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The Applications Magazine for Audio Professionals

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20th

Anniversary Issue

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Readers' Poll Results
SR Systems
Article Index: 1970-1989

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CONTENTS

20th Anniversary

A Short History of RE/P

In RE/P's 20 years, much has changed and much remains.

By the RE/P staff 20

The RE/P Hall of Fame

The results are in and the votes are tallied for RE/P's 20th Anniversary Reader Polls.

By the RE/P staff 33



Ads Throughout the Ages

A look at some of the more notable ads that have appeared between RE/P covers in the last 20 years.

By the RE/P staff 50

What a Long, Strange Trip It Has Been

A glimpse at people in an industry that changes day-to-day, yet always maintains its growth potential.

By Pamela Fleener 56

Sound Reinforcement Grows Up

A look at live sound from the 1950s through today.

By the RE/P staff 67

The RE/P Index: 1970-1989

A comprehensive listing of the 917 articles, show listings and directories RE/P has published from the April/May 1970 issue to the December 1989 issue. The listings are broken down into 70 alphabetical categories.

By the RE/P staff 74



On the Cover

Design by Stephanie Chiles.

Departments

Editorial	7
News	8
Managing MIDI	12
SPARS On-Line	14
The Cutting Edge	16
Classified	97
Advertisers' Index	104
Rapid Facts Cards	105
Subscriber Cards	107

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Twenty and Counting

There's probably no greater oxymoron than "pro audio magazine." Hmm, you've got a magazine, something you hold in your hand and read. And it's describing extremely complex events involving your sense of hearing, your perception of that sense, your emotional response to those perceptions, in addition to the interrelation of such disciplines as art, music, acoustics, psychoacoustics, electronics and science (not necessarily in that order).

Pretty daunting, isn't it? Words can't begin to describe the creation of audio. Yet we keep at it, because even in this imperfect medium, you decide when, where, and at what pace you want to read.

When Martin Gallay launched this magazine, he hoped that the readers would "identify with the purpose and earnestness of our effort to publish an extraordinary magazine devoted to the art, science and equipment of recording." That statement remains true today. Our goal is to provide you, our readers, with the practical information that you can use in your job every day.

RE/P turns 20 this month, and we've departed from our regular format to explore where our industry has been these past two decades. Our intent is not to celebrate RE/P; rather, it is to celebrate this industry. The magazine, and its history, may be the vehicle, but ultimately we're celebrating the men and women who have made this industry unique.

In this issue, you'll find the results of the 20th Anniversary Readers Polls that we conducted in the December issue; read what some of the more prominent members of our industry think about the last 20 years; trace the development of sound reinforcement from its humble beginnings; and, finally, peruse the ultimate pro audio resource, the RE/P Index: an alphabetical, topical listing of articles from 1970 through 1989.

Throughout it all, we hope you get a sense of how this industry got where it is today, and where it is going. This industry was founded by individuals, be they producers, studio owners or equipment manufacturers. What struck me most in going through the back issues is that this is still true.

The fact that thousands of people still try to carve a niche in this industry, despite the obstacles, is as good a testament to the vitality of the industry as I can think of. It's still possible for one person to surprise the hell out of us, to make us think about something in a new way, and that bodes well as we settle in for the rest of the decade.

There are a lot of people who made this magazine a success for 20 years, both on the staff and outside of the staff. Some of our former staff members continue to be prominent players; Laurel Cash-Jones mentions some of them in this month's Cutting Edge. The very best of our industry has written for RE/P; some of their work can truly be considered classic. With 10 or 15 years' hindsight, the vision of their work is pretty amazing.

You also have to include the people we've interviewed. In the past 20 years, we've profiled the top engineers, producers, studio owners, studio designers and recording artists. Even with all of this technology around us, this is still a people business. The ability to read how someone approaches the art and science of recording can't be overlooked.

It might seem to be a shameless attempt to score points to mention the equipment manufacturers, which also happen to be the magazine's advertisers. It's really not. Advertising role aside, the manufacturers have been invaluable sources of technical information. As the creators of the gear we use, their viewpoints provide a unique perspective.

But the people who are most responsible for making the magazine a success are our readers. All of the efforts of putting a magazine together are wasted if people don't read it, talk about it with their friends, and file it for future reference.

In that first issue, Martin wrote that he hoped the magazine would become good friends with the readers. That happened, and it continues to this day. Our readers are 20,000 people who think of RE/P as more than a magazine. We see you at shows, talk to you on the phone, visit you in your facilities. Your comments and insight have been invaluable all these years. It's a privilege to work on a magazine so highly regarded by those who read it.

We dedicate this issue to our readers, and look forward to a long and happy association.

Dan Torchia
Editor

SMPTE/AES exploring the feasibility of joint conferences

SMPTE and AES have formed a study group to determine the feasibility of jointly sponsoring future conferences and conventions. In the past, the societies have held their annual conferences on opposite coasts in the United States.

The announcement comes less than a year after the formation of the Pro Audio Exhibitors Group, a U.K.-based group that stated as one of its goals the consolidation of audio trade shows. An American group, PAEG-US, was formed at the past Winter NAMM show.

However, according to Don Plunkett, the study group chairman for AES, the PAEG had no influence on the decision; the idea for the group came from SMPTE. He added that AES' association with the PAEG is increasing for other purposes. Nancy Engel of SMPTE, while not corroborating Plunkett's statement, said that the formation was based on mutual need.

In related news, the AES executive committee and board of governors have agreed on the formation of an exhibitors' advisory committee. Dr. Marshall Buck, AES president-elect and convention policy chair, has been named the director of the committee. Phase one of the activity will be the issuance of a long-range convention site preference questionnaire for AES exhibitors.

Professional Audio Women

Professional Audio Women, formed by Cari Casteel of Western Audio Sales, Erika Lopez of Audient Marketing Services, and Sue Jones of Amek/TAC, had its first official meeting (excluding an impromptu Christmas party) at the Winter NAMM show in Anaheim this January. Pro Audio Women (PAW), created as an avenue for meeting, talking and sharing ideas, is comprised of women from the media, dealers, rep firms, writers, manufacturers and independents not only from the pro audio industry, but from the research, advertising, video, film, MI and recording industries. More than 70 women are currently included on the mailing list. According to PAW, it was named as such because women are always being pawed at, are thrown bones and work like dogs. Upcoming meetings are planned for NSCA in Las Vegas, April 19-21, Summer NAMM, June 15-17, and AES, Sept. 22-25. For more information, call Cari Casteel at 818-246-3806, fax 818-247-1393; or Erika Lopez at 818-

773-9497, fax 818-718-2886. Or write to Professional Audio Women, P.O. Box 7217, Mission Hills, CA 91346.

3M Lyra awards presented

3M has presented its ninth annual Lyra awards to five audio teams nominated for the Academy Award "Achievement in Sound" category.

Receiving the awards were:

For "The Abyss": Don Bassman, dialogue re-recording mixer; Kevin F. Cleary, music re-recording mixer; Richard J. Overton, sound effects mixer; and Lee Orloff, production sound mixer.

For "Black Rain": Donald O. Mitchell, dialogue re-recording mixer; Kevin O'Connell, sound effects mixer, SFX; Greg P. Russell, music re-recording mixer; and Keith A. Wester, production sound mixer.

For "Born on the Fourth of July": Michael Minkler, dialogue re-recording mixer; Gregory H. Watkins, sound effects mixer, SFX; Wylie Stateman, sound effects recording mixer; and Tod A. Maitland, production sound mixer.

For "Glory": Donald O. Mitchell, dialogue re-recording mixer; Gregg C. Rudloff, sound effects mixer, SFX; Elliot Tyson, music re-recording mixer; and Russell Williams II, production sound mixer.

For "Indiana Jones and the Last Crusade": Gary Summers, dialogue re-recording mixer; Ben Burt, sound effects re-recording mixer; Shawn Murphy, music re-recording mixer; and Tony Dawe, production sound mixer.

Original music scoring mixers who also received Lyra awards include Dennis Sands for "The Abyss"; Jay Rifkin for "Black Rain"; Armin Steiner for "Born on the Fourth of July"; Shawn Murphy for "Glory"; and Dan Wallin for "Indiana Jones and the Last Crusade."

Valley files for reorganization

Norman Baker, president of Valley International, has confirmed that his company filed for reorganization under the provisions of Chapter 11 of the federal bankruptcy code on Feb. 13. Baker explained, "This action became necessary to preserve claims which our company has against a contract manufacturer of Valley products, and to protect new suppliers until this conflict can be resolved."

According to Baker, "Valley entered into an agreement with the supplier to begin delivery of a substantial portion of the Valley product line effective July 1988. The

supplier failed to deliver the goods on time and in the quantities agreed upon. These actions forced Valley to fall behind in its deliveries and interrupted product flow. After several attempts to remedy this problem, Valley was forced to seek alternative sources of supply. Ironically, these unfortunate circumstances have served to heighten demand for our products. We now have three independent sources manufacturing and delivering products to us so that we can catch up on existing orders and quickly return to normal delivery times."

Baker further stated, "During this very difficult time we have been overwhelmed by the supportive attitude of our loyal customers, dealers, distributors, representatives and vendors. In our 21-year history, we have evidently made quite a name for ourselves in the field of audio signal processing, judging from the the number of people who refuse to accept products other than those made by Valley. We are fortunate to have excellent advisors and employees to aid in steering us through this process. Having now found an effective method to remedy our past problems, I look forward to achieving smooth and predictable product deliveries in the very near future and futhering our reputation in the industry by delivering new products and technologies for the recording, broadcast and live sound industries."

In related news, Valley has relocated to 616 Bradley Court, Franklin, TN 37064; 615-370-5901; fax 615-370-5907.

News notes

Apogee Electronics has been appointed the exclusive U.S. distributor for the Audioscope model 9000 audio measurement system.

Contact Distribution Ltd. has been named the exclusive Canadian distributor of **Rane** professional audio products.

New England Digital has announced the realignment of its sales and marketing departments to enable it to develop more new products while meeting the growing needs of its present customer base. David Hartley has been named vice president of sales, and Franklin B. Sullivan has been named vice president of marketing and product development.

Also, NED has opened its United Kingdom headquarters in West London's Ham-

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NEWS

mersmith section. The 3,000-square-foot state-of-the-art office complex includes three fully equipped demonstration studios that are serviced by a central computer room containing five NED systems. Seminar and classroom facilities are also available. All U.K. sales, marketing, administration, service, and training support programs are based in these headquarters. Mark Terry has been promoted from European director of sales and marketing to vice president of international sales, a new position.

The 32nd annual Grammy Awards were aired live on CBS in the Stereosurround audio format using **Shure** HTS professional encoding and decoding equipment.

DIC Digital has relocated to 222 Bridge Plaza South, Fort Lee, NJ 07024; 201-224-9344; fax 201-224-9363.

Peter George Associates, acoustical and theater consultants, has relocated to 40 Prince St., New York, NY 10012-3431; 212-334-9700.

Meyer Sound has announced upcoming SIM (Source Independent Measurement) training seminars in Tokyo, New York, London and Berkeley, CA. One-day introductory seminars have been held in Toronto, Montreal, at the Berklee School of Music in Boston, and at the Nashville AES chapter. For more information, call Mark Johnson at 415-486-1166.

QSC has named Western Audio Sales, Glendale, CA, as its 1989 Representative of the Year.

The **DeWolfe Music Library** has won a first place award in the Hispanic advertising category in the ADDY advertising competition conducted by the New Mexico Advertising Commission. The music composed by Andy Quin backed up a :30 radio commercial produced for the Albuquerque Journal. Recording and production was provided by John Barton.

T.C. Electronics has appointed Virtual Designs Ltd. as its exclusive U.S. distributor.

Neve has reported sales of its 82 Series console to Alfa Recording (Puerto Rico), Beat Street (Los Angeles), Harmony Recorders (Burbank, CA), Trevor Lawrence (Studio City, CA), Klub Kev's

(Seattle) and Rhythm Street Sound (New York). Orders for the 82 Series have been received from Southlake Recording (New Orleans) and Studio Masters (Los Angeles). In addition, Signature Sound (San Diego), formerly L.A. Recording, has installed a Neve V Series console; and 321 Studios, formerly the Record Plant, has installed two Neve V 60 consoles with Flying Faders for its Studio C and mix room.

Martin Audio has sold the Otari MTR-100A 24-channel analog recorder to Home Box Office (HBO), Brigg's Bakery and Java Recording. A Mozart audio console was purchased from Martin Audio by Tullen Sound Recording; Idlers Recording has installed a Magnum audio console and an Otari MX-80 recorder.

Wave Sound Recorders (Los Angeles) has ordered its second **AMS Industries** AudioFile system.

KRK Monitoring Systems (Huntington Beach, CA) has signed contracts to deliver and install main speaker systems to Peter Wolf, David Hewitt, Michael Powell and Soundelux.

The first three **Motionworks** Motionworker automation and synchronization system have been installed at The Power Station studios (New York). The first was installed in the mixdown and post-production suite; the other two in SSL rooms.

Midilab (Chicago) recently purchased a **Digital Designs** ProDisk-464 digital audio recording and editing system.

AMEK Systems and Controls has sold its Mozart console to REL Studios (Edinburgh) and M2 Video (London). The company has also reported the following U.S. installations: Brielle Music (New York), Tullen Sound Recording (New Jersey) and Today Video (New York).

AudioLine has relocated its Chicago office to 368 W. Ontario St., Chicago, IL 60610; 312-988-9166; fax 312-988-9697. The 1,800-square-foot office includes two fully equipped demo rooms.

Musicon has moved its tape duplicating plant from Oceanside, CA, to a Portland, OR, suburb: 27501 S.W. 95th Ave., Wilsonville, OR 97070; 503-682-8668; fax 503-682-3043.

More than 24 **Studer** A827 analog multitracks have been delivered to U.S. facilities, including the following California locations: Music Animals (Los Angeles), Evergreen Studio (North Hollywood), Sound Chamber Recorders (Pasadena), Stephen Mitchell Music (Culver City), Ameraycan Studios (North Hollywood), Capitol Records (Hollywood) and Larabee Recording Studios (Hollywood).

Redwood Marketing is a manufacturer's sales representative company formed by Claude Hill and Eric Johnson. Redwood represents product lines from Amek/TAC, Saturn Research, Perfectone, Philip Drake, Barth, Alperman + Velte, Audio Animation, Sonic Solutions and Data Conversion Systems. Box 270007, Nashville, TN 37227-0007; 615-254-7400; fax 615-242-5774.

Neve has opened its expanded offices at Berkshire Industrial Park, 7 Parklawn Drive, Bethel, CT 06801; 203-744-6230; fax 203-792-7863.

Marshank Sales Company, Los Angeles, is celebrating its 70th anniversary this year. The company represents Southern California for such manufacturers as AKG Acoustics, Ambria, Aries, BBE Sound, dbx Pro, Drawmer, EAW, Fosgate, Genelec, Hosa Technology, Parasound Products, Stewart Filmscreen, Techron and U.S. Audio.

Indiana University now offers a 4-year Bachelor of Science degree in Audio Recording. This program is in addition to the 2-year Associate of Science degree in Audio Technology, offered since 1981.

Allen & Heath has begun production of 2-bus versions of its SR Series of sound reinforcement consoles within its U.S. facility. Joining the Scepter rack-mount mixer, the SR Series is the second Allen & Heath product originally designed in the United States to be manufactured in the United States.

Neil Fink, president and founder of **Fink and Blakely Associates**, was a featured speaker during the professional development session at the NAB convention in Atlanta. Howard Lipson of **Lipson and Company** joined Fink in the presentation entitled "Career Advancement for Technical Personnel."

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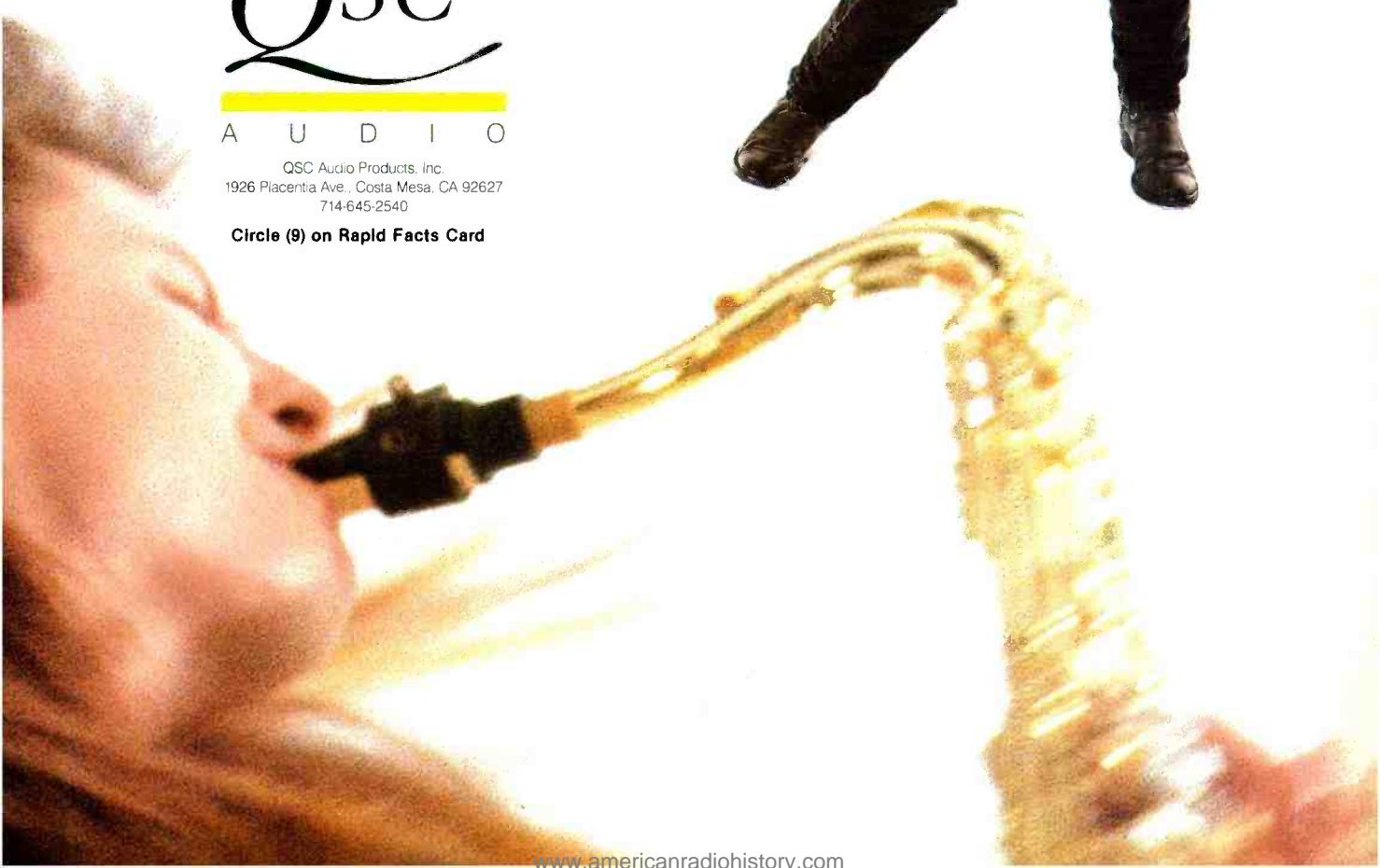


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MANAGING MIDI

By Paul D. Lehrman

Looking Backward

Twenty years of RE/P. Four years of Managing MIDI. Pardon me while I get nostalgic.

Twenty years ago, believe me, no one figured that electronic music was going to end up a major commercial force in the recording industry. I, on the other hand, had fallen in love with the stuff and wanted to make it my life.

Just as RE/P was first getting started, I was waiting for my acceptance notices to college. My highest priority was to find a school with an electronic music lab somewhat more elaborate than the one I had at home: a Moog-designed hand-built Theremin, a Sam Ash fuzz box, a couple of Lafayette Radio microphones and a Sony 1/4-track tape recorder.

In the next couple of years, I learned modular synthesis, tape looping and editing, equalization and even some computer programming. There were people doing music with computers, but the obstacles you had to overcome and the hoops you had to jump through to make a computer play music seemed to me to be much more trouble than they were worth.

But it wasn't long before I gave up on electronic music. No one seemed interested. Commercial synthesizers were becoming useful, but they were still way too expensive for a student, and the kind of one-line, one-sound stuff they were capable of doing didn't come anywhere near the complex electronic orchestras I heard in my mind's ear. So I went to a different college where I studied traditional classical music, and also learned — by volunteering to be the music department's resident engineer — about recording. While in the classroom I sweated over counterpoint and analyzed Schoenberg; in the evenings I got hands-on experience with mic placement and room acoustics.

Paul D. Lehrman is RE/P's electronic music consulting editor and a Boston-based producer, electronic musician and free-lance writer.

When I graduated, making records was what I wanted to do. Not as a performer or composer — I had developed some compositional chops, but never the patience the craft required — but behind the glass, putting other people's music on tape and disc. I had sat in enough orchestras to know what instruments were supposed to sound like, and thanks to my years in the electronic music lab, I felt I could edit tape with the best of them.

When I was in college and told people I was studying electronic music, they looked at me as if I came from another planet.

In my search for a job, I discovered this fascinating little magazine, whose title was precisely what I wanted to be. RE/P showed me a brave new world of music-production tools: huge consoles, intriguing signal processors and tape decks with more tracks than I could ever know what to do with. So I faithfully answered all of the ads for employment.

But the world I saw in RE/P seemed to be out of my reach. I soon found if I took a job, it was going to be schlepping coffee at a major uptown studio, or doing maintenance at a minor downtown one. Editing? Mixing? Producing? Having some kind of creative input? Well, kid (snicker-snicker), if you hang around here for a couple of years, maybe we'll let you take the razor blades out of the wrappers.

So once again, my lack of patience forced me to look elsewhere. I worked a little in radio, played in bands, and started to do some writing for a local "alternative" newspaper about music and electronics. I read RE/P and bided my time.

And then it happened: one of my New York studio contacts came through, and I got a job as chief engineer in a brand-new 24-track studio. It wasn't exactly in New York — it was actually thousands of miles away in the Caribbean — but it was my chance. A big MCI console, Dolby, reverb, tube mics, compressors, flangers, all mine to play with!

Well, that didn't last too long. The owner of the studio turned out to be a bit, shall we say, creative in his methods of acqui-

sition of equipment and materials, and somewhat tardy in the area of employee compensation. As soon as I realized I wasn't going to get paid, I fled. I couldn't even get any of my tapes out. But I did manage to escape with some interesting stories about what happens when you try to bring high tech to the Third World. And I sold them.

Which, believe it or not, is how I became a professional-audio journalist. It soon occurred to me that if I couldn't get into the studios of my dreams as an engineer or producer, working with my heroes on their albums, maybe if I showed up with pen in hand, offering to interview everybody in sight, then rather than order their bodyguards to stop me at the door, they would be happy to see me!

And suddenly the world of RE/P was no longer beyond my reach. Mel Lambert — who had just come over from England and was joining the magazine as editor-at-large, whatever that meant — sat me down in the Waldorf-Astoria coffee shop at the Fall 1980 AES meeting and told me he thought I'd be an asset to the magazine. Naturally, I was totally taken with the idea — after all, no one in the recording industry had ever referred to me as an "asset" before.

So I wrote. And I learned. About patience, about craft, about the people who were struggling to get to the top of their profession, and those who were already there. About the concerns of producers and studio owners in New York, London, Nashville, Chicago and Dublin, and how they differed and how they were the same.

Somewhere along the way I found that the music industry was re-discovering electronic music, and that I was learning about computers. I wrote an article about a personal computer-based synthesis system, and instantly saw my own future. Music on a desktop. Multitracking without tape. Composing without paper, and producing albums at home, making finished masters on demo budgets.

Then MIDI came out, and it was official. There was about to be a major change in the way people made music. There could be small, affordable, independent studios capable of producing great music, and I wouldn't need anyone's permission, or money, to work in one of them — I could own it myself. The same month I was asked to start this column, I did my first album at home. It cost about \$60 to make. I'm still getting royalties from it.

My work finds its way into \$250-an-hour post-production suites, but I don't have to be there, watching the money clock tick. My world is at home, being creative (or trying to be), struggling with muses and deadlines, not with accountants and budgets. If anyone asks, "What's MIDI?" that's what I try to tell them: MIDI is creativity.

I still write, because in 10 years I've grown to love writing. In fact, I guess after 10 years I'm senior guy around here at RE/P. I've worked with several editors, all of whom have shown me the same kind of support I got from the beginning. I write more about my own experiences and ideas, but I still like to interview the successful and the famous. And you know what? They like to talk about their home studios, too.

I also teach, and there's a wonderful electronic music studio at the college where I work. I miss the multiple tape recorders and the modular synthesizers of the lab I had when I was a student, but the sounds our new studio can get, and the speed with which it can get them, are far beyond anything we had 20 years ago.

MIDI, and the development it has spurred in synthesizers, samplers, software, and even the computers themselves, has made it possible for me and maybe thousands of others, who would never have gotten the opportunity otherwise, to be creative musical artists.

There have been many important milestones in the evolution of the recording arts over the last 20 years, most of them designed to make things sound better and to make the production process more efficient. But there are other worthwhile goals for the music industry, such as encouraging creativity in more people, letting more musical voices be heard. For those of us with these goals, MIDI is the most significant development of all.

"Managing MIDI" has been a great experience. It's taught me a lot, about all sorts of technologies in addition to MIDI, and about the politics of the industry, too. It has let me raise a whole lot of issues, about some of which I've been right, and about others dead wrong. It's started many dialogues, in print, on convention floors, and on electronic networks, among users, theoreticians and manufacturers. And it's been absolutely fascinating to see the spec change and grow over the years, and to be able to chronicle it all.

But MIDI is a finite subject, and I think in four years I've at least touched on just

about everything that can be said about it. I'm sure it will be with us for a long time to come, but it's time for me to move on.

I'll still haunt these pages with articles, you just won't see me every month. But I want to thank Mel, Mike, Dan and everyone else at the magazine for giving me

the opportunity to expound on my favorite subject every month, and I want to thank you, the readers, for making it so much fun.

RE/P

Do You Know these terms?

Monitor — a reference loudspeaker system for the mixing and mastering of recorded music.

Standard — a reference from which qualitative judgements can be made.

Tracks — (noun) channels on a multi-track recorder (verb) accurately reproduces the audio qualities of another transducer.

Monitor Standard™ — a close-field recording monitor system from RADIAN. *The only one which accurately tracks large recording monitors.*

What does all this mean?

RADIAN's new MM-8 Systems are the only close-field monitors to utilize *full-sized compression drivers*.

RADIAN's new MM-8 Systems reproduce explosive transients with clarity and ease. *No more distortion or break-up* from fragile domes and cone tweeters.

RADIAN's new MM-8 Systems provide *coherent, point-source* sound for superior stereo imaging.

RADIAN's new MM-8 Systems eliminate the "sweet spot." Their ultra wide-angle (120°) dispersion delivers *the same tonal balance* to everyone seated at the console.



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Circle (10) on Rapid Facts Card

SPARS ON-LINE

By Len Pearlman

Interfacing the Future

I recently dropped into my local consumer electronics department store to check out this year's hot item: the "media" room, a home system consisting of a large video display and mammoth speakers with the programmable flexibility that would blow away a record executive.

I found the latest CD and videodisc players, stereo TV monitors, surroundsound speaker stacks and racks of high-performance audio gear, all integrated and ready to remotely control from the comfort of your easy chair.

Effortlessly, we can re-create the intimacy of a front-row seat at a superstar concert and skip the hassles of ticket scalpers and traffic jams. The accelerating sophistication of today's consumer gear is astounding, and it is paralleled in the world of pro audio.

