nakamichi MR-2B, Nakamichi B-100, Nakamichi B-1, Otari DP-4050C1 high-speed duplicating deck. **Noise Reduction Equipment:** Dolby XP-24 Type A, Dolby SR/A Model 363. **Synchronization Systems:** (3) TimeLine Lynx synchronizers with KCU keyboard controller, VAC 100PA-2PC sync generator. **Echo, Reverb & Delay Systems:** Lexicon 200, Lexicon PCM70, Eventide 3000SE Ultra-Harmonizer, Eventide H910, Yamaha SPX90 digital multi-effects processor. **Other Outdoor Equipment:** Drawmer DS-210 stereo noise gates, Aphex 300 stereo Compellor, Aphex Type-C Aural Exciter, (4) UREI LA-4 compressor/limiters, (3) dbx1600 compressor/limiters, Symtetrax TI-101 telephone interface, (2) Symtetrax 528 voice processors, Technics SL-P1300 compact disc player. **Microphones:** Neumann U87, AKG C-414EB/P48, AKG C-406B/CK 61ULS, AKG D-112, Shure Beta-57, Sennheiser MD-421. **Monitor Amplifiers:** UREI 6500, Crown D-75, Crown D-150A Series II (headphone amplifier), Crown PSA-II (MIDI room). **Monitor Speakers:** Control Room: UREI 813B, ROR E3/MIDI room: Tannoy PBM-6, ROR E3. **Musical Instruments:** Kawai GS-40 acoustic grand piano, Kurzweil 250 w/advanced sampling, Kurzweil-1000PX Plus, Yamaha DX7-II, Yamaha DX7, (4) TX-7 modules, (2) Akai/Linn MPC-60 drum machine/samplers, DYAXIS digital record/edit/mix, Roland JX-3P, Roland RM-8 drum machine,

Roland D-550 & P-1000 Programmer, Korg M1R, E-mu systems Emax-SE digital sampler. **Other MIDI Equipment:** (2) Macintosh Plus, Macintosh SE with 100-meg microtech HD/2 meg RAM, Macintosh II with 60-meg HD/2 Meg RAM, J.L. Cooper 16/20 junction box. **Video Equipment:** Sony VO-5800 3/4" deck. **Other:** Dyaxis disk-based tapeless workstation w/ analog and digital inputs, MaxMix and Q-sheet software. **Rates:** Upon request.

[24+] **PRESENCE STUDIOS; also REMOTE RECORDING.** 461 Main St.; East Haven, CT 06512; (203) 467-9038. **Owner:** Jon Russell. **Manager:** Dana Raflee. **Engineers:** Joe Carrano, E. Gray Fowler, R. Barone. **Dimensions:** Room 1: Studio 37x30, control room 20x18. Room 2: studio 15x12, control room 10x12. **Mixing Consoles:** SSL 4056G TR. **Audio Recorders:** Studer A827 24-track, Mitsubishi X850 32-track digital, Ampex ATR-800 2-track 1/4", Studer A820TC 2-track 1/2" w/center time code, Technics RLS-1380 2-track 1/4". **Cassette Recorders/Duplicators:** (40) Sony TC-FX150 real-time duplication, Noise Reduction Equipment: (2) Dolby A/SR 361. **Synchronization Systems:** (3) TimeLine Lynx. **Echo, Reverb & Delay Systems:** Lexicon 480L w/3.0 software, Lexicon 224XL, Lexicon PCM703.0, Lexicon PCM60, AKG BX-10, TC Electronic 2290, (4) Roland SDE-3000, Lexicon M87 Super Prime Time, (2) MXR digital delay, (2) Marshall 300 tape eliminator, (2) UREI 1176LN, Drawmer 1960 tube comp., dbx 162 stereo compressor/limiter, (4) dbx 165 overeasy, (4) Yamaha SPX90, (2) Yamaha REV7, Eventide H3000B, Eventide H949, dbx 906 flanger/doubler, BBE 802, dbx 902 de-esser, (2) Drawmer DS-201 stereo noise gate. **Microphones:** (2) Neumann U87, Neumann U47 FET, (4) AKG C-414ULS, AKG C-414P48, (10) AKG C-451-E/EB, (4) AKG C-460ULS, AKG The Tube, (4) AKG C-501E, AKG D-12E, (4) Sennheiser MD-421, Sennheiser MD-441, (2) EV RE20, EV RE10, (2) Shure SM58, Shure SM57, (2) Crown PZM, (2) Sony ECM-22. **Monitor Amplifiers:** (2) Hafler DH-500, (5) Hafler DH-220, (4) Hafler DH-200. **Monitor Speakers:** (2) Westlake HR-70, (2) Westlake TM-1, (2) JBL 4311, (2) Czech Model 2 w/M6 27 sub, (2) Yamaha NS-10M, (2) Auratone C. **Musical Instruments:** Fairlight CMI Series III w/Waveform Supervisor and 20MB RAM, Yamaha DX5, Yamaha DX7, Yamaha DX711, Yamaha Y CAM, Yamaha CP80 w/Forte MIDI, Yamaha G2 grand piano w/Forte MIDI, Roland D-550, Roland MKS-70, Korg M3R, Oberheim QBX-A w/MIDI, Emulator Emax, Minimoog w/MIDI. **Rates:** On per project basis. Starting at \$80/hr.

[24+] **PRIME CUTS STUDIOS; 1600 Broadway, Ste. 704; New York, NY 10019; (212) 265-1800.** **Owner:** Tuta Aquino, Mark Kamins. **Manager:** Tuta Aquino. **Engineers:** Tuta Aquino, Rick Van Benschoten, Gary Clugston, Shawn James. **Dimensions:** Room 1: studio 12x9, control room 18x16. Room 2: control room 12x9. **Mixing Consoles:** Trident Series 65 Model 24 28x24x24. **Audio Recorders:** Otari MX-80 24-track, (2) Otari MTR-12 2-track 1/2" and 1/4", Sony PCM-2500 DAT. **Cassette Recorders/Duplicators:** (2) Nakamichi MR-2, Tascam 122 MkII B, Sony DTR-1000ES DAT, Sony DTR-100 DAT. **Synchronization Systems:** Roland SBX-80. **Echo, Reverb & Delay Systems:** Yamaha REV5, (2) Yamaha SPX90i reverb, Alesis Quadraverb reverb, (2) Lexicon LXP-1 reverb, Lexicon MRC controller, Lexicon PCM42 delay, Ibanez SDR-1000+ reverb. **Other Outboard Equipment:** (2) API 550B parametric EQ, (2) dbx 160X compressor, Aphex expander/noise gate, (2) Valley People GateX noise gate, Rane ME30 3-band graphic EQ. **Microphones:** AKG 414, (2) Shure SM58. **Monitor Amplifiers:** Yamaha P2150, Yamaha P2250, Crown D-40, Sansui Aug77XII. **Monitor Speakers:** (2) Yamaha NS-10M, Tannoy 6.5, Auratone 5C, UREI 813, Yamaha NSW2 subwoofer. **Musical Instruments:** Akai MPC60 drum machine/sequencer, Yamaha DX71FD keyboard controller, Moog Minimoog w/MIDI retrofit, Akai S950 sampler, Korg M1R MIDI keyboard, Roland D-550 MIDI keyboard, Roland MKS-80 Super Jupiter MIDI keyboard, Roland programmer for MKS-80, Roland MKS-70 Super JX MIDI keyboard, Roland D-110, Yamaha TX802, Yamaha TX81Z, Oberheim Matrix-1000, Casio C21000, Roland TR-808 drum machine, Roland TR-707 drum machine, TR-303 bassline MIDI keyboard, E-mu Proteus MIDI keyboard, Roland Juno-106 keyboard, Oberheim Matrix 6 keyboard, Ensoniq ESOM keyboard. **Other MIDI Equipment:** Atari 1040ST sequencer, Macintosh SE30 sequencer, Opcode MIDI interface. **Rates:** Studio A: 24-track MIDI w/engineer: \$85 per hour. Studio B: 2-track editing w/o engineer: \$40 per hour.

[24+] **PRO AUDIO/BIG MO RECORDING; also REMOTE RECORDING.** 11264 Triangle Ln.; Wheaton, MD 20902; (301) 946-7364. **Owner:** Ed Eastndge, John Sprung. **Manager:** Ed Eastndge. **Engineers:** Ed Eastndge, Jim Crenca, John Brittain, Ron Freeland. **Dimensions:** Studio 26x32, control room 24x8. **Mixing Consoles:** Custom ESP 40x24. **Audio Recorders:** MCI JH-114 24-track, Akai MG14D 12-track, Sony 5003 2-track w/center time code, Sony/MCI JH-24 24-track, Revox PR99 2-track (2) Panasonic 3500 DAT. **Cassette Recorders/Duplicators:** (2) Sony DC-DSM, Nakamichi, Technics. **Noise Reduction Equipment:** Dolby A 28 channels, dbx 2 channels. **Echo, Reverb & Delay Systems:** Lexicon PCM70, Lexicon PCM60, Roland DEP-5, Lexicon LXP-1, Lexicon M93 delay, (2) Yamaha SPX90, Klark-Teknik D-70. **Other Outboard Equipment:** Audioarts stereo parametric EQ, (2) UREI LA-3A, UREI stereo graphic EQ, (7) Valley People Gain Brain, dbx 900 rack w/de-esser, comp/limiter, noise gate, parametric EQ, (2) TC Electronic TC-1140 parametric EQ, dbx 160 com-

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PRO AUDIO/BIG MO RECORDING
Wheaton, MD

pressor, BBE 802, (6) Valley People Kepex. **Microphones:** (3) AKG 414ES, (4) AKG C-55ES, (6) AKG C-451, (2) Crown PZM, (2) EV PL20, (2) Neumann U89, (4) Neumann U87, (2) Neumann KM84, (6) Sennheiser MD-421, (6) Shure SM57, (4) Shure SMC8, (3) Beyer M50A, (2) AKG 561. **Monitor Amplifiers:** Bryston, Crown DC-300, Crown D-150A, AMP 8000. **Monitor Speakers:** (2) UREI B11 Time Align, UREI 311C (studio), (2) Yamaha NS-10, (2) JBL 4408. **Musical Instruments:** Korg DDE-1 drum synth, Yamaha KX76 MIDI controller, Yamaha 802 synth, Roland GP-8 guitar effects, Yamaha TX41Z FM synth, Roland GM 70 MIDI converter, Roland GR-304 synth guitar, Oberheim OBE synthesizer, Kawai grand piano, Akai S900 sampler, Fender vibroverb, Marshall JMF half-stack, Roland JC-120. **Video Equipment:** Panasonic WV-1Z camera, RCA camera, JVC TM13V monitor, Panasonic 19" monitor, JVC CR-850U 3/4" deck.

[24+] **THE PRODUCTION BLOCK; also REMOTE RECORDING.** 2833 North Front St.; Harrisburg, PA 17110-1222; (717) 233-4155. **Owner:** Michael and Sarah Block. **Manager:** Ashley Block.

[24+] **PRODUCTION MASTERS INC.; also REMOTE RECORDING.** 321 First Ave.; Pittsburgh, PA 15222; (412) 281-8500; FAX: (412) 391-7529. **Owner:** David Case. **Manager:** Jack Bails.

[24+] **PULSE WAVE UNDERGROUND RECORDING STUDIO; 19 Norwood Terr.; Trumbull, CT 06611; (203) 258-1018.** **Owner:** John P. Mozzi. **Manager:** Fred Louis. **Engineers:** Joseph P. Mozzi, Fred Louis. **Dimensions:** Room 1: Studio 22x25, control room 10x16. Room 2: studio 20x11. **Mixing Consoles:** Sony MXP-3036 36-channel. **Audio Recorders:** Sony JH-24 24-track, Otari MX-5050 IIB stereo, Panasonic SV-3700 R-DAT. **Cassette Recorders/Duplicators:** Tascam 122B. **Echo, Reverb & Delay Systems:** Lexicon 300, Lexicon PCM70, Lexicon PCM60, (2) Lexicon LXP-1, (4) Korg SDD-3000. **Other Outboard Equipment:** Aphex Dominator I, (2) Aphex Expresser, (2) dbx 180X, Drawmer DS-201 Valley People Dma-Mix, Audioarts 400A, Klark-Teknik DN-60, (2) BBE 822. **Microphones:** AKG C-414ULS, (3) AKG C-535, AKG D-222, Beyer M100 500, (9) Sennheiser MD-421, (2) Sennheiser MD-431, (2) Sennheiser MD-441, Sennheiser ME-1C, Sennheiser ME80, (2) Shure SM57, Neumann U47, Neumann U87 Brite & Kjaer 4006X. **Monitor Amplifiers:** Bryton 4E, (2) Crown D-150A, Crown D-70. **Monitor Speakers:** UREI 809, Meyer HD-1, Electro-Voice MS802, (2) Yamaha NS-10. **Musical Instruments:** Korg SGX1E digital piano, Korg DS-1, Korg M1R, Kurzweil 1000PX, Roland E-mu Proteus 2, (2) Korg EX8000 synthesizer. **Other MIDI Equipment:** Lexicon MRC controller, MIDI Timepiece, Roland A380 dual-her/mixer/merger. **Video Equipment:** Panasonic PV-17SD. **Other:** (4) John Hardy mic preamps, (2) API 550 EQ, Macintosh SE/30, Performer, Finale & DigDesign software.

[24+] **PYRAMID RECORDING STUDIO; 449-51 Central Ave.; Orange, NJ 07050; (201) 678-1663.** **Owner:** Lou Massa. **Manager:** Lou Massa.

[24+] **PYRAMID SOUND INC.; 105 E. Clinton St.; Ithaca, NY 14850; (607) 273-3931; FAX: (607) 273-3936.** **Owner:** John Peralas. **Manager:** Lorri Hunter.



[24+] **Q DIVISION LTD.; 443 Albany St.; Boston, MA 02118; (617) 542-0081.** **Owner:** Phil Sullivan. **Manager:** Jonathan Lupter.

[24+] **QUAD RECORDING; 723 7th Ave.; New York, NY 10019; (212) 730-1035.** **Owner:** Lou Gonzalez. **Manager:** Amanda Cruz. **Engineers:** Robbie Norris, Rick Slater, Russell Evedo. **Mixing Consoles:** SSL 604 w/G Series automation, SSL 4064, SSL 4064 w/2-input available, (8) 3 module Trident

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Series 70. **Audio Recorders:** Studer A800 24-track, (3) Studer A80 24-track, (2) Otari MTR-90 MkII 24-track, (4) Studer A80VU 2-track, (2) Otari 8-track, Otari 4-track. **Cassette Recorders/Duplicators:** Tascam 122 MkII. **Synchronization Systems:** (6) TimeLine Lynx. **Echo, Reverb & Delay Systems:** Lexicon 480L, (2) Lexicon 224XL, (3) Lexicon PCM70, Lexicon 224, (3) AMS DDL, (3) AMS reverb, (5) Yamaha REV7, (4) Yamaha SPX90, (2) Roland Dimension D, (4) LA-2A compressor, (6) 1176 compressor, (15) Pultec equalizer, (4) Neve 1073 equalizer, (8) API 550 equalizer, (14) API mic pre, (15) API line amp, (8) Lexicon PCM42, (4) Lexicon PCM41, Publison delay, TC-2290, Tri chorus, (6) EMT 140. **Microphones:** (2) Neumann U47, (2) Neumann M49, (5) Neumann U67, (3) Neumann KM84, (5) Neumann U87, (4) AKG 414, AKG D-12, (11) Sennheiser MD-421, (3) Shure SM57. **Musical Instruments:** Kurzweil K-1000, Yamaha DX7II, Yamaha DX7, Roland Juno-106, Roland Juno-60, Casio CZ-101, Prophet-5, Yamaha TX81Z, Korg M1, Roland D-550, Roland Super Jupiter, Korg EX-8000, Yamaha TX7, Akai S900, Roland SBX-80, E-mu SP-12, Korg DDD-1, Roland Octapad, J.L. Cooper MIDI patch bay, Macintosh Plus w/Performer software. **Specialization & Credits:** Projects worked on at Quad; LaLah Hathaway, Ardrian McDonald, The Airos-Kickin Afrodistics, Mark Cohn, Black Flames—"Dance With Me," "Fine Young Cannibals—"Johnny," Sean Lennon, Paul Young—"Heaven Can Wait," "Family Stand—"Sweet Liberation," "Blaze—"So Special," Ray Contreras, Elisa Fiorello, Jellybean Benitez, The State Loose Ends, Whodini, The Stranglers, Southern Sons, Vanessa Williams, Skin and Bones, SlaneSlam, Tribal House, Candyman, Kyze, Bernard Bell, Prefab Sprout, Kate Celbrano, Wooten Brothers, Snap, Queen Latifah, James Blond Ulmer, Shabba Ranks, London Beat, Kathy Dennis, Teenage Mutant Ninja Turtles, I & L, Color Me Badd, K-Solo, Tara Kemp, The Boys, Bobby Brown, Vanilla Ice, Babyface, Danny D./Danny Madden, Alexander ONeal, David Wilcox, Caron Wheeler, B.B. King, Steve V., James Taylor, Starlena Young, Karyn White, Pet Shop Boys, INXS, Christopher Max, Dand Dane—"Tales from the Dane Side," Ice T, Whitney Houston, Cissy Houston, Grayson Hugh, Fishbone, Four of US, Blue Angel, Overweight Pooch, BasNori, Phillip Peery, Oleta Adams, Elton John, Cameo, Alex Bagnon, Brenda K. Starr, BWP—"2 Minute Brother," today, High Tech3, Levert, Stanley Clark—"Book of Love," Allison Moyet, 2 in a Room—"Wiggle It", BooYa Tribe, Aswad, Reggae Philharmonic Orchestra, Richard Rogers, Barbara Weathers.

[24+] **QUANTUM SOUND STUDIOS;** 512 Patterson Plank Rd.; Jersey City, NJ 07307; (201) 656-7023.



[24+] **RAM'S DEN STUDIOS INC.;** 32 West St.; Northport, L.I., NY 11768; (516) 754-1333. **Owner:** Salvatore Minetta III. **Manager:** Marc Gershuny. **Engineers:** Marc Gershuny. **Dimensions:** Room 1: control room 22x14, Room 2: studio 26x15, Room 3: studio 25x13, Room 4: MIDI studio 9x9, Room 5: studio 25x12x10. **Mixing Consoles:** Trident 24 (60-input), Sound Workshop. **Audio Recorders:** Sony APR 24 2" 24-track analog, Otari 1/2" MX-5050 8-track, (2) Panasonic SV-3700 DAT, Otari 1/4" MX-5050 2-track. **Cassette Recorders/Duplicators:** Nakamichi MR-1, Nakamichi 681-ZX, Nakamichi CR-3A, Tascam 122 MkII. **Noise Reduction Equipment:** (10) dbx 900 series/model 411, (2) Aphex Type C. **Echo, Reverb & Delay Systems:** (2) Eventide H3000SE, Korg DRV-2000, Korg SDD-1000, Lexicon PCM42, Lexicon PCM70, Roland SRV-1000, TC Electronic TC 2290, dbx 900 series flanger, Ecoplate II plate reverb. **Other Outboard Equipment:** (4) Aphex 612 stereo gate, (2) ART 270 IEO's, Audioarts 1200 comp/limiter, (4) dbx 166 compressor, (2) Valley People Dyna-Mite Gates, Yamaha GC2020 comp/limiter, (2) Rane GE30 EQ. **Microphones:** (2) Neumann U87, (2) AKG C-414, (6) Sennheiser 421, (2) AKG D-12, (10) Shure SM57, (10) Shure SM57, (6) Shure SM58, (2) AKG C-460B, AKG C-535EB, Beyer M69N(C). **Monitor Amplifiers:** UREI 6500, Crown D-150A series I, BGW model 100 headphone, Rane HC6, BGW 750C. **Monitor Speakers:** (2) UREI 813, (4) Yamaha NS-10M, (2) Tannoy PBM-6.5, (2) Auratone, (4) Fender 2851 studio play.

Musical Instruments: ddrum electronic drums, (3) Marshall stacks, Roland JC-120, Yamaha custom drum set (11-pc.), Yamaha custom drum set (8 pc.), Baldwin baby grand piano, (4) Korg DSM-1 samplers, Korg M1, Korg SGX-1D, Roland R-8, Roland R-8M, Roland U-20, Korg M3R, Roland Super JX10, Roland D-550. **Other MIDI Equipment:** (2) Macintosh SE30, performance software by M.O.T.U., Opcode Performance software, Mark of The Unicorn MIDI Timepiece, MIDIKit. **Other:** Megamix automation. **Rates:** Rates designed to fit all budgets. Call for more info.

[24+] **RAWLSTON RECORDING;** 1271 Fulton St.; Brooklyn, NY 11216; (718) 622-0010; FAX: (718) 622-0216. **Owner:** Rawlston Charles. **Manager:** Akili Walker. **Engineers:** Tommy Weber, George Mayers. **Dimensions:** Room 1: studio 35x16, control room 27x14. **Mixing Consoles:** Neve 8068 custom console 28x32x64. **Audio Recorders:** Studer A80, Mk III 24-track, Studer A80 1/2" and 2-track 1/4", Korg 500-2000 2-track sampling digital delay, Panasonic SV-3500 DAT. **Cassette Recorders/Duplicators:** (2) Tascam 122. **Noise Reduction Equipment:** (2) Dolby 361 A. **Synchronization Systems:** SBX 80 MIDI Time Piece. **Echo, Reverb & Delay Systems:** EMT 140 stereo plate, Lexicon 224 digital reverb, AMS RMX 16 reverb, PCM 70 Dep, SP 2016 digital processor, DMX 15 -80 digital delay, Prime Time 2, (2) PCM 42 digital delay, AR 300 tape duplicator, Eventide 949 Harmonizer, Eventide phaser/flanger. **Other Outboard Equipment:** (2) API 550 A EQ, Pultec MEQ-5, Orban Stereo 622B EQ, UREI Stereo 532 graphic EQ, (4) Kepex II, (8) Dynamite compressor/gates, (6) Drawmer stereo gates, Teletronix LA 2A, (2) UREI 1176 limiter, (2) dbx 160X limiter, (4) Easy Rider compressor, Neve compressors, Dynaflex noise reduction unit. **Microphones:** Neumann U87, Neumann U47, Neumann M49, Neumann M269, AKG 414, AKG D12, AKG 451, Sennheiser 421, Sennheiser 441, Telefunken Tube 47, Electro-Voice RE20, Electro-Voice RE55, Shure SM57, RCA BX-44, RCA 77-DX. **Monitor Amplifiers:** Crown PSA-2, Crown DC-150. **Monitor Speakers:** UREI 813B, Yamaha NS-10, Auratone. **Musical Instruments:** Yamaha C-5 grand piano, Proteus, Korg M3R, Matrix 1000, SP 12 drum machine, Roland D-50 synthesizer, DX7 synthesizer, Emulator 2 synthesizer, Out-board 8 synthesizer, TX 816 rack, Yamaha custom recording drums, SVT Bass amp, Roland Jazz chorus guitar amp. **Other MIDI Equipment:** Macintosh SE30, Performer 3.42 software, MIDI Time Piece interface, SBX 80 sequencer, Akai 900 sampler. **Rates:** \$55 hr.

[24+] **RBY RECORDING AND VIDEO;** also REMOTE RECORDING; 920 N. Main St.; Southbury, CT 06488; (203) 264-3666; FAX: (203) 264-3667. **Owner:** Jack Jones, Evan Jones. **Manager:** Marjorie Jones.