This has truly been a remarkable 20 years for those of us considered to be veterans of the audio industry. We have been swept along at the speed of laser prototypes, as we embraced the new technologies and hopped on the bandwagons of opportunity. We have seen new trends in the recording arts develop.

And just as soon as we thought they might settle down and solidify, we have seen even newer technologies transform the marketplace overnight. I long ago gave up on my crystal ball and now just use it as a paperweight, occasionally shaking it and watching the snowflakes swirl around in a mass of confusion.

Where does all this turmoil leave the audio business executive as he contemplates his strategy for the next decade? When I look to the past to avoid repeating mistakes, I see a path littered with discarded formats and the ghosts of manufacturers long gone and forgotten. Each year at the AES or NAB, we are introduced to the hot new item that promises to leap ahead of the limitations of last year's model. I suspect that my banker and accountant are using the depreciation schedule as a dart board. I've noticed that the console sales-

Len Pearlman is a former SPARS president and currently the president of Pearlman & Associates, Highland Park, IL.

men are as adept at concocting amortization plans as they are at quoting specifications and performance data.

It appears that new technologies and the innovations they spawn have a 4-year window of development. The first year is filled with hope and hype, with potential customers wondering whether the prototype will ever see the light of day. Engineers and producers fire off suggestions and criticisms, assuming a wait-and-see posture.

The following two years find a product solidifying in concept and becoming an industry buzzword. It is during this time that we see the manufacturers beginning to smile. Feeding frenzies ensue, and critical decisions for projects and budgets are based on the availability of the new device. The anxious studio owner scrambles to compose a new business plan before the studio next door offers the latest gadget as part of the basic room package.

In the fourth year of new product life, we see the mature version of an improved product, overshadowing its predecessor in features, quality and price. The question for the 1990s might be, "How will so few buy so much so soon?"

This industry has always been highly competitive in pricing and services, but recently, we have even found ourselves competing with our own clients. By diversifying into areas once totally foreign to our core business, we have attempted to specialize in new niches and garner stability in an industry that quickly embraces change.

What will be the key to survival and prosperity in the future? Communication. We have all become comfortable with — no, dependent on — the tools of communication. The telephone has become a data transmission link that has spawned direct ties to our offices, homes and cars. The mail was superseded by overnight delivery, only to be replaced by the almighty fax.

The world has shrunk, and overnight we find that once small businesses are now competing in a national or even global marketplace. Clients are sometimes loyal, but certainly more demanding, as they hook up to this networking scheme. Communication is the key, and vision is the theme, in this exciting and challenging time of the information age.

If we want to be the leaders of the future, we must be adept at more than just the portable laptop. We must communicate our real needs to the manufacturers

and the designers of the technology. We must listen carefully to our clients as they determine new applications for our services.

We must also communicate our needs to the universities that will develop the engineers, artists and future business leaders. The audio industry must aggressively participate in the grander scheme of things and invest in more than merely the latest state-of-the-art. Prosperity and progress must be user-driven.

SPARS is now in its second decade and has grown to be a significant voice in the industrywide communication loop. The organization has evolved as the industry has evolved, reflecting the growth, diversification and geographical profile of professional audio. Our business conferences and on-site manufacturing interfaces have become an influential force in shaping the future.

We've discovered that profitable communication is the result of broad-based teamwork rather than rivalry. Education is the center of SPARS activity, and will continue to monitor change and steer us through the '90s.

The simple business view is selling time and tape, but our major asset is in the talent that mixes the music, edits the soundtrack and fine-tunes the equipment. As professionals looking toward longevity in an ever-changing industry, we must make long-term investments in the human element of audio.

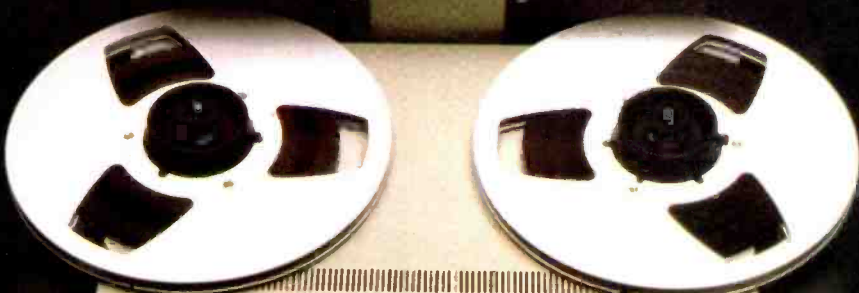
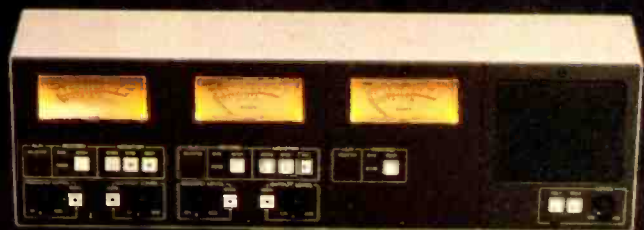
Communication is not only important on the grand scale, it is essential internally. The very nature of our industry calls for creativity on all levels, within the framework of increasingly harder business realities. Throughout the business community, we see corporate downsizing and restructuring, which indicates challenging times for the smaller ventures.

The trend toward mergers and acquisitions will be an awkward fit for a service industry, but power and growth will come to those businesses that have a true sense of teamwork. It's my personal hope that we can spend less time worrying about technology financing and concentrate on developing long-term creativity and talent.

SPARS is a network of minds and resources. Communication is our first priority, and mutual education will be our interface with the future. By working together, we can resolve the current issues of the day, grapple with the "bells and whistles" and continue to enjoy what we do.

REP

**SO SMART,
IT SPEAKS
A SECOND
LANGUAGE.**



Now, there's an audio recorder that talks video. The APR-5003V.

You can actually control the APR-5003V with a video editor. Because its 9-pin serial port communicates with Sony's BVE-9000 or BVE-900 editors. And ease of control is just one of many advantages for video post production.

The APR-5003V also offers a wide range of synchronization features, including resolve on play. Chase synchronization. Timecode generation with video reference. And offset with bit resolution.

Of course, the first language of any audio recorder is



9-pin serial port for control by Sony video editors BVE-9000 or BVE-900.

still audio. And you get the superb sonic quality you'd expect from Sony.

If you're in post production, and you're in the market for an analog recorder, remember whom to speak to. Contact your Sony Professional Audio Representative. East (201) 368-5185; West (818) 841-8711; Central (312) 773-6001; South (615) 883-8140.

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PROFESSIONAL AUDIO

It's time to buy a world-class console. But until now, the two or three that you'd consider all carried price tags that you wouldn't.

Catch the M700, the console with unbelievable sound at a price you'll find hard to believe: About \$70,000.*

When you're looking for a world-class console, your first consideration is,



what does it sound like. And because the final instrument for testing sound quality is your own two ears, you've got to hear the M700. You'll then find out how well it compares to the consoles that defined "great sound."

Then get some hands-on experience. The M700 is designed around familiar industry standards with no

**NOW YOU CAN GET UNBELIEVABLE SOUND
AT A PRICE THAT SOUNDS UNBELIEVABLE.**



surprises to slow you down. Everything is where it should be, from full parametric EQ to its 12 auxiliary sends, which makes operating speed another of the M700's best features.

You'll get superb routing flexibility, with 40 in-line monitors, 80 inputs, 32 subgroupings and quad outputs.

When you decide to move up to digital, to accompany your console, one option to consider is the DASH format DA800 24-track digital recorder with award-winning ZD circuitry. Currently available for \$99,000*

it's destined to be the best-sounding 24-track around.

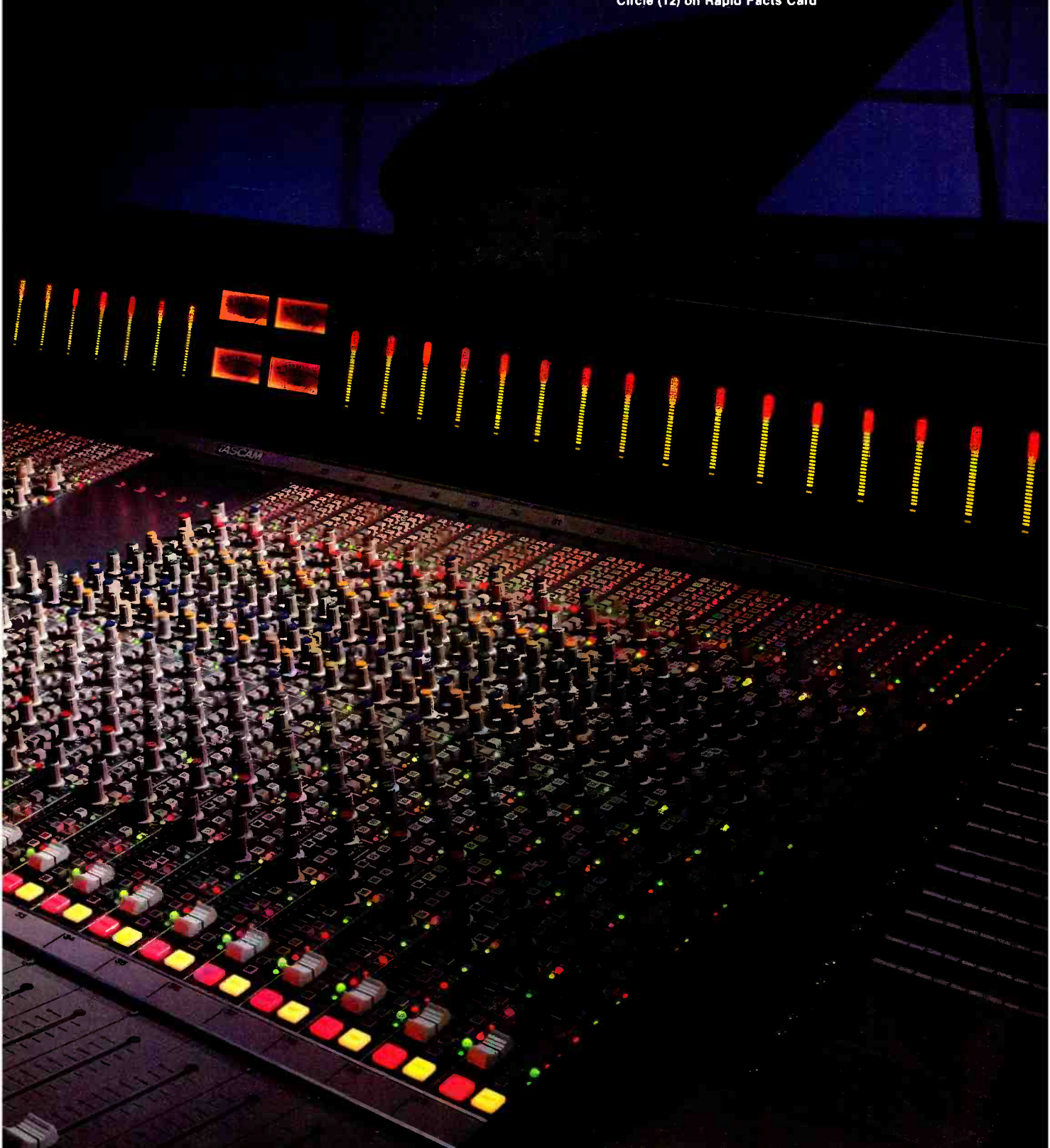
So before you invest in any console, you owe it to yourself to hear the M700. We think you'll agree that the only thing more unbelievable than the sound of the M700 & DA800 combination is its price tag.

*Manufacturer's suggested retail price. Actual price may vary from dealer to dealer.

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A SHORT HISTORY OF RE/P

**In RE/P's 20 years,
much has changed
and much remains.**

R

ather than spend time describing the history of RE/P, we thought it would be better to show what's appeared in these pages through 20 years and 136 issues. Here, then, is an abbreviated history of RE/P:

"We want very much to become good friends." Those words, written by publisher/editor Martin Gallay, launched the first issue, in April/May 1970.

Even though that issue was only 40 pages, its contents set the standard for what would follow for the next 20 years: in-depth, practical information that audio professionals would find nowhere else.

Advertisers in that first issue include many names still current today: Ampex, Crown, Dolby, Electro-Voice, James B. Lansing Sound (known today simply as JBL), Shure Brothers and Yamaha.

In that opening statement, Gallay mentions the possibility of the magazine going monthly in 1971. This didn't happen on schedule; RE/P remained a bimonthly for the next 16 years.

Within the first 20 issues, the magazine introduced subjects that remain its core areas today. Audio-for-video and broadcast production first appeared in 1970. Bones Howe, the engineer/producer of one of the 1969 Grammy nominees for best

A ROOM EQUALIZED TO PERFECTION
MULTITRACK TO MIXDOWN
STUDIO MONITORS REVEAL
THE ENTIRE SOUND SPECTRUM



Now the excellence of sound experienced by engineers and producers
can be duplicated on Sunkyong Pure Chrome Tape.

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www.americanradiohistory.com

engineered recording, "The Age of Aquarius," was the first interview subject, in the June/July 1970 issue. The first digital article appeared in 1971, and sound reinforcement made its first appearance in 1972 before becoming a mainstay in 1974.

Even with competition from multiple magazines, RE/P has flourished. Galley sold the magazine to Intertec Publishing in 1986; monthly publishing began the following year.

The 1990s find RE/P committed to providing the best information possible for its readers. As changes continue to occur in our industry, RE/P will be there to light the way.



RE/P's changing logo: 1970, 1973, 1976, 1982 and today.

RE/P Trivia

(Totals derived from the April/May 1970 through December 1989 issues.)

- No. of issues published: 136.
- No. of pages printed: 4,400.
- No. of articles published: 900 (excludes directories and convention listings).
- No. of new product items published: 2,986.
- Items appearing most often on the cover:
 - Control rooms and studios: 36.
 - Consoles: 24.
 - People: 18.
 - Sound reinforcement systems: 13.
 - Tape machines: 10.
 - Microphones: 8.
- No. of people interviewed: 118 (includes multi-party interviews).
- Most-published interviewees: Roy Thomas Baker, Tom Dowd, George Martin, Keith Olsen, Bruce Swedien (all have appeared twice).

ScreenSound. A fully integrated audio for video editing suite



Post production facilities need to take advantage of the efficiency offered by today's technology. Speed and creative flexibility are essential to commercial success. Digital sound quality is no longer a luxury.

ScreenSound is a fully integrated audio for video editing suite. It combines digital audio storage and editing with machine control of multiple VTRs, Laserdisc or film reproducers. It also interfaces with Quantel's digital video editor, Harry.

Simple to learn and fast to use, a cordless pen, tablet and RGB monitor provide control of all ScreenSound functions.

Multiple sound reels enable music,

dialogue and effects to be laid back to picture and synchronised to the exact video frame.

Edit, review, time offset, track slipping, cross fades and many other production techniques are available at the touch of a pen. Gain and stereo pan controls can be automated to timecode.

AES/EBU interfacing keeps digital audio transfers free of analogue distortions and losses, preserving the highest audio integrity through to the final format.

Above all, ScreenSound is a dedicated system - purpose-built to bring the advantages of hard disk sound manipulation to audio post production.

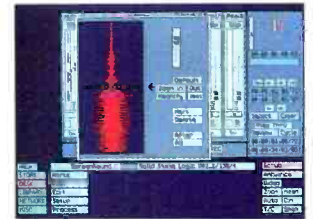
AUDIO STORE

The hard disk store of sound clips gives title and duration, in addition to powerful search and sort routines.



SCRUB EDITOR

Provides accurate edit marking and scrub of audio waveform.



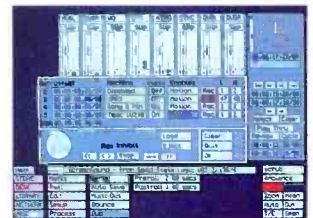
OPTICAL LIBRARY

An off-line library of sound clips and effects can be compiled on a Write Once Read Many (WORM) optical disc.



MACHINE CONTROL

For control of multiple VTRs, laserdisc or film reproducers.



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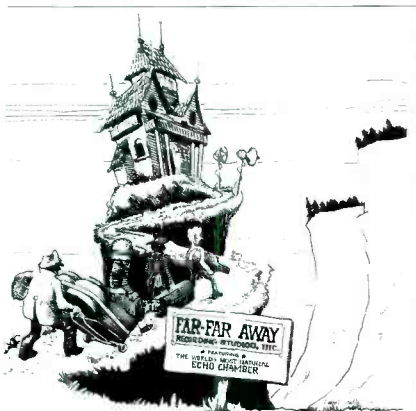
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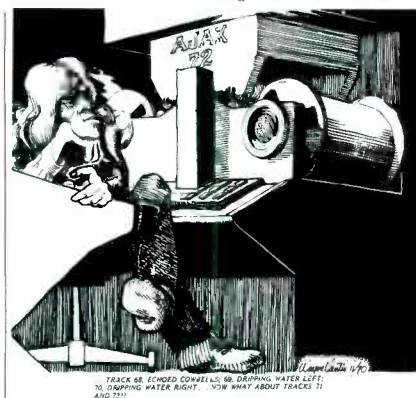
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Changing cover concepts: 1971, 1978, 1985, 1989.



For the first couple of years, RE/P included a cartoon, drawn by Wayne Yentis, an outside contributor and later RE/P's associate editor. For the early 1970s, his work was amazingly visionary, such as 72-track recording. Here are four examples of his work.



TRACK 18: ECHOED CONVEYERS, 60: DRIPPING WATER LEFT, 70: DRIPPING WATER RIGHT...VOW WHY ABOUT TRACKS 71 AND 72!!!

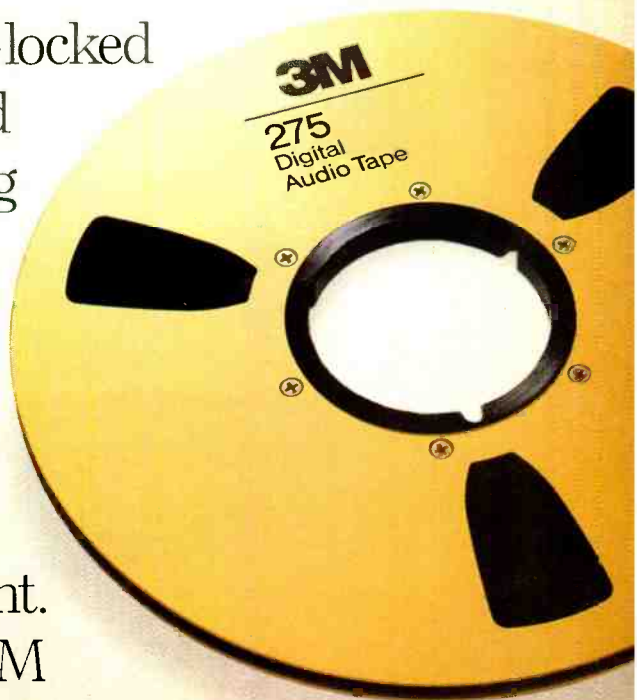


Wayne Yentis © 73

It's a lot easier to be done than to be satisfied.



You've been there—locked in the battle between perfection and reality. There's always one more thing you'd like to try. And the last thing you need to worry about is the tape. So choose 3M 275 Digital Audio Tape. It offers an extremely low error rate, and it's compatible with all digital audio recording equipment. Because, in products and service, 3M is committed to one goal: We won't be satisfied until you are.



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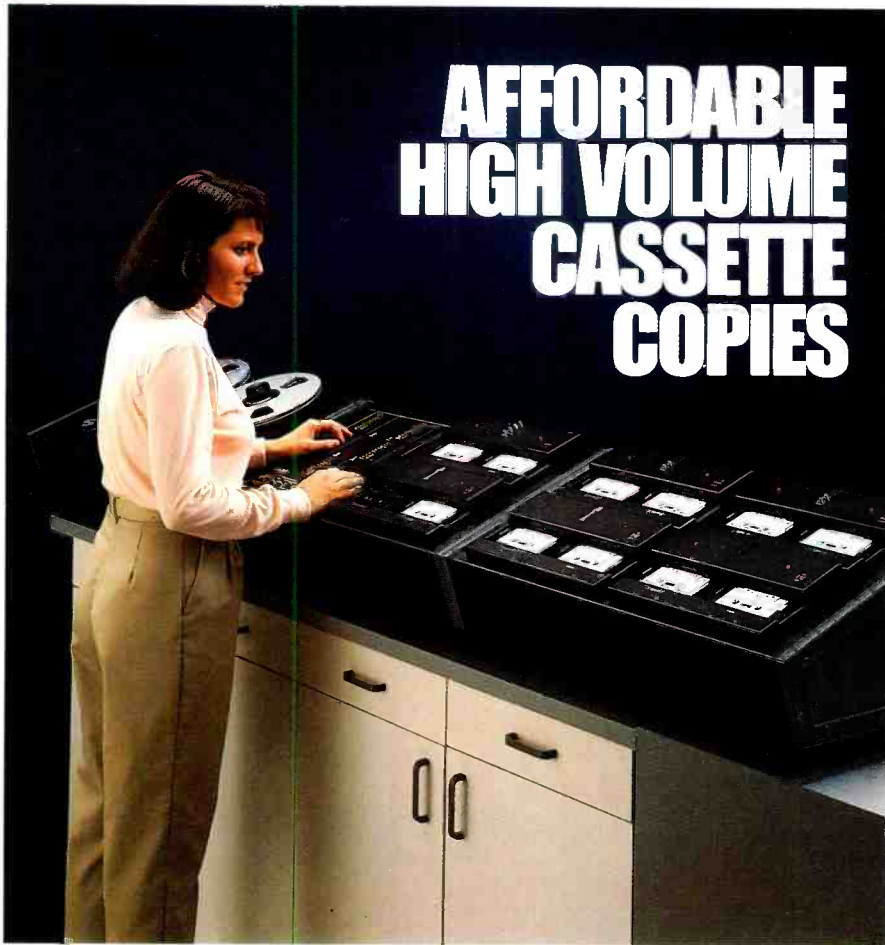


The RE/P Interviews

Through its 20 years, RE/P's interviews have been a top attraction, featuring influential people who rarely get publicity. As of the end of 1989, 118 people have been interviewed in 91 published interviews. Our subjects ranged from rock stars to studio owners to engineers/producers to record company owners. Here's a sampling of what they've said.

"The patch bay is like a cribbage board. The old Western Electric jack system is great, it's fine, it's positive. If it makes a bad contact, you jiggle it in and out three or four times and it works. There are advantages to not miniaturizing certain functions. Our hands are still the same size, and if it's something that you're gonna do with your hands, it should be big enough that you can control it with your hands, and yet not so big that it's unwieldy. To make a little jack that you hold between your thumb and forefinger is unreasonable." — Bones Howe, June/July 1970.

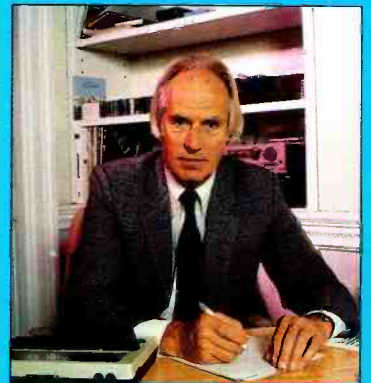
"I don't think machines have done anyone a favor or helped the state of the music — they've hurt it considerably. That's a very loaded statement for someone who's made records with machines for five years. I don't think there's any rea-



**Telex makes it fast, easy,
and cost effective.**

The 6120 series from Telex proves that a high speed audio tape duplicator can feature easy one-button operation *and* an affordable modular design that grows along with your needs. As the leader in tape duplicators, Telex blends the quality and convenience of U.S. made products with production speed options that meet your special requirements. For complete details, write to Telex Communications, Inc., 9600 Aldrich Ave. So., Minneapolis, MN 55420.

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George Martin

TELEX®

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SEEKERS



We follow your every move.

The Harrison SeriesTen follows your every move *perfectly* and *in real time*.

Other consoles have fader and mute automation and perhaps even reset or recall (manual reset) type capabilities, but the Harrison SeriesTen is more than snapshots, it has dynamically...

- Automated EQ (4 band parametric with hi-pass and lo-pass filters)
- Automated inputs
- Automated insert points
- Automated compressors
- Automated display window
- Programmable 2 track and 4 track machine routing
- Automated panning (Stereo, quad and 4 channel L. C. R. S. cinema)
- Automated routing
- Automated gates
- Automated auxiliary sends
- Programmable monitor setups and buss and tape switching for film

Whether you're using the SeriesTen for multi-track recording, film post or teleproduction you can make a virtually *unlimited* number of dynamic changes to any of these functions *in real time* — *FAST!*

The creative possibilities are endless and immediately at your fingertips. Until you've experienced TOTAL AUTOMATION ON THE SERIESTEN you haven't experienced mixing.

SeriesTen with Mac II hard disk based automation—simply the fastest, most comprehensive, automated mixing system available.

Just think of the possibilities. — SeriesTen



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Harrison by GLW

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son to listen to something a machine did more than once to hear how cleverly it was done because there's no performance value. Not if it's quantized. Not if the dynamics have been corrected. Not if all the note values have been changed by a computer. Not if you can't make a mistake. A performance has all those things." — Pat Leonard, September 1988.

"I think digital recording will only come into its own when it becomes completely integrated with the desk. I think just having a digital machine connected to an analog desk doesn't make too much sense to me. When the tape machine is an integral part of the console, and it's a completely computerized unit which can do things that you can't do now, like synthetically process

an echo sound that imitates "Heart-break Hotel" without an echo unit... that kind of thing. Then it will make sense." — George Martin, February 1979.

"I think eventually you won't have to own a reproducer. It will cause an overall revolution in systems of communications — your television, music telephone... everything will be tied together. The terminal in your house is fed from the telephone lines. Someday all recordings could be placed in a giant bank and you could just loan it out. When

How To Upgrade Your Studer A-80 (A-800)

Answer: Switch to Saki 24-track Record and Playback heads when replacement time comes.



Ours.

Compare ours vs. theirs. Same crisp, clean audio. Same mechanical and electrical specs down to the last detail. Guaranteed.

Ah, but the difference: The Saki heads are made of long-lasting Permalloy... proven reliable for years of troublefree service. And, just incidentally, priced about 30% less than Studer. Ours vs. theirs—it's no comparison.



Theirs.

Call us now for immediate, off-the-shelf delivery.

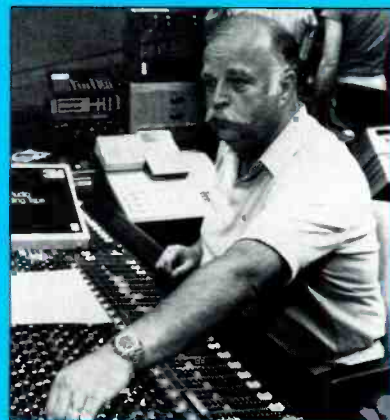
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SAKI MAGNETICS, INC.

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Phone: (818) 880-4054 Telex 244546 Fax (818) 880-6242



Bruce Swedien

somebody completes their audio, they could take it down to the central CPU, make it into digital information and store it on a disk somewhere." — Todd Rundgren, December 1979.

"Microphones to me are like musical instruments. Each microphone, and, in fact, individual microphones within a model or manufactured type, will have its own color or its own characteristics. I've been engineering so long that I can listen to people speak and know what mics would work best on their voices. That's a big help. I don't waste a lot of time in the studio trying different microphones." — Bruce Swedien, July 1988.


Circle (18) on Rapid Facts Card

If Michelangelo had a QUADRAVERB, he might have mixed music instead of paint.



It's true. Music and painting are very similar. A stroke of red, a touch of chorus. A splash of blue, a wash of reverb. Either way, it's art. And every artform has its masterpieces. And its tools.

Introducing the Alesis QUADRAVERB. An all-new 16 bit digital, simultaneous multi-effects processor and dead-serious musical tool. With QUADRAVERB, your mixes will be mirror images of the sound in your head. No letdowns. No noise. No nonsense. No boundaries between art and creation.



Inside, QUADRAVERB is alive with colors. Chorus, flange, phase shift, pitch detune and delay... all in stereo, to give your music depth and space. For absolute tonal control there are 5 bands of parametric and 11 bands of graphic e.q. And, of course, there's the unmistakable clarity and drama of the award-winning Alesis digital reverb programs.

With full programmability, 100 memory slots, and 90 factory programs created by the best ears in the business, QUADRAVERB gives you total artistic freedom. Plus, in QuadMode™, four of these flawless 20kHz bandwidth effects occur simultaneously. Like crunching thousands of dollars worth of studio gear into one rack space.

With very little cash, and even less effort, you can use QUADRAVERB on your next mix... plug it into your instrument rig... perfect your sound.

See your Alesis dealer today and hear what state of the art really means.

Michelangelo would agree,
QUADRAVERB is a masterpiece.



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"My empathy and my emotions are with the musician, from the beginning to the end. I don't play the game of "he's only a musician," which is where I think a lot of producers have made mistakes for years. You know, when I sat in the engineer's chair for years and years, watching other producers — which was the learning tool for me — I watched for diplomacy, and what I

sometimes saw was a bunch of guys who weren't treated very well." — Phil Ramone, October 1977.

"If they say, 'Hey, I think we need 5dB at 10k,' that's pretty clear. I know what they think they want and probably what they do want. I would much rather have somebody come in and say, 'You know, the kick needs to sound less like a

—Great!—

What People Say When They Hear A Gauss Coaxial.

And what they say when they see how a Gauss coaxial loudspeaker is made. What you will say when you hear one coasting along at 200 watts rms.

They were designed to *perform* at their rated power of 200 wrms... not just survive. Since they were designed to replace the tired old coax used in recording studios, they are extremely clean and distortion free even when played at high levels.

The majority of Gauss coaxials are not only sold for use in studios... they go into installations with even more demand for clean power and reliability... discos (yes they're still around and doing well), convention centers, auditoriums, restaurants, and anywhere true high fidelity sound is needed.

When your application calls for the versatility of a coax, check out the full line of Gauss coaxial loudspeakers. No other coax can compare for power handling, reliability and performance.



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Roy Thomas Baker

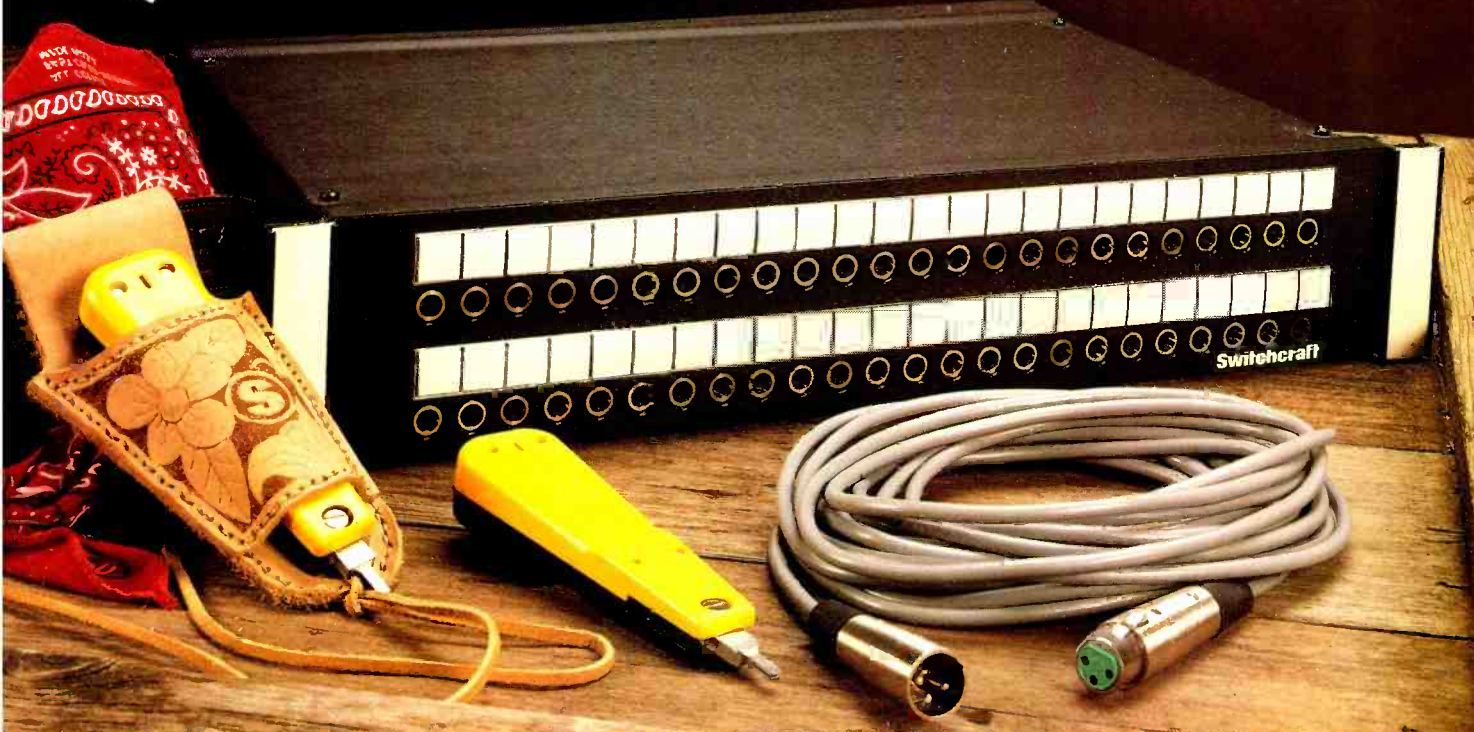
basketball.' And I'll say, 'I know exactly what you mean.' It's using your ears." — Ed Seay, February 1989.

"I don't think I've had any influences. At least I don't know of any. If I've copied anyone it's purely coincidental. Basically I like classical. I don't even sit at the board anymore. I sit on one of the couches in front of the board. Then I can listen for the performances instead of the sound. Then we get the sound together when we mix. So there's less to worry about technically. I leave that to the engineer. And once I finish a record, I never listen to it again. It's past history." — Roy Thomas Baker, August 1979.

RE/P

Circle (20) on Rapid Facts Card

Quick Terminations



“Meet the Fastest Gun in the West”... Switchcraft

In a showdown, no other audio patch panel is “faster on the draw” than the APP Series from Switchcraft.

Bullet quick terminations are achieved with color-coded insulation displacement connectors (IDCs) that provide speedy wiring access of T, R, S, TN & RN termination points. One simple tool eliminates the need for wire stripping and makes connections fast and easy.

Other sharp shooting features include:

- **Versatile Configurations:** The APP can adapt to any installation as a full assembly, front panel only with 48 jacks installed and cabled to rear panel, or rear panel only.
- **Easy Wire Management:** Wiring guides and cable



support bar offer convenient wire routing.

- **Many Normalling Options:** Including top and bottom normals, half normals, and others.

Plus, Switchcraft manufactures a complete line of technologically advanced audio components, jacks, cords, connectors, plugs, and audio adapters.

You don't have to bite the bullet and put up with inferior audio products. Insist on genuine Switchcraft audio components "... from the fastest gun in the West."

Switchcraft

A **Raytheon** Company

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Chicago, Illinois 60630

For instant response to your questions or for more information, call our audio department at 312/792-2700 or FAX 312/792-2129.

Circle (21) on Rapid Facts Card

www.americanradiohistory.com

THE POWER PACKAGE

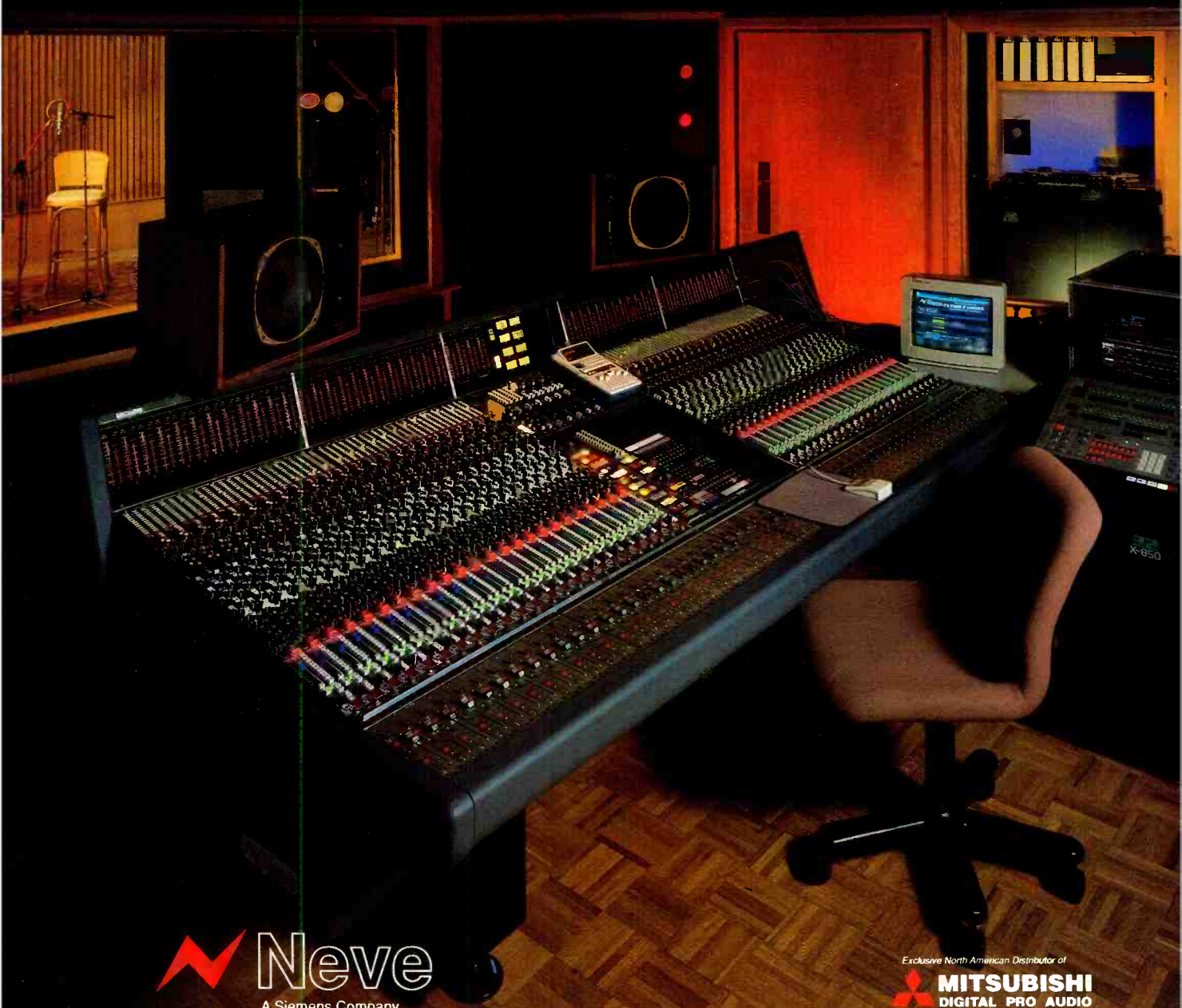
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Digital Recorders

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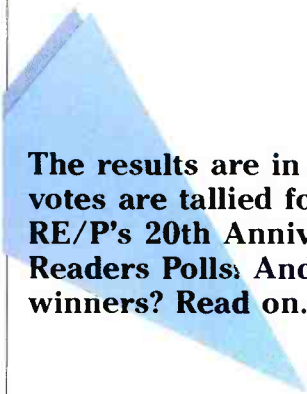
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Circle (22) on Rapid Facts Card



THE RE/P HALL OF FAME



The results are in and the votes are tallied for RE/P's 20th Anniversary Readers Polls. And the winners? Read on...



Back in December, we asked readers to vote on what they considered the classic equipment of the last 20 years, as well as their preference of recording engineers and producers who had most effect on our audio world.

Reader response was tremendous, and we are pleased to present the results — a true cross-section of the products and people who inhabit our professional lives.

We'll state it right up front: The results of this poll can hardly be called definitive. So many products and people have contributed to the artistic world in which we live that any attempt at tallying "the best" merely samples the strata, from workhorse everyday mics to expensive, now-sought-out exotica; from individuals who defined a genre to hard workers swept up in the music explosion of the 1970s and 1980s. A comprehensive list would look like an encyclopedia.

Still, the popular favorites rose to the top. How do your favorites compare to the ones listed here? Here's where you can find out. The Classic Equipment results begin on page 24; Classic Engineers/Producers start on page 40; and you'll find Classic Producers on page 44.

CLASSIC

EQUIPMENT

First Place Winner

Neumann U67 microphone

Along with the U67, we also received nominations for the U47 and U87. Certainly, all three are winners in their own right. To its credit, the U67 was arguably the first large diaphragm condenser to achieve widespread use at all levels of production. In nominating this mic, one Editorial Review Board member said, "I don't know any engineer not using it."



Second Place Winner

Shure SM 57 and 58 microphones

Durable and dependable, no mic locker in the world is complete without several well-worn copies of both. Although designed in 1965, the phenomenal durability and crisp, punchy sound contribute to making these the reigning workhorse microphones available to date. More than 1 million have been sold throughout their history.

Third Place Winner

Dolby Type A noise reduction

Historians writing about the pro audio industry will probably cite Ray Dolby as the man who saved analog recording. Indeed, millions know his name, through his consumer and professional noise reduction. The breakthrough Type A solved a very real problem with intelligence, insight and brilliant engineering.



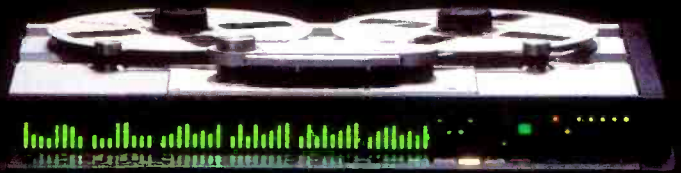
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Honorable Mentions

Ampex ATR-102 2-track recorder

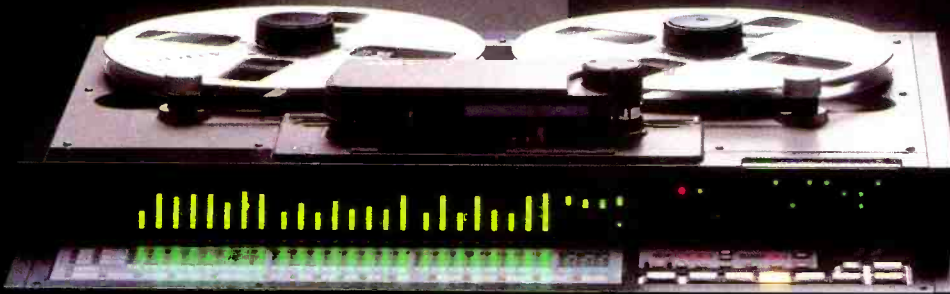
Ampex may no longer be in the ATR business, but the ATR-102 represents the culmination of engineering innovation. The engineering breakthroughs embodied in the 102s were extensive, with the classic early demo consisting of tape threaded directly to the take-up spindle, sans reel,

THERE'S A BIG IDEA BEHIND OUR NEW PCM-3324A



SONY
D

48



It's the PCM-3348, Sony's 48-channel digital breakthrough. The technology behind our new PCM-3324A.

The PCM-3324A is Sony's second generation DASH 24-channel multitrack recorder, incorporating key technologies developed for the PCM-3348. Like 2X oversampling with digital filters for enhanced sonic performance. Reduced power consumption. And upward compatibility with the PCM-3348.

But as remarkable as the technology of the PCM-3324A and PCM-3348 is, the true beauty of the family of DASH products is that they complement the way music is made. Tracks laid down on the PCM-3324A play back flawlessly on the PCM-3348. And are undisturbed as the

PCM-3348 adds up to 24 more channels of digital audio to the original recording.

Clearly, the creative possibilities are limitless. To explore them, call your regional Sony Professional Audio office: East: (201) 368-5185. West: (818) 841-8711. South: (615) 883-8140. Central: (312) 773-6001.

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SONY®

PROFESSIONAL AUDIO



to demonstrate the advanced tape handling properties.

Aphex Aural Exciter

The first product ever reviewed in RE/P created quite a controversy. What were we

hearing? Was it distortion? Did it really add presence and clarity? Was it magic? Time has demonstrated the value of the concept; the Aural Exciter is still a well-respected and oft-requested unit.



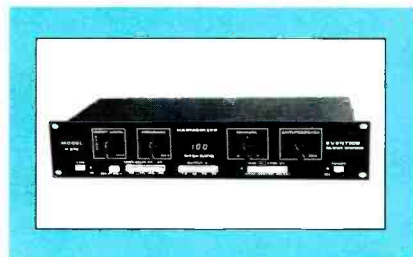
dbx 160X compressor/limiter

Originally gaining acceptance as the standard compressor/limiter to the sound reinforcement world, the 160X crossed over the studio production, no doubt due to excellent performance for the price and the superb dbx VCA.



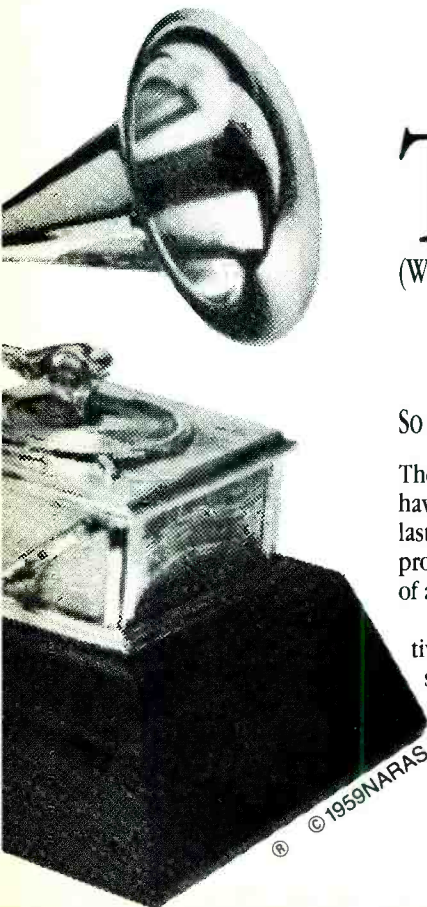
Eventide 910 Harmonizer

A product whose title became a generic label for everything that followed, the 910 set a standard for quality digital delay. The Harmonizer also delivered the first usable, multi-algorithm pitch shifting to eager, receptive engineers around the world.



Model A-3x3 Single Channel, Permanent Version Processor

Optimized electronics = optimum signal quality. And Apogee systems are easy to install, easy to array and quick to take on the road (ask about the full complement of rigging hardware).



The Academy heard it

(With one major exception.)

So will you.

The performers and audience at the Grammy Awards have the most critical ears in professional audio. The last sounds this group of top artists, engineers and producers want to hear is phase shift or the pumping of a processor-based loudspeaker system.

And they didn't. Because for the second consecutive year, Apogee speakers were selected as the house sound system for this prestigious event. No sliding filters. No floating crossovers. Just clear, natural sound with less electronics and fewer cabinets than many conventional systems.

Apogee processors do have all the functions you

© 1959 NARAS

Lexicon 224X digital reverb

Although there were other digital reverbs before the 224X, the flexibility, quality and ease of operator use put it in a class by itself. Said one Review Board member: "A kinder, gentler space."

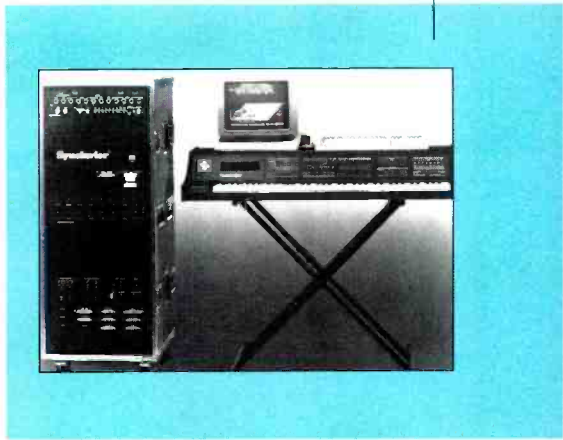


was designed as the ultimate user-friendly system, using servo-driven motors on traditional faders, instead of null matchmarks and non-intuitive obscure VCA programming commands.



New England Digital Synclavier

One of the first and still foremost digital signal manipulation/creation systems, NED has virtually pioneered the concept of audio workstation and direct-to-(computer) disk recording.



Neve NECAM automation

Introduced in 1976, NECAM (Neve Ergonomic Computer-Assisted Mixing system)



all.

Now available in single and dual channel models, Apogee's second generation processors enable you to precisely tune the protection circuits to keep amplifiers from clipping. New rubber conductive front panel



Model A-3x3
Dual Channel,
Road Version
Processor

switches feature a hidden lock to prevent unwanted recalibration.

What the Academy heard, you can hear worldwide in stadiums, auditoriums, churches and theaters from

Moscow to Japan, with a few stopovers on Broadway. Don't listen to what you don't want to hear. Let the sound quality of the Grammy's work for you. Call, write, or fax Apogee Sound, 1150 Industrial Drive, Suite C, Petaluma, CA 94952. 707/778-8887 or fax 707/778-6923. Apogee Sound.

Engineered for Perfection.



SOUND INC.



Circle (23) on Rapid Facts Card

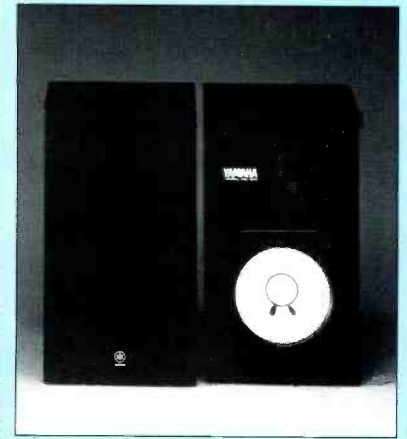
Otari MTR-90 24-track recorder

Considered by many to be the first "budget" 24-track with a "pro" design, the MTR-90 is noted for its reliability and maintenance simplicity.



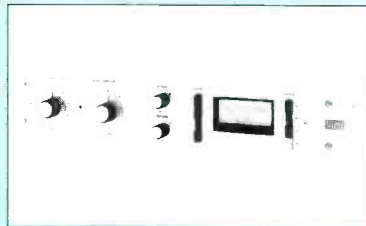
Sony PCM F1 digital processor

Originally intended for the consumer market, this digital product crossed over and became the professional standard for early field recording and studio mixdown. In conjunction with a VCR, it provided affordable digital recording at a time (1983) when dedicated professional digital machines were very expensive.



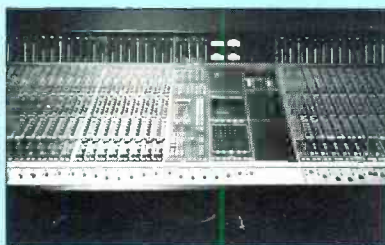
UREI 1176 Compressor

Developed by Bill Putnam, UREI's founder, the 1176, along with the little brother LA-3 and -4 units, were the mainstay dynamic processing tools in the majority of U.S. facilities. They still are.



Solid State Logic 4000 console

Several consoles were nominated, but this received the most votes, no doubt for its being the first dedicated, video-screened, fully automated production desk.



Yamaha NS-10M monitor

The post-Auratone studio monitor standard wasn't initially available even to the audio industry. Yamaha was convinced that it was a home stereo speaker only, and for years sold it through consumer shops. Imagine their surprise.

Other nominations

Look, we know that 15 is an arbitrary number, but we had to cut things off to make the voting manageable. There are lots more than 15 classic products, and in the interest of fairness, we salute these products that were nominated but weren't mentioned enough to make the final cut:

- Allison Research Kepex.
 - Allison Research VCA.
 - Auratone cubes.
 - Bruel & Kjaer test equipment and studio mics.
 - EMT 250 digital reverb.
 - Focusrite ISA 110/115 mic pre-amps.
 - JBL 4311 monitor.
 - Macintosh 1500 power amp.
 - MCI autolocator.
 - Midas Pro 4/Pro 40 consoles.
 - Neve 80 series console/
 - Pultec EQ.
 - Rane AC 22/23 crossovers.
 - RCA 77 Series microphone.
 - Sound Workshop ARMS automation.
 - Tascam Series 70 tape machines.
 - UREI LA-4 limiter.
 - Yamaha PM1000 console
 - Yamaha REV-1 digital reverb.
- And the readers offered a few suggestions of their own:
- Ampex 350/351 recorders.
 - Ampex MM1200
 - AMS RMX-16 digital reverb.
 - Pultec EQs.
 - Scully disc-cutting lathes.

Crown International...

from a unique beginning to the cutting edge of product design and development.

Whether you are enjoying a concert, a movie, or even an auto race, the prospects are good the sound you are hearing is being delivered by Crown International Products. Crown is recognized worldwide for its expertise in the production of high-quality amplifiers and microphones for the audio industry.

It all started with Clarence Moore—"a man with a mission." In fact, from 1939 to 1945, Clarence Moore was a missionary in South America. His quest to help radio stations spread the gospel led him to become a pioneer in the development of better recording equipment. He revolutionized the industry with the invention of a three-motor tape transport featuring a device called electric brakes which prevented problems with tape breakage.

Moore returned to Indiana to concentrate on building transmitters and to pursue his interests in improving amplifier systems. He knew a brilliant engineer whom he put to work on producing a better industrial amplifier. His work was conducted in the chicken coop behind Moore's Elkhart, Indiana farmhouse, and soon led to

the development of the first "quiet" pre-amp. The DC-300 was designed to withstand the rigors of any terrain.

These improvements in the tape recorder and amplifier grew out of Moore's desire to reach people in the remote areas of South America with the gospel message. His products soon began to attract the attention of professionals in other industries, and in 1947, Moore incorporated Crown International.

Today, the Elkhart, Indiana based company employs nearly 500 people, and is headed by Clyde Moore, the son of founder, Clarence Moore. Clyde, who is President and CEO, grew up with the same dedication to excellence started by his father's philosophy of ethics. He continues to oversee Crown's efforts in superior product development. In the past eight years, the company's engineering staff has tripled from 20 to 60 individuals who typically take a project from conception to production in a six-month period.

Crown believes its people are what make the organization different from its competitors.

"Our most valuable commodity is our workers. We believe in them and value them. They believe in the products and make Crown a success," said Gerry Barclay, marketing service coordinator.

The rugged construction of Crown's products enables it to offer the "3+3" warranty since the majority of end-users do not require it. According to Jim Beattie, sales manager, "Crown's best benefit is that our product design is far ahead at all times, hence built-in obsolescence need not occur." Crown also continuously works to understand the needs of its dealers as evidenced in the company's advertising copy and through the point-of-purchase materials it has developed.

From its unique beginning, Crown International stays at the cutting edge of technology. With a continuing dedication to providing the audio industry with the finest possible products, Crown's customers can be assured when purchasing that excellence is indeed guaranteed.