[24+] **RED ROCK RECORDING;** also REMOTE RECORDING; Rd #4, Box 4135; Saylorsburg, PA 18353; (717) 992-5777. **Owner:** Kent Heckman. **Manager:** Lois Brownsey. **Engineers:** Kent Heckman, Mark Heath. **Dimensions:** Studio 25x22 with 17' ceiling with isolation room, control room 20x16. **Sound Lock:** 10x6. **Lounge:** 16x10. **Mixing Consoles:** Amek Magnum 36x24x8x2 4-band EQ and 8 aux sends 576-point patch bay. **Audio Recorders:** Sony/MCI JH-24 24-track, MCI JH-110 2-track, Panasonic SV-3500 DAT. **Cassette Recorders/Duplicators:** Sony MCI JH-24 24-track, Panasonic SV-3500 DAT, MCI JH-110 2-track, Nakamichi MR-1, MR-2 cassette decks. **Echo, Reverb & Delay Systems:** Lexicon 200, (2) Lexicon LXP-1, (2) Lexicon LXP-5, Lexicon PCM70, Alesis Quadraverb, Eventide H3000SE Ultra-Harmonizer, Ibanez SDR 1000, Roland SRY-2000, (2) Korg SDD-2000 sampling delay, (2) UREI LA-3A, (2) UREI 1176N, (3) UREI 7110, BBE 802 processors, Aphex 612 Expander I Gate, (4) Valley People Dyna-Mite noise gate/compressor/limiters, dbx 165, (4) dbx 160, Studio Technologies Mic PreEminence. **Other Outboard Equipment:** (2) UREI/Teltronix LA-3A compressor, (2) UREI 1176LN compressor, (4) dbx 160 compressor, Aphex 612 dual gate/expander (2) Valley People Dyna-Mite dual noise gate, Peavey Gate Keeper, Studio Technologies Mic-PreEminence mic preamp, BBE 802 Sonic Maximizer, Aphex Type B Aural Exciter, (3) UREI 7110 compressor. **Microphones:** Neumann U47 tube, (2) Neumann U87, (2) AKG C-414EB, AKG C-460, (2) Audio-Technica ATM-4031, Audio-Technica ATM-25, (2) ATM 31, (2) RCA 77D, Sennheiser 421, Sennheiser 441, (2) Electro-Voice RE20, (2) Shure SM81, (5) Shure SM57, (7) Stewart active direct box. **Monitor Amplifiers:** Halfler HD-500, (2) Carver PM-175 (headphones), Crown Microtech 1000. **Monitor Speakers:** JBL 4425, Tannoy PBM-6.5, (10) Fostex T-20, (10) AKG K-240. **Musical Instruments:** Yamaha C7F 7"6" grand piano, Yamaha DX7 synth, Korg M3R synth, Oberheim Matrix-1000 synth, E-mu Proteus 1, E-mu Proteus 2, Roland R-8 drum machine. **Other MIDI Equipment:** Lexicon MRC remote controller, Mark of the Unicorn MIDI Time Piece, Macintosh Plus w/45MB HD. **Rates:** \$60 per hour.

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REEL PLATINUM STUDIOS INC.
Lodi, NJ

[24+] REEL PLATINUM STUDIOS INC.; 259 Paterson Ave.; Lodi, NJ 07644; (201) 471-3464. Owner: Bob Allecca. Manager: Bob Allecca. Engineers: Bob Allecca, Bill Zicher. Mixing Consoles: Trident Series 80 32x24x24 automated. Audio Recorders: MCI JH-24 24-track w/Autolocator III w/16-track head stack, TEAC 80-8 8-track w/DX8 NR, TEAC A3440 4-track w/RX8 NR, Technics 1500 2-track, Sony PCM-F1 2-track digital. Cassette Recorders/Duplicators: (2) TEAC 122. Echo, Reverb & Delay Systems: Ecoplate II, (2) Lexicon Prime Time w/MEQ, Lexicon PCM42 w/MEQ, Eventide H949 Harmonizer, Eventide instant flanger, (2) Yamaha D1500, (2) Yamaha REV7, Lexicon 200, Roland 2000, Ibanez 1000, (4) Yamaha SPX90, (2) Lexicon LXP-1 w/LARC. Other Outboard Equipment: dbx 26-channel noise reduction, Kepex II, dbx 900 signal processing rack, gates/compressors/de-essers, (2) dbx 160 compressor/limiter, Orban 622B parametric EQ, TEAC GE-20 graphic EQ, Symetrix noise gates, White Instruments 1/3-octave room EQ, (2) Aphex Aural Exciter, (4) dbx 166 compressor/limiter. Microphones: Neumann U87, AKG 414, Sennheiser 441, Sennheiser MD-421, EV RE20, EV RE15, EV 635A, Beyer 201N, Shure SM57. Monitor Amplifiers: Yamaha 2200, Yamaha 2050. Monitor Speakers: JBL 4411, Yamaha NS-10M, Auratone. Musical Instruments: Yamaha acoustic piano, Yamaha DX7, Tama full drum set, Roland SBX-80, Yamaha RX11 digital drum machine, Roland MSQ-700, Akai S800 sampler, Roland D-550, Oberheim Matrix-1000, Emax HD, SE. Rates: Call (block rates available). Specialization & Credits: We offer in-house production, arranging, lead sheets, lull keyboard and drum machine programming. Credits: Mic Mac Records: EXO, Nancy Otero, Brian Brian, Soave, Johnny O, Cynthia, Solid, Rios, Shattered Glass, Body & Style & More; Next Plateau Records: C-Bank; Profile Records: Judy Torres, Routine 6; MGEM Prod. Inc.: Mickey Garcia, Elvin Molina; Jubo Prod.: Julian Hernandez, Bob Allecca; RCA Records: K.C. Flight.

[24+] RIGHT TRACK RECORDING; 168 West 48 St.; New York, NY 10036; (212) 944-5770; FAX: (212) 944-7258. Owner: Simon Andrews. Manager: Nancy West.

[24+] ROAR PRODUCTIONS RECORDING & MUSICAL SERVICES; also REMOTE RECORDING; 6655-H Dobbin Rd.; Columbia, MD 21045; (301) 596-2600; FAX: (301) 381-9486. Owner: Steven and Jerome Rosch. Manager: Steven Rosch. Engineers: Andrea Weatherhead, Michael Hamilton, Steven Rosch, Eric Wenocur, Steven Steckler. Dimensions: Room 1: studio 21x23, control room 22x16, Room 2: 18x23, control room 11x14, Room 3: control room 8x10. Mixing Consoles: Neotek Elan 40x24 w/80 returns at mixdown (room 1), Neotek Series II 24x8 (room 2), Ross 16x2 (MIDI ste.). Audio Recorders: Ampex ATR-124 24-track, MCI JH-16 16-track, Otari MTR-10C 2-track w/time "code track", Otari MX-50 8-track 1/2", Otari MX-5050 2-track, (5) Technics 1500 2-track and 4-track. Cassette Recorders/Duplicators: (5) Nakamichi ZX, MR-1, BX-100 master, (5) KABA Audiofile real-time/double time, Tascam 124AV 1/2 track. Noise Reduction Equipment: (26) dbx Type 1. Synchronization Systems: Adams-Smith Zeta-3 audio/video/MIDI. Echo, Reverb & Delay Systems: (2) Lexicon LXP-1 digital effects processor, Lexicon 300 digital effects processor, Lexicon LXP-5 digital effects processor, AKG BX-10 spring reverb, Ecoplate II plate reverb, ART DR1 digital reverb, ART DR2 digital reverb, (3) ART ProVerb digital reverb, Alesis Microverb II digital reverb, Alesis MIDIVerb digital reverb, (3) DeltaLab DDL effectors, Lexicon PCM42 DDL, MXR Flanger/doubler, Eventide H910. Other Outboard Equipment: (2) Aphex Compellor compressor, (2) Omni Craft GT-A passive noise gates/4 channels, (2) Symetrix 522 comp, limiter, expander, gates, Symetrix CL-150 de-esser/mono compressor, Audio Logic MTMT-66 compressor/noise gate (2) dynamic compressors/gates, dbx 162 stereo compressor, (2) Furman Quadgates noise gates 4 channels, Audio Logic MT-66 stereo compressors, Ashly Audio Parametric Equalizer—4 channels. Microphones: Neumann U47, (2) Neumann KM100, (4) AKG 414, (2) AKG 451, (6) Sennheiser 421, (2) Sennheiser 441, AKG D112, (2) EV PL20, (5) Shure SM57, (2) Shure SM58. Monitor Amplifiers: Crown DC-300, SCS 2350A, BGW 250B, Haller PRO-1200. Monitor Speakers:

KRK, Meyer Sound Labs HD-1, Ed Long MDM-4, Tannoy PBM-6.5, JBL 4313, JBL 4301. Musical Instruments: Oberheim OBXA digital/analogue synthesizer, 360 Systems ProMIDI Bass, 8-piece studio drum kit, Toyo 6'2" studio grand piano, Roland R-8 digital drums/human rhythm composer, Kawai K1 digital synthesizer, Oberheim DPX1 digital sample player, 360 Systems digital sampler keyboard Eprom, Yamaha TX FM tone generators. Video Equipment: Sony 5850 3/4" recorder w/remote. Rates: The lowest rates for pro studio in Washington/Baltimore—Call!

[24+] RODEL AUDIO SERVICES; 1028 33rd St. NW; Washington, DC 20007; (202) 338-0770; FAX: (202) 338-7695. Owner: Rodel Productions Inc. Manager: Renee Funk.

[24+] RPM SOUND STUDIO; REMOTE RECORDING only; 12 East 12 St. 11th Fl.; New York, NY 10003; (212) 242-2100. Owner: Robert Mason. Manager: Doreen Star.

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SABELLA RECORDING STUDIOS
Roslyn Heights, NY

[24+] SABELLA RECORDING STUDIOS; also REMOTE RECORDING; 49 Oakdale Rd.; Roslyn Heights, NY 11577; (516) 484-0862. Owner: James Sabella. Engineers: Jim Sabella, Bill Martin. Dimensions: Studio 17x22 w/6x8 vocal booth, control room 14x16. Mixing Consoles: Neve 8068 MkII w/VCA grouping (automated) mega mix. Audio Recorders: Studer A80 24-track, MCI JH-110 2-track, (2) Ampex AG350 2-track w/15 and 30 ips, Sony DTC-1000ES DAT digital. Cassette Recorders/Duplicators: (2) Harman Kardon CD-491. Echo, Reverb & Delay Systems: Lexicon 200 reverb, Eventide H3000 Harmonizer, TC Electronic TC-2290, (2) EMT ST 140 reverb, EMT 240 reverb, Bel delay, EMT 251 Reverb, Lexicon PCM41, Lexicon Prime Time Delay. Other Outboard Equipment: (4) Drawmer dual noise gate, (9) Pultec equalizer, (2) UREI 1176 limiter, JREI LA-175B, (2) Neve limiter, (2) Neumann limiter, CDT expander. Microphones: (5) Neumann U87, (2) Neumann M49B, (2) Neumann U67, (2) Neumann U47FET, Neumann KM86, Neumann KM84, (2) AKG 414, (2) AKG 451, AKG D-12, (6) Shure SM57, (4) Sennheiser 421, (2) Sony C-37, (2) Beyer M150, (2) Beyer M88, EV RE20, Neumann U47 tube. Monitor Amplifiers: Perreaux 8000B, (2) Haller, Mac 60 tube. Monitor Speakers: (2) Altec Big Red, Tannoy PBM-6.5, Yamaha NS 10. Musical Instruments: Baldwin baby grand piano, Gibson Les Paul, Gibson L5 guitar, Dan Electro guitar, Fender Stratocaster guitar, Fender Precision bass, Fender Telecaster guitar, Rickenbacker guitar, Guild acoustic guitar, Fleta nylon-string guitar, Ludwig drum set, Matrix-1000, DX7, 802, Alesis HR-16 drum machine, Linn-Drum, Groove Tube studio series guitar amp, Marshall 100-watt guitar amp, Marshall Vintage 4x12 cabinet, Alesis SR-16, Roland D-50, Emu-Emax sampler, James Demeter studio series GTR amp. Other MIDI Equipment: Macintosh SE w/Studio 3 and Performer software, IBM AT, MSB REV2 Video Equipment: JVC 1/2" recorder. Other: (8) Simmons direct box, James Demeter direct box. Rates: Available upon request. Specialization & Credits: Offering complete recording services including television and film scoring, narration, radio spots and jingles, editing and dubbing, high-speed duplication plus all mastering needs, and Macintosh SE computer with complete MIDI workstation. Also...producer with contacts with major record labels like Atlantic, PolyGram, Geffen, CBS, Warner Bros., etc., and also many independent labels, offering services to talented artists and bands: He will help you record, arrange and produce your material to shop to these record labels and open doors and get your music heard. We are offering you the complete package at a price you can afford. Call now for details, Monday through Friday, EST 1:00-6:00 pm. Ask for Jim.

[24+] SAINTS AND SINNERS SOUND STUDIO; also REMOTE RECORDING; 432 Western Ave.; Albany, NY 12203; (518) 454-5278; FAX: (518) 438-3293. Owner: College of St. Rose. Manager: Mary Anne Nelson.

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[24+] HOWARD M. SCHWARTZ RECORDING INC.; also REMOTE RECORDING; 420 Lexington Ave., Rm. 1934; New York, NY 10170; (212) 687-4180; FAX: (212) 697-0536. Owner: Howard M. Schwartz. Manager: Beth Levy. Engineers: Roy Latham, George Meyer, Richie Becker, Joe Vagnoni, John Alberts, Ralph Kelsey, Michael Unger, Larry Fane, Marty Newman—chief eng. **Mixing Consoles:** (2) SSL 6048G w/Total Recall. (5) Sony MXP-3036 w/ADS automation, SSL 40486. **Audio Recorders:** (2) Sony PCM-3348 48-track digital, (5) Sony PCM-3324 24-track, (2) Studer A820-24 24-track, (6) Otari MTR-90 MkII 24-track, (4) Studer A820 2-track w/center-track time code, Nagra IVs TC, recorder, (14) Otari MTR-10 2-track w/center-track time code, (4) MCI JH-110C 4-track, (6) MCI JH-110B 2-track, Sony D-10 R-DAT, Panasonic SV255 R-DAT, (4) Otari MTR-10 4-track. **Cassette Recorders/Duplicators:** (16) Nakamichi MR1, (4) Sony TLD 5M, (3) Magnafax high-speed duplicator. **Noise Reduction Equipment:** Dolby SR-XP 24 channel, (3) Dolby XP-A 24-channel, (5) Dolby A 24-channel, (10) Dolby 361 2-channel, Dolby SR 2-channel. **Synchronization Systems:** (2) Adams-Smith 2600 AV editor/sync system, (2) Adams-Smith 2600 compact control system, (2) Adams-Smith Zeta-3, (3) EECO MOS-100A, (3) EECO code generator. **Echo, Reverb & Delay Systems:** EMT 250 digital reverb, (2) EMT 140S stereo plate, Lexicon PCM70 digital reverb, (4) Lexicon PCM60 digital reverb, (10) Lexicon PCM42 digital delay, (8) Yamaha SPX90 digital reverb, (3) Yamaha REV5 digital reverb, (4) Yamaha REV7 digital reverb, (3) Eventide Ultra-Harmonizer, AKG ADR-68K. **Other Outboard Equipment:** (8) Pultec EQ, (5) LA-2A limiter, (24) dbx 160X limiter, Roland E-660 digital EQ, (2) Eventide Harmonizer, (2) Orban paragrahic EQ, UREI Little Dipper, (4) Aphex 612 noise gate, (2) John Hardy mic preamps, Lexicon 2400, Digital Workstations: (2) SSL Screen Sound, Compusonics, Geffen Systems **Microphones:** (24) Neumann, complete assortment, (9) AKG C-414, (18) Sennheiser complete assortment, (4) RCA ribbon. **Monitor Amplifiers:** Complete assortment. **Monitor Speakers:** (30) complete assortment. **Musical Instruments:** Steinway concert grand piano, Yamaha studio series drums, Yamaha DX7 synth, (4) Fender, Roland, Ampeg amps, (2) Fender Rhodes. **Other MIDI Equipment:** (6) Studer Telephone Hybrid, CompuSonics digital workstation, (7) Magna-Tech film dubber, stereo digital satellite uplink and downlink. **Video Equipment:** (2) Sony DVR-10 digital recorder (D2 format), (3) Sony BGH-3100 1" C-format recorder, (2) Sony BVH-2000 C-format, (2) Sony BVJ-780 3/4" recorder, (4) JVC CR850 3/4" recorder, (3) JVC CR8250 3/4" recorder, (8) Tektronix assorted monitors, (7) Sony 25" XBR pro monitor, Ikegami 13" high-resolution monitor, (4) GVG distribution, Tektronix 1750 video generator, (4) Ampex VCR-2 serial remote control, Sony Beta SP

[24+] SECOND CITY SOUND STUDIOS INC.; 67-B Glen Cove Ave.; Glen Cove, NY 11542; (516) 759-9110; FAX: (516) 674-4204. Owner: Clay Hutchinson. Manager: Clay Hutchinson. Engineers: Clay Hutchinson, Mario Vasquez, John Rispoli. **Dimensions:** Room 1: studio 34x36, control room 34x17, Room 2: studio 5x5, control room 15x18. **Mixing Consoles:** Neve 8078 w/Necam 96 automation 40x24, Soundcraft 600 28x8. **Audio Recorders:** Studer A827 24-track, (2) Studer A80 24-track, Studer A80 2-track 1/2", (2) Studer B67 2-track 1/4", Ampeg AG-440-C 2-track 1/4". **Cassette Recorders/Duplicators:** Nakamichi MR-1, Nakamichi BX-100, Panasonic SV-3700 DAT, Panasonic SV-255 DAT, Studer A710. **Synchronization Systems:** (2) Lynx TimeLine. **Echo, Reverb & Delay Systems:** Lexicon 224XL, Lexicon PCM60, Lexicon PCM70, EMT 140 Plate, Eventide 3000SE, (2) Eventide Harmonizer 910, (4) GML mic pre, (2) GML EQ, (2) LA-2A limiter, (4) LN-1176 limiter, (2) LA-3A limiter, (8) Kepex II, (2) API 550 EQ, (4) dbx 160 VU, (2) dbx 160X, (2) Lexicon PCM42, Lexicon 200 reverb, AMS RMX 16, Aphex Aural Exciter, (2) Pultec EOP-1A, Pultec MEG-5, dbx 165, Yamaha SPX90, Yamaha REV7, (6) Drawmer Gates. **Microphones:** (8) AKG 414, (6) AKG 452, (4) Neumann U87, (2) Neumann U67, Neumann U47, AKG The Tube, (8) 421, (4) EV RE20, (2) AKG D-12. **Monitor Amplifiers:** UREI 6500, (2) Crest 3001, (2) Crown MA2400, Macintosh 2150. **Monitor Speakers:** UREI 813B, (2) Yamaha NS-10M. **Musical Instruments:** (8) Yamaha DX7. **Other MIDI Equipment:** Macintosh SE, Alan 1040, SBX-80, S-900, MIDI Moog,

Korg M1, TX-802, TX-812, Super JX, P-330, Studio 3, (8) TX-816. **Other:** (6) Marshall, Boogie, Jazz Chorus, B15N amps, Magnavox CD player, Onkyo CD player.



SHEFFIELD AUDIO-VIDEO PRODUCTIONS
Phoenix, MD

[24+] SHEFFIELD AUDIO-VIDEO PRODUCTIONS; also REMOTE RECORDING; 13816 Sunnybrook Rd.; Phoenix, MD 21131; (301) 628-7260; FAX: (301) 628-1977. Owner: John J. Anosa, Jr. Manager: Richard Van Horn, vp. Engineers: William Mueller—chief engineer, Fred Derby, Garth Michael. **Dimensions:** Room 1: studio 50x40, control room 25x20, Room 2: studio 21x16, control room 22x20'8". **Mixing Consoles:** Solid State Logic 4048E G-computer w/Total Recall, Neve 8068 MkII, Neve 5104, Neve 8036. **Audio Recorders:** (2) Sony PCM-3324 multitrack, (2) Otari MTR-90 MkII, (2) Sony 3202 2-track digital, Studer A810, Studer B67, Studer A80 1/2-track, Sony PCM-2500 DAT. **Cassette Recorders/Duplicators:** (12) Tascam 122 MkII, (13) Nakamichi MR12. **Synchronization Systems:** TimeLine Lynx, Cipher Digital, Echo, Reverb & Delay Systems: AMS 15-80S, Lexicon 224XL, EMT-140S, Lexicon Prime Time, Lexicon 200, Yamaha SPX90 II, Yamaha REV5, Eventide Ultra Harmonizer (fully loaded), Sony DAL 1000 digital limiter, Barcus-Berry 833, Yamaha D1500, AMS RMX16, TC Electronics 2290, Yamaha REV7, Drawmer M-5000 gate, Sontec limiter/compressor. **Other Outboard Equipment:** 12 channels of Sontec mic preamps and EO. **Microphones:** AKG, B&K, Crown, Neumann, Sennheiser, Shure, Sony, etc. **Monitor Amplifiers:** Crown, UREI, Crest. **Monitor Speakers:** UREI 811, Yamaha NS-10M. **Musical Instruments:** Yamaha C7 piano, Sonar drums, Hammond B3, Kurzweil 250. **Other MIDI Equipment:** Waveframe Digital Workstation, Mac Plus computer. **Video Equipment:** (9) Ampex 1" VTR, Betacam SP 75 w/Dynamic tracking, Quantel Mirage w/Starlight, ADO NEC System 10, Ampex VPR 5 portable 1", (2) Ampex Ace editor, Ampex ESS5—graphic and still store system, Ampex AVC 33 switcher w/3 ME, 2 channels of Ampex digital optics, Quantel PaintBox V Series, Ikegami HL-55 chip cameras, 44x52 soundstage, (2) 1" video edit suites, video remote truck. **Specialization & Credits:** We specialize in remote digital and analog multitrack recording, as well as audio and video production and post-production. Our new remote truck is a 48' custom-built tractor trailer with a Solid State Logic 4048E w/G Series computer and Sony multitrack digital recorders. The truck also offers a Neve auxiliary console, Sontec mic pre-amps and EO. Some recent recordings include Disney/MGM Raiders of the Lost Ark and Cranium Command, The John DeBella Show for Fox TV w/Hall and Oates, Tommy Conwell, Grover Washington, etc. CBS new artist jazz series, Vixen, Billy Joel, Childs Play, B.B. King, Polygram/Wing Records, Aretha Franklin, SRO concert series, Laura Brannigan, Wynton Marsalis, Hooters, Elektra Records and others.

[24+] SHELTER ISLAND SOUND; 30 W. 21st St.; New York, NY 10010; (212) 366-6633; FAX: (212) 366-0465. Owner: AGF Entertainment Ltd.

[24+] SIGMA SOUND STUDIOS OF NEW YORK; also REMOTE RECORDING; 1697 Broadway, 10th Fl.; New York, NY 10019; (212) 582-5055. Owner: Sigma Acquisition Corp. Manager: Gary Robbins, Luke Ebbin.

[24+] SILVER CITY STUDIOS; also REMOTE RECORDING; 944 Somersett Ave.; Taunton, MA 02780; (508) 823-9014. Owner: Ronald W. Pires. Manager: Cynthia Moreau.

[24+] SKYLINE STUDIOS; 36 W. 37th St.; New York, NY 10018; (212) 594-7484; FAX: (212) 239-9776. Owner: Paul Wickliffe, Lloyd Donnelly. Manager: Barbara Moutenot. Engineers: Francis Manzella, Patric Dilett, Katherine Miller, David Schiffman, John Williams, Hiro Ishihara, Michael Jurewicz, Justin Luchter, Doreen Pinto, Tara Sheehan, Richard Lamb, Andy King, Sandy Jenkins, Rod Hohl, Maureen Kennedy. **Dimensions:** Control Room 3: 25x20x12, Studio 3: 30x30x13, plus 2 iso booths: 8x10x7x12, Control Room 6: 25x23x11, Studio 6: 32x30x12, plus 3 iso booths: 12x16, 9x11, 6x8, MIDI Room: 25x22x11, plus 1 iso booth: 8x12. **Mixing Consoles:** Studio 3: SSL 4064G w/60-channels Total Recall. Studio 6:

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SSL 4064 VU w/60-channels G Series Total Recall. MIDI room: Amek 2500 35-inputs. **Audio Recorders:** (4) Studer A800 MkIII 24-track, Studer A8202-track w/ 1/2" heads & 1/4" CTS heads. Studer A80 2-track w/ 1/4" & 1/2" heads. Studer A80 4-track 1/2". Studer B67 1/4" 2-track or mono. Mitsubishi X-800 32-track w/Apogee filters. Otari MTR-90 MkII 24-track. Ampex ATR-102 2-track. (2) Sony PCM-2500 DAT. Technics 1500 2-track 1/4 track heads available. (7) TEAC 122 MkII. **Noise Reduction Equipment:** (2) Dolby XP-24. (6) Dolby Type A 361 for 2-tracks. Dolby 363 SR/A 2-track. **Synchronization Systems:** (2) TimeLine Lynx module. (3) JVC 3/4" video decks. **Echo, Reverb & Delay Systems:** (2) EMT 140 stereo plate reverb w/remote. EMT 240 stereo gold foil plate reverb w/remote. (2) AMS RMX 16. (2) Yamaha REV7. Lexicon 480L. (2) Lexicon 224XL. (2) Quantec stereo QRS room simulator. (3) Yamaha SPX90. (3) Lexicon PCM70. Compuelectra. (4) Eventide 949 Harmonizer. (2) Eventide H3000 Ultra-Harmonizer. (2) ADR Panscan. Marshall Time Modulator. Marshall Tape Eliminator. Roland Dimension-D stereo chorus. Eventide stereo flanger. UREI digital metronome. (2) AMS DMX 15-80S (6.4s, 3.2s). Lexicon Prime Time II. (5) Lexicon PCM42. Lexicon PCM41. **Other Outboard Equipment:** (8) Neve 1064 3-band EQ. Focusrite 115HD dual EQ. Massenburg B200 EQ. (2) Pultec EOP-1. Pultec MEO-5. Tube-Tech PE-1A. (2) API 550A. (4) API 560. (4) API 523. APSI. (2) Klark-Teknik DN360. (2) LA-2. Neve 32254E stereo. (2) UREI 1176. (6) dbx 160x. (2) dbx 165A. (6) Kepex II. (4) Drawmer dual noise gates. **Microphones:** (2) Neumann U47 tube. (2) Neumann U47 FET. Neumann M49. (2) Neumann U67. (4) Neumann KM84. (6) Neumann U87. (6) AKG 414. (5) AKG 451. (2) AKG 460. (2) AKG D-12. AKG D-112. (2) AKG 202. (10) Sennheiser 421. Sennheiser 441. Sennheiser 815 shotgun. (2) Shure SM81. (6) Shure SM57. (2) Shure SM58. Shure SM545. Sony ECM-22P. Sony ECM-33. Sony C-37P. Sony C-37A tube. Sanken CU41. (2) Beyer M88. (2) Beyer M160. (2) Beyer M500. Calrec CM 1050C. Altec 688B. (2) Altec sail-shakers. Electro-Voice RE20. Electro-Voice RE15. (2) Electro-Voice 666. (2) RCA 77-DX. RCA 44. **Monitor Amplifiers:** (8) Yamaha 2002. (2) Crown MT-600. (2) McIntosh 2100. (2) Custom "time aligned" main stereo speaker systems w/40 cubic ft. enclosures. Altec 6048K coaxials. TAD low frequency drivers. UREI custom cross-overs. **Monitor Speakers:** (3) Yamaha NS-10M. Celestion 100s. Electro-Voice Sentry 100s. AR 18s. JBL 4311s. Auratones. ROR cubes. **Musical Instruments:** Steinway B grand piano circa 1896 (rebuild). Yamaha C7E grand piano. Hammond C-3 organ w/Leslie. Fender Rhodes Suitcase 73. Yamaha DX7IIFD digital synthesizer. Akai S900 sampler. Roland JC-120. Fender Marshall & Ampeg guitar & bass amps. Yamaha Recording Series drum kit w/(3) snares. (5) toms and Zildjian cymbals. Pearl Pro drum kit. custom built bass rig w/McIntosh tube amp and Alembic pre-amp. SBX80 Roland sync box.