Circle (24) on Rapid Facts Card

May 1990 Recording Engineer/Producer • 39

CLASSIC

ENGINEERS/ PRODUCERS

First Place Winner

Les Paul

Can we imagine the modern recording studio without Les Paul's innovations? To wit: close miking, echo delay, multitrack recording, and with it, overdubbing. And how many people were building studios in 1945? In short, most of what we do in a studio today can be traced to his vision. He won this poll by a wide margin, and deservedly so.

Whether it's election night or the 9:30 update—Harrison teleproduction consoles.



Several years ago when you bought your present console, none of your audience had hi-fi, VCR tuners that let them in on the secret of your distortion or limited dynamic range. It's a more-demanding market now.

Harrison's TV-4, TV-3 and Pro-790 are found all over the world in the facilities that are leading the broadcast audio revolution. Call us today to find out which one is right for your facility. We'll gladly arrange a demonstration in our factory or at your facility.

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Harrison by GLW

Circle (25) on Rapid Facts Card

In an age of disk and digital, why buy analog?

We know there are some applications where our 32-channel digital machine, the DTR-900, is the only answer. But if your business is such that you can do anything you want to do in the analog domain, and at the same time do less damage to your budget, then our brand new analog 24-channel MTR-100A may be the perfect machine for you.

When you consider that the MTR-100 will literally *change forever* the way engineers interface with audio machines, and



The MTR-100's auto-alignment saves you hours of time by eliminating constant tweaking and re-tweaking between sessions.

that this new way will save you hours spent in non-productive time, the analog choice begins to make even more sense. You see, the MTR-100 features full Auto-Alignment that allows total recalibration of the record and reproduce electronics. This means you can compensate for different tapes in a *fraction* of the time that it previously took, and your studio is not bogged down with constant tweaking and re-tweaking between sessions.

And if you think digital machines have a corner on high performance transports, think again! The MTR-100's new transport incorporates reel motors that approach one horsepower—you'll get fast wind speeds of up to 474 inches per second! Of course, the

transport is pinchrollerless to give you the legendary tape handling ballistics of our MTR-90.

What's more, with its optional EC-103 chase synchronizer, the MTR-100 maintains frame-lock in forward and reverse from 0.2X to 2.5X play speed, and will typically park with zero frame error.

Then, there's the sound. New cylindrical-contour heads built by Otari especially for the MTR-100 result in remarkably low crosstalk and outstanding low-frequency performance. Pre-amps are located directly beneath the heads to further improve frequency response, and HX-Pro* is built-in for enhanced high frequency headroom. (An optional internal noise reduction package houses Dolby* SR/A.) Add all these features to gapless, seamless, punch-in, punch-out, which is also built-in, and your

MTR-100's sonic performance will rival, or beat any digital machine in the world.

So there you have it. With these powerful benefits available in analog, does it make sense to go digital? Sure, for some applications. But analyze your needs carefully before you buy. For many applications, a hot

analog tape machine like the MTR-100 is the right choice.

And because we can see both sides of the question, put us to work. We have information that can help you make the right decision. Call Otari at (415) 341-5900 for the "Technology You Can Trust".



Reel motors that approach one horsepower are driven by pulse width modulation amplifiers to tape speeds up to 474 ips.

OTARI®



Trademark Dolby Laboratories Licensing Corporation

Circle (26) on Rapid Facts Card

www.americanradiohistory.com



Third Place Winner

Roger Nichols

We love this combination: nuclear physicist/recording engineer. It works for us. Currently the chief engineer at Los Angeles' Soundworks West, Nichols' work with Steely Dan did much to advance the state of the recording art in those years. More recently, his work on Rickie Lee Jones' "Flying Cowboys" featured mix-down on the Meyer HD-1 monitors.

Geoff Emerick

The Sixth Beatle, in our book. Not to take anything away from the Beatles or George Martin, but someone had to get in on tape. The results are timeless.

Glyn Johns

Perhaps most typical of the "English gentlemen" school of engineers and producers. First known for his work with the Rolling Stones and later with the Eagles. He returned in 1989 as the producer of Nanci Griffith's "Quiet Storm."

George Massenburg

His technical standing assured by the GML pre-amps and automation, he deserves equal praise for his engineering work, including Earth, Wind and Fire, the Ronstadt/Harris/Parton Trio album, Little Feat, and most recently, Ronstadt's "Cry Like a Rainstorm, Howl Like the Wind," for which he won this year's engineering Grammy.

Phil Ramone

A great example of how an engineer can become a producer — deliver the goods, develop a rapport with an artist (in this case Paul Simon) and offer some helpful suggestions when asked. A producer in his own right, responsible for Billy Joel's success.

Bruce Swedien

If you were lucky enough to catch his AES master class last October, you saw a master at work. His equal devotion to capturing natural spatial relationships, in addition to developing sounds that never could occur in nature, is one reason why Quincy Jones' and Michael Jackson's records are so good.

Second Place Winner

Wally Heider

A true Renaissance man: musician, arranger, studio owner, remote recording innovator, record company owner, video pioneer. Wally Heider Recording was probably *the* premier recording complex on the West Coast in the 1970s. His remote recording truck is considered to be the first, and that's him scurrying across the stage during the Who's set in "Monterey Pop." His death on March 22, 1989, left a great void.



Honorable Mentions:

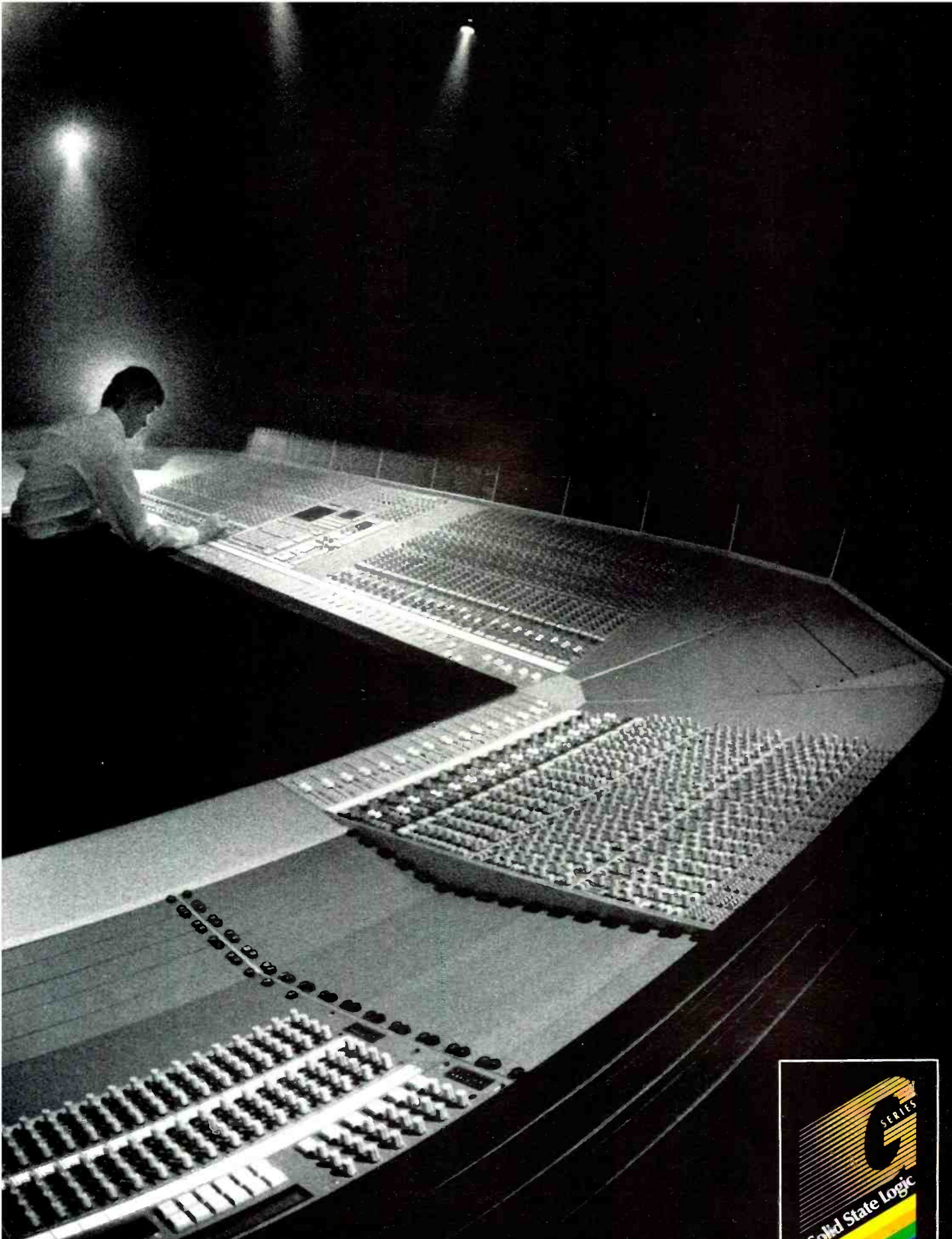
Fred Catero

Still active today with Catero Records, this engineer defined early 1970s rock with his work with Santana, Chicago and Janis Joplin.

Tom Dowd

Another participant in Atlantic's glory years. Worked on Cream and Aretha Franklin.





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CLASSIC

PRODUCERS

First Place Winner

George Martin

Much has been written about George Martin and his work with the Beatles, which we won't repeat here. But it bears repeating that he helped change the way records are made. Shame on Paul McCartney for not thanking "the Fifth Beatle" at this year's Grammy Awards. In an era when the studio was the producer's absolute domain, George Martin was the Gorbachev

Whether you're #1 or on your way— Harrison on-air control consoles.

Your air staff is your front line. To make your station #1 in your market, they need the right tools. The Harrison Air-790 is the ultimate on-air console — transparent sound, rock solid reliability and hot looks. The AP-100 puts big market features every station needs at your fingertips for an unbelievably low price.

Harrison consoles are built better. Period. To find out why, call us for a demonstration—in the factory or at your facility.

 **Harrison** by GLW

GLW ENTERPRISES, INC. • Manufacturers of Harrison Consoles • 437 Atlas Drive, Nashville, Tennessee 37211 USA • Telephone (615) 331-8800 • Facsimile (615) 331-8883 • Telex 413838 (GLW.NASH)



Selecting a high performance music recording console used to mean that you went with one of two major manufacturers—ending up one of a thousand. Not any more.

Studer—one of the largest manufacturers of professional sound mixing consoles in the world—now gives you a *real* choice, one that will set you apart from the competition. Like Studer's first large music recording console for a prominent LA studio, Lighthouse.

The separate monitor section with full multitrack capabilities, the external custom patch bay, the 62 inputs (each with moving fader automation, 4-band semi-parametric equalization and 10 aux sends)—to mention only a few of its powerful features—make the

Lighthouse Studer 905 console the exclusive choice. Add superior noise and cross talk performance, and the 905 becomes *the* console to use for digital recording.

But specs can't tell the whole story. Listen to it perform... The Lighthouse 905 has opened to rave reviews from some of LA's top producers who praise the board's great sound.

Now that you've got a real choice, choose to be one of a very few instead of one of a thousand. Call us or write. Let Studer custom-build a console for you.

STUDER reVOX

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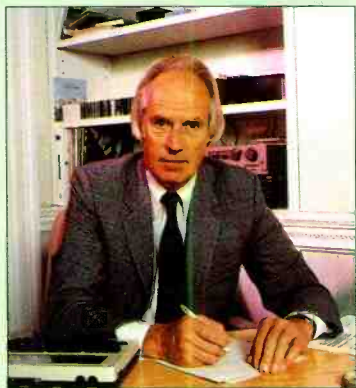
Los Angeles, (818) 780-4234 New York (212) 255-4462.
Chicago (312) 526-1660. Dallas/Ft. Worth (817) 861-1861.
In Canada, Toronto (416) 423-2831.

Circle (29) on Rapid Facts Card

The exclusive choice. At Lighthouse.



For bookings
at Lighthouse Studios,
call (818) 506-8942.



kids," as he called them, still sound good today in all their mono glory. And they did it all live.

Third Place Winner

Quincy Jones

The Q's place in history would be assured even without his association with Michael Jackson. "Thriller" remains the best example of mid-1980s pop that we can think of, but let's not overlook his work outside of L.A.; productions of Ray Charles, Dinah Washington and Count Basie are timeless.

John Hammond

Hammond's gift was in his ability to stay out of the way: letting his artists work their magic while he read the paper or used the telephone. The results of these artists — including Count Basie, Billie Holiday, Aretha Franklin, Bob Dylan, Bruce Springsteen — speak for themselves.

Jimmy Jam/Terry Lewis

Along with Prince, these two defined the Minneapolis Sound, perhaps *the* most influential Eighties pop production style. Their Flyte Tyme studios is one reason why Minneapolis is becoming well-known as a recording and production center.

of his time. Not to take away anything from the Beatles' genius, but somebody had to let them in the control room. To open that door to pop musicians, of all people, was nothing short of revolutionary. That takes nothing away from Martin's production skills; deservedly, he won this poll by a wide margin.

Second Place Winner

Phil Spector

The recent inductee into the Rock 'n' Roll Hall of Fame is entirely worthy, as his Wall of Sound production style can be heard today. Those "little symphonies for the



Arif Mardin

Producer of many R&B hits in the Atlantic glory years of the 1960s. Produced "Wind Beneath My Wings," this year's Grammy winner for song of the year.

Giorgio Moroder

Electronic music records? His were among the first commercial successes, including Donna Summer and Blondie.

Ted Templeman

Anyone whose productions range from Randy Newman to the Doobie Brothers to Van Halen wins a spot in our heart. A record company exec who never forgot how records are made, or why.

Narada Michael Walden

A good example of a musician/artist turned producer. Coming from a fusion background, Walden's productions for Aretha Franklin and Whitney Houston were breakthroughs for both.



Honorable Mentions:

Roy Thomas Baker

The man who made tape saturation an art. Nominated as a producer for his work with Queen and the Cars, his engineering chops shouldn't be overlooked, especially considering his experiments with tape-based flanging in the 1960s and his work with the Who, the Stones and T-Rex.

Artists' expectations, engineering limitations, and other myths of digital recording.

Digital. The word itself conjures up visions of a totally perfect recording process where anything is possible.

Nothing could be further from the truth.

For example, if you treat your digital tape as we've shown below you'll likely end up with exactly what you'd expect. Useless tape.

And how about *sound*: that nebulous, very subjective quality that is, for each one of us, the *raison d'être*?

After all, even though we build what we believe to be the world's finest digital machine, the 32-track DTR-900B, some audio engineers would stack our analog multi-track machines up against it in terms of sound quality any day.

So why did we build the digital DTR-900, and then follow it up with significant new features and improvements in the second generation DTR-900B? And why do we believe it

may be the single most important purchase you will ever make in your business? Simple. It will solve problems for you that no other system can solve.

It can cut hours from session times. And it can make your life as a professional magnitudes easier and more rewarding. Here's how.

Just imagine a session where after only a few takes you can send the talent home. You got their best when they were fresh, and now you can do *your* best when you're fresh, and cre-

ative. You use the DTR-900B's session controller to *electronically* assemble the final master from the tracks with no—that's *zero*—sound degradation. (As one studio owner put it, "Often a record becomes what analog makes it—not so with digital.") And no matter how intense the mix-down, the PD format with its powerful Reed-Solomon error correction scheme means you could lose up

to 8 tracks of data and still record and play all 32 channels! So, if you were to lay a cigarette down... no, no, just kidding!

But there's a down side to digital, too. For one thing, there's no friendly tape noise to cover up mistakes, or to add that mysterious "something" to the mix. And the initial cost for a digital machine can be *scary*.

So what's the final mix, or the bottom line, if you prefer? The cost is high, and even though the Otari DTR-900B is a powerful client draw, it's important to consider your return on investment.

But then, a great sounding record is hard to put a price on, isn't it?

It's your decision, but we can help. After all, Otari can offer you the best in digital, *and* the best in analog. Call Otari at (415) 341-5900, for more information. (And if you own a DTR-900, ask us about how the new features on the "B" can be added to your machine.)



The DTR-900B's new Locator/Remote features improved hardware and software that make the machine faster and easier to operate.

pd The world standard Professional Digital (PD) format employs Reed-Solomon coding, mechanical dispersion, and cyclical redundancy in a virtually foolproof error correction scheme for data loss recovery.

OTARI

Circle (30) on Rapid Facts Card



Equally worthy

Like the equipment poll, it was difficult to limit the number of choices. That these worthy nominees were excluded by no means diminishes their accomplishments, the ones listed here being cited by their peers on the Editorial Review Board. We salute them:

- Bob Clearmountain (Bruce Springsteen).
- Brian Couzens (Chandos Records).
- Steven Epstein (CBS classical recordings).
- Buddy Holly (the first artist/producer?).
- Keith Johnson (Sheffield and Reference Recordings).
- Tom Jung (DMP)
- Gary Katz (Steely Dan).
- Eddie Kramer (Jimi Hendrix/Electric Ladyland).
- Larry Lavine (engineered Spector's Wall of Sound).
- Mutt Lange (Def Leppard).
- Daniel Lanois (Peter Gabriel).
- Teo Macero (Miles Davis)
- Steve Nye (Yellow Magic Orchestra).
- Allen Parsons (Pink Floyd, Allen Parsons Project).
- Bill Putnam (UREI founder).
- Todd Rundgren ("Something/Anything").
- Toby Scott (Bruce Springsteen).
- Carson Taylor (chief engineer, Capitol Records).
- Brian Wilson ("Pet Sounds").
- Shelly Yakus (Don Henly, Tom Petty).



POLL DETAILS

Here's how the 20th Anniversary Readers Polls were conducted: Last fall, we asked the RE/P Editorial Review Board, consisting of manufacturers and readers, for nominations in each category of classic equipment, classic engineers/producers and classic producers. We compiled these nominations and determined finalists. A total of 15 pieces of equipment made the final list; we chose 10 each for the engineers/producers and producers. It was these groups that readers voted on in December.

Ballots were tabulated differently in each poll. In the equipment poll, first place votes were counted. First, Second and Third place were determined from the top first-place vote-getters. For the other polls, we determined places through a straightforward vote-counting.

For all polls, we've designated First, Second and Third places; the remainder of the finalists are listed in alphabetical order.

The point of the poll was not in determining winners and losers, but to have some fun and spotlight some equipment and

people that have much to do with how we work today. We don't claim to be the last word, and we encourage yours. If what you consider to be classic equipment, or engineers and producers, isn't listed here, write us and tell what you think are classics. Send them to Letters, RE/P, 9221 Quivira, Overland Park, KS 66215.

REP

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Flying Faders Automation
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Contact: Hank Neuberger

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Exclusive North American Distributor of

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DIGITAL PRO AUDIO

ADS

THROUGHOUT THE AGES

Although we barely have the space or time to present all the various ads that have appeared in RE/P, we would like to share a few of our favorites. These ads are some of the more interesting and notable that have appeared in RE/P during the past two decades of change.

And at \$16,500, the JH-16 is worth fighting over.

Combining the total logic and the constant tape tension of the JH-10 Transport with proven MCI electronics, the JH-16 is a triumph of both lower cost and higher quality.

MCI has eliminated the costly hand-wiring found in other comparable units and substituted channel strip printed circuit boards in conjunction with non-adjustment functions. Yet there's no sacrifice of world-renowned MCI quality—in fact, serviceability and reliability are improved.

The JH-16 is a complete 3-head 16-track recorder that can be changed in minutes for one- or two-inch tape capability for 8-, 12- or 16-track operation.

Remote overdub and transport motion control are standard equipment. Space is available in the attractive aluminum housing of the JH-16 remote control for the optional Auto-Locator (\$1,200).

Atlantic Records, Tommy Dorsey and Criteria Recording Studio's Mack Emerman aren't the only ones fighting for the first JH-16. To join the fray, contact MCI, 1140 N. Flagler Drive, Ft. Lauderdale, Fla. 33304 (phone 305-763-5433).

The big problem: not MCI size with the JH-16's

WHO'LL GET THE FIRST ONE?



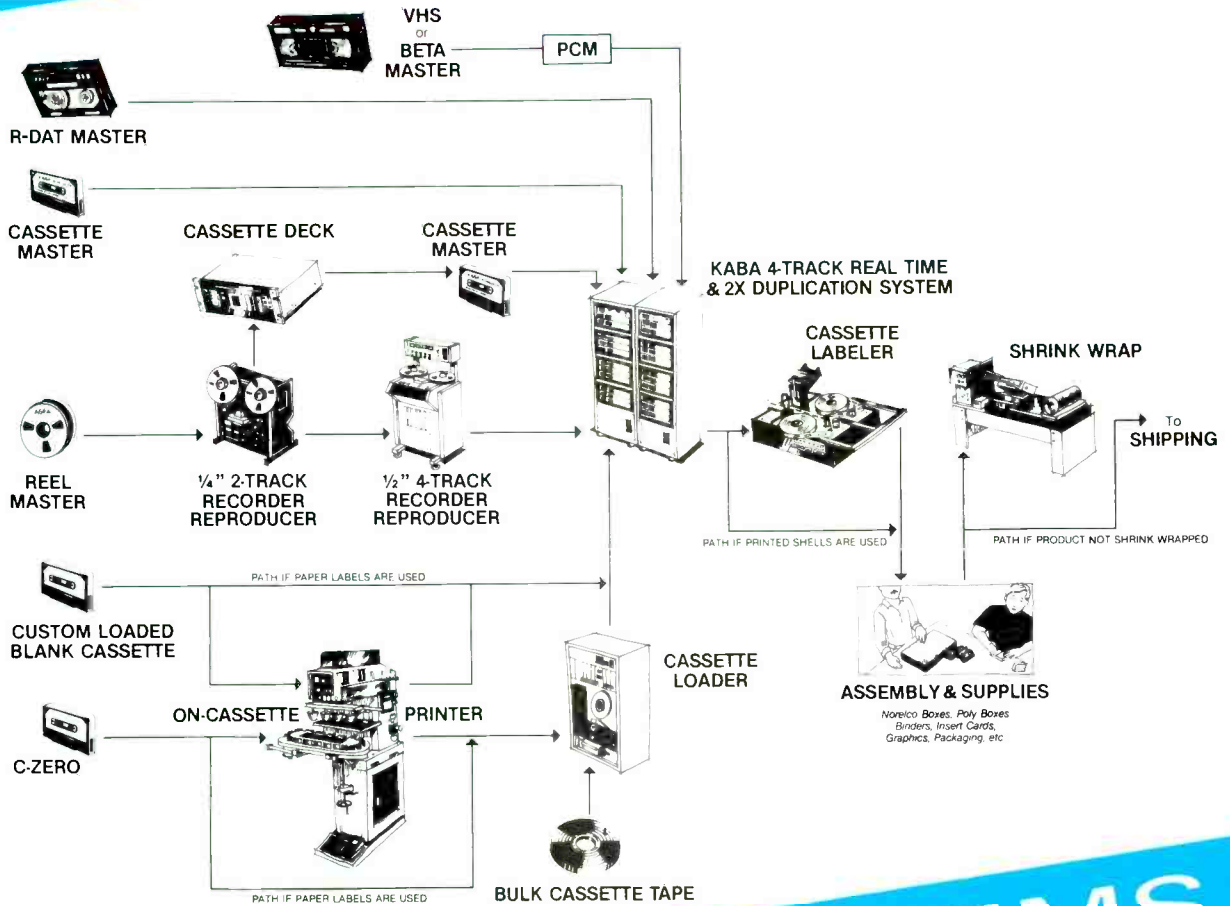
MCI DISTRIBUTORS: Tom Hickey, Westlake Audio, 6311 Wilshire Blvd., Los Angeles, Calif. 90048 • Dan Fischinger, Dan Fischinger Associates, P.O. Box 628, Hudson, Ohio 44238 • Dave Harrison, Studio Supply Co., 112 Cleveland Court, Hendersonville, Tenn. 37075 • Paul Kelly, Kelly's Audio Engineers, 704 Elphinst, Muscle Shoals, Ala. 35681

Circle No. 105

September/October 1971

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THE INFINITE COMPRESSOR

VARYING INPUT LEVELS & RESULT IN UNIFORM OUTPUT LEVEL!



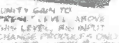
THE EXPANDER

SUBDUES ALL BUT THE BEST DYNAMIC RANGE INTO A WIDER-DYNAMIC RANGE!




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THE LIMITER

LIMITS GAIN TO PRESET LEVELS. BEYOND THIS LEVEL, NO INPUT CHANGE PRODUCE A WIDER-LITTLE OUTPUT CHANGE!



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MAKING LITTLE SIGNALS BECOME BIGGER!



THE OMNIPRESSOR[®] \$600 FROM THOSE WONDERFUL FOLKS WHO BROUGHT YOU THE INSTANT PHASER[™] AND DIGITAL DELAY LINE

Eventide

July/August 1973

Keep on Trackin'




Multi-track, that is with Stephens Electronics professional tape recorder/processors. Our superbly designed and engineered machines are available in a variety of standard formats. From 4 to 24 tracks, or you can keep on trackin' with Stephens' unique 22 track and 40 track 2-inch machines.

Featured prominently are the 4-track 4000 and 24-track machines. Delivery schedules and prices are available on request.

STEPHENS ELECTRONICS, INC.
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August 1974



Home Cookin'!

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 A 4-track professional, 100% transistorized, 1/4" tape recorder with 4000 Hz frequency response.

June 1977

Bob Dylan Comes Home

20,000 at Garden Dig That Old Dylan Music

Blue Jeans For Bob Dylan

Bob Dylan, 35, is back in New York City, and he's back in a big way. He's wearing blue jeans and a white shirt, and he's looking like a young man again. He's back in New York City, and he's back in a big way. He's wearing blue jeans and a white shirt, and he's looking like a young man again.

To record Bob Dylan and The Band... Wally Heider, Phil Ramone, Rob Fraboni, and Automated Processes

Bob Dylan and The Band are recording their new album in New York City. The album is being produced by Wally Heider, Phil Ramone, and Rob Fraboni. Automated Processes, Inc. is providing the recording equipment for the sessions.

Dylan Sends Garden Into Mature Frenzy

Bob Dylan's new album, 'Blood on the Face', is a mature and powerful work. It shows Dylan at the height of his artistic powers, and it's a testament to his enduring talent.


For Dylan, the Dollars Are a Changin'

Bob Dylan's new album, 'Blood on the Face', is a mature and powerful work. It shows Dylan at the height of his artistic powers, and it's a testament to his enduring talent.

Automated Processes, Inc.
 1000 Broadway, New York, N.Y. 10018

March/April 1974

Reach! We've got you covered.

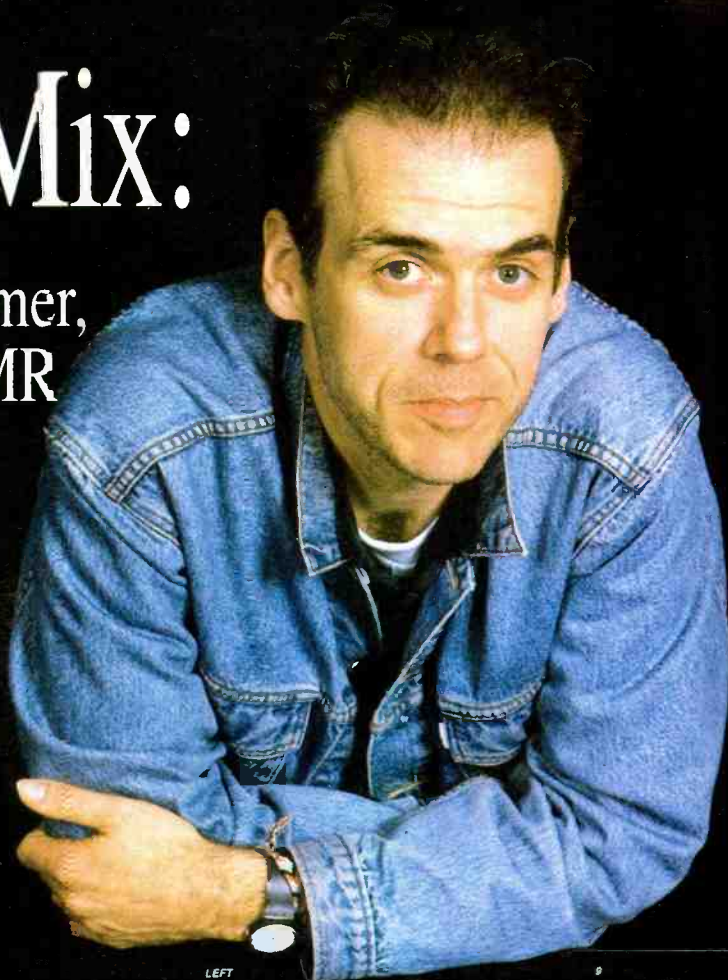


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January/February 1972

The Perfect Mix:

John Hiatt—Performer,
Songwriter, Producer, AMR
Production Series™ 1600
Console Owner.




Through continuing contact with professional recording engineers, Peavey Audio Media Research has produced the definitive mixing console with performance, function and features of uncompromising quality. Ask John Hiatt—performer, songwriter, producer—what he thinks of his new Production Series™ 1600 from AMR. Like John, the kind of people that incorporate AMR equipment into their studio design usually have quite a track record of success. Whether you're a seasoned professional or a talented novice, AMR has the right equipment for you.
Audio Media Research and Success—The Perfect Mix

PEAVEY
AUDIO MEDIA RESEARCH™
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Send \$2 for product catalog to: AUDIO MEDIA RESEARCH/A D VISION OF PEAVEY ELECTRONICS 711 A Street/Meridian, MS 39302-2898 © 1990

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For more information on the Linn drum machine, call 1-800-541-1111. Linn is a registered trademark of Linn Electronics, Inc. Linn Electronics, Inc. 10240 Woodbine, Torrance, California 90503

October 1983

much of what makes us superior is apparent... much more is not



STUDER
MULTI-TRACK TAPE RECORDER

PLAY

June 1979

Congratulations Recording ENGINEER/PRODUCER



on your 20th Anniversary!

Milestones are a time for assessment and reflection—a time to look forward as well as back. Accordingly, as we celebrate our 65th year, we are eyeing the road that lies ahead with the enthusiasm that has characterized our accomplishments in the past.

Many Shure products have become recognized classics over the years. And, as audio specialists have known for six decades, the next Shure classic is always just around the corner.

SHURE®

THE SOUND OF THE PROFESSIONALS®... WORLDWIDE

We Didn't Believe it Either.

Our introduction to the Premier Zone has transformed and the best recording studios use PZM™. So do a whole lot of other people on a whole lot of stages, church podiums, and conference room tables. Success has changed us. One of our most popular products is probably still selling years since we first introduced it. It should work all along.

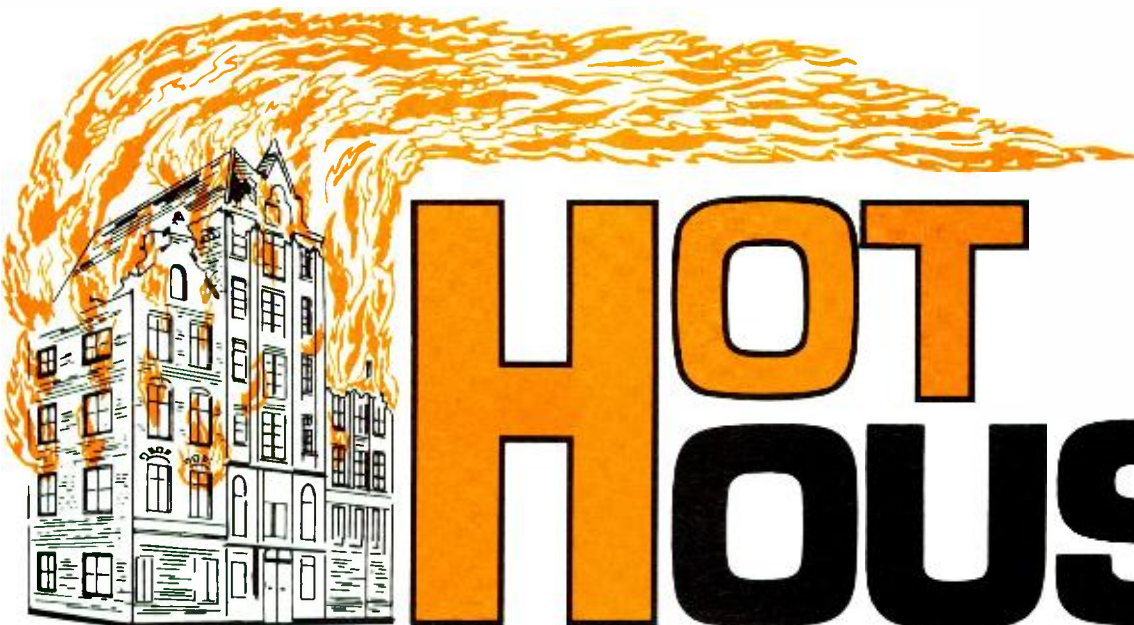


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February 1984

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WHAT A LONG, STRANGE TRIP IT HAS BEEN

A glimpse at people in an industry that changes day-to-day, yet always maintains its growth potential.

By Pamela S. Fleener

S

ince RE/P's inception 20 years ago, there have been many changes in the recording industry. No one will dispute that. But what changes have affected us the most? In all probability, the adaption from project studios to home studios could be agreed upon as a major change in our cottage industry. Major technological advancements can be found in every aspect of recording. But what other changes have impressed those in our industry?

In an attempt to find some answers to this question, we have surveyed manufacturers, engineers/producers, studio owners and others. The following questions were asked:

- What was your first job in the industry?
- What do you feel has been the biggest change in the industry since you've been a part of it?

In alphabetical order are the persons surveyed and their insights and views of the changes in the recording industry.

Pam Fleener is RE/P's associate editor.

AGFA... quietly the new leader

A major international economic power is concentrating its resources on serving the needs of today's recording and duplication professional.

Who is Agfa and why are you hearing so much about its tape of late? Agfa users can probably answer this question best of all.

Ask engineer/producer Michael Brauer, for example, who has done mixing for such chart-topping hits as Aretha Franklin's "Freeway of Love," "Price of Love" from Bad English, and the Rolling Stones LP "Steel Wheels"—all on AGFA PEM 468 high-bias audio mastering tape.

"I don't have an interest in promoting one particular brand of tape over another," he says. "I just want to use what works best and AGFA PEM 468 always comes out on top."

Of course, Brauer is used to explaining to his artists and producers who Agfa is and why he prefers their product. "I did a blind test for "Steel Wheels" producer Chris Kimsey, and asked him to choose between two versions of the same mix on two different brands of tape... he chose Agfa."

For many esteemed musicians, from Bonnie Raitt to Willie Nelson, Aerosmith, and Janet Jackson, the choice of a mastering tape depends not so much on what they hear about "the company" as what they actually hear on "the tape." And what they hear on Agfa is a better high-end and more transparent sound—an overall reliable formula that runs cleanly and holds up over multiple passes.

Few professionals know, however, that Agfa is the number one international brand of audio mastering tape—favored by studios from Abbey Road in London to the Power Station in New York. One out of every three prerecorded audio cassettes is duplicated on Agfa's advanced ferric oxide formula, PE 649. Agfa's video duplication tape is favored by the country's leading duplicators, and Agfa is the leading supplier of tape for Otari's esteemed Thermal Magnetic Duplication (TMD) high speed system. In fact, the world's first magnetic audio tape was coated at an Agfa factory in the 1940's.

Agfa's reputation for quality and innovation is well known throughout the world, based on its role as a leading consumer tape supplier. Stateside, however, the company has decided to bypass the consumer marketplace in order to concentrate its full resources on serving the technical and service needs of today's studio and duplication professionals. This sacrifice in terms of popular notoriety has allowed Agfa to better serve its valued professional customer base.

In fact, Agfa as a corporate power has great-



Rolling Stones' Steel Wheels Mixer Michael Brauer uses AGFA PEM 468 exclusively.

New U.S. Headquarters of Agfa Corporation, Ridgefield Park, New Jersey



er resources to serve this marketplace than any of its competitors. In the United States, it is headquartered in Ridgefield Park, New Jersey, and is part of a rapidly growing domestic business that employs 6,000 people with sales of about \$1 billion. Its products range from magnetic tape to advanced photographic and electronic imaging products.

Furthermore, Agfa is part of Bayer USA, the U.S. management holding company of Bayer AG, West Germany, with sales of about \$5.4 billion. Its sister company Mobay is a major supplier of the raw materials that go into the manufacture of the compact disc.

Recording studios, duplicators, engineers and producers don't usually concentrate on such corporate matters. To them it is more than enough that Agfa sounds better and reflects manufacturing acumen that is renowned for its quality control and advanced German engineering. As evidence of these facts, at one point last month, three of the Top Ten albums on the *Billboard* charts were recorded and/or mixed on AGFA PEM 468 high-bias or AGFA PEM 469 bias-compatible audio mastering tapes.

At the same time, Agfa is contributing to the industry from which it has grown so much. Agfa recently donated PEM 469 to record a

forthcoming Farm Aid IV charity album, while it also donated a matching grant to the year's TEC Award-winning audio education program at Full Sail Recording. Its innovative AGFA-XT tape restoration process has saved many master tapes from irreparable damage. And its AGFA FORUM award will recognize the world's best audio cassette at a gala AES event this coming fall.

In short, Agfa is a tape company you have been hearing so much about because it is making a difference. For many artists, engineers and producers it has offered a significant studio alternative. And for duplicators it has served as a formula for profitable and great sounding high speed duplication. It is the best choice for recording and duplication professionals like Michael Brauer and the Rolling Stones who are discriminating enough to know how much better their music can sound.

Agfa — quietly the new leader.



Murray Allen

Murray Allen, owner, Universal Recording, Chicago

My first job was as a musician with a band called Al Kavelin and His Cascading Court. We toured Army bases during World War II.

I started in this industry before analog came in, and I'm here when it's going out. Over the next few years, we'll get to the point where we'll never look at regular recording tape again. There will be various formats, but it won't be recording tape.



Marvin Caesar

Marvin Caesar, president, Aphex Systems, Sun Valley, CA

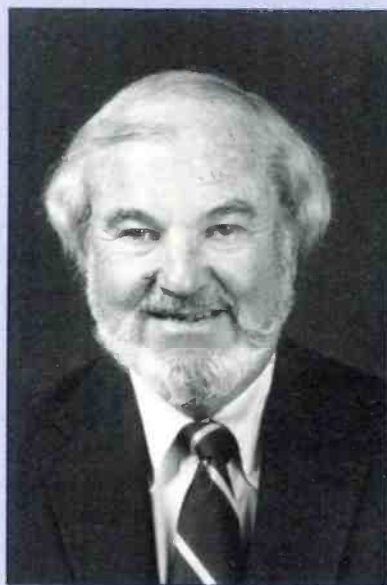
I've been president of Aphex for the last 15 years. I developed labs in upstate New York before that.

The biggest change has been the availability of home recording, or how much home recording is actually taking place. I also feel this will increase in the future.

Roy Clair, owner, Clair Bros. Audio, Lancaster, PA

Dionne Warwick was my first project, in Lancaster, PA.

There have been so many changes. I guess specialization is a major change. It's gone from the companies doing everything — driving the trucks, setting up the equipment, mixing the show, tearing down and driving to the next show — to one company doing one thing. Now all we do is sound.



Mack Emerman

Mack Emerman, owner, Criteria Recording Studios, Miami

The founding of Criteria in 1955 was my first job in the industry.

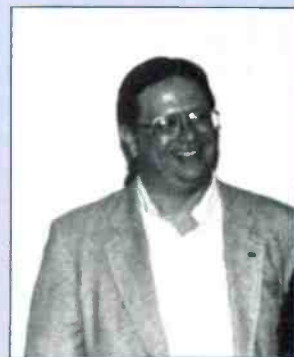
I started out cutting on discs, going to tapes, going to mono, going to stereo, going to 3-track, 4-track, 8-track, 16-track and so on. Things change every day. I'm a member of the board of MCI. It is now the largest professional audio manufacturer and owned by Sony. The 25,000-square-foot complex includes five operational

multitrack studios in it, music- and audio for video-oriented.

Steve Ett, engineer, Chung King House of Metal, New York

I started at the Automated Sound Studios in New York. It is no longer there; they folded. It was a 2-room complex, Neve and Studer, and the majority of the projects was jingles. You had to be really fast, because each room would do four or five jingles a day. They were full-blown productions where a rhythm section would come in and you opened up horns, then strings, then vocals. Then you had to mix and get it out in less than three hours.

The biggest change in my view is not equipment. It's the people coming out of the schools. When I started, there weren't schools. Our studio started an internship program where we would take a student and he would come to the studio one day a week *instead of* going to school. That was unheard of when I first started. Now there are schools where kids go for six, seven or eight months, and come out trying to get a job at a studio. I recently interviewed five kids for an assistant's position. Four out of five had attended a recording school. The other said that he probably shouldn't be in the interview because, unlike the other applicants, he hadn't gone to school. He's the one that I hired. He was so into it, and he had that *ambition* to really want that job.

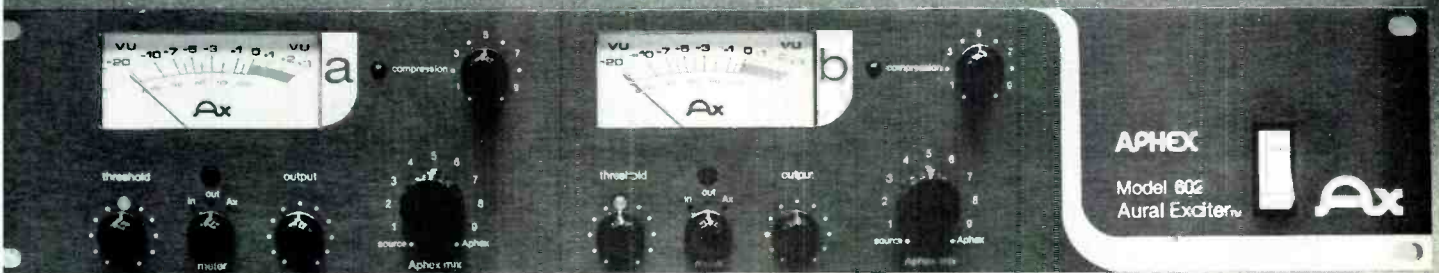


Mark Gander

Mark Gander, vice president of marketing, JBL, Northridge, CA

My first real industry job has been with JBL, since 1976. I started here as a transducer engineer, an equipment designer. I moved from there to marketing. Before

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The Aphex Aural Exciter™ gives you sonic realism obtainable by no other means. Producers of over 4000 albums have relied on this unique effect to give their recordings true spatiality and detail. Broadcasters around the world are now turning to the Aphex™ to give an added dimension of clarity and presence without making the sound unnatural or inducing listener fatigue. In-line or in your production room, give yourself and your listeners the opportunity to experience the answer to "What is Aural Excitement?" Aphex™.

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Change has occurred on two levels. One is technical. Obviously, the industry has changed technically from being an analog, transistor-based industry to being a fully fledged digital industry. The whole DSP, microprocessor and CD technology push of the last five to six years has made major changes in our industry. Along side that has been the cyclical change from being an industry of a very disconnected nature. You had contracting suppliers, such as Altec Lansing, and then you had recording suppliers, such as Harrison or Neve, and the two never met. Over the last 15 years, we've seen companies grow and start to supply products for many segments in the audio community. Rather than being small companies specializing in one segment, now you have large companies that have consolidated other brand names in them, such as the Klark-Teknik group, which includes JBL and Electro-Voice. The industry has gone from lots and

lots of little companies toward consolidation.

Kyle Lehning, Nashville-based producer (Randy Travis, Dan Seals)

My first job was as a musician playing piano and doing arrangement at Glaser Sound Studio in Nashville. I played off and on there for about five years.

The length of time that we take on projects is a major change. Because of the changes in technology, it takes much longer all of the time. Technology does not make things quicker. We have more options and we need more time to decide on them.

Erika Lopez, Audient Marketing Services, Mission Hills, CA

First, I worked in a music store in San Francisco doing bookkeeping for Don Wehr's Music City. Then I was in invento-

ry control at American Music in Seattle. From there, I moved to LA and did various jobs in advertising until I formed Audient Marketing in 1987.

Other than having two kids, I feel the biggest change in this industry since I began is digital.

Bob Ludwig, mastering engineer, Masterdisk, New York

While I was in college in the recording department at the Eastland School of Music, I was also a radio announcer at WBBF-FM, a classical station in Rochester, NY.

The biggest change I've noticed is the appearance of cassettes and CDs, and the disappearance of LPs. I don't think the LP will ever come back, and I am pretty confident that the cassette will in fact disappear as well, possibly in five years or less.



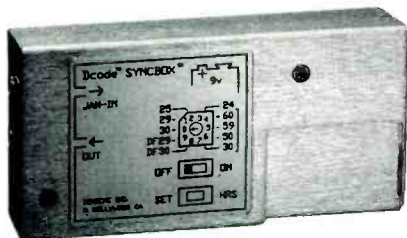
Kyle Lehning



Brad Naples

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Brad Naples, president, New England Digital, White River Junction, VT

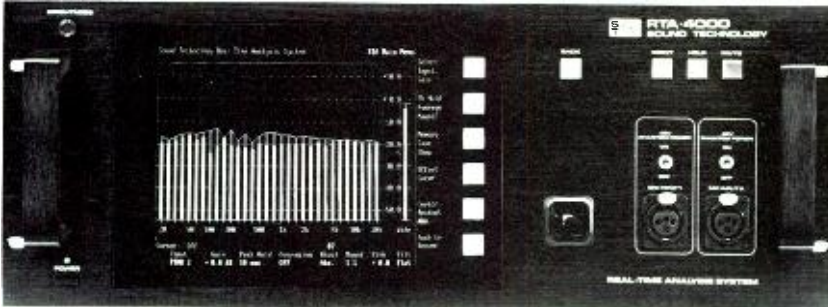
I was business manager of NED in 1979 when it had eight employees. I've been with the company since then.

The products that we have introduced have revolutionized the industry, started a trend. The biggest change has been the way most rhythm tracks are produced through the latter part of the '80s, using technology, sequencers, synthesizers and sampling machines to produce the basic rhythm tracks of music. If you listen to music after 1985-86, and even today, you know what's behind the lion's share of all

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FINALLY!

Troubleshoot using your Program Audio!

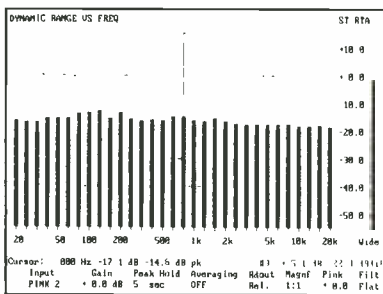


- graphs displayed on CRT
- prints direct to printer
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THE NEW SOUND TECHNOLOGY RTA-4000 Real Time PROGRAM/ACOUSTIC ANALYZER

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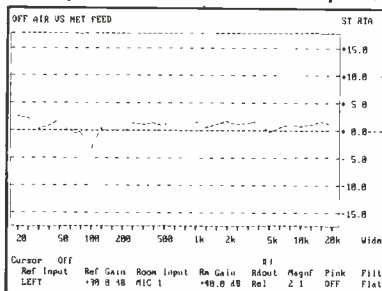
PROGRAM 1 MODE (Dynamic Range vs. Freq.)



Exclusive features of this real time analysis mode:

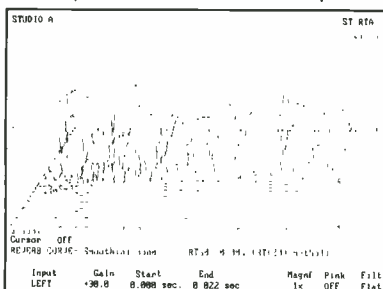
1. Verify peak vs. average energy content of program audio by frequency component.
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PROGRAM 2 MODE (Comparison of two audio inputs)



High speed transfer function shows statistical deviation of two audio inputs. Can be used to show effects of audio processing, sweetening, compression, limiting, and transmission of signal. The RTA's four rear panel inputs allow for left and right "unprocessed" audio in, looped through back into the system, and finally downstream audio brought back into the RTA at the other set of inputs. You can instantaneously see the effects of your system... before and after any adjustments!

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the commercials and records. I think 50% to 60% of all commercials and music use those devices to produce their rhythm tracks. That's the biggest difference between now and when I started. One person programming the groove and then the live tracks over it.

Nick Palladino, vice president of audio services, Scene Three, Nashville

I started as a back-up engineer here in Nashville at Ray Steven's Sound Lab in 1975. From there I built up a clientele doing small sessions and demos. I broke out on my own as an independent engineer. I've been with Scene 3 seven years.

I always had cut records before I came to Scene 3, and when I came here, I got into TV post-production. We shoot a lot of live concerts, so I'm often dealing in a record-type situation. The biggest change, obviously, is digital recording. Also, in the business I'm in, the digital workstations. We own the AMS AudioFile. It has totally and completely changed the way editing is done. When the digital world came in, it just completely changed the industry. My 24-track Studer has cobwebs on it.

Hartley Peavey, president, Peavey Electronics, Meridian, MS

Survival was my first job in the industry. I started out in 1965, right out of college as a green kid. Basically, I started out making good equipment for fair and

reasonable prices. I've been doing it ever since.

When I started out, people in the music business were just that — they were people. Today, the movers and shakers in the music business are for the most part not people, but huge companies. When Leo Fender ran Fender, it was basically Leo Fender and a couple of other guys. Today there are those companies and the people who run those companies, and often they have ownership, but their name is not on the company. There are definitely some exceptions, myself being one, Ray Kurzweil and Zildjian.

When I look around at all those who were heavyweights back when I was in business 25 years ago, most of them are no longer with us. And certainly not in the same format they were in then. Most have been sold, resold, bankrupt and resurrected. All the majors have gone through major changes.

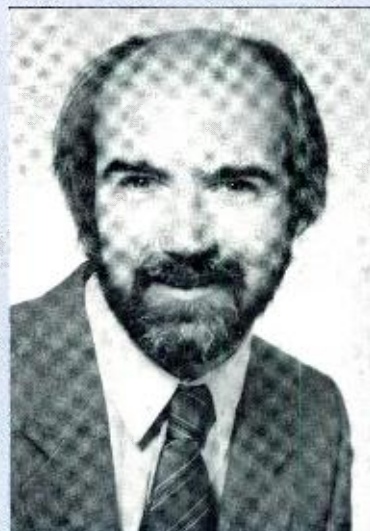
June 1990 is our 25th anniversary. Just to survive 25 years in an unaltered state, managerially speaking, is quite a feat in my estimation.

Don Plunkett, executive director, Audio Engineering Society, New York

My first job was an apprenticeship at NBC in the 1940s. After that, I stayed there for several years and then went on to MGM Records in New York.

One of the biggest changes in the industry is having *gone through* so many

changes. The last one has been the digital revolution. As an example, many things have been re-released on digital. One I picked up recently was a re-issue of *Finnian's Rainbow*, done in March 1947 or 1948. As I heard the re-creation, the restoration of the recording, all done originally at 33½ lacquer, two things were very apparent to me. First, they did pretty well in those days; they fulfilled their responsibilities. The stuff was well recorded, well preserved. And secondly, in the final stage of the transfer to digital, it was amazing to hear what was done then, and the restoration.



David Porter



Hartley Peavey

David Porter, owner, Music Annex, San Francisco

I started out life as a player. I worked in studios as a performer. But my first job in the *industry* was as a mastering engineer at a tape duplication plant. I was making bin loop masters for 8-track cartridge and cassette duplication. The plant, located in Santa Clara, CA, was Recording Specialties. It no longer exists under that name. What is left of it I own.