U87. AKG C-451 EB. **Monitor Amplifiers:** Yamaha M60. Yamaha M40. (4) Yamaha P2075C. Yamaha P2050. Crown DC-300A Series II. **Monitor Speakers:** (2) KEF 104.2. (4) KEF 103.2. (4) Auratone cube. **Musical Instruments:** Kurzweil 250 digital sampler w/extensive Macintosh sound library. Yamaha DX7E FM synthesizer. Yamaha TX7 FM sound module. Roland Planet P keyboard module. Ibanez MIDI guitar controller. Roland Juno-6 analog synthesizer. **Other MIDI Equipment:** Southworth Jam Box4+. Macintosh Plus w/4 megabytes RAM. Performer/Composer/Finale software. Opcode/Laure Spiegel's Music Mouse. Farallon Mac recorder. DX editor/Ibran. Sound Designer II software. **Video Equipment:** Sony VO-5850 3/4" VCR. Sony VO-5800 3/4" VCR. Sony VO-5600 3/4" VCR. Sony RM-440 editor. Tektronix WaveFrame monitor and vector scope. JVC monitor. JVC VHS Hi-Fi duplicator. Macintosh Ixx w/8MB RAM 160MB HD. Mac Ixx w/8MB RAM. 160MB HD. NuVista & 4MB videoboard. Disquest Animaq video controller board. Raster Ops color board 364. Mass Micro Color Space II NTSC video board. Macromind Director w/accelerator. Paracom Swivel 3D and Electronic Arts Studio/32. NEC. Panasonic. Mitsubishi. Sony. Electrohome monitors. extensive type libraries for DTF. OnniMedia 24-bit color scanner. **Other:** Pyxis digital video effect generator w/TBC. (4) Macintosh Plus computer. (2) Technics SL-P720 CD player. Fast Forward F-21 time code reader/generator. EECO time code reader. Macintosh IICI w/5MB RAM. E-rabyte tape back-up system. (2) Sun SPARC stations. **Rates:** 24-track A/V O. lock synchronization \$120/hr. 24-track mix \$100/hr. 24-track record/mix — nights and weekends \$75/hr. 8-track \$65/hr. 3/4" offline editing \$60/hr. **Specialization & Credits:** Sonic Images specializes in award-winning music productions for all multimedia presentations and broadcasts. All styles are employed. from solo to full orchestral scores. Working in our LEDE control rooms designed by Neil Muncy ensures you the most accurate audio image available today. With state-of-the-art audio/video synchronization tools on hand, we can offer your show the highest quality production at affordable prices. Our award-winning team produces a wide range of programs as well as offering complete audio production for radio, album, cassette or CD. Call us for a bid on your next project—be it music, script, talent or a complete presentation—and ask us about our current CD-1 projects with American Interactive Media (AIM), a Philips/PolyGram Corporation. In addition, Sonic Images now offers complete digital audio editing and preparation for CD-1 and other multimedia platforms.

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SONIC IMAGES PRODUCTIONS INC.
Washington, DC


[24+] **SONIC IMAGES PRODUCTIONS INC.**; also *REMOTE RECORDING*; 4590 MacArthur Blvd. NW; Washington, DC 20007; (202) 333-1063. **Owner:** John Ramo, Jolie Barbieri, Zenon Slawinski. **Manager:** David Hibbitts. **Engineers:** Zenon Slawinski, John Ramo, David Hibbitts, Radomir Dikosavljevic. **Dimensions:** Room 1: studio 16x14, control room 22x14. Room 2: studio 12x12, control room 12x9. Room 3: video edit suite 10x12. **Mixing Consoles:** Neotek Series II 28x8x2. Sound Workshop Logex 8 20x8x2. **Audio Recorders:** Otari MX-5050 2-track. (2) Otari MX-5050BII 2-track. Otari MX-5050 MkIII 2-track. Otari MTR-12 2-track w/center-track time code. Sony PCM F1 2-track digital. MCI JH-110 4-track. Otari MX-5050 MkIII 8-track. MCI JH-24 24-track. Digidesign Sound Tools w/Pro/IO. DAT I/O on Macintosh IIfx. Panasonic SV-3700 DAT. **Cassette Recorders/Duplicators:** (2) NAD 6050C. TEAC W4040C. **Noise Reduction Equipment:** (4) dbx 150X 2-channel. dbx Type I 8-channels. (2) Dolby SR/A model 363 2-channel. **Synchronization Systems:** Audio Kinetics 4.10 w/Eclipse head. **Echo, Reverb & Delay Systems:** (2) Yamaha REV7 digital reverb. Yamaha SPX90 digital effects unit. MXR digital delay. **Other Outboard Equipment:** Aphex Type C Aural Exciter. dbx 166 2-channel compressor/limiter/gate. (2) Symetrix CL-100 compressor/limiter. **Microphones:** (4) Sennheiser 421. (2) Electro-Voice RE20. (2) AKG C-460B. (2) Neumann



SONY CLASSICAL PRODUCTIONS INC.
New York, NY

[24+] **SONY CLASSICAL PRODUCTIONS INC.**; *REMOTE RECORDING* only; 1370 Ave. of Americas, Ste. 2301; New York, NY 10019; (212) 445-1800; FAX: (212) 262-0228. **Owner:** Sony Classical GmbH, Hamburg GR. **Manager:** Mike Abercrombie. **Engineers:** Bud Graham, Kevin Boutote, Christian Constantinov, Charles Harbutt, Bob Wolff. **Mixing Consoles:** Sony MXP-3036 (modified) w/GMI automation **Audio Recorders:** Sony PCM-3348. Sony PCM-3324A. Sony PCM-3402. Studer A820 w/Mark Levinson electronics. Sony PCM-1630/DMR-4000. **Cassette Recorders/Duplicators:** Nakamichi MR-1. **Noise Reduction Equipment:** Dolby SR/A. **Synchronization Systems:** Adams-Smith 2600. **Echo, Reverb & Delay Systems:** Lexicon 480L. Lexicon 300. **Microphones:** B&K 4006. B&K 4009. B&K 4011. Neumann KM130. Neumann KM140. Neumann KM150. Neumann TLM170i. Schoeps MK-2. Schoeps MK-2S. Schoeps 4. Schoeps Colette series. Sennheiser MKH-20. Sennheiser MKH-30. Sennheiser MKH-40. **Monitor Amplifiers:** Mark Levinson ML-23. **Monitor Speakers:** B&W 801 matrix. **Video Equipment:** Sony BVU-950 (NTSC & Pal versions) U-matic. Sony PVM-2503 NTSC monitor. Sony PVM-2040QM. Sony PAL monitor. **Other:** Sony DAE-3000 digital audio editing system. Sonic Solutions CD premastering system. Sonic Solutions 8-track hard disk editing system. Sonic Solutions NoNoise system. **Specialization & Credits:** We continually record a wide variety of productions on location throughout the U.S. and Europe. Our New York studio is a digital audio post-production facility with special expertise in digital audio for picture, either NTSC or PAL, as well as exemplary restoration of analog masters to compact disc. —LISTING CONTINUED ON NEXT PAGE

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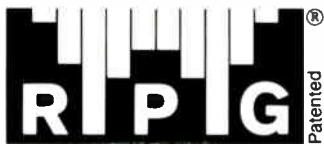
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[24+] **SONY MUSIC STUDIO OPERATIONS**; 49 E. 52nd St.; New York, NY 10022; (212) 445-2958; FAX: (212) 755-8311. Owner: Sony. Manager: Rob Grabowski.

[24+] **SORCERER SOUND**; 19 Mercer St.; New York, NY 10013; (212) 226-0480. Manager: Vera Beren. Specialization & Credits: Sorcerer Sound is a full-service, two-room facility using the finest equipment, customized by Acoustilog for peak operation. We offer in-house, top-quality maintenance, with a fully stocked shop. Our environment is totally unique, and the rates are sensible. Please call to arrange a tour.

[24+] **SOUND DESIGNERS INC.**; also REMOTE RECORDING; 424 W. 45th Street; New York, NY 10036; (212) 757-5679. Owner: Sound Associates and Fox and Perla. Manager: Gene Perla.

[24+] **SOUND ON SOUND RECORDING INC.**; 322 W. 45th St.; New York, NY 10036; (212) 757-5300; FAX: (212) 757-5816. Owner: David Amlen. Manager: Zack Davis.



SOUND TECHNIQUES INC.
Boston, MA

[24+] **SOUND TECHNIQUES INC.**; 1260 Boylston St.; Boston, MA 02215; (617) 536-1166; FAX: (617) 536-4446. Owner: Sound Techniques Inc. Manager: Lance Duncan. Engineers: Lance Duncan, Jim Anderson, Rick Sweetser. Dimensions: Room 1: studio 30x20, control room 18x27. Room 2: studio 20x20, control room 18x27. Room 3: studio 10x10, control room 15x17. **Mixing Consoles**: SSL 4056 G Series 48 inputs w/Total Recall, Neve V Series 36-input, Allen & Heath 54BER series 32-input. **Audio Recorders**: Sony 5003V 2-track analog w/time code, Mitsubishi X-86 2-track digital, Otari MX-70 16-track analog, Sony APR-24 24-track analog, (2) Sony PCM-3324A 24-track digital, Otari MTR-10 2-track w/time code, Sony 2-track digital. **Cassette Recorders/Duplicators**: Nakamichi MR-1. **Noise Reduction Equipment**: dbx Type I 16-channels. **Synchronization Systems**: Timeline Lynx w/system supervisor. **Echo, Reverb & Delay Systems**: Lexicon 480L, (4) Roland SDE-3000, Quantec QRS-XL digital processor, Klark-Teknik DN780, Dynacord DRP-20, Lexicon 224 V. 4. 4, (2) Yamaha REV5, EMT 240 stereo plate, (2) Lexicon PCM70, (2) Eventide H3000, (2) Yamaha SPX90II, Lexicon LXP-1, Lexicon LXP-5, Lexicon MRC MIDI controller,

(2) Lexicon PCM42. **Other Outboard Equipment**: Tubetech CLIA tube compressor, (2) VA175 tube compressor (3) dbx 900 rack w/902/903/904/905/907 26-ch., (2) dbx 165A comp/limiter, (4) Kepex II noise gate, Aphex Compellor level processor, (5) dbx 166 comp/noise gate, Dynedged 4-channel exciter, BBE Sonic Maximizer, (2) Orban 622B EQ, dbx 160X comp/lim. **Microphones**: (4) Neumann U87A, (2) Neumann U67, Neumann U47, Neumann U47 FET condenser, AKG C-24 stereo tube condenser, (8) AKG C-414 EBULS, (4) AKG C-46 OULS, (2) Beyer MC-740N large diaphragm condenser, PLM DC96 condenser, (2) Neumann KM841 small diaphragm, B & K 4003, (3) Beyer M160N. **Monitor Amplifiers**: (4) Bryston 7B, (2) Bryston 2B, (8) various Crown, AB. **Monitor Speakers**: (2) Westlake BBSM12 series, Tannoy LGM, (2) Meyer HD1, Yamaha NS-10, Westlake BBSM4. **Musical Instruments**: Young Chang 7' concert grand piano, Roland JX-10, Akai S1000, Roland D-550, Yamaha DX7. **Video Equipment**: (2) Sony VH-3100 1". Sony BWV-70 Betacam SP, (4) Sony VO-5850 3/4. **Other**: Digidesign Sound Tools w/1 hr. stereo capacity, SSL ScreenSound—audio-for-video & film hard disk recording system. **Rates**: \$110/hr to \$325/hr. **Specialization & Credits**: Sound Techniques is a new audio facility in Boston designed to accommodate the most demanding recording sessions. Highly qualified engineers and the finest equipment facilitate the completion of virtually any audio project, whether it be recording an album, mixing to picture or working on a spot. Three independent suites are linked through a central machine room, offering a wide selection of equipment packages and acoustic environments. The spacious control rooms of all three suites are acoustically designed for accuracy and highly detailed listening. Studios A & B are live, dynamic rooms with extremely natural, even decay and contain both "live" and "warm" isolation booths. Studio C is set up primarily for pre-production, MIDI production, overdubs, and voice-overs. Our well-known staff enjoys a reputation for friendly, efficient service. A kitchen and lounge are located within the facility, and a wide range of restaurants, hotels and nightclubs can be found nearby.

[24+] **SOUNDESIGN**; Main Street Gallery, 181 Main St.; Brattleboro, VT 05301; (802) 257-1555. Owner: Billy Shaw. Manager: Joanne Singer. Engineers: Billy Shaw, Joe Podlesny, Al Stockwell. Dimensions: Studio 28x30 w/separate iso room, control room 28x18. **Mixing Consoles**: Sound Workshop 28X32. **Audio Recorders**: Sony/MCI JH-24 24/16/8-track, MCI JH 2-track, Otari MX-5050 8-track, (3) Otari MX-5050B 2-track, Revox A77 2-track, Audionics AV132B 2-track reel-to-reel high-speed duplicators, Panasonic RV-3500 DAT. **Cassette Recorders/Duplicators**: Nakamichi, (10) Akai FX71, Otari DP-4050 high-speed duplicators. **Noise Reduction Equipment**: (24) dbx. **Echo, Reverb & Delay Systems**: Yamaha REV7, (2) Yamaha SPX90, Lexicon digital reverb, Master-Room XL-210 stereo reverb, Korg sampling digital delay, Effectron DDL, (2) MXR DDL. **Other Outboard Equipment**: (8) Valley People Kepex, (2) UREI 1176N limiter, (2) Teletronix LA-2A tube compressor, (2) dbx overeasy compressor, (2) Ashly Audio stereo parametric EQ, (4) Omni Craft noise gate, (4) Ashly Audio limiter, Altec Voice IIE 27-band stereo graphic EQ, MXR 15-band EQ. **Microphones**: (4) Neumann U87, Neumann KM84, Neumann KM81, AKG C-414, AKG 451E, (8) Sennheiser 421, (2) Sennheiser 441, (2) Sennheiser 403, AKG D-12, (4) AKG SE-10, Shure SM57, Shure SM58, Shure SM85. **Monitor Amplifiers**: Crown DC-300A, BGW, Soundcraft. **Monitor Speakers**: JBL 4311, Yamaha NS-10M, Auratone, custom air-suspension system. **Musical Instruments**: IBM computer for automation w/music software, Yamaha C 6'6" grand piano, Ludwig drum kit, Oberheim DMX drum machine, Fender Twin, Fender Princeton, (2) Crate amplifier, Ampeg B15, Yamaha DX7, Roland JX-3P, Kurzweil K1000. **Rates**: Block book and prepay discounts available. 24-track \$50/hr., 16-track \$40/hr., 8/2-track \$30/hr.

[24+] **SOUNDHOUND INC.**; also REMOTE RECORDING; 45 W. 45th St., 4th Fl.; New York, NY 10036; (212) 575-8664; FAX: (212) 575-9412. Owner: Jeffrey B. Berman. Manager: Joel Beckerman. Specialization & Credits: Radio and television audio post-production in 4 mixing suites. Film mixing to video, industrial and audio/visual track creation, 40 music libraries for stock music picks, stock and custom sound effects, casting services, real time and high speed duplication, original scoring, multiplex digital satellite. Staff engineers: Hank Aberle, Rick Granoff, Frank Tomaino.

[24+] **SOUNDMIRROR INC.**; also REMOTE RECORDING; 76 Green St.; Boston, MA 02130; (617) 522-1412; FAX: (617) 524-8377. Owner: John Newton. Specialization & Credits: Soundmirror's two post-production suites offer complete mixing, editing and mastering entirely in the digital domain. We offer disk-based 24-track mixing and editing utilizing a Lexicon Opus, and our Sony editing suite is available for 2-track editing and CD mastering. Mix to picture or sound with picture can be accomplished in either studio. In addition to our international reputation in classical recording and post-production, we are New England's premier CD mastering facility, having earned listings in the hundreds of recordings in all genres of music. All of this complements our extensive location recording capabilities in Europe and North America. The quality of our work is demonstrated by numerous Grammy nominations and frequent listings in the Billboard classical and crossover listings.

[24+] **SOUNDTRACK N.Y.**; 936 Broadway/25 E. 21st; New York, NY 10010; (212) 420-6010; FAX: (212) 533-6758. Owner: Rob Cavicchio. Manager: Gail Nord.

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[24+] **SOUNDTRACK RECORDING STUDIOS;** also REMOTE RECORDING; 77 N. Washington St.; Boston, MA 02114; (617) 367-0510; FAX: (617) 367-1521. Owner: Rob Cavicchio. Manager: Jeanne McGrail.

[24+] **SOUNTEC STUDIOS INC.;** also REMOTE RECORDING; 25 Van Zant St.; E. Norwalk, CT 06855; (203) 853-3433; FAX: (203) 855-1508. Owner: Richard Hodgson. Manager: Melissa Cooper.

[24+] **SPLASH PRODUCTIONS;** also REMOTE RECORDING; 123 W. 28th St., #2W; New York, NY 10001; (212) 695-3665. Owner: D. DiPaola/G. Ricciardi. Manager: Danny Dee.

[24+] **STARDUST RECORDING STUDIO;** 615 Valley Rd.; Upper Montclair, NJ 07043; (201) 746-2359. Owner: George Louvis. Manager: Jeff Chambers.

[24+] **STUDIO 900;** 900 Broadway, Ste. 905; New York, NY 10003; (212) 529-3285. Owner: Joe Johnson. Manager: Joe Johnson.

[24+] **STUDIO UNICORN;** also REMOTE RECORDING; 109 Lenox Ave.; Bridgeport, CT 06605; (203) 333-0736. Owner: Paul Avgerinos. Manager: Paul Avgerinos.

[24+] **SUPERDUPE;** 295 Madison Ave., 15th fl.; New York, NY 10017; (212) 683-6854. Owner: Gordon Media Companies. Manager: Jon Adelman. Engineers: Gary Arnold, Tony Brainard, Gordon Miller, Henri Protti, Mitch Raboy, Arnie Rosen, Bill Smith, Brian Turner. Dimensions: Room 1: studio 10x6, control room 22x17. Room 2: studio 10x6, control room 22x17. Room 3: studio 10x6, control room 22x17. Room 4: studio 10x6, control room 19x15. Room 5: studio 10x16, control room 20x18. Room 6: studio 10x6, control room 20x18. Mixing Consoles: Neve 8058 series, Sony 3036, (3) Sound Workshop Series 34, Otari Series 54 Sound Workshop, Otari Series 34 Sound Workshop. Audio Recorders: (6) Otari MTR-90, (36) Otari MTR-10, (6) Studer A80, SSL Screen Sound, D.A.R. Sound Station II. Cassette Recorders/Duplicators: (25) Tascam 122 MkII. Noise Reduction Equipment: Dolby. Synchronization Systems: (2) Adams-Smith 5-machine system, (4) TimeLine Lynx 5-machine system. Echo, Reverb & Delay Systems: (6) Yamaha SPX900, (2) Lexicon 224 reverb, (6) Lexicon PCM42. Other Outboard Equipment: (6) Orban EQ, (22) dbx 160 limiter, (6) Drawmer noise gate, (8) Technics CD player, Microphones: (15) Neumann U87, (8) AKG C-414. Monitor Amplifiers: (6) Bryston 4B, (6) Hafler P500. Monitor Speakers: (3) UREI 813B, (3) UREI 813C, (6) Yamaha NS-10M, MSM-4, (8) Auratone. Musical Instruments: (19) synthesizers and samplers, full digital recording sequencers. Video Equipment: (2) Sony BVH-3100 1", (4) Sony BVU-950 3/4", Sony BVU-850 3/4", (6) JVC 8250 3/4", JVC VHS, IBM and Macintosh sequencing. Other: High-speed reel-to-reel duplication and, computerized labeling, 24-track MIDI recording studio.

[24+] **SYNC SOUND INC.;** 450 W. 56th St.; New York, NY 10019; (212) 246-5580. Owner: Bill Marino, Ken Hahn. Manager: Sherri Fernandez. Engineers: Ken Hahn, Grant Maxwell, Regina Mullen, Pam Bartella, John Purcell, Michael Ruschak, Ray Palagy, David Jaunai, Tracy Martinson. Dimensions: Room 1: studio 11x14, control room 23x22. Room 2: studio 10x16, control room 16x14. Room 3, 4, 5, 6 and 7: AMS editing rooms. Room 8: studio 22x15, control room 18x15. Room 9: NED PostPro room/mixing. Mixing Consoles: SSL 6000 G Series automated w/stereo modules, SSL 4000 E Series automated, Sony MXP-3036. Audio Recorders: (5) AMS AudioFile digital editing w/4-hour memories, Sony PCM-3324 24-track digital, Sony PCM-1630 2-track digital, Sony PCM-F1, R-DAT digital, Otari MTR-90 24/16/8-track, Otari MTR-20 4-track, Nagra center-track TC stereo and mono, ATM 16/35mm magnetic film recorder, cart machines, Nagra IV STC and NED PostPro. Cassette Recorders/Duplicators: Nakamichi. Noise Reduction Equipment: Dolby SP-24, Dolby CAT 43, Dolby SR/A, TTM NR frames w/CAT 22 cards, Elison noise reduction. Synchronization Systems: Proprietary edit system allowing lockup, edit rehearsal and editing to subframe accuracy of all audio, video and digital machines, CMX compatible auto conform. Echo, Reverb & Delay Systems: Lexicon 224X w/LARC, Lexicon PCM60, Lexicon PCM42, Lexicon Prime Time II, EMT 140 stereo tube plate, Lexicon PCM70, AMS 15-80X, Yamaha SPX90, Yamaha REV7, Marshall tape eliminator, Roland EQ. Other Outboard Equipment: Dolby Surround mixing, Neve stereo limiter, dbx subharmonic synthesizer, Tube-Tech PE-1B, Sontec EQ, UREI 1176, Dynaflex DX-1, Dynaflex DX-2, AN1 stereo simulator, dbx de-essers, Orban de-essers, UREI notch filters, Audio & Design selective limiter, Brain II, Kepex II, dbx subharmonic synthesizer, Eventide 3000H. Microphones: Neumann U89, Neumann U87, EV RE20, Sanken, Shure SM57. Monitor Amplifiers: Ashly Audio 500 FET, Ashly Audio 200 FET, Yamaha, Crown D-150, Crown D-75, Symetrix A-220. Monitor Speakers: UREI 813, Auratone, JBL 4411, Fostex. Musical Instruments: Yamaha DX7. Video Equipment: Sony BVH-2000 1" w/Dolby, Sony BVH-2830 1" w/digital audio, Sony D-2, Sony BVU-850SP, JVC 8250, VHS Hi-Fi, Betacam SP, Panasonic 100" video projection system, Sony monitors, monitor switches in all areas for multivideo. Specialization & Credits: In 1991 Sync Sound expanded its facility. Two additional AMS AudioFile editing rooms, a fourth mixing room complete with an NED PostPro system, dub room and kitchen complete the new area. Sync

Sound is a full-service audio post-production house, ready to meet your audio needs with experience and enthusiasm. Our facilities are specifically designed to accommodate editing and mixing to picture (digital or analog), dialog replacement, Foley, overdubs to picture, sound effects design, audience sweetening and Dolby surround mixing. Sync Sound also provides technical consultation, Nagra and Mag dubs, an extensive SFX library and videotape laybacks.

[24+] **SYNCO SOUND STUDIOS;** 331 Newbury St.; Boston, MA 02115; (617) 424-1062; FAX: (617) 424-0980. Owner: Richard Mendelson, Andy Mendelson. Manager: Bob Kempf, Tamora Gooding. Engineers: Tony Lamberti, Richard Mendelson, Andrew Mendelson, Tom Hamilton, Bob Kempf, Tamora Gooding, Perry Geyer, David Porter. Mixing Consoles: Sony MCI MXP-3000 36x24 w/automation, TAC Scorpion (32-input, 8-bus). Audio Recorders: Sony/MCI JH-24 2", Otari MX-55T M-1/4" 2-track center track time code, Otari 5050 Mk II 2-track 1/4" center track time code, Otari MX-80 24-track 2", Studer B-67 2-track 1/4", Otari MX-70 16-track 1", Otari MX-50 2-track 1/4", Ampex ATR-102 2-track Cassette Recorders/Duplicators: (3) Panasonic SV3500 DAT, (15) Tascam 122 MkII, Panasonic SV3700 DAT. Synchronization Systems: Adams-Smith 2600 A/V editing system. Echo, Reverb & Delay Systems: EMT 142 stereo plate, (3) Yamaha SPX 90II, (2) Alesis Quadverb, Alesis MIDIVerb, (3) Lexicon LXP-1, (2) TC 2290 sampling delay, Roland SRV-2000, Eventide H910 harmonizer. Other Outboard Equipment: (4) UREI 1176 compressor/limiter, (4) dbx 160X compressor/limiter, (10) Ashley SG-33 noise gates, (2) Ashley stereo graphic EQ, Orban 622B parametric EQ, (2) Symetrix 511A noise reduction. Microphones: (3) Neumann U87, (2) AKG 414, (2) AKG 451, (2) Neumann KM84, Electro-Voice RE20, (5) Sennheiser 421, (5) Shure SM57, AKG D-12, Crown PZM, Shure SM58. Monitor Speakers: UREI 813, (6) Yamaha NS-10M, UREI 809, (2) Auratone. Musical Instruments: E-mu EIII stereo sampling keyboard, (2) Akai S900, Akai S1000, Korg MIR, E-mu Emix SE HD, E-mu SP1200, Roland D550, Oberheim Matrix 1000, Roland D-70, Yamaha DX711, Roland Jupiter 8, Roland Super JX, Moog Memory, Roland 808, Yamaha 8' grand piano, Hammond B3 Leslie, Yamaha recording custom drum set w/ Zildjian cymbals. Video Equipment: Ampex VPR-2 1" video deck, JVC CR-600U 3/4" video deck. Other: Macintosh IIc, Wren 700MB hard drive, Digidesign Sound Tools, Deck digital 4-track recording system, Sound Tools digital interface, (3) Performer Sequencing software, Macintosh SE/30, Opcode SMPTE/MIDI converter.

T

[24+] **TAMARAND DIGITAL RECORDING;** Gamerville, NY 10923-0368; (914) 639-1000; FAX: (914) 634-7584. Owner: Bill Horwitz. Manager: Bill Horwitz.



TAYLOR-MADE PRODUCTIONS
Caldwell, NJ

[24+] **TAYLOR-MADE PRODUCTIONS;** also REMOTE RECORDING; PO Box 309; Caldwell, NJ 07006; (201) 226-1461; FAX: (201) 226-1462. Owner: Glenn M. Taylor. Manager: Pauline Taylor. Engineers: Glenn M. Taylor, Michele M. Michaud, Hannah A. Taylor, Blackos Taylor. Dimensions: Studio 23x18, control room 18x18, MIDI room 37x12. Preview room/lounge 10x8. Vocal booth 8.5x4. Mixing Consoles: Harrison Raven 64x32 w/M-Wank mod. Audio Recorders: Otari MX-80 24-track 2", Otari MkIII 8/4-track 1/2", Otari MX-5050 4-track 1/4", (2) Otari MX-55 2-track 1/4", Studer A80VU MkIV 2-track 1/2", Panasonic SV-3500 DAT, Sony PCM-501ES (F1) 2-track digital processor. Cassette Recorders/Duplicators: (11) Tascam 122, Marantz Portable PMD-201. Noise Reduction Equipment: Dolby SR/A 30 channels, dbx Type I Pro 28 channels. Synchronization Systems: (4) TimeLine Lynx, Roland SBX-80, J.L. Cooper PPS-100 SMPTE/MIDI event. Echo, Reverb & Delay Systems: Roland R-880 digital reverb, (2) Lexicon 224/224XL, Lexicon PCM70 w/3.0 software, Yamaha REV7, EMT stereo plate w/custom electronics, Yamaha SPX90, Lexicon LXP-5, Lexicon PCM41 DDL, ART

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MultiVerb DDL/reverb/FX, DeltaLab Super Time-Line DDL, Yamaha 1500 DDL, Korg SDD-3000 DDL, MXR DDL. **Other Outboard Equipment:** Focusrite ISA 115-HD dual-channel mic preamp/EQ, Eventide H949 Harmonizer, Eventide stereo Ultra-Harmonizer SE, H3000 sampling card, Audio & Design Panscan, BBE 802 exciter, Aphex Type III Aural Exciter, Aphex 602B Aural Exciter, (2) Audio Logic 4-channel gates, TC 1210 Spatial Expander, Symmetrizer 205 Peak/Average Meter, Samson Wireless System, Valley Audio rack, Ashly Audio SC66 stereo parametric EQ, (8) Alesis micro EQ, (2) White Instruments 1/3-octave room equalization, (2) Omni Craft 4-channel noise gate, (2) Drawmer noise gate, Valley People GateX 4-channel noise gate, Valley People Dyna-Mite stereo dynamics processor/gate, Pultec EQH 2 tube EQ, Aphex 612 stereo expander/gate, (3) Orban de-esser, BASE Bedini Audio Spatial Environment stereo enhancement, Aphex Compellor, (2) dbx 165A compressor/limiter, (2) dbx 161 compressor/limiter, MXR chorus/doubler, (2) MXR mini-rack/ flangers, Scholz Rockman, Groove Tube guitar preamp, **Microphones:** (2) Neumann U87, (2) AKG 414, (6) Sennheiser 421, AKG The Tube and assorted others. **Monitor Amplifiers:** (4) Haller P-230, (2) Yamaha BGW 500, (2) Yamaha P2075. **Monitor Speakers:** UREI B13C, Yamaha NS 10M, Auratone 5C Super sound cube, JBL 4408's, JBL 100's, Sony Minis. **Musical Instruments:** Over 40 keyboards and modules—you name it! Large collection of vintage acoustic and electric guitars, basses and amps. **Other MIDI Equipment:** Roland MC-500 MkII sequencer/recorder, Cue Cube auto punch in box, Phi-Tech Pitch to MIDI converter, Casio MIDI guitar. **Video Equipment:** Otari 1" audio-for-video layback deck, JVC 8250 U-matic 3/4" deck, (2) NEC color monitor. **Other:** Technics SL P1200 pro CD player, (3) Optical Media "Universe of Sound", CD library for Emulator II, huge assortment of CD music and SFX libraries. **Rates:** Reasonable rates, per project and hourly. Call to discuss your needs. **Specialization & Credits:** Taylor-Made Productions is the sound source for all media. We are a full-service original music scoring house w/sync-to-picture capability, as well as a production source for bands and individual artists. Additionally, we are a complete audio-for-video post-production studio, with stock music and a huge SFX library at the client's disposal. We offer extensive MIDI programming and music production. We also offer our clients a large talent pool of vocalists, narrators and voice-over talent, as well as in-house creative and scriptwriting services for corporate, industrial, comedy and commercial purposes. Our product includes work for AT&T, Lorus Watches, Universal Pictures, World Federation of Wrestling, Hertz, Jersey Central Power and Light, Nando Sparkling Wine, WWOR-TV, Schlott Real Estate, New York Airlines, National Public Radio, Fresh Air Radio, Volvo-White Trucks, Warner-Lambert, Parke-Davis, Lederle and Johnson & Johnson Pharmaceuticals, Clorox and Nabisco Brands to name more than a few. Please call us for complete details on how TMP can help you in your next production.

[24+] 39TH STREET MUSIC; 260 W. 39th St., 17th Fl., New York, NY 10018; (212) 840-3285; FAX: (212) 840-3923. **Owner:** Michael Karp. **Manager:** Jack Malkin. **Dimensions:** Studio 30x30, control room 25x20. **Mixing Consoles:** Solid State Logic SL4056 G Series w/Total Recall. **Audio Recorders:** Studer 827, Panasonic SV 3500 DAT, (4) Studer B67 2-track 1/4", Studer A80VJ MkII 2/4-track 1/2", Studer A80VU MkII 24-track. **Cassette Recorders/Duplicators:** (6) Tascam 122B. **Noise Reduction Equipment:** Dolby A M16 rack 24 channels, (4) Dolby A 361. **Synchronization Systems:** (2) TimeLine Lynx, Roland SBX-80, Garfield Masterbeat. **Echo, Reverb & Delay Systems:** (2) Lexicon PCM42, Lexicon Prime Time 95, Publison Infernal Machine 90, Yamaha SPX90, Yamaha SPX90II, (2) Lexicon PCM70 (2) Yamaha D1500 DDL, TC Electronic 2290, Eventide H3000BS Harmonizer, Eventide FL201 instant flanger, (2) Korg SDD-2000 digital delay, EMT 124 mono, Yamaha SPX1000, Lexicon 224 digital reverb. **Other Outboard Equipment:** (4) dbx 160 compressor, Aphex Compellor, Teletronix LA-2A, (4) Drawmer DS201 noise gate, Orban 516EC dynamic sibilance controller, Drawmer 1960 vacuum tube compressor, UREI 535 graphic equalizer, (4) Valley People Kexep II, Orban 674A paragraph equalizer, (2) Pultec EGH2. **Microphones:** (2) Neumann U87, Neumann U47 FET, Neumann U67 tube, (4) AKG C-414EB, many others.

Monitor Amplifiers: QSC 1400, (2) Crown PSA-2 (bridged), (2) Crown D-150. **Monitor Speakers:** UREI B13C, Tannoy PBM-6.5, Auratone cubes, (3) Yamaha NS-10M. **Musical Instruments:** E-mu Proteus, Roland D-550, Minimoog w/MIDI (MPU101), Akai S950 and S900, Korg M1R, Yamaha DX7II/FD, Hammond B-3 w/Leslie 122, Ludwig drum kit w/Gretsch toms, Yamaha baby grand piano, Emulator II w/Sound Designer, Oberheim Matrix-12, E-mu SP-12 drum machine, Yamaha TX816, percussion kit, timpani 25" and 28". **Other MIDI Equipment:** JL Cooper MSB 16/20 switcher, J.L. Cooper MSB+. **Video Equipment:** Sony VO-5800 3/4" deck. **Other:** Mark of the Unicorn Performer 3.3, Leading Edge Model D w/20MB HD, Voyetra Sequencer Plus MkIII V. 3.0, Opcode DX7II/D-50 editor/librarian, Macintosh SE w/46MB HD.

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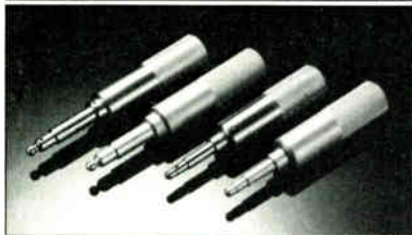
THIS WAY PRODUCTIONS INC.
New York, NY

[24+] THIS WAY PRODUCTIONS INC.; 503-11 Broadway, Rm. 519; New York, NY 10012; (212) 431-5894. **Engineers:** Danny Caccavo, Paul Special, Robert Agnello, Chuck Cavanaugh. **Dimensions:** Studio 11x19, control room 12x19, MIDI room 10x16. **Mixing Consoles:** Soundcraft 1600 24x24 w/Megamix automation (24-track room), Allen and Heath CMC-24 console (16-track room). **Audio Recorders:** Ampex MM1 200 24-track, Digidesign Soundtools, Tascam DA30 DAT Recorder, Ampex ATR-102 2-track, Ampex ATR-104 4-track, Tascam MS-16 16-track w/DBX noise reduction, Tascam 42 2-track, Fostex 20 w/center track time code. **Synchronization Systems:** Adams-Smith Zeta-3 w/remote. **Echo, Reverb & Delay Systems:** Eventide 2016, Eventide H3000 Ultra-Harmonizer, Yamaha REV7, Eventide 969 Harmonizer, Ursa Major Space Station, Yamaha SPX90, (2) Roland SRV-2000. **Other Outboard Equipment:** (2) ADR Comex II compressor/expander, UREI 1176 limiter, dbx 160X limiters, (2) JBL/UREI 7110 limiters, (2) dbx silencers, Aphex Type C, BBE Sonic Maximizer, (4) Valley People Dyna-Mite. **Microphones:** Neumann TLM170, AKG 414, (4) AKG 451, AKG D-12, (5) Sennheiser MD-421, (2) PZM. **Monitor Amplifiers:** Crown Micro-Tech 600, Crown DC-300, Phase Linear 400. **Monitor Speakers:** UREI 809A, Yamaha NS-10M. **Musical Instruments:** Kurzweil MIDIboard, Korg M1, M1R, (2) Akai S-1000, (2) E-mu Proteus, (2) Proteus 2, (2) Roland F-8, (2) S-950, (2) Yamaha DX7, (2) Yamaha TX7 modules, (2) Emulator II, Emax, Roland Super JX rack, Oberheim sample player, Roland Octapad, Linn drum Mellotron 400, Ludwig drum kit, Fender Telecaster bass, Stratocaster. **Other MIDI Equipment:** Macintosh IliX, Macintosh IliX, MOTU MIDI Time Piece and Video Time Piece, Performer, Sound Designer, A-Sheet. **Video Equipment:** (2) JVC 6650 3/4" deck, NEC 26" monitor, MOTU VTC reder-generator. **Other:** Mesa/Boogie Studio .22, Marshall Lead 100 w/4x12 cabinet, Ampeg reverb rocket. **Rates:** Call! **Specialization & Credits:** Now in its fourth year, This Way Productions is a comfortable, mid-priced facility for quality recording in both the audio post-production and music fields. Recently we've added Sound Tools for digital mastering and post-production, and Megamix console automation for our 24-track control room. We specialize in creative custom sound designing, scoring, music recording and feature a comfortable, relaxed atmosphere in which you can produce high-quality work—the kind of environment we think is unmatched by other studios in our price range. Some of our recent clients and projects include: MTV, TNT, the latest "Headsup" album, Burger King, Time Warner, Ogilvy & Mather, Nickelodeon, Saatchi & Saatchi, Showtime, Steve Stern/Mass Media USA, Tom Pomposello Productions, AT&T, Chat/Day, Spy TV, Marine Midland Bank, National Geographic, USA Network.

[24+] TIKI RECORDING STUDIOS INC.; 186 Glen Cove Ave.; Glen Cove, NY 11542; (516) 671-4555. **Owner:** Fred Guarno. **Manager:** Inge Palmieri.

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T.M.P. RECORDING
Berlin, NJ

[24+] **T.M.P. RECORDING**; Rt. 73 and Jackson Rd.; Berlin, NJ 08009; (609) 768-2226; FAX: (609) 768-7135. **Owner:** Tom DiGangi. **Manager:** Lenny Digangi, Tom Traub. **Engineers:** Anthony Riccobono, Mark Eskey, Ed Dibono, Steve Kristansen, Brian McMahon, Tom Traub, Lenny Digangi. **Dimensions:** Room 1: control room 15x20. Room 2: studio 16x25. Room 3: studio 9x11. Room 4: studio 5x6. **Mixing Consoles:** Tascam M3500 32x8x32. **Audio Recorders:** Tascam MS-16 16-track, Tascam 32 2-track, Tascam MS-24 24-track, Tascam DA 30 DAT. **Cassette Recorders/Duplicators:** TEAC W-990. **TEAC Noise Reduction Equipment:** dbx DX8DS 16-channels, dbx DX2D 2-channels, Symetrix 511A. **Synchronization Systems:** Atan computer w/Dr. T's Phantom, Musicsoft Syncman, Aphex studio clock, Tascam ES50. **Echo, Reverb & Delay Systems:** Yamaha SPX900, Lexicon LXP-1, Roland SRV-2000, Korg DRV-2000, Korg SDD-2000, Lexicon LXP-5, Lexicon PCM42, Korg DRV-3000, Lexicon LXP-15. **Other Outboard Equipment:** Orban 424A compressor, (9) Tascam PB-32 patch bay, (2) dbx 160X compressor, dbx 166 compressor, Audio Logic MT-44 gate, BBE 422A sonic maximizer, Klark-Teknik DN500 compressor, Klark-Teknik DN360 EQ, DigiTech 33b harmony machine, Rane HC6 headphone amp, Rane SP15 parametric EQ, Symetrix SX204 headphone amp, Ashly CL52E compressor, Korg VP1, Yamaha Q2031A EQ. **Microphones:** (2) AKG 414, (2) AKG D-112, (2) AKG C-5353EB, (6) Shure SM58, (6) Shure SM57, Shure SM98, (5) Sennheiser MD-421, (2) Sennheiser 441-U, (2) Sennheiser 409-U3, (2) Beyers M380, (2) Beyers M420, Neumann U87, (2) Crown PZM6R. **Monitor Amplifiers:** (2) Yamaha 2350, Yamaha 2075. **Monitor Speakers:** Tannoy SRM-12B, Tannoy PBM-6.5, Tannoy PBM-8, Yamaha NS-10M. **Musical Instruments:** Korg T3, Korg M1REX, Yamaha TG77, Matrix 1000, J.L. Cooper Electronics MSB & REV2 MIDI patch bay, Korg C-9000 88 key piano, Yamaha SY77, Roland S-550 w/80 meg hard drive, Roland R-8M, Roland R-8, Roland U-220. **Other MIDI Equipment:** Yamaha MJC8 8-track, J.L. Cooper MSB, Roland VP-70, Roland MC-500. **Other:** Symetrix Sx203 telephone interface, Lexicon MRC, Aphex Impulse.

[24+] **TULLEN SOUND RECORDING**; also *REMOTE RECORDING*; 26 Altamont Ct.; Morristown, NJ 07960; (201) 539-8120; FAX: (201) 539-5615. **Owner:** Skipp Tullen. **Manager:** Barbara Shalit.

[24+] **TUNDRA STUDIOS LTD.**; also *REMOTE RECORDING*; 45 Casco Street; Portland, ME 04101; (207) 772-1222. **Owner:** Tundra Studios. **Manager:** Tim Tierney.

[24+] **TWAIN RECORDING**; 18 Hiawatha Pass; West Milford, NJ 07480; (201) 697-7540. **Owner:** Robert Both. **Manager:** Robert Both.

U

[24+] **UNIQUE RECORDING STUDIOS INC.**; 701 Seventh Ave.; New York, NY 10036; (212) 921-1711. **Owner:** Joanne and Bobby Nathan. **Manager:** Tony Drootin, Susan Heagney. **Engineers:** Roey Shamir, Angela Piva, Acar Key, Richard Joseph, George Karrus, Ken Collins, Peter Robbins, Tony Smalios. **Dimensions:** Studio A 12x15, Studio B 40x20, Studio C 22x14, Studio D 25x20, Studio E 25x20. **Mixing Consoles:** (2) SSL 4000E G Series 56-channel w/Total Recall, SSL 6000E E Series 48-channel w/Total Recall, (2) Trident Series 24 28x24x2. **Audio Recorders:** (4) Studer A800 MkII 24-track, Otari MTR-90 MkII 24-track, (3) Studer A820 2-track 1/2", (2) Studer A810 2-track 1/4", (2) Studer A80 MkII 2-track, (2) Otari MTR-12 2-track 1/2", (5) Panasonic SV-3500 Pro DAT. **Cassette Recorders/Duplicators:** (10) Nakamichi MR-1. **Synchronization Systems:** (3) Adams-Smith w/2600 remote. **Echo, Reverb & Delay Systems:** (2) Publison Infernal 90 (21 seconds), (2) Sony DRE-2000A, (3) Lexicon 480L, (3) Lexicon 224XL, (3) AMS RMX 16, (3) AMS DMX 15-80S, (3) Eventide H3000 Studio Elite, (3) Klark-Teknik DN780, (3) AKG ADR-16 4.0, (2) Yamaha REV1, (3) Yamaha REV7, (3) Yamaha SPX1000, (6) Yamaha SPX90, (3) Lexicon PCM70, (14) Lexicon PCM42. —SEE PHOTO/LOGO TOP OF NEXT COLUMN



UNIQUE RECORDING STUDIOS INC.
New York, NY

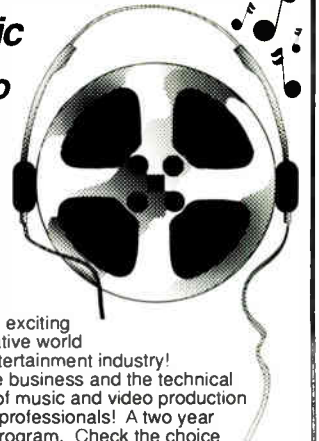
(3) Roland Dimension D, (3) Eventide H910. **Other Outboard Equipment:** (6) UREI LA-3A, (6) UREI LA-2A, (6) dbx 165A, (6) dbx 160, (8) dbx 160X, (8) Drawmer DS-201, (12) Valley People Dyna-Mite, (6) dbx 902 de-esser, (6) Pultec EQU-2, (6) Pultec EQP-1A, (3) Pultec MEQ-5, (24) Neve 1077 mic pre EQ, (2) Neve Prism rack 16 EQ 4 dyana., (2) GML 8200, (4) Focusrite ISA131 dynam., (12) API 550A, (12) API 560A, (8) API 512B, (8) Focusrite ISA 115 EQ, (3) Panscan. **Monitor Amplifiers:** (3) Perreaux 6000, (3) Perreaux 3000, (4) Crown Macro-Tech, (2) Yamaha P5002M. **Monitor Speakers:** (3) UREI 813, Gauss, (1) UREI 813, (8) Yamaha NS-10M studio. **Musical Instruments:** (2) Yamaha conservatory grand w/MIDI. **Other MIDI Equipment:** (4) Yamaha TX802, (4) Yamaha TX81Z, (3) Roland D-50, (4) Roland D-550, (4) Roland MKS-80/MPG-80, (5) Akai S950/S900, (4) Korg M1R, (3) Yamaha DX7IIK, Oberheim Matrix-12, Oberheim Matrix-1000, Akai MPC-60, (2) Roland TR-808 w/MIDI, Moog Minimoog w/MIDI, Atari 1040ST. **Other:** (3) Macintosh SE, Macintosh Ix 8MB w/650MB drive, IBM PC 286 16MHz. **Specialization & Credits:** Credits include: Aerosmith, A1B, Sure!, Al Green, Bananarama, Billy Idol, Billy Ocean, Book of Love, Carly Simon, Chaka Khan, Cher, Cover Girls, Diana Ross, Dionne Warwick, Donald Newkirk, Don Johnson, Donny Osmond, Duran Duran, E.U., Electric Angels, En-Touch, Expose', Freddie Jackson, Full Force, Hall & Oates, Heavy D, and D Boyz, Henry Lee Summer, Information Society, James Brown, Jimmy Cliff, Joa Cocker, Joe Lynn Turner, Johnny Kemp, Joyce Simms, Keith Sweat, Kool Moe Dee, Levert, Living Colour, Melba Moore, Motley Crue, New Edition, New Kids on the Block, Nona Hendryx, Ofra Haza, Omar Hakim, Oran "Juice" Jones, Patti LaBelle, Paul Schaffer, Pet Shop Boys, Public Enemy, Ric Ocasek, Robert Palmer, Roberta Flack, Rod Stewart, Rolling Stones, Run-D.M.C., Sa-Fire, Salt-n-Pepa, Samantha Fox, Seduction, Shannon, Sheena Easton, Soul II Soul, Steve Winwood, Stevie Nicks, Sweet Sensation, Sybil, Tabu Combo, Ted Nugent, The Cars, The Ocean Blue, The System, The The, Third World, Tiffany.