The biggest change is basically that so many people have found the industry somewhat glamorous to be in, and there are a lot of people in it who did not start out as audio people. Many came across

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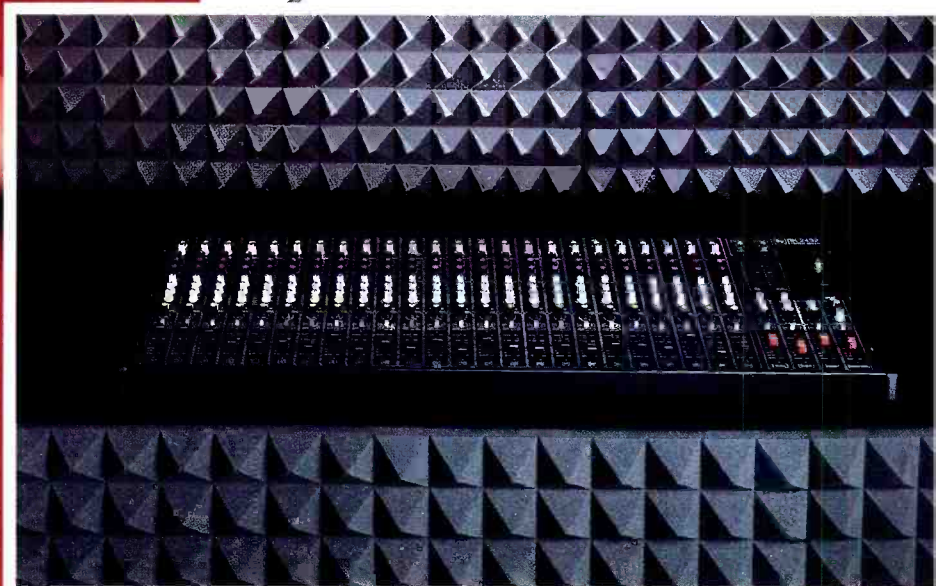
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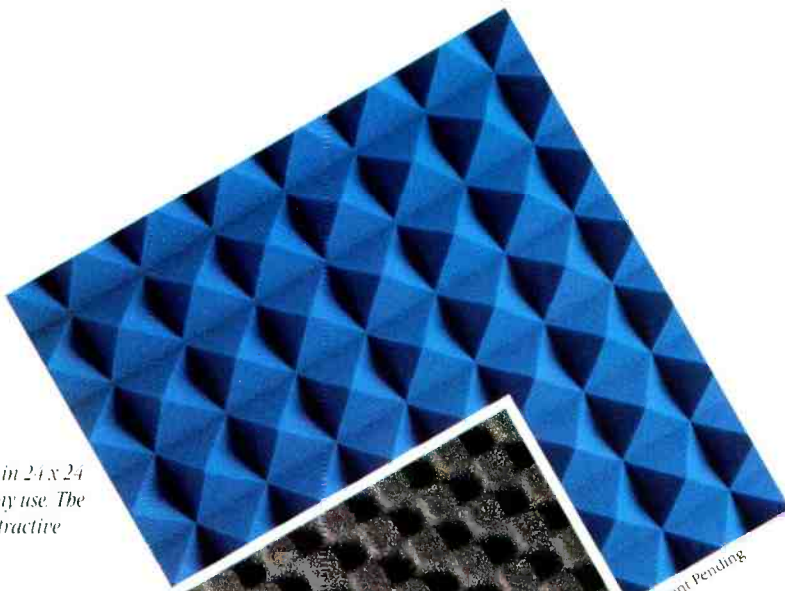
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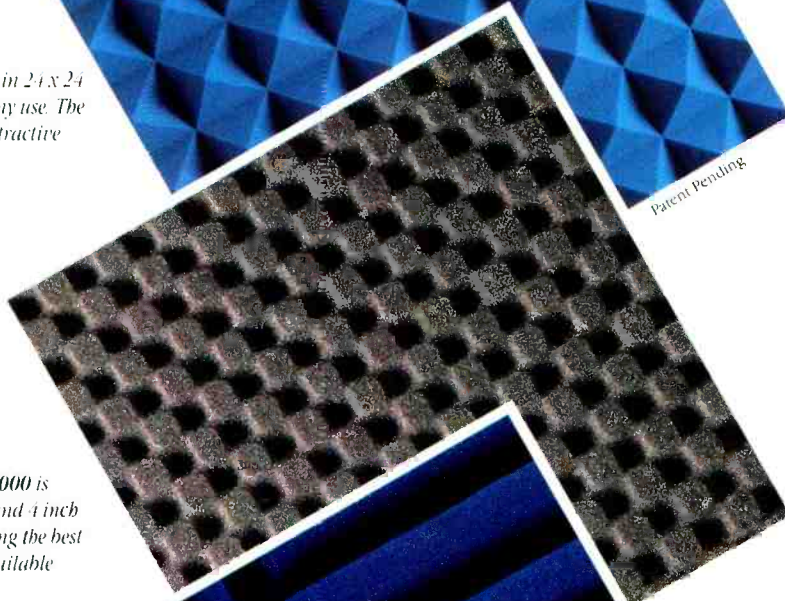
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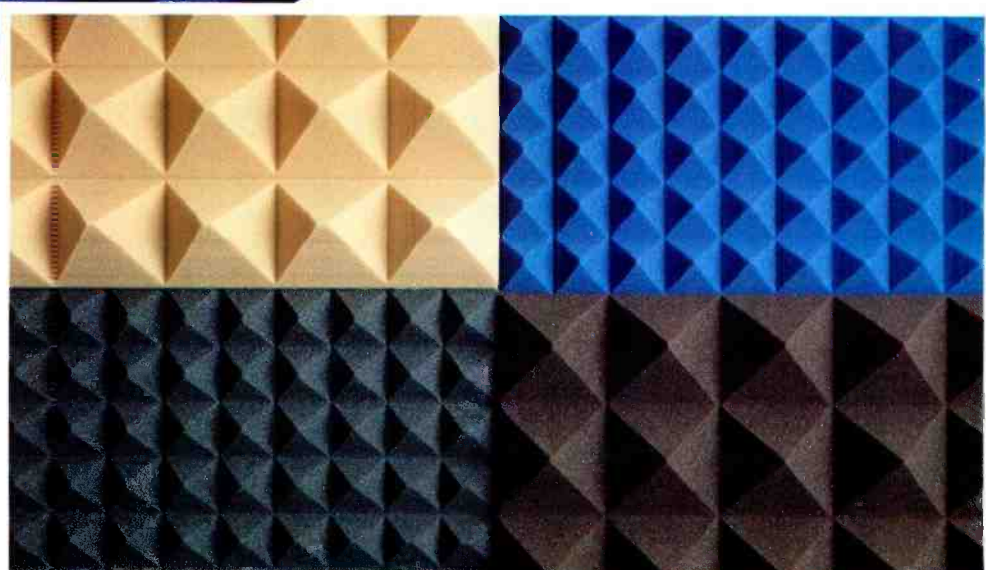


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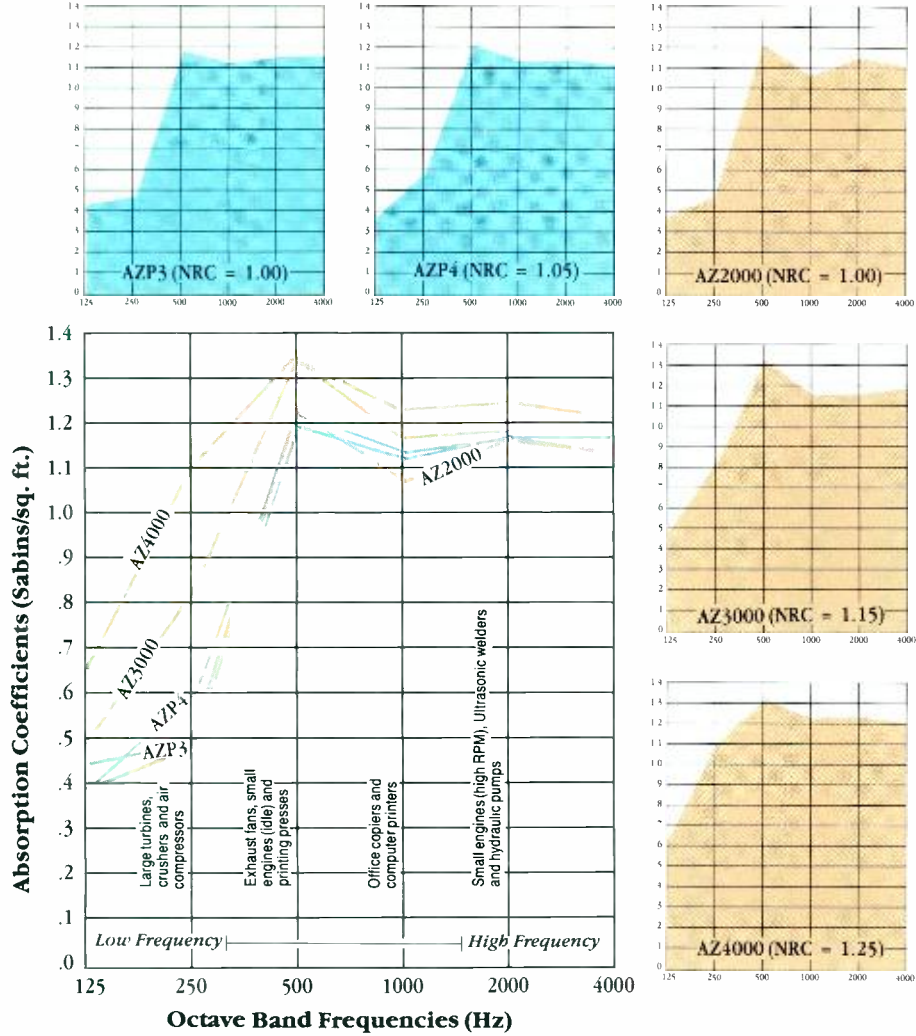
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from the music side, not unlike myself. It's no longer a bunch of guys in lab coats, technician-type guys. The result is kind of a new type of audio person who may very well have a strong musical background, whose background may not necessarily be technical. Even in the old days, musicians and producers would go to a place, such as a studio owned by a record company, and there would be a guy, a union staff engineer, who took coffee breaks and was just *there* — a lab coat guy who wasn't very artistic. Now the musicians, producers, etc. have their own studios and they do their own thing with it. Access to technology. That's the biggest change.



M.L. Procise

M.L. Procise, live sound engineer, Showco, Dallas

Working with Genesis on their world-wide tour in 1975 was my first job with Showco. I spent four years and did 350 live shows with them. Before I worked at Showco, I worked for a band (Ethos) in the Midwest that had two albums out on Capital. They were from Fort Wayne, IN, and they were a progressive rock group that was pretty advanced technologically for the time. They owned some of the more esoteric musical instrumentation at the time: a Mellotron, MiniMoogs, Arps. They were a pretty innovative group. Before that, I was working with bands as part of the road team with bar bands when I was in high school. But I generally consider my experience to be somewhere in the area of 18 years professionally. There was time before that when I was involved with music extensively, but I wouldn't call it professional.

I witnessed the industry go from a hobby to a profession. It developed into a legitimate, very important profession. The change in technology, of course, has been enormous. Just watching the sound reinforcement capabilities evolving into the state-of-the-art that it is now — that change has been overwhelming.

Fred Vail, owner, Treasure Isle, Nashville

I was a disc jockey at KXOA FM and KJML in Sacramento, CA.

Other than technology, which is virtually changing weekly, I guess the latest change would be the impact of smaller

studios and home studios on the industry. Unfortunately, changes in revenues haven't changed much at all over the last 10 years. A good studio today doesn't cost much more by the hour than a studio 10 years ago. Inflation has increased every-

thing — from a loaf of bread, to a gallon of gas, to a home — over the same period of time, yet nowhere near in proportion to studio revenues.

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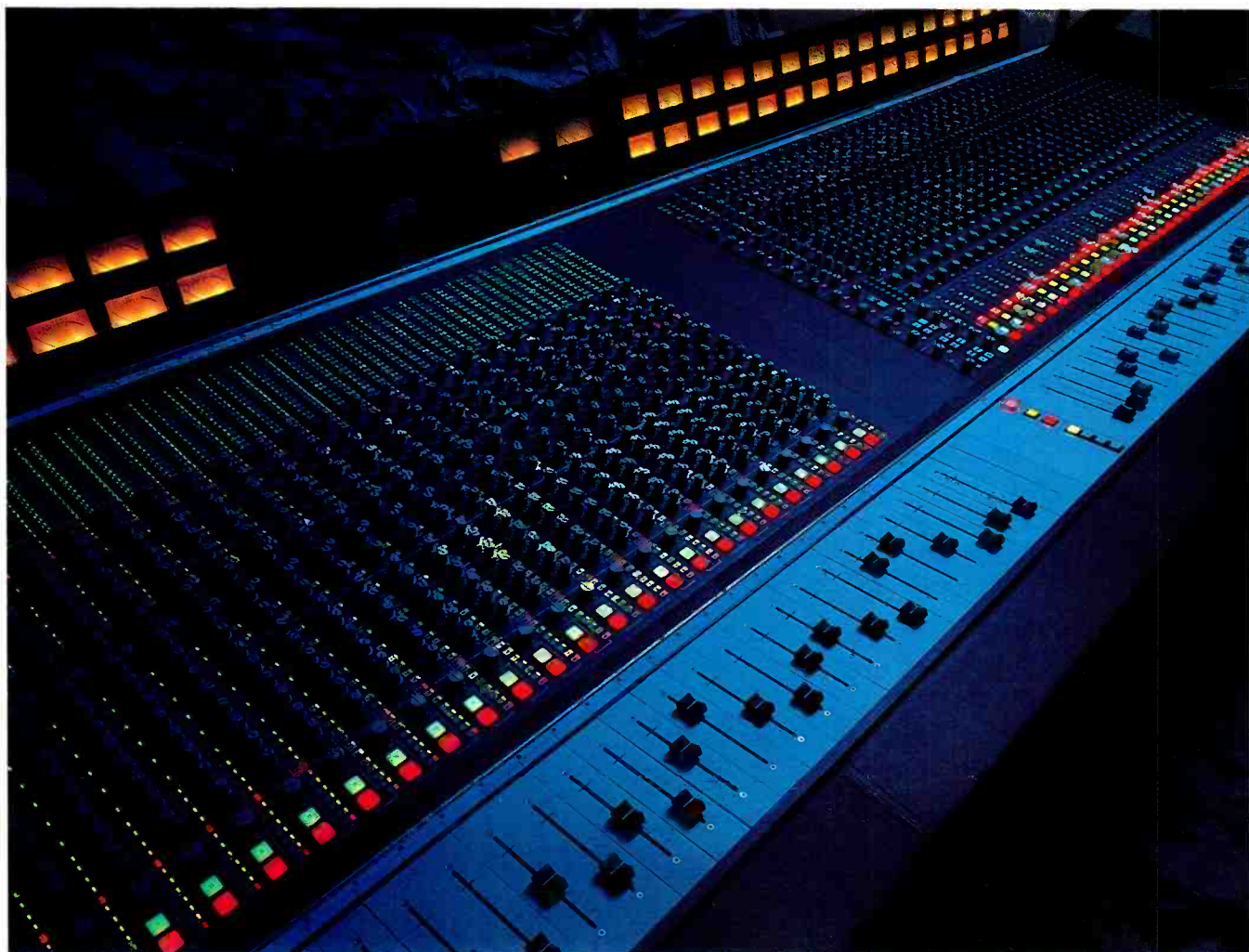
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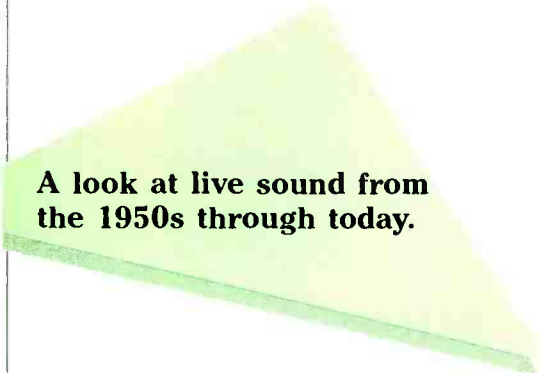


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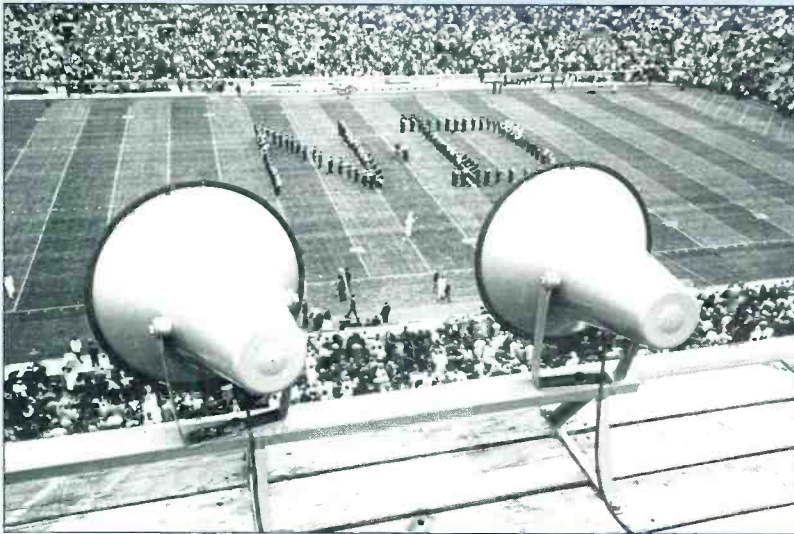
**A look at live sound from
the 1950s through today.**



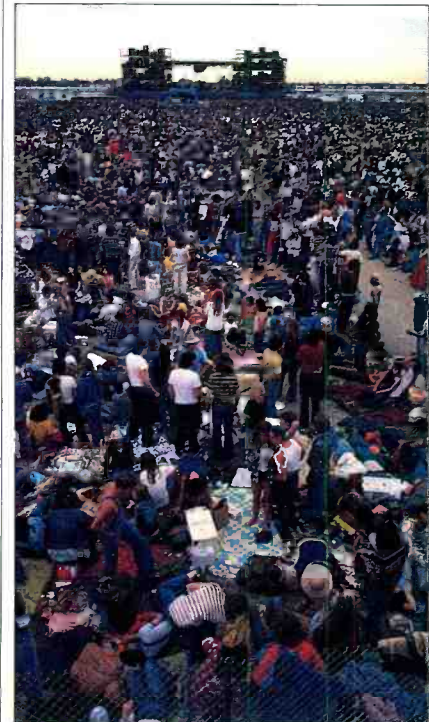
Sound reinforcement coverage has been an important part of RE/P since the first sound reinforcement article appeared in 1972; regular SR coverage began in 1974 and has continued to this day.

Through the years, sound reinforcement coverage has evolved as the discipline has evolved. Initially, SR was little more than a band's PA system. As concert events grew more complicated, sound reinforcement systems responded in kind. Today's systems are extremely sophisticated, nearly capable of re-creating material the artist created in the studio.

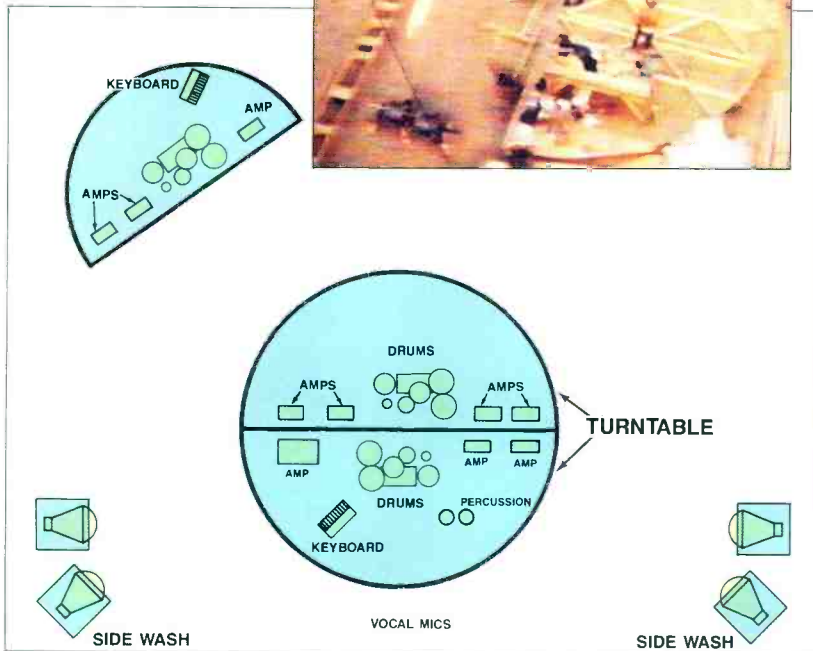
The following pages offer a look at what sound reinforcement has been all these years, and where it is headed in the future.



Sound reinforcement grew out of public address systems in such fixed installations as stadiums and arenas. This early example, at Notre Dame Stadium in South Bend, IN, features an early system from the 1950s. (Photo courtesy of Electro-Voice.)



The California Jam in April 1974 was one of the first mega-events. Initially, organizers planned on 60,000 people attending. A few days before the event, they estimated that attendance would surpass 200,000. Initial system coverage was only 1,000. Additional arrays were added at 1,000 feet, with the signal delayed by 859ms. Tycobrahe Sound provided the system. (Photo courtesy of JBL.)

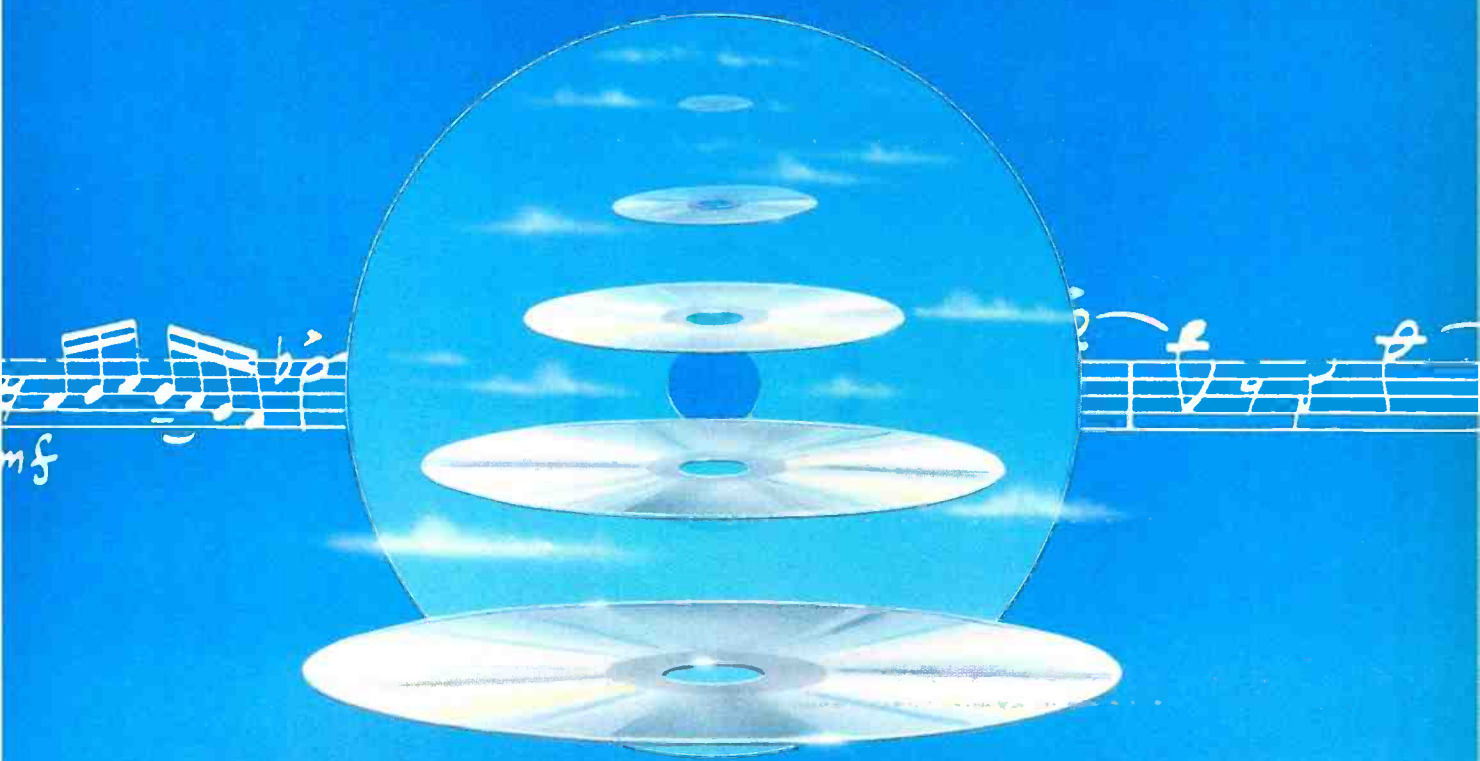


The US Festival, financed by Apple Computer founder Steve Wozniak, was probably the major concert event in the early 1980s. Technically, it was noted for a cooperative system designed and operated by Clair Bros. and Showco. Attendance was about 300,000 on a 54-acre site. (Photo courtesy of JBL.)

Sound reinforcement's quantum leap occurred in the 1960s, when the huge growth of rock 'n' roll spurred the first festival systems. Woodstock, the most notable of these, featured a 10kW system and a turntable stage that allowed one group to play while another one set up. The SR system was designed by Bill Hanley, one of the pioneers in concert sound systems.

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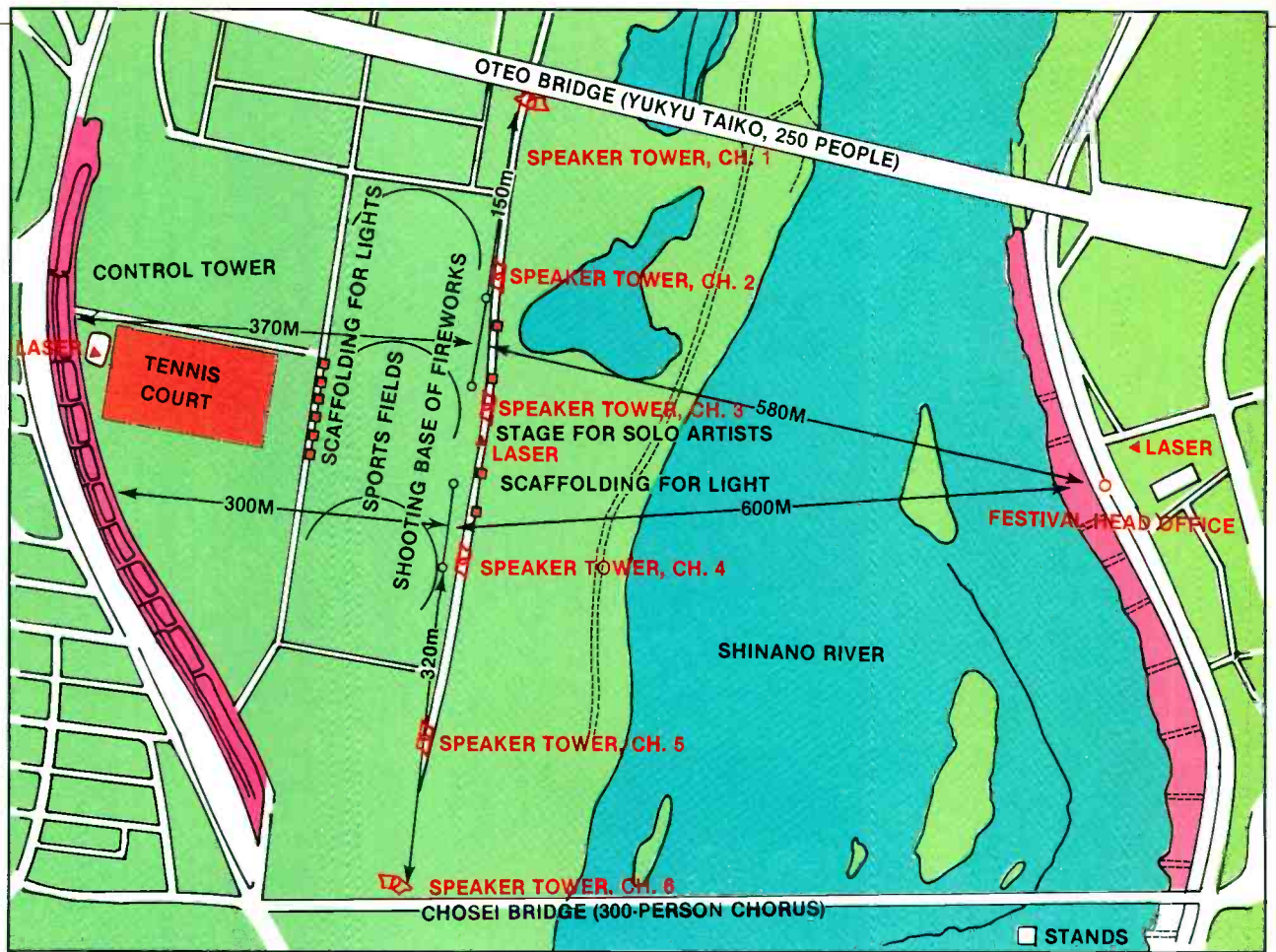
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The late-1980s sound systems were noted for their technical complexity. For example, an outdoor Tomita concert in the summer of 1987 required coverage up to 600 meters away across the river. The system had to reproduce acoustic and synthesized instruments, a 300-person chorus, and compete with exploding fireworks. This area map lays out the system.



The trend hasn't only been toward the large; miniaturization has also played a part. Miniature mics have been used for such instruments as drums and saxes. Shown here is Jim Pollock of Brenda Russell's band using a Ramsa WM-S2 mini-mic clipped to the bell of his horn. (Photo courtesy of Ramsa.)

One of the raging debates in sound reinforcement the past couple of years concerns electronically controlled speaker systems, with dedicated electronics that provide crossover points, built-in delay, phase offset, bandpass limiting and component protection. Are these systems the wave of the future, or are they marketing concoctions? The answer is far from clear; debate at the most recent Syn-Aud-Con seminar in January 1989 revealed vocal supporters on both sides. Shown here is a Meyer MSL3 system at a 1985 Grateful Dead concert, supplied by Ultrasound.