[24+] **UNIVERSITY OF LOWELL—SOUND RECORDING TECHNOLOGY**; also *REMOTE RECORDING*; College of Music; One University Ave.; Lowell, MA 01854; (508) 934-3850; FAX: (508) 934-3000. **Owner:** Dr. William Moylan. **Manager:** Bill Carman. **Engineers:** Leon Janikian, Scott Kent, Paul D. Lehman, J. Robert O'Connell, Coleman Rogers. **Dimensions:** Room 1: studio 25x45, control room 24x15. Room 2: studio 25x45, control room 9x12. Room 3: control room 12x20. Room 4: control room 9x20. **Mixing Consoles:** Soundcraft TS-24 34x24 w/Audio Kinetics Master Mix automation. **Sound Workshop Series 200**, (2) Yamaha DMP7 digital, Ramsa WR-T812, Soundcraft Series 200. **Audio Recorders:** Otari MTR-90 24-track, Otari MTR-10 2-track, (2) Otari MX-5050 8-track, (9) Revox B-77 2-track, Studer Editech Dyaxis digital editing/recording system, Sony PCM-F1 digital, Scully 280-B 4-track. **Noise Reduction Equipment:** (11) dbx 150X. **Synchronization Systems:** (2) Adams-Smith Zeta-3, Opcode Studio 3 MIDI interface/SMPTe, Southworth JamBox +4 MIDI interface/sync. **Echo, Reverb & Delay Systems:** Lexicon 480L, BBF 882 "Sonic Maximizer" Aural Exciter, Yamaha REV7, Yamaha REV5, AKG ADR-68K, Klark-Teknik DN780, Lexicon PCM70, Yamaha SPX9C, (10) assorted Deltalab digital delays & time processors, Lexicon PCM42, Eventide H3000 Ultra-Harmonizer, Orban Model 642 parametric EQ/notch filter, (4) Ashly Audio PQ66 stereo 4-band parametric EQ, UREI third octave graphic EQ, Ursa Major "Space station", Valley People Effects Rack; (2) DSP, (2) MaxiQ, (2) Kepex II, (2) dbx 165A "Over Easy" compressor/limiter, dbx 166, (5) Valley People Dyna-Mite, (2) UREI LA-4 compeller, Ashly Audio SG33 noise gate. **Microphones:** (74) AKG, Beyers, B&K, EV, Neumann, Sennheiser, Shure. **Monitor Amplifiers:** (2) Briston 4B, (3) Briston 3B, Yamaha PS150, Crown DC-300A. **Monitor Speakers:** (2) UREI 811C "Time Align", (2) UREI 809C "Time Align", (2) Tannoy NFM-8, (2) Tannoy NFM-6.5, (2) Yamaha NS-10, (2) JBL 4412. **Musical Instruments:** Kurzweil MIDI board MIDI controller, E-mu Emax sampler, Kurzweil 1000-PX, Roland D-550, Yamaha TRX816, Yamaha TX802, New England Digital Synclavier synthesizer, Yamaha DX7, E-mu Systems Emulator II HD sampling synthesizer, (6) drum machines: Alesis, Roland, Yamaha, E-mu

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—LISTING CONTINUED FROM PREVIOUS PAGE
Systems, Linn Drum. Other MIDI Equipment: JL Cooper MSB
+ MIDI processor. Video Equipment: Alta Cygnus AV switcher,
Fast-forward SMPTE generator/reader, (4) JVC video
monitors, JVC special effects generator, (2) JVC 3/4" VCR, (2)
Kenwood vector scope & wave form generator, Laird character
generator. Other: (9) Macintosh; (2) Ilcx, II, (4) SE, Plus, Ilfx,
Rockman stereo chorus, Rockman sustainer, Gold Line digital
real time analyzer.

V

[24+] VAN GELDER RECORDING STUDIO INC.; also REMOTE
RECORDING: 445 Route 9W; Englewood Cliffs, NJ
07632; (201) 567-4145; FAX: (201) 567-4145. Owner: Rudy
Van Gelder.



WIDEOMIX
New York, NY

[24+] WIDEOMIX; REMOTE RECORDING only; 123 W. 18th
St.; New York, NY 10011; (212) 627-7700; FAX: (212) 727-
3075. Owner: CP Sound Inc. Manager: Kathleen Spellman
Krause. Engineers: Barbara Flyntz-Bradley, Chris Argento,
James von Buelow, Dick Matland. Dimensions: Room 1:
studio 23x20, control room 25x23. Room 2: studio 23x20,
control room 25x23. Room 3: studio 15x10, control room
20x15. Room 4: studio 15x10, control room 20x15. Mixing
Consoles: Sony MXP-3000 w/JL Cooper automation, Amek
Mozart w/automation, Sound Workshop 34 w/disc mix auto-
mation, Sony MXP-2000. Audio Recorders: (3) Otari MTR-9011
24-track, Otari MX-70 16-track, (6) Otari MTR-12-2 2-track,
Otari MTR-12-4 4-track, (2) Fostex P-20 time code DAT, (5)
Panasonic DAT. Cassette Recorders/Duplicators: (10) Kaba
Real Time, (2) Nakamichi mastering decks, (4) Tascam 122, (5)
Maganafax high-speed 1/4". Noise Reduction Equipment:
(60) Dolby SRA, (16) dbx. Synchronization Systems: (3)
Soundmaster "Smart Synch", Echo, Reverb & Delay Sys-
tems: (2) Lexicon 480, (3) Lexicon 200, (2) Lexicon 3000, (2)
Lexicon PCM70, (2) Yamaha SPX90, Ursa Major. Other Out-
board Equipment: (3) dbx 900, (3) UREI 1178, dbx 166, (6)
UREI 545 parametric EQ, (2) Aphex Expander, (2) Studio
Technologies stereo simulator, (2) BASE, Lexicon PCM42, (2)
DigiTech sampler, (2) dbx 166, (2) Aphex Studio Aural exciter,
Aphex compressor, Aphex Expressor, Aphex Exciter III, Ursa
Major stereo processor. Microphones: (3) Neumann TLM170,
(5) Neumann U87, (2) AKG C-414, many others. Monitor
Amplifiers: Crown, Meyer Sound Labs, Hot House. Monitor
Speakers: (4) JBL 4425, (8) Yamaha NS-10, Tannoy 15-8-6
Dolby Surround systems, (8) Digital Design. Other MIDI
Equipment: (2) E-mu Systems E3, (2) E-mu Systems E2,
Yamaha DX7, "Putney" synthesizer. Video Equipment: (2)
Ampex VPR-6 1", (5) JVC 850 3/4", Sony BWV-75 Beta SP,
Sony DVR-10 D2. Other: Digidesign digital workstation, 4-track

online interloc 16/35 Mag., D-20 online SMPTE DAT recorder,
Dolby SR on all recorders. Specialization & Credits: Certified
Dolby Surround, all-Tannoy room audio-for-video post-pro-
duction. Specializing in SFX, laugh tracks and music scoring.
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audio duplication and fulfillment capability. Interformat audio/
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guage tracks our secret specialty.

[24+] VOICES RECORDING STUDIOS; also REMOTE RE-
CORDING: 16 East 48 St.; New York, NY 10017; (212) 935-
9820; FAX: (212) 755-1150. Owner: Richard Leonard. Man-
ager: Phil Goodman. Engineers: Mark Francke, Chris Droz-
dowski, Brian Sherman. Dimensions: Room 1: studio 10x10,
control room 20x25. Room 2: studio 10x12, control room
20x25. Mixing Consoles: (2) Sound Workshop Series 34.
Audio Recorders: New England Digital PostPro system
(tapeless), MCI/Sony 24-track. Video Equipment: Sony 1"
video decks.

W



WALTON RECORDING INC.
Fairfax, VA

[24+] WALTON RECORDING INC.; also REMOTE RE-
CORDING: 5583-B Guinea Rd.; Fairfax, VA 22032; (703) 425-
9498. Owner: Shannon Walton, Bonnie O'Leary. Manager:
Bonnie O'Leary. Engineers: Shannon Walton. Dimensions:
Room 1: studio 18x18, control room 20x20. Room 2: studio
10x6. Room 3: studio 7x6. Mixing Consoles: AMR Model 240
production series. Audio Recorders: Studer A80 2" 24-track,
Tascam BR20T 1/4" w/ time code & remote. Cassette Re-
corders/Duplicators: Panasonic SV-3700 DAT, Tascam 122.
Noise Reduction Equipment: dbx 150. Echo, Reverb &
Delay Systems: Yamaha SPX1000 multi-effects processor w/
Yamaha SC7 controller, Alesis Quadraverb, Alesis Midiverb 3.
Other Outboard Equipment: (2) dbx 160XT compressor
limiter, Klark-Teknik DN360 EQ, (2) Gatekeeper 5-way noise
gates, Rane HC6, BBE 422, (2) Alesis Cue amps, TEAC Stere-
o EQ w/spectrum, Optimus CD player w/remote. Micro-
phones: Neumann U87, (2) Sennheiser 441, (3) Shure SM94,
(4) Electro-Voice 408, (4) Shure SM57, AKG 112, Electro-Voice
PL20, (3) Brooke-Siren Direct boxes. Monitor Amplifiers:
Carver PM-300, Carver PM-1200. Monitor Speakers: JBL
4435, Yamaha NS-10, Realistic .03, custom-made JBL/Electro-
Voice 3-way playback monitors, (6) AKG 141 headphones,
(2) AKG 270 headphones. Musical Instruments: Steinway
1927 Concert B grand piano, Pearl Maple 5-piece drum set w/
hardware, (16) Zildjian/Paiste cymbals, Boss DR 550 drum
machine, Ensoniq SQ-1 keyboard, Rockman guitar, Rockman
bass, Guild Mark II classical guitar, Gibson ES 335.

[24+] WAREHOUSE/J.E.M. SOUND RECORDING STU-
DIOS INC.; 1030 N. Delaware Ave.; Philadelphia, PA 19125;
(215) 423-7300; FAX: (215) 426-6104. Owner: John Moyer,
Michele Nicoler. Manager: Dan Michael.

[24+] WENDELL RECORDING STUDIO; also REMOTE
RECORDING: Box 61; Wendell, MA 01379; (508) 544-8288.
Owner: Jeffrey Bauman. Manager: Judy Bauman. Engineers:
Rick King, Bruce Kahn, Jeffrey Bauman, Peter Kepler, Mark
Epstein. Dimensions: Studio 25x25x19 (turntable sound
panels), control room 18x14. Mixing Consoles: Trident 24 56-
channel w/32 channels of MegaMix VCA automation. Audio
Recorders: Otari MTR-9011 24-track, 3M M79 16-track, 3M
M792-track 1/2" Saki heads, Otari 5050 2-track 1/4", Sony 501
2-track digital, Panasonic 3700 DAT. Cassette Recorders/
Duplicators: Nakamichi 480, Awa. Noise Reduction Equip-
ment: dbx 150 Type I 2 tracks. Synchronization Systems:
Adams-Smith Zeta-3. Echo, Reverb & Delay Systems: Lexicon
PCM70, Lexicon PCM60, Yamaha SPX90 digital effects pro-
cessor, DeltaLab Super Prime Time digital delay, Teletronix LA-
2A limiter, (2) Pultec MEQ-5 equalizer, UREI 1176 compres-
sor, Valley People 610 stereo compressor/expander, dbx 166
stereo compressor/limiter, Orban co-operator compressor/
expander, Aphex Type C Aural Exciter, Ashly Audio SE66 stereo
parametric equalizer, Klark-Teknik DN360 stereo equalizer,

Fostex 330 stereo equalizer, Scholz Rock Moclute, (2) Ashly Audio stereo noise gate, Valley People Dyna Mite, Alesis Quad raverb **Microphones:** Neumann U47 tube, (2) Neumann TLM170, Beyer MC740, AKG 451, (2) AKG C 501, AKG CK 22 capsule, (2) Beyer 500, Beyer M69N, Beyer M201N, (2) Sennheiser 421, (2) Sony ECM 23F condenser, (2) Crown PZM, (2) Shure SM58, (2) Shure SM57, (3) Shure SM81 condenser EV PL20, EV 635A, ATM 1 R, ATM 8501 **Monitor Amplifiers:** Ashly Audio MOSFET stereo, Crown 300 stereo, Yamaha P2050 stereo, McIntosh 250 tube stereo **Monitor Speakers:** (2) Gauss 7258, (2) Altec 604F, (2) EV Sentry 100, (2) Auratone T 6, (2) Auratone, (2) ADSL 700 **Musical Instruments:** Yamaha conservatory grand piano, Fender (tan) Super guitar amp, Gibson 1947 guitar amp, Fender (tan) guitar reverb, Yamaha RX15 drum machine, Martin OM 1933 guitar, Gibson Sunburst 335 1959 guitar **Other MIDI Equipment:** Performer software on Macintosh Plus w/ 20MB HD **Video Equipment:** Sony U matic 3 1/2" recorder player, Panasonic OmniVision VHS recorder player **Other:** (10) AKG headphones **Specialization & Credits:** Wendell Recording Studio is a deluxe residential facility designed for artists who desire total control over their working environment. Located on 12 acres of stone, walled woodlands near the Vermont border, we are a 3 hour drive from NYC and 1.5 hours from Boston. People love recording here because our resort like location, beautiful accommodations and superb cuisine make it more like a vacation than work. Projects are often completed here at one third the cost of recording in NYC. Clients stay in a beautiful seven room woods contemporary, equipped with Swedish sauna and decorated with Oriental rugs and antique furniture. Gourmet chefs are available to serve your needs. Artists often walk down the footpath to the studio, ready to record in a relaxed, centered mood. If you are looking for a beautiful, total service environment for your next project, this is the place for you.

[24+] **WESTRAX RECORDING STUDIOS; 484 W. 43rd St., New York, NY 10036; (212) 947-0533. Owner:** Peter Link **Manager:** Jeremy Harris **Engineers:** Jeremy Harris (chief engineer), Todd Anderson, Jesse Plumley (senior engineer), Laura Fried, William Garrett, Steven Wilds. **Dimensions:** Room 1 studio 17x24, control room 17x20, MIDI room 16x16 **Mixing Consoles:** DDA RAM 24, Sound Workshop 30, Soundcraft 200B, Roland M 240, Roland M 160 **Audio Recorders:** Otari MX 80 24 track 2", Tascam 85 16B 16 track 1", Otari 5050 MkIII 8 track 1 1/2", Otari MTR 12 2 track 1/2", Otari MTR 12 2 track 1 1/4", Technics 1520 2 track 1 1/4", Sony SL HF 650 Beta w/ Sony PCM 501 digital audio processor **Cassette Recorders/Duplicators:** (2) Tascam 122, Tascam 122 MII **Noise Reduction Equipment:** (28) dbx Type I 150 2 B 16 track **Synchronization Systems:** Roland SBX 80 **Echo, Reverb & Delay Systems:** Roland R 880, Lexicon PCM70, Lexicon LXP 1, (2) Yamaha REV7, Yamaha SPX90II, Ibanez SDR 1000+, Ecoplate III, Lexicon PCM42, Korg SDD 2000 **Other Out-board Equipment:** Aphex Aural Exciter, Aphex Compellor, Pultec EQH 2, dbx 160X, UREI 1176LN peak limiter Orban 622B parametric EQ, (2) Drawmer noise gate, RSP Hush 2000 **Microphones:** (2) Neumann U87, (2) AKG C 12, (2) AKG 414, AKG 451, (2) AKG 535, EV RE20, EV 666, (3) Sennheiser 421, (2) Shure SM57 **Monitor Amplifiers:** Haller 230, Haller 220, Ashly Audio 200 **Monitor Speakers:** (2) Tannoy LGM 12, (4) Yamaha NS 10M (2) JBL 4313 **Musical Instruments:** Kurzweil 1000PX Plus, E mu Proteus, Korg M1R, (2) Roland D 550, Roland S-550, Roland S 50, Yamaha DX7, Yamaha DX7IIFD, (8) Yamaha TX816, Oberheim OBXa, E mu SP 12, Alesis HR-16, Alesis HR 16B, Korg Poly 800II **Other MIDI Equipment:** (2) IBM PC AT w/20MB HD, Macintosh SE, J.L. Cooper MSB 16/20, Voyetra Sequencer Plus V 3.3, Opcode Visper V 2. **Video Equipment:** VHS, Beta **Other:** Yamaha C3 6" grand piano, Gretsch drums **Rates:** 24 track \$110, 16 track \$65, 8 track \$45, 2 track and MIDI room \$40



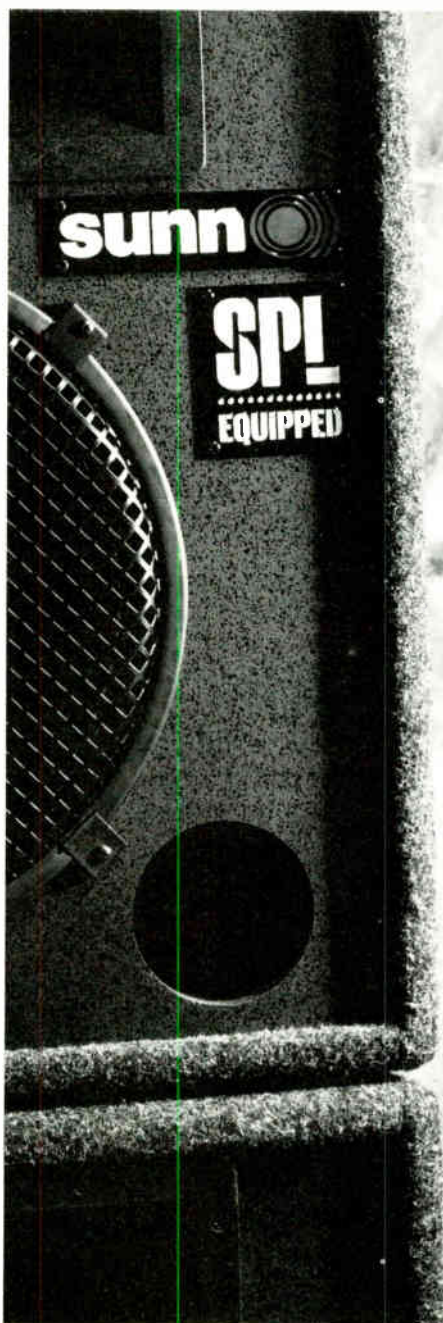
WHITE CROW AUDIO
Burlington, VT

[24+] **WHITE CROW AUDIO; also REMOTE RECORDING. 19 Marble Ave.; Burlington, VT 05401; (802) 658-6475. Owner:** Todd Lockwood **Manager:** Douglas Jaffe **Engineers:** Todd Lockwood, Tom Walters, Douglas Jaffe, Chris Bailey **Dimensions:** Room A studio 29x38, control room 19x21 Iso room A

1 15x17' Iso room A 2 10x11' **Mixing Consoles:** Neotek Series I 16x4 remote, Neve 8068 MkII 4x16 w/GML automation **Audio Recorders:** (2) Sony PCM 2500 DAT, Studer A80RC 2 track 1 1/2", Studer A810 2 track 1 1/4" w/SMPTII, Studer A820 2 track 1 1/2" (2) Studer A820 24 track **Noise Reduction Equipment:** (54) Dolby SR for all Studer machines **Synchronization Systems:** (3) TimeLine Lynx SMPTE **Echo, Reverb & Delay Systems:** AMS DMX 15 80S DDL sampler AMS RMX 16, (6) API 5FOA EQ, Barcus Berry BBE 802, dbx 165A limiter, (4) dbx 9031 limiter, (2) dbx 905 parametric EQ, dbx 906 flanger, Deltat ab DL 3 DDL, (2) Drawmer DS 201 dual gate, LMT 2 10 Goldrft oil, XR exciter 4 channels, Lexicon 480L w/(2) LARC, Lexicon PCM70, Lexicon PCM42 (4, 800ms), Neve 33609 stereo limiter Studio Technologies AN 2 stereo simulator (4) Summit Audio TLA 100A tube limiter, Trois DQ520 dynamic FO Tube Tech PE 1B EQ, (2) UREI 1176, Valley People 610 stereo limiter, Valley People Gain Brain II, (4) Valley People Kerpex II, Valley People Leveller (3) Valley People Mix Q **Microphones:** (2) AKG C 414 B, (2) AKG C 451 II, (2) AKG C 460 CK61 ULS, AKG D 112 AKG D 12E, (2) Beyer MC7:ON (2) Bruel & Kjaer 4006 (2) Crown PZM30, (3) EV RE20, Fostex M88RP ribbon (2) Neumann KM84, Neumann TLM170 Neumann U47 tube Stephen Paul modified (2) Neumann U87 Stephen Paul modified (2) Neumann U89,

Sanken CMS 2 stereo, (6) Sennheiser 421, Shure SM53, (3) Shure SM57, (3) Shure SM58, (3) Shure SM81, Sony ECM 989. **Monitor Amplifiers:** (2) Bryston IB, (2) Crown D 150 **Monitor Speakers:** Tannoy NFM 8, UREI 813, Yamaha NS 10M Studio **Video Equipment:** Sony VQ 5800 3/4" VCR **Other:** (4) AXE DI 100 +dBm direct box, Crown SASS B stereo mic frame, (2) John Hardy M 1 mc preamp Sony 601E S CPM F1 modulator, (5) White Crow artist cue system, (5) White Crow Jensen direct box, (4) White Crow Jensen guitar amp input box **Specialization & Credits:** White Crow serves discriminating clients from the greater New York and Los Angeles areas who desire privacy and elegance at competitive rates. Our clientele covers a wide range of musical territory, from Alice Cooper to Odette. Our large, quiet studio enables us to accommodate acoustically oriented projects not feasible at many other facilities. Producers looking for a classic, "warm" sound will appreciate our combination of Neve, Studer and Dolby SR. We invite producers and artists to come and enjoy one of the Northeast's most entertaining small cities while recording at White Crow.

[24+] **WINTHROP PRODUCTIONS; also REMOTE RECORDING. 156 W. 94th St.; New York, NY 10025; (212) 662-8685; FAX: (212) 749-8387. Owner:** Susan Winthrop



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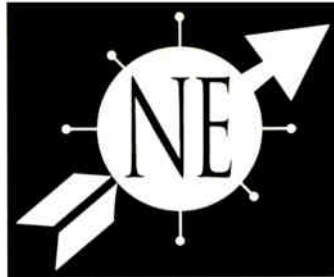
Low-Cost Microphones
The Future of Project Studios

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NORTHEAST 12- & 16-TRACK STUDIOS



AURA: THE AMERICAN UNIVERSITY
RECORDING ASSOCIATES
Washington, DC

[16] **AURA: THE AMERICAN UNIVERSITY RECORDING ASSOCIATES**; Physics Dept., Audio Tech. Program; 4400 Mass. Ave., NW; Washington, DC 20016; (202) 885-2743; (202) 885-2759. **Owner:** The American University. **Manager:** Audio Technology Program Staff. **Engineers:** Staff engineers are drawn from the pool of Audio Tech. students who have qualified through the program's studio courses. **Dimensions:** Room 1: studio 18x20, control room 10x15. Room 2: studio 15x18. Room 3: studio 18x20. **Mixing Consoles:** TAC Scorpion 24x16, (2) Yamaha 8x4, Allen and Heath 12x2. **Audio Recorders:** Ampex MM1000 16-track, (2) Revox B77 2-track, Tascam 3440 4-track, Tascam 3300 2-track. **Cassette Recorders/Duplicators:** BIC, Tascam, Sony Beta Hi-Fi, Nakamichi. **Noise Reduction Equipment:** (8) dbx 180 stereo. **Synchronization Systems:** Southworth Jam Box. **Echo, Reverb & Delay Systems:** (2) Lexicon PCM70, (2) Roland DEP-5, (3) DeltaLab Effectron, (2) Yamaha REV1000, Lexicon LPX, PAIA Vocoder. **Other Outboard Equipment:** Aphex Aural Exciter, (2) Valley People GateX, (5) Rane graphic EQ, (2) Valley People Dyna-Mite compressor/limiter, Audioarts parametric EQ, (2) Ashly Audio compressor/limiter, Symetrix gate/expander, Rane headphone console, dbx 160X compressor/limiter. **Microphones:** Neumann, AKG, Sennheiser, Electro-Voice, Shure, Beyer. **Monitor Amplifiers:** QSC, Crown. **JBL Monitor Speakers:** UREI Time Align, JBL, Bose, Electro-Voice, Auratone. **Musical Instruments:** Moog System 55 modular console synthesizer, Yamaha DX7 w/E! expansion, Yamaha RX11, (2) Yamaha CX5M, Kawai K5 Fourier synthesizer, Akai S612 sampler, (2) Oberheim Matrix-6, Yamaha TX7, Akai S900 sampler, Roland D-550, Kurzweil MIDIboard keyboard controller, (3) Korg M1, Rhodes electric piano. **Other MIDI Equipment:** J.L. Cooper MSB+, Yamaha MJC8, Akai MIDI-controlled mixer, Opcode Studio Plus Two, Roland MPU-401. **Other:** Apple Macintosh, Atari 1040ST, Commodore 64, IBM XT and PS/2, various data acquisition and signal analysis systems. **Rates:** N/A. Student projects only at this time. **Specialization & Credits:** AURA is one of three studios serving the American University's Audio Technology program, the first degree program of its kind on the East Coast. Included in the equipment listings are the facilities of the electronic music studio and the interdisciplinary Music and Technology program. AURA has produced tapes for several local professional and amateur bands.

[16] **BACKTRACKS (SEE STRAIGHT ARROW FOR COMPLETE LIST)**; also REMOTE RECORDING; 5 School Avenue; Montpelier, VT 05602; (802) 223-2551. **Owner:** Mike Billingsley. **Manager:** Lin Haley.

[16] **BEBOP PRODUCTIONS INC.**; also REMOTE RECORDING; 1006 Brice Rd.; Rockville, MD 20852; (301) 279-0937. **Owner:** Bob DeWald. **Manager:** Marco Delmar.

[16] **CHEMEL MUSIC CO.**; also REMOTE RECORDING; PO Box 7; North White Plains, NY 10603; (914) 948-5811. **Owner:** Chester M. Soares. **Manager:** Chemel Soares.

[16] **COTTON HILL STUDIOS INC.**; also REMOTE RECORDING; 18 Walker Way; Albany, NY 12205; (518) 869-1968; FAX: (518) 869-1969. **Owner:** Ray Rettig. **Manager:** Allan Carr.

[16] **COUNTDOWN STUDIOS INC.**; also REMOTE RECORDING; 122 W. 26th St., Ste. 2R; New York, NY 10001; (212) 691-9279; FAX: (212) 691-9397. **Owner:** Rhea Nierenstein. **Manager:** Tony Mann.

[16] **DEREK STUDIOS**; also REMOTE RECORDING; 850 Main St., PO Box 304; Dalton, MA 01226-0304; (413) 684-0198. **Owner:** Gregory K. Steele. **Manager:** Gregory K. Steele. **Engineers:** Greg Steele, Max Mattoon. **Dimensions:** Room 1: studio 45x30, control room 18x16. Room 2: studio 10x8. Room 3: studio 8x8. **Mixing Consoles:** Amek/TAC Scorpion II 32x16 w/monitor EQ, Tascam 8x2. **Audio Recorders:** Tascam MS-16 16-track w/autolocator and dbx, Tascam 58 8-track w/autolocator and dbx, Otari MX-5050B MkII 2-track w/remote and dbx, Revox B-77 2-track, Ampex 351 2-track. **Cassette Recorders/Duplicators:** (2) Tandberg TCD-310 MkII, Awa WX-220, Awa F350. **Noise Reduction Equipment:** (2) Tascam DX-8DS, (2) Tascam DX-4D, dbx 150. **Echo, Reverb & Delay Systems:** Lexicon PCM70, Lexicon 95 Prime Time II, Lexicon PCM42 DDL, Lexicon PCM41 DDL, (2) Lexicon PCM60, ADA stereo taped delay, ADA D-1280. Loft 450 delay/flanger. **Other Outboard Equipment:** Valley People 430 dual Dynamite, Valley People GateX quad noise gate, Valley People 415 dynamic sibilance processor, dbx 166 gated compressor/limiter, dbx 160x compressor/limiter, UREI LA-4 compressor/limiter, Audioarts Model 1200 compressor/limiter, Symetrix 528 vocal processor, Aphex Type B Aural Exciter, MXR dual 15-band EQ, (2) MXR mnr-limiter, (2) MXR Auto-Flanger. **Microphones:** AKG C-414 EB, AKG D-2000, (3) AKG C-451 E, Beyer MC-734, (2) Beyer M250 ribbon, (2) Beyer M-201, (2) Countryman EM-101, (2) Countryman Isomax III, (2) Sennheiser MD-421, Sennheiser MD-441, (2) Shure SM53, (2) Shure SM57, (2) Shure SM-81, Electro-Voice RE20. **Monitor Amplifiers:** Yamaha P-2200, Harman Kardon Citation 12. **Monitor Speakers:** JBL 4425 bi-radial, KEF 103.2, Auratone 5C. **Musical Instruments:** Yamaha DX7 II FD, Korg DSS-1, Roland D-110, Roland S-10, Oberheim Matrix-6R, E-mu Proteus/1, E-mu SP-12 Turbo-sampling percussion, Roland D-110, Oberheim matrix 6R, Roland S-10 sampler, 360 Systems MIDI bass, Casio C2-101, E-mu performance 1 piano module, ARP module 2600 synthesizer, Gibson '59 Les Paul, Fender precision bass, Fender twin reverb, Marshall JCM 800, Scholz Rockman sustainer/chorus. **Other MIDI Equipment:** Macintosh SE w/2 meg-40 MB HD, Mark of the Unicorn Performer 3.6, Mark of the Unicorn MIDI Time Piece.

[16] **EASTWIND RECORDING**; 6820 Ellicott Dr.; East Syracuse, NY 13057; (315) 463-6759. **Owner:** Michael Jafarian. **Manager:** Ken Hoston.

[16] **ELECTRIC WILBURLAND STUDIO**; Ithaca, NY; (607) 277-0770. **Owner:** Will Russell. **Mixing Consoles:** Soundcraft 200B 24x4x2, Fostex 2016 16x2 line mixer. **Audio Recorders:** Tascam MS16 16-track 1" w/AQ 65 autolocator. **Echo, Reverb & Delay Systems:** Lexicon LXP5, (3) Lexicon LXP1, Lexicon MRC controller, ART DRX, Korg SDD2000 delay. **Other Outboard Equipment:** Furman QN44B quad C. Yamaha GC2020 compressor/limiter, Aphex type C Aural Exciter, Rane HC6 headphone amp, Symetrix SX20 mic pre-amp, (2) Symetrix SX20 parametric EQ. **Microphones:** AKG 414, (3) E-V ND 408, (4) Shure SM57. **Monitor Amplifiers:** Carver PM 400. **Monitor Speakers:** Yamaha NS-10M, Tannoy series 8. **Rates:** \$20/hr.

[16] **CHARLES ELLER STUDIOS**; also REMOTE RECORDING; 335 So. Union St.; Burlington, VT 05401; (802) 862-2605. **Owner:** Chas Eller.

[16] **EMERALD STUDIO; REMOTE RECORDING** only; RFD #2 Box 3675 Wiley Rd.; Greene, ME 04236; (207) 946-5258. Owner: Jeff Strout, Gary Bennett, Greg Wilkinson.

[16] **JIM FEMINO PRODUCTIONS**; also **REMOTE RECORDING**; 429 S. Lewis Rd.; Royersford, PA 19468; (215) 948-8228; FAX: (215) 948-4175. Owner: Jim Femino. Manager: Tom Simpson.

[16] **GRAMPA STUDIOS**; 502 Warren St.; Brooklyn, NY 11217; (718) 260-9803. Owner: Mick Cantarella. Manager: Skip Rubber.

[16] **GREGMAR STUDIOS INC.**; Eatontown, NJ; (201) 542-5116. Owner: Gregmar Productions Inc. Manager: Marcelo Oliveira. Engineers: Marcelo Oliveira, Gregory LaSorsa. Dimensions: Room 1: studio 10x10, control room 11x19. Room 2: studio 12x12, Room 3: studio 6x6. **Mixing Consoles**: Ramsa WRT-820B. **Audio Recorders**: Tascam MS-16HS 16-track 30 ips w/dbx and autolocator/remote, Tascam ATR-60-2HS 2-track 30 ips w/dbx and remote, Sony PCM-2500R-DAT, Sony TCD-D10 R-DAT. **Cassette Recorders/Duplicators**: TEAC V-670. **Noise Reduction Equipment**: RSP Hush 2000 single-ended 2-channel. **Echo, Reverb & Delay Systems**: Lexicon LXP-1, Lexicon LXP-5, Alesis Quadraverb, Alesis MIDVerb II, (2) Alesis Microverb, Yamaha SPX90, (2) Ibanez SDR-1000+, DigiTech DSP-128, ADA S-1000 delay. **Other Outboard Equipment**: Lexicon MRC w/V, 3.0 software, (2) Symetrix 525 2-channel comp/lim/expander/gate, ART HD-15 stereo 15-band graphic EQ, BBE 422A Sonic Maximizer 2-channel, Aphex Type C Aural Exciter, Alesis Micro Enhance. **Microphones**: Neumann U87A, Shure SM58, EV RE20, EV PL20, (2) EV BK1 condenser, (10) EV 757 N/Dym, (2) EV 457 N/Dym, (6) EV 408 N/Dym. **Monitor Amplifiers**: Hafner P-125. **Monitor Speakers**: Tannoy PBM-6.5, (6) Toa SM-25M monitor/cue. **Musical Instruments**: Kurzweil K-1000SE, Roland D-110, Yamaha CP60M piano, Korg P-3, Hohner D-6 clavinet, Rogers 5-pc drums w/3/4 toms and Istanbul cymbals, Alesis HR-16/HR-16B combo. **Other MIDI Equipment**: Alesis MMT8 sequencer, Alesis data disk. **Video Equipment**: Panasonic PVS-350 1/2" S-VHS D/FX camcorder, JVC HRS8000-U 1/2" S-VHS Hi-fi D/FX VCR.

[16] **HARRISON DIGITAL AUDIO SERVICES**; also **REMOTE RECORDING**; 670 Amherst Rd.; Granby, MA 01033; (413) 467-3737. Owner: Jeff Harrison.

[16] **HI-TOUCH STUDIOS**; 10200 Owen Brown Road; Columbia, MD 21044; (301) 596-6612; FAX: (301) 229-0289. Owner: N.B. Tharp. Manager: Steve Antosca.

[16] **LAKEWEST RECORDING STUDIO**; also **REMOTE RECORDING**; 200 Mishnock Rd.; West Greenwich, RI 02817; (401) 397-4828; FAX: (401) 826-3518. Owner: Jack Gauthier.

[16] **LAUGHING DOG PRODUCTIONS INC.**; also **REMOTE RECORDING**; 80 Van Duzer St.; Staten Island, NY 10301; (718) 720-9497; FAX: (718) 727-1526. Owner: Bill Donnelly. Manager: Daniel Fredman.

[16] **LEVELHEAD RECORDING/STUDIO AT SOUNDSCAPE**; also **REMOTE RECORDING**; 500 W. 52nd; New York, NY 10019; (212) 664-1033. Owner: Gary Wade, John Dee. Manager: Gary Wade, John Dee. **Specialization & Credits**: Levelhead/Soundscape is a 24-hour recording and rehearsal facility offering 2" 16-track, 1/2" 8-track, 1/4" 4-track, and 1/4" 2-track recording. We have over 2,000 square feet of space as well as a large selection of instruments, amps and outboard gear. Our staff features experienced engineers with major engineering and production credits. We also offer in-house music production, from jingles to soundtracks to albums. Past clients have included: CBS Records, Famous Music Publishing, Damn Yankees, Ted Nugent, Tommy Shaw (Styx), Chris Stein (Blondie), Terence Trent D'Arby, Jack Blades (Night Ranger), Peter Noone (Herman's Hermits), Aztec Two Step, Dave Liebman, Ymo Toro, Richard X. Heyman (Cypress Records), The Triplets (Epic Records), Miller Beer and Miller Concert Series, Bed & Bath, National Dance Company of Senegal, Aid to Afghanistan Relief Fund Committee, Helen Slater (*Supergirl*), Peter MacNicol (*Ghostbusters II*), Mary Stuart Masterson (*Immediate Family*), Fisher Stevens (*Short Circuit I & II*).

[16] **LIVING SOUND PRODUCTIONS**; also **REMOTE RECORDING**; 22 Crescent Rd.; Westport, CT 06880; (203) 226-6908. Manager: Jeff Jacoby.

[16] **MANOR HOUSE PRODUCTIONS**; also **REMOTE RECORDING**; PO Box GG; Millwood, NY 10546; (914) 241-2028. Owner: Robert Cancro, Brian Smith. Manager: Anne Marie Vaujoies.

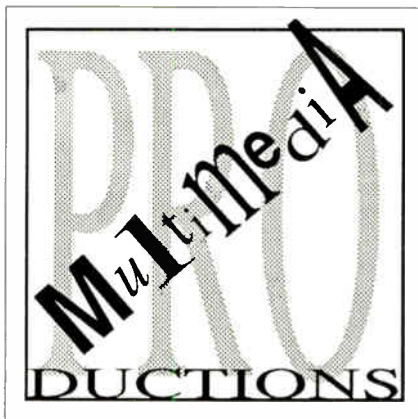
[16] **MERLIN MUSIC**; 224 Sullivan St., E-41; New York, NY 10012; (212) 594-2414. Owner: Paul Goodrich. Manager: Paul Goodrich.

[16] **MIDNIGHT MODULATION**; 2211 Pine Ln.; Saugerties, NY 12477; (914) 246-4761. Owner: Michael Bittman.

[16] **MIRROR SOUND STUDIOS**; also **REMOTE RECORDING**; 1731 Cinnaminson Ave.; Cinnaminson, NJ 08077; (609) 829-9413. Owner: Ken Fordyce. Manager: Thomas Bitzer.

Engineers: Jon Udell, Ken Fordyce, Diane Carberry. **Mixing Consoles**: Soundcraft Series 600 40x8. **Audio Recorders**: Tascam MS-16 16-track w/autolocator, Technics RS-1500 2-track, Panasonic SV-3700 DAT. **Cassette Recorders/Duplicators**: (2) Sony TC-K555, Marantz PMD-200. **Noise Reduction Equipment**: (4) dbx 150. **Synchronization Systems**: Zeta-3 synchronizer. **Echo, Reverb & Delay Systems**: Lexicon PCM70 w/3.0 software, LXP-5 w/MRC controller, LXP-1. Yamaha REV7, DeltaLab ADM 1024, Eventide instant flanger. **Other Outboard Equipment**: dbx 160, dbx 166, Symetrix 522, Omni Craft GT4, Orban 621B parametric EQ, Valley People Dyna-Mite, BBE 402 Maxie, Drawmer DS-201. **Microphones**: (2) AKG 451EB, Neumann KM84, EV RE20, (3) Sennheiser MD-421, (2) Shure SM57, AKG 224, AKG D-2000E, Shure PL9, EV 660, (3) Crown PZM, AKG C-41EB-US. **Monitor Amplifiers**: BGW 7000B, Crown DC-150. **Monitor Speakers**: JBL 4313, Yamaha NS-10. **Musical Instruments**: Roland S-330, Roland U-220 sampler, Roland Octapads, Korg CX-3, Fender guitar amps, Roland guitar amps, Music Man HD 120, Ludwig drums, Gibson, Fender, Ibanez guitars, Alesis HR-16 drum machine. **Other MIDI Equipment**: IBM AT w/VGA monitor w/Twelve Tone's 3.0 pro Cakewalk sequencer and other MIDI software, Roland MKB-300 keyboard controller.

[16] **MORTAL MUSIC PRODUCTIONS**; also **REMOTE RECORDING**; PO Box 361; Reading, MA 01867; (617) 944-5381. Owner: Andy Pinkham. Engineers: Andy Pinkham, Mark Retallack. **Audio Recorders**: Fostex E-16 with 4050 autolocator, Sony PCM 501 with Sony SLHF 900 super beta, Sony DTC-700 DAT, Fostex Model 20 w/center track. **Cassette Recorders/Duplicators**: Tascam, Sony. **Echo, Reverb & Delay Systems**: Lexicon PCM70, (2) Roland SRV-2000, Korg DRV-3000, Roland DEP-5, Alesis quadraverb, (2) Alesis Microverb II. **Musical Instruments**: Yamaha C-5 conservatory grand, Korg SG-1D sampled grand. **Rates**: Call for rates.



MULTIMEDIA PRODUCTIONS INC.
Baltimore, MD

[16] **MULTIMEDIA PRODUCTIONS INC.**; 1201 W. Pratt St., Ste. J; Baltimore, MD 21223; (800) 229-0355. Owner: Erik Steensen. Manager: Mike Cochran.

[16] **THE MUSIC FACTORY**; also **REMOTE RECORDING**; 107 Canal St.; Rome, NY 13440; (315) 336-2151. Owner: Alec Serway. Manager: Rick Montalbano. Engineers: Rick Montalbano, Alec Serway. **Dimensions**: Studio 25x13, control room 13x18, isolation room 7x14. **Mixing Consoles**: Trident Series 65 24x16 w/custom patch bay. **Audio Recorders**: Otari MX-70 16-track, Tascam 580B 8-track w/dbx NR, Otari 5050B 2-track w/dbx 180 NR, Panasonic 3500 2-track DAT. **Cassette Recorders/Duplicators**: Tascam 122 MkII, (2) Nakamichi MR-2 Noise Reduction Equipment: (8) dbx 150 180. **Echo, Reverb & Delay Systems**: Lexicon LXP-1 digital reverb w/MRC MIDI remote, Lexicon PCM60 digital reverb, (2) ART Multiverb II, Master-Room XL305 spring stereo reverb, DeltaLab ADM-2048 delay, Aphex Type C Aural Exciter, Orban 516EC sibilance controller, (6) dbx 160X compressor limiter, Drawmer DS201 dual gate, MXR 31-band graphic EQ (room), Carvin 31-band graphic EQ (room), GateX 4-channel noise gate. **Other Outboard Equipment**: Tascam MX80 8x2 line/mic mixer, Tascam PE404-channel parametric EQ. **Microphones**: EV RE20, AKG 414EB, (2) AKG C-451, Shure SM81, (2) Sennheiser MD-421, (4) EV ND408, AKG C-535, AKG D-12, (4) EV BK1, (2) Crown PZM. **Monitor Amplifiers**: SGS 700W MOSFET, OSC 300W MOSFET, Hill 300W MOSFET, Hill 300W MOSFET. **Monitor Speakers**: (2) JBL 4411 control 3-way, (2) Tannoy PBM-6.5 near-field. **Musical Instruments**: Baldwin 7'3" grand 1984, Yamaha recording series drum kit, all forms of Latin percussion instruments, Ensoniq EPS sampler w/80MB SCSI and huge patch lib., Roland D-50 synth, Moog Memorymoog w/MIDI, Yamaha DX7 w/FB01, Roland MC-500 MIDI sequencer, Alesis HR-16 drum machine, Sequential Circuits Drumtraks, Hammond B-3 organ w/Leslie speaker. **Other**: Studio room has variable acoustics, control room has LEDE design. **Rates**: \$42 per hour. Day rate is \$300. Block booking rate will be quoted on request.

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[16] **MUSIC FACTORY ENTERPRISES INC.**; also REMOTE RECORDING; Ford & Washington Sts., Ste. 300; Norristown, PA 19401; (215) 277-9550. Owner: Jeffrey Calhoun. Manager: Jamie Bones/Linda Hoverson.

[16] **NOMAD**; also REMOTE RECORDING; PO Box 886; Levittown, NY 11756; (516) 735-2655. Owner: Jim Brown. Manager: Jim Brown. Specialization & Credits: MIDI and live projects with full automation and Sound Tools. Pressing available. Artists include: Elk Motel, Tin Prison, Inaudible Noises, Amelia Terry.

[16] **PARADOX PRODUCTIONS INC.**; also REMOTE RECORDING; 50 Anna Ct.; Gaithersburg, MD 20877; (301) 869-9122. Owner: Mark L. Crowe, William B. Baker. Manager: William B. Baker.

[16] **P.P.I. RECORDING**; also REMOTE RECORDING; 147 W. 33rd St., Ste. 308; New York, NY 10001; (212) 279-1631. Owner: Chip M. Fabrizi. Manager: Tony Tyler/Marcelo Mella.

[16] **RED APPLE WORX INC.**; also REMOTE RECORDING; PO Box 441532; Fort Washington, MD 20744; (301) 292-4415. Owner: Carl W. Fletcher. Manager: Ralph E. C. Maunder. Engineers: Ralph E. C. Maunder (principal engineer), Jeff Martin, Dave Mackin, Dave Kramnic, Jesse A. Meman, Joseph Cascio. Dimensions: Room 1: studio 23x18, control room 13x11. Room 2: studio 7'6"x7'6", control room 5'x5'6". Mixing Consoles: Allen and Heath CMC-32 32x16, Sound Workshop 1280-B 12x8. Audio Recorders: Fostex E-16 16-track w/Dolby C, Fostex E-2 3-track, Tascam 234-Syncassette 4-track, Panasonic SV-3500 DAT. Cassette Recorders/Duplicators: Technics RS-B905 w/Dolby B, C, dbx. Noise Reduction Equipment: Valley People Kepex II, Ashly Audio SG-33 noise gate, BBE aural processor. Synchronization Systems: Fostex 4030/4035 synchronizer and remote. Echo, Reverb & Delay Systems: Alesis Xtic digital reverb, Orban 1113B dual reverb, Biamp MR 140 pro reverb, RDS digital delay system, Valley People Gain Brain II, Yamaha analog delay, MIDiverb II, Korg DRV-3000 digital reverb system, Yamaha SPX90, DSP 128+. Microphones: (2) AKG C-414B-ULS acoustic condenser, (10) Electro-Voice N/D357, (2) Nakamichi CM-100, (2) AKG D-12E, (4) Yamaha ME50, Beyer dynamic ME-500. Monitor Amplifiers: McIntosh 2105, McIntosh 2100, Bose 1801. Monitor Speakers: (2) Gauss 7258 studio, (4) Toa 280-ME 3-way reference, (2) Toa 265-ME 2-way reference. Musical Instruments: Fender Chroma Polaris, Ensoniq ESQ-M synthesis module, Korg EX-8000 synthesis module, Yamaha TX81Z FM tone generator, E-mu SP-1200 digital sampling percussion system, Akai S900 digital MIDI sampler, Akai VK90, Moog Source, Korg M1 digital workstation, Kurzweil GX-1000. Other MIDI Equipment: Voyetra sequencer Plus MkIII 3,000-track recorder, Yamaha KX88 keyboard controller, Korg RK-100 remote MIDI controller. Other: Premier drum set, Mesa Boogie studio 22 amplifier, Vendex personal computer (IBM) XT. Rates: \$45/hour, studios A or B.

[16] **REEL WORLD MUSIC STUDIOS LTD.**; 12 Bardonia Mall; Bardonia, NY 10954; (914) 627-3025. Owner: Olivia Melendez, Gilbert Camacho. Manager: Ernest A. Melendez.

[16] **RMS RECORDING**; Merrick, NY 11566; (516) 378-7430. Owner: Robert Santora. Manager: Robert Santora. Engineers: Robert Santora, Justin Cucci, Peter Bainone. Dimensions: Studio 20x18, control room 10x12. Mixing Consoles: Yamaha 16x8x4x2, Ross PC 8400 (power). Audio Recorders: Studer 4-track, Tascam MS-16 1" 16-track, PCM Beta VHS. Cassette Recorders/Duplicators: Nakamichi 7A, Onkyo Integra 3-head. Noise Reduction Equipment: dbx 16-track. Echo, Reverb & Delay Systems: Alesis MIDiverb III, Yamaha SPX90, Audio Logic stereo compressor/limiter/gate, ADA pitch track, (2) EV 357, (2) Shure SM58, Sennheiser, Beyer, various—any model available upon request. Other Outboard Equipment: Aphex Aural Exciter. Monitor Amplifiers: Onkyo Integra, (2) Ross. Monitor Speakers: (2) JBL 4406, (2) Mk III type C, (2) Toa horn load. Musical Instruments: Pre CBS Fender Strat, Gibson Les Paul, Ibanez bass, Ovation acoustic/electric, saxophone, flute, Gibson SG, 7-piece drum w/Zildjian

cymbal, Music Man HD 130 reverb, Roland JC-77, Peavey Mark III bass. Video Equipment: Sylvania VHS 4-head color monitor. Other: Fender pre CBS cabinet, EV 4 speaker, EV bass bin, (2) Altec 15" scoops, cable. Rates: Available upon request.

[16] **RPL**; also REMOTE RECORDING; 1100 State St.; Camden, NJ 08105; (800) 966-3001. Owner: Ron Oiano. Manager: John Miller. Audio Recorders: Digidesign Sound Tools/DAT I/O hard disk, (2) Sony PCM-2500 DAT, Panasonic SV-255 portable DAT, 3M M56 8-track 1", Otari MTR-12LX/HX Pro, Webster-Chicago "Memory Corder" wire recorder. Cassette Recorders/Duplicators: ElectroSound 64-1, ElectroSound 32-1, Ampex custom, Ampex custom 4-track, (3) Concept Designs cassette winder, customized broadcast/other cartridge winder, Apex direct imprinter, King cassette winder. Noise Reduction Equipment: Dolby A/B, Dolby SR, dbx, Echo, Reverb & Delay Systems: (2) SPX90, (2) Alesis MIDiverb, Orban stereo, EMT stereo plate tube/solid-state switchable, EMT mono plate, outrageous live room, Audio Instrument 44A tube-driven 7-head loop delay, Orban stereo delay. Other Outboard Equipment: (4) Pultec EQP-1, Pultec MEQ, (3) Pultec MB-1 mic preamp, (4) Universal Audio 175-B compressor, RCA BA6A compressor. Musical Instruments: Korg M1, (2) Roland D-50, Yamaha KX88 controller, (4) Roland D-50 module, Yamaha DX7. Other MIDI Equipment: Roland S-330, Roland SKS-20.