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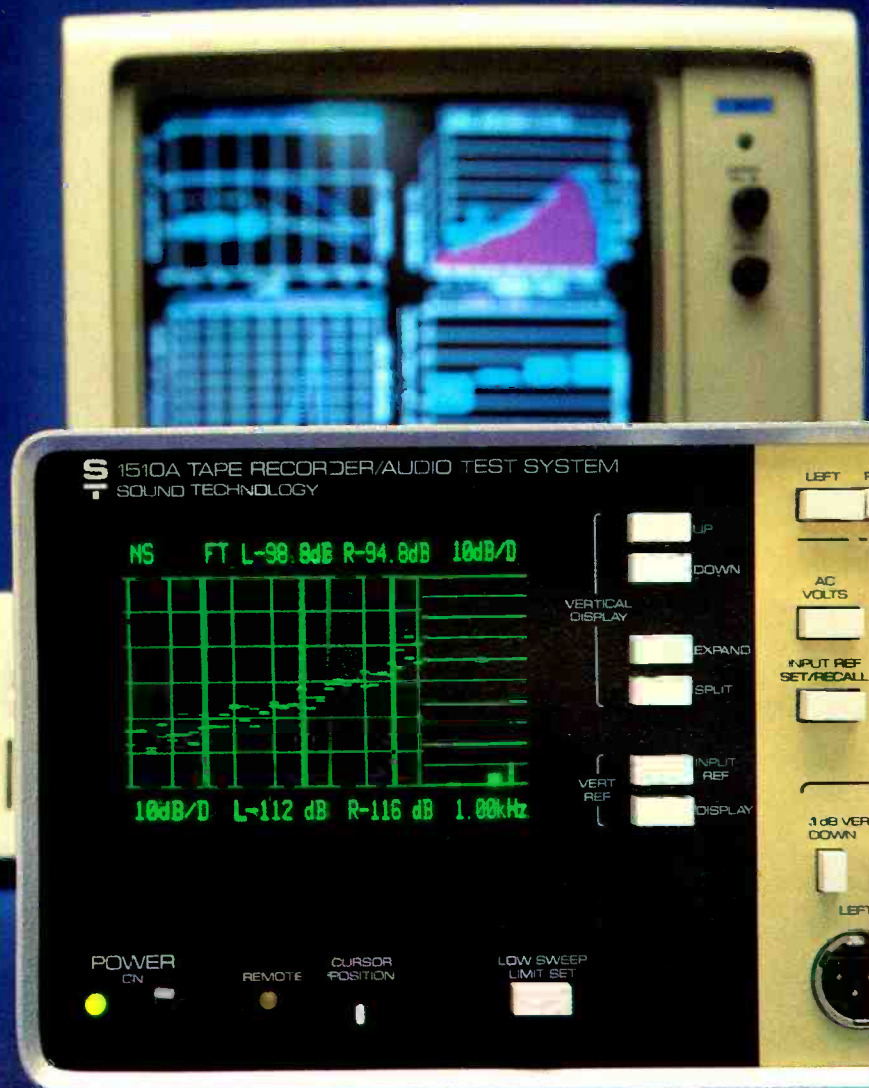
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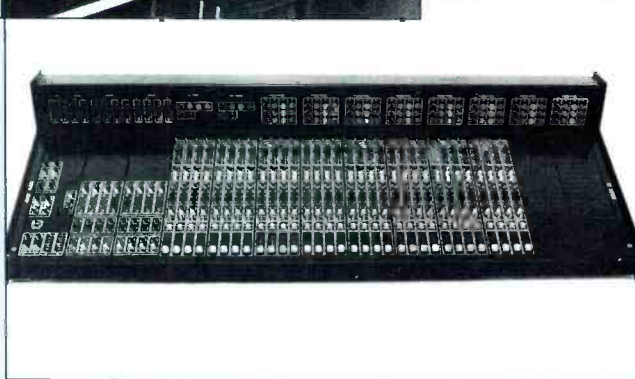
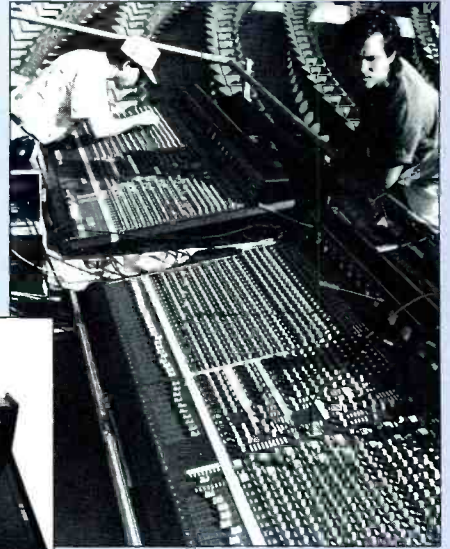
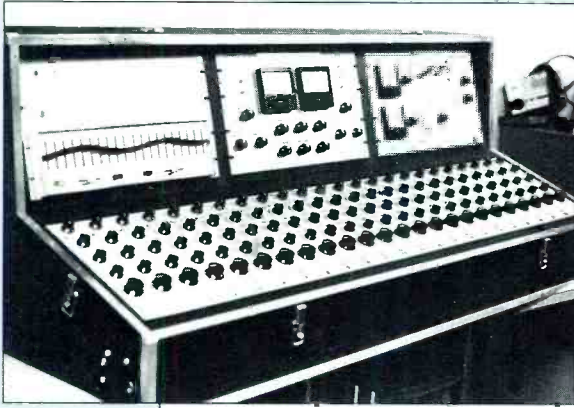
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Sound reinforcement consoles have changed dramatically in 20 years. Witness the three consoles shown here: a Brighton Sound console with no faders, dating from the mid-to-late 1969s; an Ashly Audio 40x8x2, from 1976 and a Ramsa WR-S840. (Photos courtesy of Sound Image, San Marcos, CA, and Ramsa.)



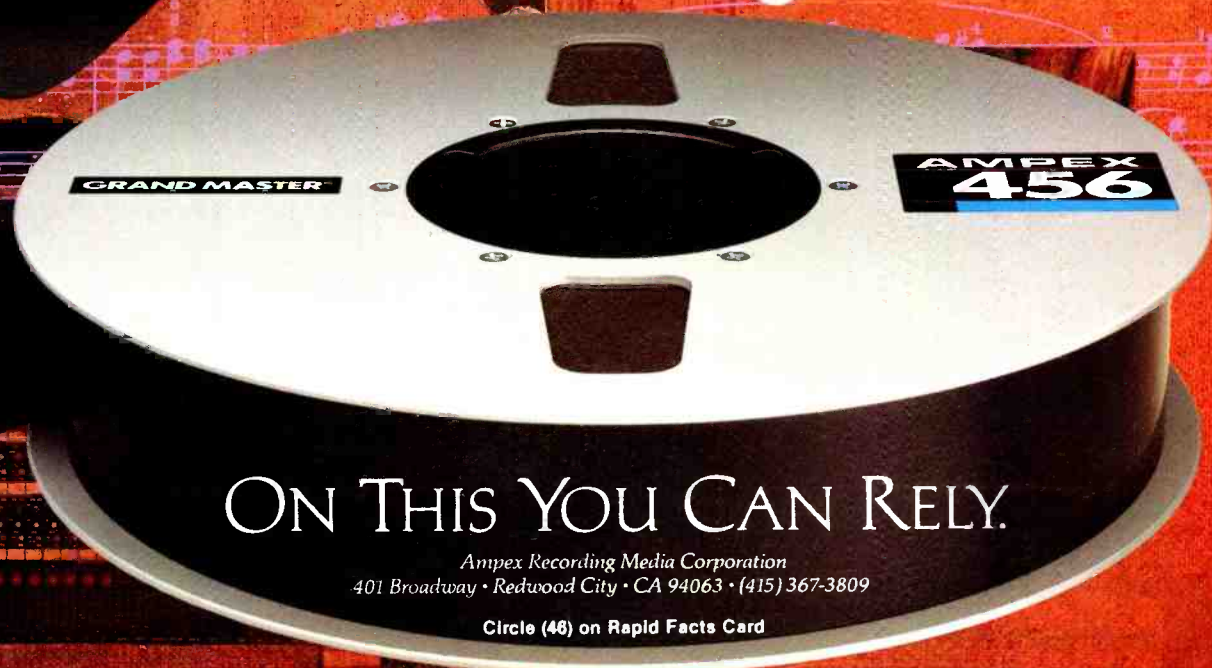
How loud is loud? How about 500kW? This Turbosound system for a heavy metal festival in August 1988 used 304 TMS-3s, 60 TSW-124 subwoofers and 218 monitors (460 amplifier channels). A delay tower consisted of 46 Maryland Sound HF and LF cabinets, plus eight JBL long-throw horns. From a raw power standpoint, the system was impressive; indeed the system rated an entry in the Guinness Book of World Records.

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Perhaps the highest praise RE/P receives is when readers call to inquire about an article that was written five, 10 or even 15 years ago. Often, they are looking for a photocopy or cannot find the article among their back issues and enlist our help. And we've gotten more than a few requests for an index of articles.

In response to all of these instances, we are proud to present the RE/P Index, an alphabetical listing of the 917 articles, show listings and directories the magazine

published through the December 1989 issue, broken down into 70 alphabetical categories.

This list is for informational purposes only; we regret that we cannot fulfill requests for photocopies. If you cannot find articles in your own collection of back issues, ask around. If you live near or around this country's main recording centers — New York, Los Angeles and Nashville — the following libraries contain these back issues:

- New York Public Library: 1978 to present.
 - Los Angeles Public Library: 1974 to present.
 - Country Music Foundation, Nashville: November/December 1970 to present.
- Finally, we would like to acknowledge the following people who lent us back issues in order to complete the Index: Laurel Cash-Jones, Tom Mardykes of City Spark Studio, Kansas City, MO, Mark Gander of JBL, and Mel Lambert.

THE RE/P INDEX: 1970-1989

Acoustics	Mth/Yr	Pg							
Acoustics in Studio Design	Jun/74	29	Guide to Comparing High-Power Amplifiers	Jun/88	36	Production Techniques			
Angled Control Room Window Sound Diffraction	Apr/81	58	Interfacing Monitor Amplifiers	May/88	56	Cost-Effective Audio for Video Production	Apr/84	158	
Bass Traps	Aug/80	46	Power: How Much is Enough?	Apr/77	81	Creative Visual Music Production	Apr/81	78	
Designing Customized Facilities: The Acoustician's Role	May/87	40	Using Power Amplifiers in the Real World	May/89	57	Digital Sound for Laurie Anderson's "Home of the Brave," Part 1	Aug/86	24	
Echoes in Recording Studios	Apr/80	118	What the New IHF Amplifier Standards Mean to Pro Audio	Dec/78	48	Part 2:	Oct/86	64	
Guideposts in the Use of Acoustical Materials	Feb/81	36				Digital Recording and Post-Production Techniques for Concert Video and Film Shoots	Oct/84	70	
Hassing Hass	Jun/80	98	Advertising Production	Mth/Yr	Pg	Earthquake: The Story of Universal's Sensurround	Apr/75	18	
Low Frequency Absorption: Helmholtz Resonators for Studio Use	Feb/80	60	Techniques for Producing Commercials and Jingles	Mar/87	36	Electronic Editing: States of the Art	Sep/89	20	
Noise Level Build-Up Relative to Reflectivity	Dec/80	42	The Creative Art of Jingle and Commercials Production	Dec/83	146	Electronic Sound Editing: The Dawning of a New Era	Jan/88	52	
Reverberation Time Characteristics of Recording Studios and Control Rooms	Dec/82	66	The Engineering "Hot Seat": Commercial Music Production	Apr/88	20	Generating the Low Frequencies for "Apocalypse Now"	Oct/79	118	
Sound Insulation and Isolation Properties of Floating Floors	Dec/81	80	Witchdoctors of the Jingle Jungle	Oct/71	15	High Quality Audio for Video- Post Production	Oct/83	54	
Sound Power vs. Sound Pressure	Dec/79	78	Audio Archives	Mth/Yr	Pg	Improving the Quality of Audio for Video	Dec/83	70	
Standing Waves in Rooms	Dec/76	32	Museum of Magnetic Recording at Ampex	Apr/83	62	"Let's Spend the Night Together" — Hal Ashby & the Rolling Stones Movie, Part 1	Dec/82	94	
The Acoustic Effects of Space and Materials	Dec/79	40	The Audio Archives and Laboratory at the University of Syracuse	Apr/83	56	Part 2: Multitrack Music Editing, Post-Production and Re-Recording Stages	Feb/83	60	
			Audio for Video and Film	Mth/Yr	Pg	Mastering Feature Films for Video Release	Jun/86	66	
AES Conventions	Mth/Yr	Pg	A Comparison of Post-Production Audio Sweetening for Videotape and Film	Jun/77	32	Recording Motion Picture Music	Dec/70	27	
39th AES Convention Program	Aug/70	29	A Nationwide Sampler of the Current Scene	Jun/81	16	SMPT E Synchronization — the Fusion Force for Audio and Video	Apr/81	108	
41st AES Convention Program	Oct/71	26	Ambisonic Surround-Sound Technology for Recording and Broadcast	Dec/83	140	Sony PCM-F1 Modification to Enable Digital Editing Without Transfer to PCM-1610 Format	Oct/84	81	
45th AES Convention Program	Apr/73	46	An On-Location Video Record Shoot With Michael Nesmith's Pacific Arts Video Record Company	Apr/81	94	Sound for the Visual Age	Jun/85	70	
46th AES Convention Program	Aug/73	33	Audio for Video Post-Production: A Basic System	Sep/88	36	Surround Sound for Video	Dec/86	64	
48th AES Convention Program	Apr/74	54	Audio Post-Production Compact Video — Cross-Fertilization of Film- and Video-Based Post-	Apr/88	30	The Audio/Video World of Thomas Dolby	Jun/86	26	
51st AES Convention	Apr/75	36		Aug/84	70	The Challenge of Multi-Format Film Mixing	Feb/74	19	
AES Convention Preview	Oct/89	30				The Growing Importance of High-Quality Stereo Audio for Video	Dec/84	148	
AES Preview	Oct/88	52							
AES Preview	Oct/87	50							
AES Replay: Digital Developments	Jan/87	54							
Amplifiers	Mth/Yr	Pg							
Amplifier-to-Loudspeaker Connections	Jan/87	60							



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Audio for Video and Film, continued

The Growing Importance of Music Video Production on Today's Recording Studio Industry	Aug/85	62
The Marriage of SMPTE and MIDI	Sep/89	28
The Visual Music Alliance	Aug/81	58
The Wondrous World and Vocabulary of the Audio/Video Sweetening Session	Oct/80	72

Where Have All the Sprockets Gone?	Jan/89	48
Book Reviews "Wide Screen Cinema and Stereophonic Sound"	Mth/Yr Dec/71	Pg 27
Broadcast Production Audio Tapes for TV and Video Production	Mth/Yr Apr/89	Pg 18
BBC Radiophonic Workshop	Feb/89	55
Creative and Technical Issues Affecting	Dec/85	118

Broadcast Production and Audio-for-Video	Apr/89	26
Digital Audio, Dynamic Range and the Real World	Dec/87	90
Digital Audio Recording for TV Programming	Apr/86	78
Digital Recording and Random- Access Editing Techniques	Apr/89	40
Digital Satellite Production for the Media Recording Facility	Oct/81	88
King Biscuit Flower Hour Mixing Stereo Monophonically	Apr/70	31
Multitrack Broadcast Production at ABC/Watermark	Apr/84	144
New Audio Techniques for the Old Art of Radio Broadcasting	Oct/80	106
Outfitting the new Turner Broadcasting Audio/Video Production Mobile	Oct/84	150
Producing Audio for NBC Entertainment Promos	Feb/85	134
Quad Broadcasts at PHR	Dec/71	23
Sound on the Set	Jun/77	19
Stereo Television Audio Surround Sound	Feb/85	108
Production for Super Bowl XXI	May/87	64
The Late Show	Mar/87	24
The Midnight Special	Aug/74	17
The New (Audio) Home of the Grand Ole Opry	Oct/74	55
The 22nd Annual Grammy Awards Concert and Telecast	Apr/80	64
The Who's North American Farewell Concert, Toronto	Jun/83	88
Third Coast Audio — Texas Style	Apr/84	150
What Recording Engineers & Producers Should Know About... Broadcasting!	Jun/75	13

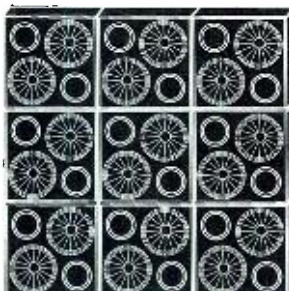
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Business Operations, continued

			Contemporary Design and Performance	Jun/80	60	Relapping Your Own Magnetic Recorder Heads	Aug/75	47
On the Job Training — An Overview	Jan/88	68	Custom Console Design	Apr/84	96	Remoting the Leslie Organ Speaker	Oct/72	35
Personnel Management	May/88	64	Design of a Digitally Controlled Assignable Console	Mar/87	44	Solid State Switching	Dec/71	25
Property and Liability Insurance for Recording Studios	May/87	52	Developments in Assignable Console Designs	Dec/86	24	The Ring Modulator	Feb/71	23
Public Relations and Advertising Principles	Aug/87	82	Expanding Your Console with an Outboard Solo/Cue System	Aug/80	96	The Octopus	Jun/74	41
Scheduling and Booking Policies for Recording and Production Studios	Jul/87	52	Focusrite: A Special Report	Jul/89	50	What Happens When You Ceramic Tile an Echo Chamber?	Jun/72	17
Selecting Accounting Software for Audio Facilities	Dec/87	82	Future Console Developments: The Impact of Digital Techniques	Sep/87	22			
Service and Maintenance Contracts	Mar/87	90	MIDI and the Mixing Console	Feb/89	22	Digital Audio Workstations		
Studio Scheduling	Feb/88	68	MIDI-Based Automation	Feb/89	50	Digital Audio Workstations: An Overview	Mar/88	18
Studio Policy, Rates and the "Arts"	Feb/73	23	Performance Limits in Contemporary Console Design	Apr/80	96	Digital Audio Workstations: Operational Report	Mar/88	38
Tax Planning	Sep/88	82	The Integration of Large-Scale Studio Systems	Feb/88	14			
The New Phonograph Record Labor Agreement (PRLA)	Oct/80	64	The Virtual Console	Oct/85	162	Digital Recording		
The Second Engineer	Dec/79	56	True Digital Audio Mixers	Feb/89	28	An All-Digital Nutcracker: Adapting Digital Technology for 3-Machine Mixing and Editing	Jul/87	38
Understanding the New Tax Laws	Jan/87	36	Upgrading Vintage Technology	Jun/86	82	Digital Recording Formats	Dec/86	82
Writing a Business Plan for the Recording Studio	Jan/88	50				Digital Re-Recording and Remix of Vintage Jimi Hendrix Tapes Using 3M DMS and JVC DAS-900	Aug/85	87
			Construction Projects	Mth/Yr	Pg	Multitrack Recording and Production with ABBA at Polar Studios, Sweden (3M Digital Mastering System)	Aug/83	74
Cassette Duplication	Mth/Yr	Pg	A \$5 Line Amplifier	Jun/72	29	Session Report: A Transcontinental Digital Overdub	Jul/87	44
A Critique of Audio Compact Cassette Housings	Feb/85	114	A High-Performance, Low-Cost Transformerless Microphone Project	Feb/79	60			
Mastering for Tape Duplication	Oct/73	25	A Peak Overload Indicator	Feb/73	21	Digital Signal Processing		
Selecting an In-Cassette Duplication System	Feb/87	78	A Phase Correlation Indicator	Oct/71	31	A Bit's Eye View of Digital Signal Processing	Apr/88	56
			A Simple Low-Pass Filter	Aug/73	26	Digital Signal Processing: Living up to the Promises?	Mar/89	49
Computers	Mth/Yr	Pg	A Simple Panning Network	Aug/75	22	Future Directions in Digital Signal Processing Technology	Jul/87	24
Automating Recording Studio Operations	Dec/86	38	A Simple-to-use PCB Building Kit — the Omni Card	Feb/83	50			
Computer Music: System V	Aug/77	55	A Stereo Synthesizer	Jun/79	62	Digital Technology		
Computer Power Protection	May/88	76	Construction Project	Feb/75	49	A Programmable Parametric Attenuator and a Digital Logic Control System	Apr/78	74
Computers on the Road	Jun/88	50	A Transformerless Balanced-to-Unbalanced/Unbalanced-to-Balanced Line Converter			A Standard Digital Interface for Peripheral Equipment	Feb/78	56
Disk Recording Technology	Mar/88	58	A 20kHz Low-Pass Filter for Audio Noise Measurements	Dec/77	30	CD-ROM in the Studio	Feb/86	76
Glass Apples: Philip Glass Uses Macintosh	Sep/88	74	An Active Band-Pass Filter Design Technique	Jun/71	21	Compact Disc Mastering and Manufacture	Apr/84	94
Computers for Concert Loudspeaker Cable Analysis by Microcomputer: a BASIC Utility Program for the Apple II+	Feb/84	132	An Acutron Watch ... a 60Hz Standard	Aug/71	25	Design Considerations for an Integrated, All-Digital Audio Storage, Editing and Processing System	Dec/86	30
Minicomputers-Microprocessors: How They Work	Feb/78	42	An Earphone/Amplifier Metronome Project	Aug/70	28	Design Parameters of Digital Anti-Aliasing and Anti-Imaging Low-Pass Filters	Aug/87	68
The Computer as a Circuit Design Tool, Part 1	Oct/83	174	An Overhead Microphone Mounting System	Oct/79	96	Digital Audio for Videocassette Duplication	Aug/86	32
Part 2:	Feb/84	64	Audio Overload Indicator	Aug/71	25	Digital Audio Post-Production	Jan/87	64
Using Minicomputers for Audio System Analysis	Oct/81	84	Automating Transport Control	Jun/73	33	Digital Control of Analog Tape Machines	Jul/88	32
			Building a Bipolar Power Supply	Aug/86	68			
Consoles	Mth/Yr	Pg	Building a Microphone Polarity Tester	Oct/80	60			
Console Noise Specifications: Fact or Fiction?	Feb/78	82	Can You Use a Budget Click-Trac?	Oct/77	72			
Part 2:	Dec/77	19	Constructing Pads and Attenuator Circuits	Jun/84	138			
Console Topographies: Live Performance vs. Recording and Production Designs	Sept/87	30	DC Control on a Budget	Oct/72	27			
			Peak Program Meters	Apr/81	114			



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Digital Technology, continued

			Live Sound Consoles, Part 1			Fundamental Signal Feed Techniques for	Apr/70	27
Digital Mastering	Jul/88	58	Part 2:	Jun/85	121	Recording Electronic Musical Instruments		
Digital Mastering and Editing in the Real World (Masterfonics, Nashville)	Dec/82	46	Time-Domain Processors and Special Effects Units, including Reverb Systems, Delay Lines, Phasers, Flangers and Pitch Shifters	Aug/85	116	Grounding Reduction/Expansion Amplifiers	Apr/73	37
Digital Storage Technology	Mar/88	48				Grounding, Referencing and Patching for single-Ended Systems	Oct/80	88
Digital Transports: Why are They so Different From Analog Machines?	Aug/85	70				Impulse Alignment of Loudspeakers and Microphones, Part 1	Dec/78	88
Editing with the Mitsubishi Stationary-Head System	Oct/81	134	Disc Mastering	Mth/Yr	Pg	Part 2:	Feb/79	65
Editing with the Sony Rotary-Head System	Oct/81	134	Creative Mixing for Better Disc Mastering	Aug/73	35	Interconnecting Audio Equipment	Oct/86	144
First Steps in Digital Recording and Post-Production	Apr/84	110	Direct Metal Mastering	Oct/85	58	Interconnecting Audio Equipment	May/88	50
Noise Modulation in Digital Devices, or Who Wrapped the Mics in Sandpaper?	Mar/88	54	Disc Mastering ... Almost the Point of No Return	Jun/70	21	Interface Design	Jan/88	28
Performance Aspects of Digital Oversampling	Mar/89	20	Disk Mastering: The Misunderstood Link	Feb/85	86	Interfaced-Induced Audio Anomalies	Oct/80	98
Practical Performance of Digital Systems	Mar/88	54	Disc Mastering: Views From Around the World	Aug/78	56	Matching Signal	Aug/81	70
Sampling vs. Hard Disk Recording	Mar/89	54	Half-Speed Cutting Returns Is there Life After Digital?	Oct/76	43	Interconnections of Professional Audio Components		
Sony Rotary-Head System at Spectrum Studios	Apr/81	120	Mobile Fidelity + JVC = Original Masters	Dec/81	84	Mundane Applications of the Flux Loop	Aug/74	41
Synchronization and Editing Functions of the Studer D820X-2 Digital Recorder	Aug/85	73	The Final Link	Aug/79	96	Phantom Powering Precautions	Nov/88	36
Synchronization of Mitsubishi X-800/850 and X-80 Digital Transports	Aug/85	83	The Lacquer	Feb/87	74	Repairing Surface-Mount PC Boards	Jul/88	68
Synchronizing 3M Digital Multitracks with Film and Video Transports	Aug/85	76	The Stylus to the Pre-Amplifier: The Weakest Link in the Audio Chain	Dec/75	17	Solid State Switching Circuits: Turn-Ons for the Audio Engineer	Oct/79	116
Synchronizing the Sony PCM-1610, PCM-3120/3202 and PCM-3324 Digital Systems	Dec/80	44		Oct/79	140	Speaker Wire	Oct/78	46
The Digital Recording Science	Aug/82	76	Drum Machines	Apr/85	136	Specmanship and the New Generation of VCA	Oct/82	138
The Digital Transition: How Manufacturers are Responding	Aug/85	78	An Engineer's Guide to Drum Machines			Stabilizing Op-Amps	Jun/78	42
The EIAJ-Format Digital Processor Comes of Age: A Review of Available Hardware, Transfer and Editing Systems	Apr/76	57	An Engineer's Guide to Electronic Drums and Percussion	Mth/Yr	Pg	The Audibility of Electronics	Jul/87	68
The First Digital Studio: Soundstream	Jun/71	9		Apr/80	128	The Pre-Distortion Phenomenon	Dec/81	96
The Promise of Digital Technology Applied to Audio Recording	Dec/77	52	Drums	Mth/Yr	Pg	The State-Variable Filter	Feb/82	44
The 3M System	Apr/81	120	Drum Tuning for the Studio Engineer	Dec/79	66	The Tube vs. Transistor Controversy	Oct/73	35
3M Stationary-Head System at Sound 80	Apr/81	120		Jun/81	40	Understanding Circuit Principles, Part 1: Operation Amplifiers	Mar/87	60
Directories	Mth/Yr	Pg	Electrical/Electronics	Mth/Yr	Pg	Part 2: System Gain and Noise	Jun/87	50
1988 Buyers' Guide	Dec/87	20	A Fuss About Plus	Oct/81	124	Understanding the Neutral VCAs ... the Promise of Electronic Gain Control	Oct/75	15
1989 Black Book	Dec/88	49	A Practical Approach to Electronics,	Jan/88	14	VCAs Round II	Feb/79	72
1990 Black Book	Dec/89	14	Troubleshooting and Maintenance for Less-Than-Technical Personnel, Part 1	Feb/83	44	Voltage Controlled Amplifiers	Apr/79	130
Dynamics Control, Noise Reduction and Effects Processors	Oct/85	176	Part 2:	Nov/88	69	What's Wrong with the Good Old VU Meter?	Feb/72	24
Multitrack and Mastering Tape Machines, Remote Controllers and Synchronizers	Feb/85	156	A Practical Approach to Grounding	Feb/73	29		Jun/70	17
Recording, Production and	Apr/85	156	A Practical Approach to Transistor and Op-Amp Circuit Design	Feb/88	46	Electronic Music	Mth/Yr	Pg
			Active Balanced Inputs and Outputs	Jun/78	54	An Electronic Music Case Study: "The Celtic Macintosh"	Mar/87	84
			An Updated Look at Gain Application Guide for Switch Contact Selections	Apr/84	172	Electronic Musical Instruments in the Studio	Jun/89	32
			Audio Shielding, Grounding and Safety	May/87	46	Equipping an Electronic Music Production Facility	Jan/87	74
			Designing Headphone Distribution Systems	Apr/82	48	The Future of Electronic Music Production	Jun/87	84
			Electrical and Interface Systems for Recording and Production Studios	Jan/88	48		Mth/Yr	Pg
			Essentials of Digital Logic Circuits	Feb/76	23	Equalizers	Oct/88	36
			Fiber Optics Considerations			Analog Equalizers: Overview and Terminology	Dec/72	17
			Filters — Theory and Practice			Equalization: The Highest, Most Sustained		
			Flourescent Lighting in the Studio					