[16] **SHUSTER SOUND**; 29 Burt Ct.; Valley Stream, NY 11581; (516) 791-2985. Owner: Bob Shuster. Manager: Bob Shuster.

[16] **SILVER LININGS INC.**; also REMOTE RECORDING; 25 Huntington Ave., Ste. 617; Boston, MA 02116; (617) 262-9289; FAX: (617) 266-3067. Owner: Arklay King. Manager: John Kusiak.

[16] **60 SECOND STREET PRODUCTIONS**; PO Box 3098; York, PA 17402; (717) 757-4989. Owner: Leash & Associates. Manager: David SanSoucie.

[16] **SOUND LABORATORY INC.**; also REMOTE RECORDING; PO Box 113; New Kingstown, PA 17072; (717) 245-9952. Owner: Brian Roschberger. Manager: Marty Anderson.

[16] **SOUND SITUATION**; also REMOTE RECORDING; 130 Griswold St.; Glastonbury, CT 06033; (203) 633-1952. Owner: David Budries. Specialization & Credits: Our specialization is in professional sound design and musical composition. We have experienced sound designers and composers who regularly work in the facility. This is a complete project studio with a comfortable working atmosphere. Our rates are competitive. The studio offers 18 sound generation modules including ADS and sequential sampling, Kurzweil sample modules, Yamaha FM synthesizers, Roland sound modules and SampleCell. Our computer and DSP technology is Yamaha C1 with 14MB RAM and 20 MB of disc storage; Macintosh IIx with 20MB RAM and 1.6 gigabytes of disk storage. Our software consists of Sound Designer II (w/CS1 controller), StudioVision, Professional Composer, Professional Performer, Finale, Kurzweil patch editor Softsynth, Cakewalk, Music Printer Plus and Powerbase. We can produce CD-ready DAT masters and demos. We also have a very large sampling, instrument and sound effect library featuring more than 20,000 sounds. The primary designer is David Budries.

[16] **SOUNDWORKS**; REMOTE RECORDING only; 10 Wheeler Ct.; Watertown, MA 02172; (617) 924-0065. Owner: Brian Capouch, Ken Selcer.

[16] **STAR BASE STUDIO**; 41-53 53rd St.; Woodside, NY 11377; (718) 476-0665; FAX: (718) 476-0665. Owner: Chuck Thompson. Manager: Chuck Thompson. Engineers: Chuck Thompson. Dimensions: Studio 17x15, control room 25x20. Mixing Consoles: Amek Tac Scorpion 32x8x8x2, Roland M-160 16x2. Audio Recorders: Otari MX-70 16-track, TEAC 3340S 4-track, Tascam 32 2-track, (2) Sony PCM2500 2-track. Cassette Recorders/Duplicators: Sony TC WR-930 double deck, Bang & Olufsen BE2200, Marantz 5420. Noise Reduction Equipment: (4) Symetrix 511A, dbx 150. Synchronization Systems: Akai MPC-60. Echo, Reverb & Delay Systems: Lexicon 480L, Lexicon PCM70, Lexicon PCM60, Yamaha REV7, (2) Yamaha SPX90, Alesis MIDiverb II, DeltaLab Super Time Line, DeltaLab Effectron II, Furman RV2 (spring reverb), Roland SRV-2000, Roland SRV-3000, (2) dbx 160X, (2) Drawmer DS-201 dual gate, (2) dbx 166, UREI 1176LNL, Loft 400 quad gate/limiter, Furman PQ-6 parametric EQ, MXR 1/3-octave graphic EQ, Eventide H3000-S, Aphex Type C Aural Exciter, Focusrite ISA 115H0, Massenburg 8200, BBE 802, Orban 464A, Orban 536A. Other Outboard Equipment: Studiomaster IMP-1, Lexicon MFC, Microphones: Neumann U89, Neumann U87, AKG 421, AKG 414, (5) Shure SM58, (2) Shure SM57, Shure SM77, (4) EV D054, EV RE20, Beyer. Monitor Amplifiers: Crown Micro-Tech 1200, Crown Micro-Tech 600, Crown DC-300, Crown D-75, JBL 6260, QSC 5.1, QSC 3.7. Monitor Speakers: (2) EV MS-802, (2) Yamaha NS-10, (2) JBL 4412. Musical Instruments: Akai S-1000 HD, Casio FZ-1 sampler, Roland D-50, Korg M-1, Roland MKS-20, Roland MKS-70, Yamaha DX7, Roland MT-32. Video Equipment: (2) Panasonic AG-7500A editing VCRS-VHS, Panasonic AG-A750 editing controller. Other: (2) Technics 1200 turntables.

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[16] STRAIGHT ARROW RECORDINGS (FORMERLY BACKTRACKS); also REMOTE RECORDING; 5 School Ave.; Montpelier, VT 05602; (802) 223-2551. Owner: Mike Billingsley. Manager: Geoff Brumbaugh, Lin Haley. **Specialization & Credits:** We love music and sound, and specialize in all the wonderful nuances of 44.1kHz digital recording...both remote in good halls and on-location with DC power. As inventors and patent holders of Crown's Stereo Ambient Sampling System (SASS™) microphone continue our pioneering work with stereo imaging, using the SASS-P and SASS-B plus our own designs for both ultraquiet location work and a special 4-channel SASS-plus-digital recorder configuration. We use all the best components for accuracy and detail, including special preamps, modified B&K mics and power supplies, Star-Quad cable and Apogee filter sets. We lovingly record acoustic ensembles (ethnic, folk and classical), percussion, location samples and sound effects, environmental ambience (including 4-channel) and live performances. CD premastering/editing and digital domain modifications in-house give us full control of the final stereo or 4-channel image. We create auditory environments for museums and galleries. Artist commissions are welcome.



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[16] STRONG ISLAND RECORDS INC.; PO Box 453; Massapequa Park, NY 11762; (516) 798-2308; FAX: (516) 541-8264. Owner: Robert La Serra. Manager: Robert La Serra.

[16] SUBTERRANEAN SOUND; also REMOTE RECORDING; 504 High St.; Long Branch, NJ 07740; (908) 870-1379. Owner: Stacy Pheon. Manager: Stacy Pheon.

[16] SUNSET RIDGE RECORDING; 194 Kensington Rd.; Hampton Falls, NH 03844; (603) 926-2907. Owner: Christopher Biggi. Manager: Christopher Biggi. Engineers: Christopher Biggi. Dimensions: Studio 15x25, control room 13x13. **Mixing Consoles:** Tascam M-600. **Audio Recorders:** Tascam MS-16 1". (2) Toshiba DX9000 PCM (VHS), Tascam 42B 2-track, Panasonic SV-3500 R-DAT, Sony DTC 700 DAT. **Cassette Recorders/Duplicators:** (2) Tascam 122. **Noise Reduction Equipment:** (2) dbx DX8DS, Rocktron Hush IICX. **Synchronization Systems:** SMPTE trac. **Echo, Reverb & Delay Systems:** Lexicon PCM70, (2) Lexicon LXP-5, TC Electronic 2290 digital delay, TC Electronic 1210 chorus/flanger, (4) DigiTech Smart Shift, Alesis QuadraVerb, Alesis MIDiverb II, Yamaha SPX90II, Barcus-Berry 802 signal processor, Roland SRV-2000 reverb. **Other Outboard Equipment:** (2) Audio Logic SC-31 equalizer, (2) Audio Logic MT44 quadgate, (2) dbx 163x compressor/limiter, dbx 166 compressor/limiter, Symetrix 525 stereo compressor/limiter, dbx 463X noise gate, dbx 263X de-esser, Rane HC6 headphone amp, Aphex Aural Exciter type III. **Microphones:** Neumann U87, (2) AKG C-414BULS, (2) EV RE20, (3) EV ND308, (2) EV RE11, (3) Audio-Technica 813R, (2) Beyers M160, (3) Audio-Technica 33R, CAD Equitek II. **Monitor Amplifiers:** AB Electronics 900A, and 600A. **Monitor Speakers:** (2) UREI 809, (2) Yamaha NS-10M studio, (2) Auratone. (2) Snell Acoustics Modela, (2) Westlake audio M-4. **Musical Instruments:** Alesis HR-16 drum machine, Korg M1, Roland D-70 linear synth, Roland JX-8P polyphonic synth, Roland Octapad, Baldwin Spinnet, Ludwig 1972 5-piece drum kit, Hohner "Jack" bass, Korg DSM-1 sampler/synth. **Other MIDI Equipment:** Atari 1040. **Video Equipment:** Minolta V10R camcorder, (2) Kodak MVS-5000 8mm audio/video recorder. Rates: Call for block rates.

[16] TECHNISOUND; 140 Madison Ave.; Westfield, NJ 07090; (908) 233-2026; FAX: (908) 654-1180. Owner: Stephen Kay. **Specialization & Credits:** Independent producer/programmer Stephen Kay's private studio—available for select projects including records, film scores, jingles, demos and session work. The studio features a fully loaded Fairlight Series III, (16-bit digital sampler/synthesizer/audio production device) with Rev8 software/hardware, software and hardware, 16MB WRAM, and over 400 MB of disk storage. Gigabytes of sounds, from orchestral to dance/pop/rap. Fully equipped 16-track studio, 48-input TAC Scorpion, Tascam 1" MS-16 w/dbx,

digital FX rack, UREI 811C monitors, DX71FD, TX802, Prophet-VS, Korg T1, M1R & Wavestation A/D, 7"4" Yamaha grand, two ARP 2600s, Macintosh w/Passport & Opcode software, digital mixdown, many outboard FX, more. Complete your master-quality project in-house or pre-produce for transfer at a larger facility. Fairlight III and MIDI rack will travel for session work. Credits include Charlie Singleton's *Man On A Mission* (Epic), NBC (Olympics, Wimbledon French Open, SportsWorld), programming, sequencing and sound design for Korg & Sound Genesis.

[12] THREE COMMUNICATIONS PRODUCTIONS; also REMOTE RECORDING; 510 Main St.; Middletown, CT 06457; (203) 347-8439. Owner: Michael Arafah. Manager: Michael Arafah.

[16] THURSDAY PRODUCTION INC.; 189 Norman Rd.; New Rochelle, NY 10804; (914) 235-7505. Owner: Daniel M. Welsh. Manager: Susan J. Welsh. Engineers: Daniel Welsh, Len Fassett Ernie Sprance. Dimensions: Studio A: 23x16 w/movable ceiling-to-floor gobos, drum booth 11x6 w/floating floor, control room 12x11. Studio B: voice booth/studio 10x8, control room 10x12. **Mixing Consoles:** Tascam M16 24x24x8, Ramsa WRT-812 12x8, Carvin MX-1202 (remote board). **Audio Recorders:** Tascam DA 30 DAT, Tascam TSR-8 8-track, Tascam 80-8 8-track, Otari MX-70 16-track, Otari MTR-10 2-track, Ampex 440C 2-track, Ampex 440C 4-track, Otari MX-5050 MkII 2-track, (2) Otari MX-5050 mono full-track. **Cassette Recorders/Duplicators:** Tascam 122B, Tascam 112, Sony TCM-5000 mono. (3) Telex CDM 4-cassette duplicator. **Echo, Reverb & Delay Systems:** Lexicon PCM60, Lexicon Prime Time, Master-Room XL-305, Orban stereo reverb, MXR System II, ART Proverb, Alesis MIDiverb II, Yamaha SPX90, ART Multiverb EXT, Effectron II, Alesis MIDiverb. **Other Outboard Equipment:** dbx 160, UREI limiters, (2) Aphex Studio Dominator limiter, Ashly Audio parametric EQ, Orban 245F, Aphex Exciter C, Rane and MXR graphic EQ. **Microphones:** Neumann U87, AKG 414ULS, Shure SM80, Sennheiser 421, (5) Electro-Voice RE80, Shure, Beyer, Crown PZM, etc. **Monitor Amplifiers:** McIntosh 2120, Haller, JVC JAS 41. **Monitor Speakers:** JBL 4312, Yamaha NS-10M, Tannoy PBM-8, Auratone 5C. **Musical Instruments:** Baldwin custom upright, Yamaha DX7FD, Korg M1 workstation, Roland MKS digital piano, Korg DD-1, Roland Juno-106, Yamaha TX rack, Korg DVP, Ludwig full set of drums (three snares). **Other MIDI Equipment:** Atari 1040ST, many multitrack programs available, CD effects libraries. **Video Equipment:** Complete interformat edit system including: (3) Panasonic AG 7550 edit deck, Alta Centaurus, UM1 450 edit-controller, all Sony broadcast monitors. Audio layback to video available. Rates: Available upon request. Project rates available. **Specialization & Credits:** Thursday Productions offers a relaxed yet professional recording environment capable of handling a wide variety of audio-visual projects. Our engineers are not just tweekers...they are solid, creative people dedicated to making the best possible audio product available. Attention to detail is the working standard—no aspect of the production process is overlooked. Thursday has become a leader in making soundtracks for education...many of which have won major awards for their clients. It's gratifying to know that some of these same clients have been filling the datebooks for over ten years. They recognize our studio's ability to consistently deliver clean products year after year. Perhaps one of our long-term clients sums it up best...and they seem to be able to rate everything. Says executive producer Ed Partikian for the radio version of *Consumer Reports Magazine*: "Thursday has produced our nationally distributed radio feature since 1985. Obviously they're pros. But more than that, they are dedicated to the project...and our program is the happy beneficiary."

[16] TRS AUDIO SERVICES; also REMOTE RECORDING; 2617 Peach St., Ste. 203; Erie, PA 16508; (814) 453-3032. Owner: John Mazza, Keith Veshecco. Manager: Dominic Veshecco.

[16] VISCONTI RECORDING STUDIOS; also REMOTE RECORDING; 486 Wellington Ave.; Cranston, RI 02910; (401) 467-9362. Owner: Russell J. Martin. Manager: Russ Martin.

[16] WINGS AS EAGLES; also REMOTE RECORDING; 151 Keeley Ave.; Warwick, RI 02886; (401) 738-6914. Owner: Bill Montella Jr.

[16] ZEDZ MUSIC; also REMOTE RECORDING; 49 Hanover St.; Malden, MA 02148; (617) 324-1989. Owner: Zed McLarnon. Manager: Zed McLarnon.

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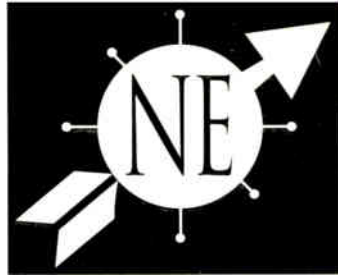
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[8] **ADVANCED AUDIO PRODUCTIONS**; 41 Rose Terrace; Trumbull, CT 06611; (203) 459-0869. **Owner:** Joseph Cichon. **Manager:** Joseph Cichon.

[4] **AFTERHOURS MOBILE POST PRODUCTION**; also *REMOTE RECORDING*; 960 1st Avenue, Ste. #10, West Haven, CT 06516; (203) 933-4339; FAX: (203) 640-5549. **Owner:** Mark R. Nathan. **Manager:** Nathan Rich.

[8] **AUDIO RECORDING TECHNOLOGY INSTITUTE**; 756 Main St.; Farmingdale, NY 11735; (516) 454-8999; FAX: (516) 582-8213. **Owner:** James J. Bernard. **Manager:** Kathy Downes. **Specialization & Credits:** A comprehensive, hands-on course in the theory and practice of audio recording. The program consists of four levels: Basic Audio A101, Advanced Audio A201, Recording Workshop A301 and MIDI Technology M401. Each course is 10 weeks, 3 hours per week, and provides extensive experience with the studio equipment. Audio Recording Tech Inst. (ARTI) was established in 1969 and maintains very limited enrollment per class; it also offers affordable tuition with financing and realistic employment opportunities. Initially, qualifying graduates may use all ARTI studios for their own private sessions as a member of the Recording Engineers Association. This exclusive Association offers the graduate important, professional studio experience in preparation for eventual employment in the industry. Presently, ARTI has two school locations in Long Island, New York, a location in Anaheim, California, and the newest location in Orlando, Florida.

[2] **AUDIOFORCE**; 630 9th Avenue, Room 1012; New York, NY 10036; (800) 847-4123; (212) 262-2626; FAX: (212) 262-2632. **Owner:** Ray Buccafusco. **Specialization & Credits:** Complete digital mastering, editing and transfer service. Audioforce technicians are experts in a wide range of CD prep and mastering services, including digital-to-digital format conversion using Harmonia Mundi sample rate converter. With this amazing device, we can transfer your tracks or final mixes to Sony 1630 (the standard for CD mastering) from Mitsubishi X-86HS, Sony 3042, DAT, and DASH or Pro-Digi multitrack and other formats—entirely in the digital domain. We also offer CD mastering services using the Sony 3000 digital editing package along with Sony digital EQ, limiting and compression. Digital format incompatibility? At Audioforce, there's no such thing.

[8] **AUDIOTRAX**; also *REMOTE RECORDING*; 16 Brigham St.; Hudson, MA 01749-2773; (508) 562-7516. **Owner:** Robert Kellaway. **Manager:** Bob Kellaway.

[4] **AVELINA'S**; also *REMOTE RECORDING*; RR 1, Box 429; Jeffersonville, NY 12748; (914) 482-3668. **Owner:** Patrick Muth. **Manager:** Patrick Muth.

[8] **CHANNEL TWO SOUND & STUDIO**; 364 White St.; So. Burlington, VT 05403; (802) 860-1509. **Owner:** Donald Quenneville. **Manager:** Donald Quenneville.

[8] **CHERRY PRODUCTIONS RECORDING STUDIO**; RD2, Box 640; Honesdale, PA 18431; (717) 383-2621. **Owner:** Bill Vargas. **Manager:** Bill Vargas.

[8] **CITY SOUND PRODUCTIONS**; 39 E. 7th St., Ste. #2; New York, NY 10003; (212) 228-9494; FAX: (212) 228-9494. **Owner:** Bob Kirschner. **Manager:** Bob Kirschner.

[8] **THE COMMERCIAL REFINERY INC.**; also *REMOTE RECORDING*; 2105 Maryland Ave.; Baltimore, MD 21218; (301) 685-8500; FAX: (301) 685-0313. **Owner:** Michael Collins, Mark Young. **Manager:** Jacoi Burfield.

[4] **CREATIVE MEDIA MARKETING INC.**; 2175 Allen St.; Rahway, NJ 07065-4401; (908) 574-8984; FAX: (908) 574-1830. **Owner:** Russ Pantier.

[8] **CREATIVE SOUND STUDIOS**; also *REMOTE RECORDING*; 601 N. Sixth St.; Allentown, PA 18102; (215) 439-8004; FAX: (215) 439-0103. **Owner:** Hal Schwoyer. **Manager:** Carole

Silvov. **Engineers:** Hal Schwoyer, Mark Stocker, John Mark Miller. **Dimensions:** Room 1: Studio 11x17, control room 11x13. Room 2: Studio 4x8, control room 9x14. **Mixing Consoles:** Soundcraft 600 24x16x2, Tascam 5B 8x4x2. **Audio Recorders:** Otari 5050 MkIII 8-track, Otari 5050 MkIII 4-track, Otari 5050 MkIII 2-track, Otari 5050 B 2-track. **Cassette Recorders/Duplicators:** Nakamichi MR-1, Nakamichi MR-2, Telex 6120 high-speed duplicator. **Noise Reduction Equipment:** dbx Type 1 12-track noise reduction. **Synchronization Systems:** Cipher Digital Shadow II. **Echo, Reverb & Delay Systems:** Yamaha Rev7 digital reverb, Yamaha SPX-90 digital reverb, Lexicon PCM-42 digital reverb, Alesis Quadraverb. **Other Outdoor Equipment:** dbx 166 limiter/compressor, Orban 424A limiter/compressor de-esser, Orban 622b parametric equalizer, Klark-Teknik DN-360 Y3 octave graphic equalizer. **Microphones:** Neumann TLM-170, AKG 414EB, AKG 451 w/CK3 & CK22 capsules, (3) Sennheiser 421, Beyers CV710N, (2) Shure SM58. **Monitor Amplifiers:** (2) Crown DC-300II, (2) Crown DC75. **Monitor Speakers:** (2) JBL 4, (4) Auratone 5C. **Musical Instruments:** Roland S-50 sampling keyboard, Roland R-8 human rhythm composer, E-mu Systems Proteus 2, Roland D-550 L/A synthesis sound module. **Other MIDI Equipment:** Hybrid Art SMPTE track Gold software, Atari 1040 ST computer. **Video Equipment:** JVC BR7700V VHS recorder. **Other:** Cipher Digital Shadow II synchronizer, Sony PCM-501 digital processor, Symetrix T1 101 telephone interface, NEI 2709 1/3-octave real-time analyzer.

[8] **CYRUS SOUND**; also *REMOTE RECORDING*; 3545 South Park Rd.; Bethel Park, PA 15102; (412) 854-2076. **Owner:** Cy Anderson. **Manager:** Cy Anderson.

[8] **JACK DANIELS PRODUCTIONS**; also *REMOTE RECORDING*; 8056 Tuckerman Ln.; Potomac, MD 20854; (301) 983-9595; FAX: (301) 983-8750. **Owner:** Jack Daniels. **Manager:** Phyllis Feelermyer.

[8] **DEMO-VOX® /D-V-X INTERNATIONAL®**; also *REMOTE RECORDING*; 1038 Bay Ridge Ave.; Brooklyn, NY 11219; (718) 680-7234. **Owner:** Demo-Vox Sound Studio Inc. **Manager:** Laura Grass.

[8] **EVERHART AUDIO ENGINEERING**; also *REMOTE RECORDING*; 26 Troscher Lane; Bethpage, NY 11714; (516) 932-5253. **Owner:** John Sillan. **Manager:** John Sillan.

[8] **FIREHOUSE STUDIOS**; also *REMOTE RECORDING*; 291 Port-Au-Peck Ave.; Oceanport, NJ 07757; (908) 229-3328. **Owner:** Dennis Dubrow. **Manager:** Dennis Dubrow.

[8] **FISHBOWL PRODUCTIONS**; *REMOTE RECORDING* only; 89 Clinton St., 3rd Floor; Everett, MA 02149; (617) 389-5816. **Owner:** Joe Miraglio.

[4] **FOOTHILL DIGITAL PRODUCTIONS INC.**; also *REMOTE RECORDING*; 215 West 91st St.; New York, NY 10024; (212) 877-0973. **Owner:** Allan Tucker. **Manager:** Allan Tucker. **Specialization & Credits:** Foothill specializes in digital editing and mastering. We took delivery in May 1989 of New York's first Sonic Solutions hard disk CD premastering system. 1991 finds us in new and much larger facilities, where we operate two mastering suites as well as real-time duplication and digital transfers. Please call for rates.

[4] **SCOTT GORDON ENTERPRISES INC.**; also *REMOTE RECORDING*; PO Box 791; Paramus, NJ 07653-0791; (201) 670-0054; FAX: (201) 670-7785. **Owner:** Scott Gordon. **Manager:** H.S. Buehneier.

[8] **HBS PRODUCTIONS/HONEY BEAR STUDIO**; PO Box 533; Cambridge, MA 02238; (617) 661-1971. **Owner:** Bruce Bartone. **Manager:** Alan Mates.

[8] **HELIO TROPE STUDIOS LTD.**; also *REMOTE RECORDING*; 21 Erie St.; Cambridge, MA 02139; (617) 868-0171; FAX: (617) 868-0172. **Owner:** Boyd Estus & James Gnebsch. **Manager:** Suzanne Sobert.

[8] **HONEYBEAR RECORDING STUDIO**; 2510 Raspberry St.; Erie, PA 16502; (814) 459-BEAR (2327). **Owner:** Walter Slivinski.

[8] **BOB JOHNSON AUDIO ENGINEERING**; also *REMOTE RECORDING*; 7 Crofut Rd.; Naugatuck, CT 06770; (203) 729-7871. **Owner:** Robert D. Johnson.

[8] **JOYFUL NOISE STUDIO**; 47 E. Walnut St.; Metuchen, NJ 08840; (908) 549-7928. **Owner:** Ted Coleman/Colthe Music. **Manager:** Ted Coleman.

[8] **KINGDOM PRODUCTIONS**; Rt. 6 E., PO Box 506; Mansfield, PA 16933; (800) 334-1456; FAX: (717) 662-3875. **Owner:** Juanita/Johnny Berguson. **Manager:** Peter Bombar. **Engineers:** Peter Bombar, Buck Smith, Mark Hamilton, Ivan Wheeler. **Dimensions:** Room 1: ISO booth, control room 15x24. Room 2: Duplication control room 14x12. Room 3: Audio/Video control room 14x12. **Mixing Consoles:** SECK 1882 18x8x2, EV C-12 12x4x2, (2) Studiomaster 16x4x2. **Audio Recorders:** Tandberg TD-20A 2-track open reel, Tascam TSR-8 8-track open reel, Tascam 40-4 4-track. **Cassette Recorders/Duplicators:** (2) Nakamichi MR-1 deck, Sony deck, Telex 6120XL high-speed duplicator. **Noise Reduction Equipment:** dbx Type I noise reduction system for analog recorders. **Synchronization Systems:** Peavey audio/video sync controller, J.L. Cooper PPS-100 SMPTE/MIDI. **Echo, Reverb & Delay Systems:** DigiTech 256 multi-effects processor, Alesis MIDiverb III, Alesis MIDiverb, Orban cooperator, Orban limiter, (2) Furman compressor/limiter, Furman QN-44 quad noise gate, BBE 822A sonic maximizer, (2) BBE 442A sonic maximizer, Ibanez UE-405 multi-effects, (2) Switchcraft custom patch bay, (6) various guitar effect boxes. **Other Outdoor Equipment:** SAE computer-direct CD player, Kenwood 1013 turntable. **Microphones:** Assortment of Sennheiser, Beyers, Shure, Telex and EV. **Monitor Amplifiers:** Kenwood 600T custom power, Kenwood 305, Crest power, Marantz integrated, BGW power, BGW preamp. **Monitor Speakers:** (2) Peavey 308S, (2) Boston Acoustics A-70, (2) JBL Control-1, (2) Wharfedale-Teesdale, (2) EV. **Musical Instruments:** Assorted Gibson, Fender, Ibanez, and Yamaha guitars, Korg T-3 keyboard, Linn LM-1 drum machine, Alesis HR-16B drum machine, E-mu Emix sampler, Roland U-220 keyboard. **Other MIDI Equipment:** Opcode MIDI interface, Macintosh Plus w/4 meg + 20 meg hard drive, Mark of the Unicorn 3-5 performer. **Video Equipment:** (2) JVC 3/4 U-matic 8250-U recorder, JVC 3/4 U-matic 6650-U recorder, JVC S-VHS BR-S611 U recorder, (8) JVC VHS BR-7000UA recorder/duplicator, (2) JVC VHS BR-8600 U recorder/duplicator, (3) Sony Trinitron color monitor, Panasonic BT-S1300 master color monitor, crosspoint latch 6119 switcher, Hitachi V-099 waveform monitor, Alta Cygnus TBC line base corrector, For-A FA-300 time base corrector, JVC RM-860 remote editor, IBM/Megatron character generator, Panasonic AG-7450 dockable S-VHS recorder, Panasonic 300 CLE 3CCD camera, JVC BY-110U 3 tube camera, Bencher light control table, complete 4-light Lowell kit.

[4] **MASTERS BY JOHNSON**; 832 Montgomery Ave.; Narberth, PA 19072; (215) 664-1188. **Owner:** Stephen Johnson. **Manager:** Stephen Johnson.

[8] **METRO RECORDING STUDIOS**; 364 Worthington St.; Springfield, MA 01103; (413) 734-3240. **Owner:** Bill Myers. **Manager:** Nik Simonik.

[4] **MIDI SYSTEMS**; 2780 Main St. Carriage House; Buffalo, NY 14214; (716) 835-5967. **Owner:** James and Virginia Wilson. **Manager:** James B. Wilson.

[8] **MOMMA EVE SOUNDS**; also *REMOTE RECORDING*; 4209 Fords Lane; Baltimore, MD 21215; (301) 358-8780. **Owner:** Larry Lee McCants. **Manager:** Evelyn Floyd. **Engineers:** Larry Lee McCants, Carel Floyd Jr. **Mixing Consoles:** SECK 1882 MkII, Yamaha MV1602. **Audio Recorders:** Tascam TSR-8 8-track. **Cassette Recorders/Duplicators:** Tascam 122 Mk II. **Noise Reduction Equipment:** Hush II CX, built-in dbx TSR-8, Dolby B, C 122 MkII. **Synchronization Systems:** SMART FSK. **Echo, Reverb & Delay Systems:** Alesis Quadraverb multi-EFX unit, Yamaha R100 reverb unit, (3) Alesis MIDiverb II reverb unit. **Other Outdoor Equipment:** Yamaha Q2031 31-bank graphic stereo EQ, Yamaha GC2020 compressor/limiter, BBE 422 A sonic maximizer, BBE 822 A sonic maximizer, Symetrix stereo parametric EQ, Alesis micro cue amp. **Microphones:** (13) various. **Monitor Amplifiers:** Hafler P225. **Monitor Speakers:** (2) Yamaha NS-10Ms, (2) custom-made Big Boys. **Musical Instruments:** (3) Yamaha TX812 w/over 2500 voices, Roland U220, Roland RBM w/complete card library, Yamaha RX5 w/complete cartridge library. **Other MIDI Equipment:** Yamaha QX5 sequencer, Yamaha MJCB, Yamaha KX88.

[4] **MULTITAPE**; 1630 Euclid St. NW, Ste. 131; Washington, DC 20009; (202) 332-1522; FAX: (202) 462-4163. **Owner:** Bruce F. Moyer. **Manager:** Bruce F. Moyer.

[8] **MULTITRAX**; (508) 790-1674. **Owner:** Mike Shephard, Gerry Cimino, Rich Fitzgerald. **Manager:** same.

[4] **NARWOOD PRODUCTIONS**; also *REMOTE RECORDING*; 425 Madison Ave.; New York, NY 10017; (212) 755-3320. **Owner:** Narwood Productions Inc. **Manager:** David Le Van, Ellen Silver.

[8] NITE DEPOT RECORDING; 880 Fifth St.; Beaver, PA 15009; (412) 774-8444. Owner: Joe Spagnola.

[8] PANETTA STUDIOS; also REMOTE RECORDING; 6 Miller Ave.; Elmwood Park, NJ 07407; (201) 791-0254. Owner: Angelo Panetta. Manager: Rob Pashman.

[8] PERMANENT WAVE PRODUCTIONS; also REMOTE RECORDING; PO Box 276 M.O.; Wrentham, MA 01545; (508) 842-4422. Owner: Brian D. Sharkey. Manager: Joe Kenneally. Specialization & Credits: PWP professional services: Commercial advertising productions, digital and analog multitrack recording, mixing, mastering and post-production, film/video scoring and soundtrack production, music composition and arranging, MIDI system design and programming, synthesizer programming and session musicians.

[2] POMEROY AUDIO; also REMOTE RECORDING; 193 Baltic St.; Brooklyn, NY 11201; (718) 855-2650; FAX: (718) 875-3324. Owner: Doug Pomeroy. Manager: Doug Pomeroy.

[8] FRANK SCHEIDT AUDIO PRODUCTIONS INC.; also REMOTE RECORDING; 15 Charlotte St.; Rochester, NY 14607; (716) 232-5210; FAX: (716) 232-5212. Owner: Frank Scheidt. Manager: Matt Scheidt.

[2] SELTZER SOUND; also REMOTE RECORDING; 185 E. Broadway; New York, NY 10002; (212) 477-2372. Owner: Carl Seltzer.

[8] SOUND OF GLASS; PO Box 2329; Worcester, MA 01613; (508) 835-2005. Owner: Charles E. Blaum. Manager: Charles E. Blaum.

[8] STUDIO PASS; 596 Broadway #602; New York, NY 10012; (212) 431-1130. Owner: Harvestworks Inc. Manager: Alex Noyes. Engineers: Brenda Hutchinson, Connie Kiellyka, Dana McCurdy, Alex Noyes, Ted Orr, Bill Seery, David Steinberg. Dimensions: Studio 12x15, control room 20x15. Mixing Consoles: Soundcraft 600 24x8x16. Audio Recorders: Otari MX-5050 MkII-8-track, Otari MX-5050 BII 2-track, Otari MX-5050 BII 2-track w/center time code track, Tascam 40-4 4-track, Panasonic SV-3700 DAT recorder, Sony PCM-F1, and Digidesign Sound Tools digital audio workstation. Cassette Recorders/Duplicators: (2) Tascam 122. Noise Reduction Equipment: (10) dbx Type I, (2) dbx 929 single-ended. Synchronization Systems: (2) Tascam ES-50, Tascam ES-51 control unit. Echo, Reverb & Delay Systems: Eventide H3000 (SE, B, sampling), Lexicon 224XL, Lexicon PCM-70, Lexicon PCM-60. Other Outboard Equipment: dbx 166 stereo compressor w/gates, UREI Stereo parametric EQ, Drawmer DS-201 noise gates, BBE 422 sonic maximizer. Microphones: AKG 414, (2) AKG 451, (2) Sennheiser 421, Shure SM57, (2) EV CS-51e, Countryman IsoMax II. Monitor Amplifiers: Crown D-150, Harman Kardon Citation Sixteen. Monitor Speakers: (2) JBL 4311, (2) Yamaha NS-10M. Musical Instruments: Digidesign SampleCell sampler, E-mu Emax SE sampler, Akai S950 sampler, Yamaha TX802 FM synthesizer, Roland D-110 L/A synthesizer, Roland MKS-80 Super Jupiter analog synthesizer w/programmer, Roland TR-707 drum machine. Other MIDI Equipment: Macintosh Ixx w/4MB RAM and 80MB HD, Digidesign Sound Tools, Digidesign SampleCell, Digidesign Pro I/O, Digidesign DAT I/O, Imprints 600MB HD, Opcode Studio Three MIDI/SMPTE interface, Mac Plus w/2 5MB RAM and 20MB HD, Southworth Jam Box 4 - MIDI/SMPTE interface, Roland MKB-1000 master keyboard, Roland Octapad drum pad controller, extensive software library including Opcode (Studio Vision, Vision, MAX, Galaxy, Cue, etc.), Digidesign (Sound Designer, Deck, Turbosynth, Softsynth, Q-Sheet, etc.) and more. Video Equipment: JVC CR-6650 3/4" VCR, Sony SLV-50 VHS VCR, Sony SL-2000 Beta VCR, Panasonic CT-2010Y 20" monitor. Other: Technics SL-1200 MkII turntable, Sony CDP-208 ESD CD player. Rates: Available upon request, including special rates for our Sound Tools digital audio workstation, CD mastering, and audio/video sweetening.

[8] SYNERGY PRODUCTIONS; 874 Broadway; New York, NY 10003; (212) 673-5139. Owner: Reed W. Robins. Manager: Reed W. Robins. Engineers: Reed W. Robins, Bob "Dee" Delureficio. Dimensions: Studio 8x5.5, control room 14x12. Mixing Consoles: Carvin 24-track, J.L. Cooper MR3 automated, Studiomastrer 8x4, Rane HC-66-way headphone mixer. Audio Recorders: Tascam ATR 60-8 8-track, Tascam 34 4-track, Otari MX-5050 MkII 2-track, Sony PCM-601 ESD 2-track digital. Cassette Recorders/Duplicators: Tascam 122 Mark II, (6) various. Noise Reduction Equipment: dbx DX8 DS 8-track dbx I, dbx DX 4D 4-track dbx I. Synchronization Systems: Southworth Jam Box 4 SMPTE, J.L. Cooper Magi 2 SMPTE. Echo, Reverb & Delay Systems: Yamaha SPX90 multi-effects unit, Korg SDD-2000 sampling digital delay, DeltaLab ADM 1024 digital delay, Lexicon LXP-1 digital effects unit, (2) Symetrix 501 compressor/limiter, Roland GP-8 guitar effects processor. Microphones: AKG 414 condenser, (2) Beyer Dynamic, (2) Audio-Technica ATM-21 dynamic, Electro-Voice 644 shotgun, Electro-Voice V-3 dynamic. Monitor Amplifiers: (2) Audiometric 441 220W power amps. Monitor Speakers: Auratone cubes small control room, Tannoy PBM-6.5 reference, Bose IA-2000 medium control, BSR model 158 large control room, BSR studio. Musical Instruments: Roland D-50 16-voice synthesizer, Alesis HR-16 12-voice synthesizer, Yamaha TX802 16-bit, Akai S612 16-bit drum machine, Roland S-330 16-bit sampler, Steinway 1917 concert grand piano, Moog Opus 3 analog synthesizer, Fender Stratocaster, Gibson SG Deluxe electric guitar, Guild fretless electric bass guitar, Fender fretted electric bass guitar, Gibson ES335 hollow body electric guitar, Takamine EF381 amplified acoustic guitar, Takamine EC1325 amplified classical guitar, Sakun #5 classical guitar, Kohno #10 concert classical guitar, Ibanez IMB 2010 MIDI guitar controller. Other MIDI Equipment: Macintosh Plus (2.5 meg) computer, Atari 1040 ST computer, (2) Alesis MMT-8 portable sequencer, Roland MSQ-100 portable sequencer, J.L. Cooper MSB+ MIDI patch bay, Akai MD280 sampler disk drive, Atari SC 1224 color monitor, Ibanez IMC-1 MIDI guitar interface. Video Equipment: Hitachi VT M137A 1/2" videocassette deck, JVC HR D3050U 1/2" videocassette deck, Toshiba 8730 video monitor. Other: Marshall 100 guitar amp head, (2) Marshall 4x10 speaker system cabinets, Fender Bandmaster guitar amp head, (5) various headphones, (5) various remote controls, (4) various turntables/CDs, Onkyo TX 3000 receiver/power amp. Rates: \$30 an hour (call for duplication rates and additional info). Specialization & Credits: At Synergy, our design philosophy is a simple one. Our resources are devoted to providing a level of quality unavailable in other studios of our size. Our results are clearly comparable to the biggest facilities around, yet at a fraction of their cost. We boast many features, such as digital mixdown, 30 ips tape speed, dbx noise reduction and mixdown automation—the kind of features that make these larger facilities desirable. We also boast a creative production team skilled in all musical styles and all areas of entertainment technology. Our services include music recording, voice-overs, SFX and Foley, composition, production, and real-time cassette duplication. Located in midtown Manhattan. Rates: \$30/hr. (Call for duplication rates and additional information.)

[8] TAKE FIVE STUDIOS; 630 Mack Place; Linden, NJ 07036; (908) 486-0129. Owner: William V. Weist. Manager: Willie Weist.

[8] THE TURNING MILL; also REMOTE RECORDING; PO Box L; Palenville, NY 12463; (518) 678-9293; FAX: (518) 678-9293. Owner: Owen Swenson. Manager: Lucy Swenson.

[4] THE VIDEOCENTER OF NEW JERSEY INC.; also REMOTE RECORDING; 228 Park Avenue; East Rutherford, NJ 07073; (201) 935-0900; FAX: (201) 935-2496. Owner: Frank O'Connell and Bob Camitta. Manager: Bob Schaffner. Engineers: Rich de Martino, Frank O'Connell, Mike Reilly, Peter TenHaagen. Dimensions: Studio 22x24, control room 15.5x18.5. Mixing Consoles: Panasonic Ramsa 8616 16x2, Sony MXP 290 8x2, Yamaha M406 6x4, Altec AAM 1678C gated 8x2. Audio Recorders: Sony APR 5003 2-track 1/4" center track time code, Otari 5050 BII 2-track 1/4". Noise Reduction Equipment: Dolby A 361 2-track. Echo, Reverb & Delay Systems: Yamaha REV7 digital reverb. Other Outboard Equipment: (2) dbx 180X compressor/limiter, Orban 622 B parametric equalizer, Orban 672A equalizer, UREI 565 "little dipper" notch filter. Microphones: Electro-Voice RE20, Schoeps MK 41 hypercardioid shotgun, (8) Tram TR50 lavalier, Sennheiser ME80 shotgun w/ME40 + MKE2-3 lavalier capsule, (2) Countryman Iso Max 4 podium, (2) Shure SM82, (4) Nady 610B w/VHF 900 xmitr wireless mic, Nady VHF 700 w/610B xmitr diversity wireless, (2) AKG 160 E1. Monitor Speakers: Fostex RM 780. Video Equipment: Sony BVE-5000 computer editing system, Sony BVE-910 computer editing system, (2) Sony DVR-10 D2 VTR, (3) Sony BVH-2000 1" VTR, (3) Sony BVW-75 Betacam SP VTR, (2) Sony BVW-70 Betacam SP VTR, Sony BVW-15 Betacam VCR, Sony BVU-800 3/4" VCR, (2) Sony VO-5850/5800 3/4" VCR, Sony BVX-30 color correction system, Grass Valley 200 switcher, Grass Valley 100 switcher, Zaxcom HCP 400 TBC master control station, Ampex ADO 2000 DVE w/digimatte & digitrail, Abekas A52 DVE, (3) Sony BVP-7 CCD camera, (2) Sony BVP-3 camera, (3) Sony BVW-35 Betacam SP field records, Sony BVW 05 Betacam SP dockable recorder.

[8] ZAX TRAX; also REMOTE RECORDING; 344-A Prospect Blvd. #101; Frederick, MD 21701; (301) 846-0843. Owner: Zachary Mabie. Manager: Zak Mabie

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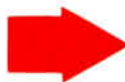
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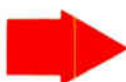
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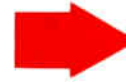
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- 11. Contractor/Installer
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- 23. Make the final decision or give approval for purchase
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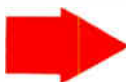
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009	039	069	099	129	159	189	219	249	279
010	040	070	100	130	160	190	220	250	280
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012	042	072	102	132	162	192	222	252	282
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014	044	074	104	134	164	194	224	254	284
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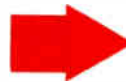
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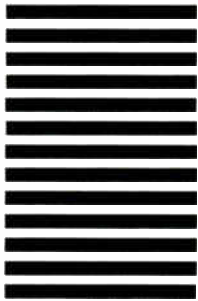
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—FROM PAGE 53, CHIP SHOTS

sequencer has also been upgraded. Version 1.3 includes all of the enhancements made to Vision, plus the ability to handle 4-channel playback when Digidesign's hardware becomes available in a few months. Opcode Systems Inc., Menlo Park, Calif.; (415) 369-8131.

Low Frequency Designer 1.0 is a loudspeaker design program for the IBM PC or compatibles developed by **SpeakEasy**. It's a low-frequency acoustic modeler for five types of loudspeaker systems, and calculates a set of driver and box parameters based on a specified system response, as well as calculating system response based on a set of parameters. SpeakEasy. Newton, Mass.; (617) 969-1460.

Steinberg/Jones announced the release of its newest update for the Cubase Macintosh sequencing program. Cubase 1.8 includes a user-definable page with faders, knobs and buttons capable of sending any MIDI data; full support of Apple's MIDI Manager; computer-aided

melody generation; improved quantization features and more. The program lists for \$579, with upgrade to registered users for \$84.

Also available now from Steinberg is Avalon 2.0, the latest version of its universal sample editing software for Atari computers. New features include time correction, erase mode, loop mode, improved display speed, SCSI support and sophisticated sound creation and editing functions. Steinberg/Jones, Northridge, Calif.; (818) 993-4091.

Dynaware, developers of Macintosh 3-D design and animation software, has tossed its hat into the MIDI sequencer, editor and music notation ring. Ballade uses a handsome graphic interface with level meters and volume faders to allow display and editing of up to 16 tracks of MIDI information. It's bundled with MIDI Manager and a MIDI interface card. The Tone Editor supports the Roland MT-32, CM-32L and CM-64. Suggested retail price is \$195, and the program is also available for the IBM PC and compatibles at the same price. Dynaware USA Inc., Foster City, Calif.; (415) 349-5879.

Mark of the Unicorn is now ship-

ping Performer 3.6, which features real-time editing, input quantization and other improvements. The program is priced at \$495, with free upgrades to registered Performer 3.5 users. Mark of the Unicorn, Cambridge, Mass.; (617) 576-2760.

JL Cooper's Sync•Link combines a Macintosh MIDI interface with a SMPTE and "smart" FSK synchronizer for synchronizing MIDI sequencers and hard disk recorders to video or audio tape. It reads and generates all SMPTE time code formats, as well as "smart" FSK sync, and supports MIDI time code, DTL and MIDI clock with song position pointer. JL Cooper Electronics, Marina del Rey, Calif.; (213) 306-4131.

Oops. In February's "Chip Shots" I reported on Microeditor, a Microsoft Windows 3 Version of the Microsound-AT hard disk audio recorder and editing system. Unfortunately, I forgot to say where people could find out more about the product. The company can be reached at Micro Technology Unlimited, Raleigh, N.C.; (919) 870-0344.

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—FROM PAGE 59, TIMING IS EVERYTHING

those people will turn out to be really good. And I don't want them to be trained in bad production methods.

Miller: As the cost of this equipment comes down, it opens up this whole market of people who are never going to produce anything professional, but boy, are they going to have a lot of fun at home. And they'll keep buying the stuff.

Block: You have no idea how many products have been developed where two things get lost in the end: the time code reader and the machine control. They're trivial things compared to the development of DSP chips and all this other technology. But it becomes a nightmare when they finally open the Pandora's box.

Eggleston: We stayed away from that right from the beginning. We wanted Opus to be a slave. That was nice because all it took was one cable. I'd be out there selling systems, and what did these people want to do? No offense, but they wanted 16 of your modules in the room; they wanted this and that. All of a sudden there were 800 cables and an interfacing mechanism, all just to do machine control. Now, three years later, we're almost there.

Johnsen: One of the things we're required to do with 90% of the composers that come in—either first-timers or experienced people who have never worked without sprockets—is to go to their place with a Lynx module, because we need that constant, and lock their machines up and say, "Okay, here's what you're doing wrong." We take out the scope and look at the output of their time code generator—and I use that as a euphemism in this case. I'd like to see a magazine article that rates the output of consumer-grade time code generators. Then people would actually understand why we have problems synchronizing their crap, even though they work great at home all the time. It's a common time base mentality at this point.

Miller: Toward a unified time base.

Johnsen: Right. That's the essence of what we must teach people: The world needs to run on one heartbeat. ■

Mark Miller and Mix associate editor Paul Potyten are considering co-producing a video to help demystify time code. They are actively seeking input from interested parties.

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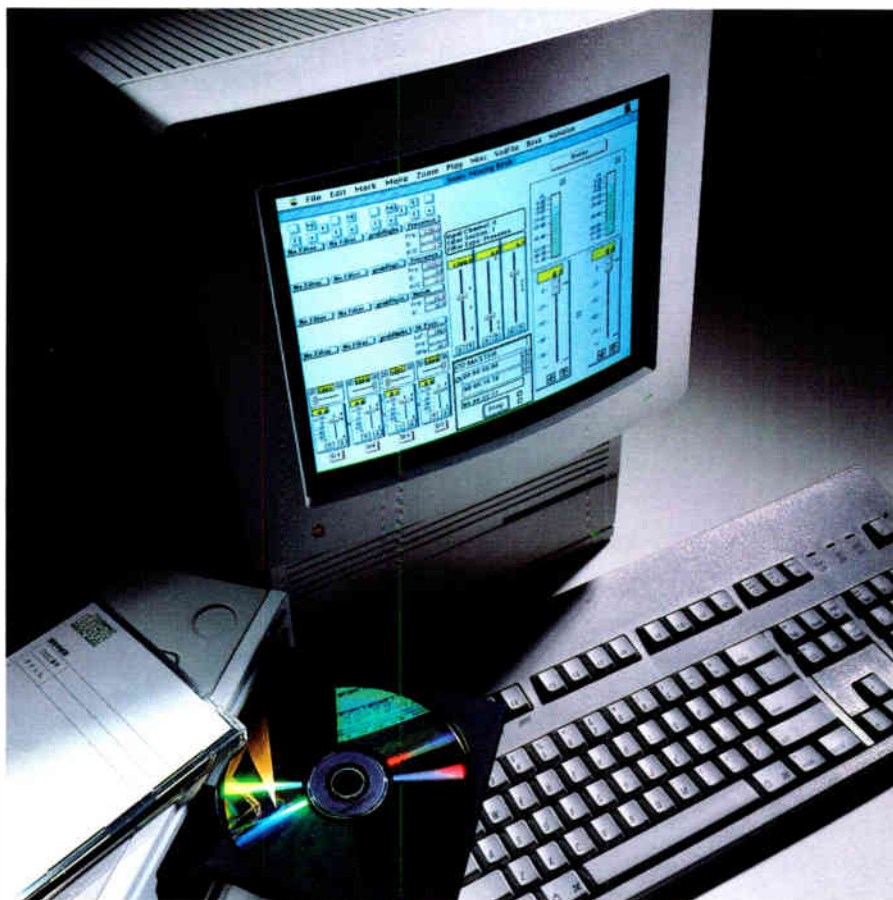
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