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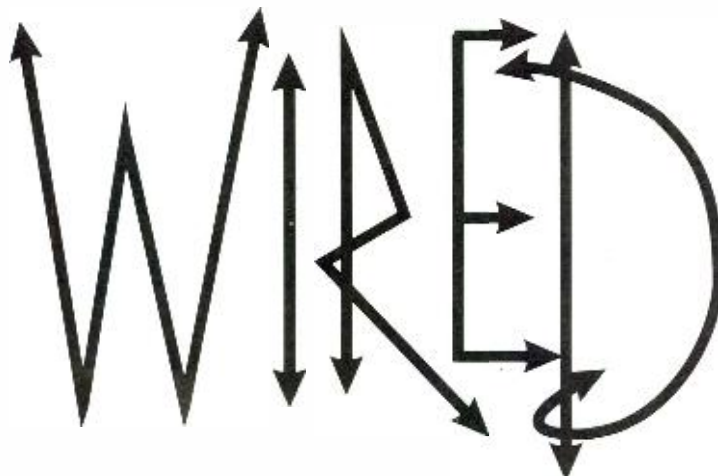
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Equalizers, continued

			Production			Solution or Two		
			Film Re-Recording	Sep/88	24	The Many Facets of	Jun/79	70
Expression of the			Film Sound Editing	Aug/81	78	Independent Production		
Recorder's Art			Techniques, Part 1					
Equalizer Performance	Aug/74	33	Part 2:	Feb/82	56	Interviews	Mth/Yr	Pg
Revisited			Film Sound Facilities and	Jun/84	78	Alpert, Herb	Oct/80	42
Exposing Equalizer	Oct/87	24	Services			Anthony, Tom	Apr/84	60
Mythology			Film Sound in the People's	Jun/87	92	Arrias, John (with Richard	Oct/84	38
The Equalizer: Audio	Apr/74	43	Republic of China			Perry)		
Superstar			Mixing Dolby Stereo Film	Feb/81	68	Asher, Peter (with Val	Feb/76	27
Trends in Equalization:	Feb/88	24	Sound			Garay)		
Digital Filtering			Mixing Techniques for	Jun/85	94	Augsburger, George	Apr/74	31
			Dolby Stereo Film and			Baker, Roy Thomas	Aug/79	32
Equipment Design	Mth/Yr	Pg	Video Releases			Baker, Roy Thomas	Mar/87	66
dbx 700: Design	Oct/82	150	Production Sound	Nov/87	36	Baron, Duane (with	Dec/83	51
Parameters and Systems			Recording			Spencer Proffer)		
Implementation			Recording with the Nagra	Jun/79	47	Baxter, Jeff "Skunk"	Feb/82	30
In Search of a Better	Apr/80	124	"Return of the Jedi," Part 1	Oct/83	150	Beamish, Kevin	Aug/81	30
Direct Box			Part 2:	Dec/83	72	Botnick, Bruce	Feb/83	30
Unearthing the Mysteries	Apr/81	130	Sound Design for "Hill	Oct/84	118	Boylan, John	Dec/80	26
of the Leslie Cabinet			Street Blues"			Bush, Henry (with Dave	Aug/72	15
			Sound Recording and Post-	Jun/82	76	Purple and Ron Capone)		
Facility Profiles	Mth/Yr	Pg	Production for "One			Butler, Larry (with Billy	Apr/80	38
Abbey Road Studio 3	Jul/89	28	From the Heart"			Sherrill)		
Alpha Studios	Aug/81	90	Techniques for Preserving	Aug/80	54	Caillat, Ken (with Richard	Apr/78	18
Century III Teleproductions	Feb/85	150	Sound Perspectives in			Dashut)		
Full Sail	Oct/89	16	Film Production			Capone, Ron (with Dave	Aug/72	15
Genesis' Fisher Lane	Jul/87	58	Recording			Purple and Henry Bush)		
Studio			The Band's "Last Waltz"	Aug/78	42	Carlos, Wendy	Apr/87	76
HLC	Apr/88	78	The Evolution and	Apr/83	64	Catero, Fred	Feb/78	22
Le Studio, Canada	Nov/89	48	Utilization of 70mm Six-			Cecil, Malcolm (with Bob	Jun/74	17
Lion Share Recording	Apr/82	38	Track Film Sound			Margouleff and Kent		
Studios			The New Generation of	Dec/79	72	Duncan)		
Lucasfilms' Skywalker	Aug/88	20	Automated Consoles			Cherin, Milt (with Bud	Jun/76	43
Ranch			The New Multi-Channel	Feb/80	74	Graham and Ray Moore)		
Master Sound Astoria	Feb/87	66	Sound, Optical Release			Cherney, Ed	Jan/88	64
Mix Magic	Dec/84	136	Formats (Dolby and			Chiccarelli, Joe	Feb/85	38
NBC PPS-1	Dec/84	136	Kintek systems)			Chkiantz, George	Aug/80	33
NBC Studio 1	Sep/88	50	The Sound Effects for	Jun/80	68	Ciani, Suzanne (with Leslie	Aug/82	16
Paisley Park Studios	Jan/88	40	"Star Trek, The Motion			Mona)		
Pegasus Studios	Jul/88	71	Picture"			Clearmountain, Bob	Dec/84	46
Red Zone Studios	Sep/87	48	Using the Multitrack	Apr/80	110	Clutterham, Lars	Apr/88	74
Soundcastle Recording	Dec/78	60	Format for Production			Crowell, Rodney (with	Dec/82	18
Spectrum Studios	Mar/88	74	Film Recording			Bradley Hartman)		
Studio Jive	May/88	70	Voice Design for	Aug/84	102	Dalen, Paul	Jun/88	56
Synergetic Studio	Jun/86	50	"Gremlins"			Dashut, Richard (with Ken	Apr/78	18
Operations: Image						Caillat)		
Recording & Composer's			Grammy Awards	Mth/Yr	Pg	Davis, Steve	Mar/88	70
Services			How Grammys Are Won	Apr/77	42	Dowd, Tom	Feb/73	11
Tampa/St. Petersburg's	Aug/76	47	Recognition 1969	Apr/70	22	Dowd, Tom	Jun/75	23
Smaller Studios			Recognition 1970	Apr/71	25	Dozier, Reggie	Jun/80	34
Target Productions	Jun/88	65	Recognition 1971	Apr/72	19	Duncan, Kent (with	Jun/74	17
The Enterprise	May/87	28	Recognition 1972	Apr/73	35	Malcolm Cecil and Bob		
The No-Compromise	Apr/80	84	Recognition 1973	Apr/74	41	Margouleff)		
Fantasy Studio D			Recognition 1974	Apr/75	61	Eales, Ian (with Jay	Apr/85	40
24 Comes to L.A. (United	Dec/71	21	Recognition 1976	Apr/77	23	Graydon)		
Recording)			Recognition 1977	Apr/78	38	Emerick, Geoff	Dec/78	30
Updating the ABWE's	Jun/87	100	Recognition 1978	Apr/79	106	Emerman, Mack with Tom	Feb/73	11
Audio Production Facility						Dowd and Jeep Harned)		
Windmill Lane Studio	Feb/88	78	Independent Production	Mth/Yr	Pg	Emerine, Larry (with Bob	Feb/80	24
World of Faith's New	Apr/86	86	Independent Production	Apr/87	82	Esty)		
Audio Production Studio			Contracts			Esty, Bob (with Larry	Feb/80	24
			Rules for Playing the	Apr/80	152	Emerine)		
Film Sound	Mth/Yr	Pg	Independent Production			Fogerty, John	Dec/74	23
Digital Sound for Motion	Oct/85	122	Game			Foster, David	Apr/74	19
Pictures, Part 1:			Successfully Negotiating	Oct/81	144	Fraboni, Rob (with Dick La		
Production Recording			the Record Producer's			Palm)		
and Random-Access			Agreement, Part 1			Galuten, Alby (with Karl	Oct/78	24
Editing			Part 2: Payments to	Dec/81	48	Richardson)		
Part 2: Post-Production	Feb/86	86	Producers			Garay, Val (with Peter	Feb/76	27
and Theatrical Playback			Part 3: Rights Granted,	Jun/82	86	Asher)		
Digital Sound for Motion	Nov/87	22	Responsibilities Outside			Gatica, Humberto	Oct/81	56
Pictures			the Studio, and Credit			Gately, Robyn	Jun/88	56
"Fantasia" Digital	Oct/82	116	The Itinerant Producer:	Feb/71	29	Geffen, David (with Jack	Apr/73	13
Recording and Post-			His Problems and a			Holzman and Joe Smith)		

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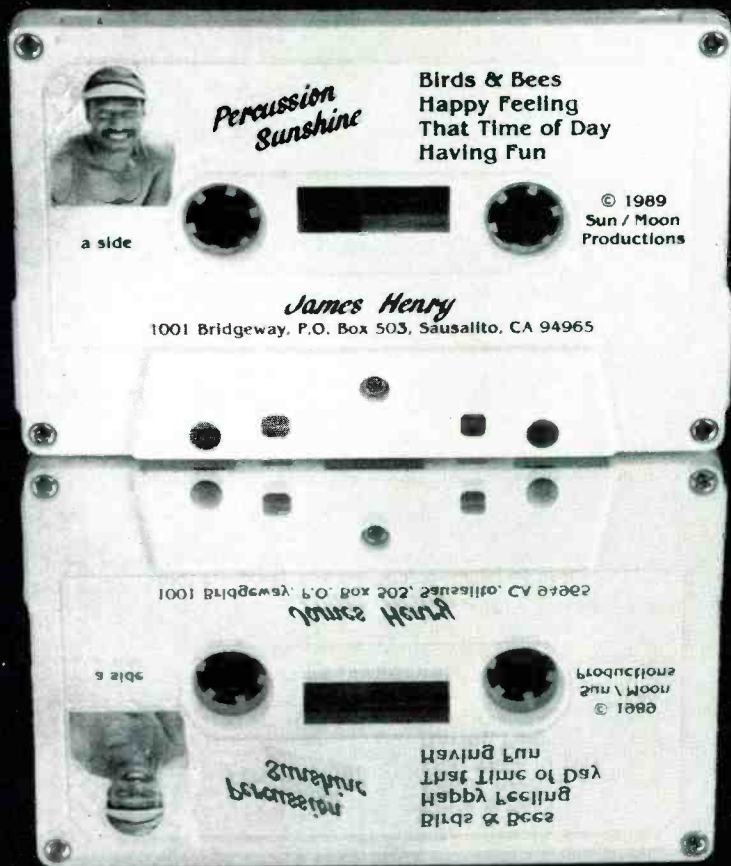
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Interviews, continued

			Rodgers, Nile	Oct/85	40	Part 2:	Dec/82	36
			Rundgren, Todd	Dec/79	28	Care and Repair of the	Jun/82	48
			Scmitt, Al	Apr/77	25	EMT 140 Echo Plate		
Gooch, Don (with Graham Nash)	Aug/73	17	Scmitt, Al	Jun/83	26	Logic Testers in Fault-	Oct/82	43
Graham, Bud (with Milt Cherin and Ray Moore)	Jun/76	43	Scott, Ken	Aug/76	32	Finding and Diagnosis of		
Granz, Norman	Aug/77	19	Seay, Ed	Feb/89	58	Audio Processing and		
Graydon, Jay (with Ian Eales)	Apr/85	36	Sherrill, Billy (with Larry Butler)	Apr/80	38	Recording Equipment		
Greene, Ed (with Don MacDougall)	Oct/73	15	Silas, Louil Jr. (with Taavi Mote)	Feb/86	22	Modifying and Upgrading	Dec/80	76
Halee, Roy	Dec/71	11	Smith, Jeremy	Feb/84	34	3M M79 Series Tape		
Hall, Rick	Apr/72	11	Smith, Joe (with Jac	Apr/73	13	Machines	Dec/80	66
Hanley, Bill	Jan/89	61	Holzman and David			Studio Maintenance		
Harned, Jeep (with Tom Dowd and Mack Emerman)	Feb/73	11	Geffen)			Roundtable, Part II	Aug/82	34
Hartman, Bradley (with Rodney Crowell)	Dec/82	18	Steiner, Armin (with Mack Emerman and Jeep Harned)	Dec/72	9	The Oscilloscope ... The		
Heermans, Andy	May/88	66	Stewart, Art	Jun/78	22	Service Engineer's		
Holman, David	Feb/88	72	Swedien, Bruce (with Quincy Jones)	Oct/82	16	Friend	Feb/83	100
Holzman, Jac (with Joe Smith and David Geffen)	Apr/73	13	Swedien, Bruce	Jul/88	36	Troubleshooting		
Howe, Bones	Jun/70	11	Szymczyk, Bill (with Ed Mashal and Joe Walsh)	Aug/78	20	Mechanical Problems in		
Johns, Andy	Oct/75	31	Tarsia, Joe	Oct/79	38	Tape Transports	Oct/77	50
Jones, Quincy (with Bruce Swedien)	Oct/82	16	Titleman, Russ	Dec/86	44	Zen and the Art of Tape		
Koppers, Juergen	Feb/81	24	Veltri, Gabe	Apr/83	32	Deck Maintenance		
Kramer, Eddie	Dec/76	17	Walden, Narada Michael	May/87	56			
La Palm, Dick (with Rob Fraboni)	Apr/74	19	Walsh, Joe (with Bill Szymczyk and Ed Mashal)	Aug/78	20	Microphone Techniques	Mth/Yr	Pg
Lambert, Dennis	Jun/85	30	Werman, Tom	Apr/81	32	An Engineer's Guide to	Aug/87	30
Lazerus, Daniel	Aug/85	30	Yakus, Shelly	Jun/82	26	Studio and Live		
Leonard, Pat	Sep/88	69				Performance		
Levine, Steve	Aug/84	38	Loudspeakers and Components	Mth/Yr	Pg	Microphones		
Li Puma, Tommy	Apr/79	30	Constructing Loudspeaker	Aug/80	62	An Over-and-Under	Apr/73	25
Mack, Tom	Apr/75	41	Systems with Predictable			Microphone Technique		
MacDougall, Don (with Ed Greene)	Oct/73	15	Performance Results			for a Bigger String		
Margouleff, Bob (with Malcolm Cecil and Kent Duncan)	Jun/74	17	Evaluating Loudspeaker	Aug/77	30	Section Sound		
Martin, George	Feb/71	11	Specifications, Test,			Dummy Head (Binaural)	Feb/77	56
Martin, George	Feb/79	24	Measurements,			Recording Onto a Full		
Mashal, Ed (with Bill Szymczyk and Joe Walsh)	Aug/78	20	Presentations	Aug/87	50	String Section		
McIan, Peter	Aug/83	26	Evaluating Low Frequency			Improved Instrument	Oct/79	78
Miller, Jimmy	Oct/74	15	Driver Performance			Timbre Through		
Mona, Leslie (with Suzanne Ciani)	Aug/82	16	The Use of Ferrofluid as a	Dec/79	80	Microphone Placement		
Moore, Ray (with Bud Graham and Milt Cherin)	Jun/76	43	Loudspeaker Component			Microphone Applications	Apr/79	124
Morgan, Marshall	Apr/86	30	What the "Amplitude	Aug/77	48	for Classical Recording		
Mote, Taavi (with Louil Silas Jr.)	Feb/86	30	Transfer Characteristic"			Microphone Techniques:	Oct/72	32
Nash, Graham (with Don Gooch)	Aug/73	17	can Reveal About the			Recording the Artist who		
Neve, Rupert	Feb/88	50	Differences in Speakers	Aug/87	50	is Both Pianist and		
Nevison, Ron	Dec/81	34	Headphones			Vocalist	Apr/82	60
Olsen, Keith	Jun/81	26	Headphone Distribution	Aug/87	50	Microphone Techniques for		
Olsen, Keith	Mar/89	42	Systems			Predictable Balance		
Omartian, Michael	Apr/82	22	Human Hearing			Control		
Parsons, Alan	Oct/76	29	dBs can be Hazardous to	Oct/79	126	Miking and Recording	Jun/81	50
Perry, Richard (with John Arrias)	Oct/84	38	Your Health			Electric Guitar and Bass		
Pilhofer, Herb	Dec/73	35	Law and the dB	Apr/80	145	Miking and Recording the	Oct/82	73
Portman, Richard	Jun/79	28	Perceiving Audio Noise	Jun/79	84	Horn Section		
Proffer, Spencer (with Duane Baron)	Dec/83	40	and Distortion			M/S Microphone	Apr/80	58
Purple, Dave (with Henry Bush and Ron Capone)	Aug/72	15	Maintenance	Mth/Yr	Pg	Techniques, Revisited		
Ramone, Phil	Oct/77	20	A Better Way to Adjust	Apr/77	77	and Simplified	Aug/83	98
Richardson, Karl (with Alby Galuten)	Oct/78	24	Azimuth			Realistic Stereo Miking for		
			A Maintenance Round	Apr/80	138	Classical Music:		
			Table			Coincident Pressure-Zone		
			A Systematic Approach to	Jun/83	40	Microphone Techniques		
			the Design and			Recording and Sound	Feb/81	80
			Outfitting of a Studio			Reinforcement		
			Maintenance Shop			Applications of Pressure		
			Basic Maintenance for	Oct/83	44	Zone Microphones		
			Assistant Engineers			Recording Acoustic Guitar	Oct/81	112
			Care and Repair of MCI	Oct/82	65	Recording Acoustic	Aug/82	46
			JH-Series Tape			Keyboards		
			Transports			Recording Drums	Dec/70	9
						Recording Drums and	Apr/83	88
						Percussion		
						Recording Orchestral,	Dec/85	30
						String and Horn Sections		
						Recording Vocal and	Feb/84	109
						Harmony Sections		
						Recording the Drums	Feb/77	31
						Recording the Piano	Apr/71	9
						Recording the Sound of a	Nov/89	20
						Concert Hall		
						Recording the String	Oct/83	68
						Section		



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<i>Microphone Techniques, continued</i>			Recognition (engineers, producers and studios of top-selling records)			Multitrack Music and Vocal Recording for "The Great Passion Play"	Apr/85	96
Re-orchestrating a Few Pieces	Dec/78	84	Poem: "The Engineer"	Dec/71	14	Recording and Production Techniques for Audio-Visual Presentations	Jun/87	64
Stereo Microphone Evaluations: An Overview of Techniques and Subjective Assessments	Aug/87	24	The Devil and the Disk (1915 article on recording)	Apr/72	23	Sound for Liberty Weekend	Jan/87	40
Stereo Miking Techniques Using Computer Pattern Analysis	Apr/76	19	Mixing Automation	Mth/Yr	Pg	South Street Venture: Time Code Synchronized Multitrack Audio, Slide and Film		
			A Glossary of Automation Terms	Dec/72	29			
			Automated Mixdown	Apr/76	34			
			Automation for Audio Recording	Aug/72	23			
Microphone Technology	Mth/Yr	Pg	Automation Report	Dec/74	35	Music	Mth/Yr	Pg
A Quadraphonic Microphone Development	Sep/70	23	Automation: The Purchase Decision	Mar/88	82	An Engineer's Guide to Music: Following Music Scores and Charts Part 2:	Jun/83	88
Automatic Microphone Mixers	Aug/80	100	MCI's Automated Mix-Down System	Feb/77	63		Aug/83	64
Coping with Wireless Microphone Systems	Jan/89	51	Quad-Eight's Compumix III	Jun/76	24	Music Libraries	Mth/Yr	Pg
Cutting the Cable — Wireless Microphones Come of Age	Apr/84	164	Recent Advances in Servo-Controlled Console Automation Systems: GML Moving Fader	Dec/84	78	Selecting and Using a Music Production Library	Aug/87	74
Differential Microphones	Jun/73	13	Automation System and Neve NECAM 96			The Basics of Music Libraries	Apr/88	72
Line Level Output from the Classic U-47	Feb/80	94	The Why ... What ... How of Automated Mix-Down	Dec/74	45			
Mic Pre-Amp Evaluation Methodology	Nov/88	30				Music Publishing	Mth/Yr	Pg
Microphone Calibration Techniques: An Overview, Part 1	Nov/88	24	Monitoring	Mth/Yr	Pg	Music Publishing: A Sometimes Missed Opportunity	Feb/75	45
Microphone Sensitivity and Microphone Signal-to-Noise Ratio	Apr/78	64	A Survey of Recording Studio Monitoring Problems	Jun/73	19	NAMM Conventions	Mth/Yr	Pg
Microphones	Apr/71	19	Acoustic Measurement Techniques	May/89	66	MIDI Update (Winter NAMM)	Apr/85	151
Neumann: The History of Tube Condenser Microphones	Feb/80	82	Bi and Tri Amplification	Apr/71	27	MIDI Update Report from Summer NAMM	Aug/85	101
Off-Axis Microphone Coloration	Jun/80	82	Close Field Monitoring	May/88	16	Exhibition		
Phase and the Single Microphone	Dec/71	17	Examining the Yamaha HS-10M "Tissue Paper" Phenomenon	Feb/86	54	NAMM Show Wrap-up	Apr/89	48
Re-Evaluating Ribbon Microphones	Nov/87	52	Future Directions of Studio Monitor Designs			NAMM Summer Expo Replay	Sep/87	54
Sources of Non-Linearities in Microphones	Feb/80	102	Monitoring: A Practical Method for Measuring Frequency Response	Dec/86	56	NAMM Winter Market Replay	Mar/87	80
Toward Microphone Transparency: The Trans-Amp	Dec/77	60	Monitoring: You Can't Hardly Believe What You Hear!	Aug/71	21	Winter NAMM Replay	Apr/88	64
Wireless Mics	Nov/87	44	Phase Shift ... Should We Worry?	May/88	60			
Zen and the Art of Using Wireless Microphones	Apr/81	62	Stage Monitoring: The Captain & Tennille Show	Oct/79	100	Noise Reduction	Mth/Yr	Pg
			Studio Monitoring: Design Perspectives	May/88	28	Background Noise	Oct/74	35
			Subwoofers and Sound Systems	May/89	22	Reduction: Practical Aspects and Alternatives		
MIDI	Mth/Yr	Pg	Subwoofers in the Studio	May/88	23	Using Noise Reduction to Reduce Disc Surface Noise	Dec/73	39
A Recording Engineer's Guide to MIDI	Dec/83	125	The Art and Science of Close Field Monitors	Aug/87	40			
A User's Guide to MIDI	Jun/86	40	The Case of the Missing Low Notes			Product Reviews	Mth/Yr	Pg
Manufacturers' Response to MIDI Time Code	Nov/87	50	The JBL Way: Inside the Studio Monitor	Dec/77	36	Akai MPX-820 Mixer	May/87	72
MIDI Control of Delay, Reverb and Special Effects	Feb/87	22	Time Domain in Monitor Loudspeakers	Oct/76	51	AMS AudioFile	Jul/87	30
MIDI Control of Effects: One Designer's Viewpoint	Nov/88	62		Oct/81	68	Analog Noise Reduction: • Dolby A • dbx Type I • Telcom c4 Dolby SR	Jul/88	44
MIDI Recorders: Myth or Reality?	Oct/85	149	Multimedia	Mth/Yr	Pg	Aphex Aural Exciter	Aug/77	67
The Evolution of MIDI-Based Narrow-Gauge Studios	Jan/87	32	Audio/Video Recording of "Mister Drums": Buddy Rich and his Band Live on King Street	Oct/85	138	Aphex Compellor	Apr/84	174
The Future of MIDI Time Code	Oct/87	106	Conan the Barbarian (Universal Studios tour)	Jun/84	126	Aphex Studio Dominator	Jan/87	70
			Multitrack Analog and Digital Sound for EPCOT Center			ART DRI Digital Reverb	Apr/87	52
						Audio Precision System	Aug/88	80
						One Test System		
						Beyer MC740 Microphone	Aug/87	46
						Calrec Soundfield microphone	Dec/79	90
						Close Field Monitor Loudspeakers:		
						• Yamaha NS10M		
						• Auratone T6		
						• Tannoy NFM-8		
						• Calibration Standard Instruments MDM-4		
						• Westlake Audio BBSM-6		

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Product Reviews, continued

Collective Equipment Assessments in an Electronic Music Production Facility:	Apr/86	98	special effects processor			Performance Assessments of Twelve Studio Microphones	Apr/84	120
• Synchronous Technologies SMPL Chase Lock MIDI and Time Code Synchronization System			EXR Exciter Model EXIV	Oct/84	190	Performance Assessments of Studio Microphones (15 additional models), Part 1	Dec/84	94
• Tascam 388 recorder			Fairlight CMI Series III	Jun/86	88	Part 2:	Feb/85	70
• Lexicon PCM-70			Digital Synthesizer			Part 3:	Dec/85	70
• Southworth Total Music MIDI Sequencer			Fostex 4050 Autolocator, 4030 Time Code Synchronizer, 4035 Synchronizer Controller	Aug/86	50	Quantec QRS/XL DSP System	Nov/87	28
• Opcode MidiMac Sequencer Software			JHD Mainline	Oct/79	150	Quantec Room Simulator	Dec/84	156
CompuSonics DSP-2002 Recording and Editing System	Dec/86	98	Klark-Teknik DN780 digital reverb	Dec/85	134	Sanken CU-41 microphone	Oct/85	200
Computer Software for the Audio Industry	Jun/89	46	Kurzweil 250 synthesizer	Oct/85	194	Scoring Software	Sep/88	42
dbx 166 stereo compressor/limiter	Oct/85	204	Kurzweil 1000 Series Sound Modules	Sep/88	77	• Mark of the Unicorn Performer		
dbx 700 digital audio processor	Oct/82	150	Lexicon 224XL digital reverb	Oct/85	186	• Opcode Cue		
Deltalab Effectron II delay and effects processor	Jun/84	148	LinnDrum 9000	Feb/85	180	• Passport Click Tracks		
Dolby 280 Spectral Recording Module	Apr/79	146	Marshall Electronic AR-300 Tape Eliminator	Jun/85	140	• Passport Master Tracks Pro		
Ecoplate	Feb/87	62	Microphone Pre-Amps: Part 1:	Sep/87	58	• Robert Keller 48 Track PC		
EMT 252 Digital Reverb	Jun/87	54	Part 2:	Oct/87	114	• Roger Powell Texture		
Ensoniq Mirage DSK-8 Sampling Keyboard	Feb/86	122	• Benchmark Media 4x4			• Voyetra Sequencer Plus Mk 3		
Eventide SP2016 digital	Apr/85	178	• GML 8300			• Control Systems Auricle		
			• HART MP-501 PC Card			• C-Lab Composer/Notator		
			• Innovative Audio UTMP-2			• Hybrid Arts SMPTETrack		
			• Jensen Twin Servo 990			• Steinburg/Jones Pro 24		
			• Sontec MB-1A			Sennheiser MKH40-P48 Microphone	Feb/86	128
			• Studio Technologies Mic Pre-Eminence			Shure SM-81	Feb/80	108
			• Summit Audio TPA2			Sony APR-5002 2-track	Aug/85	132
			Opcode Sytems Cue 2.0	Jul/88	63	Sound Technology 1500A	Mar/88	66
			Otari MTR-12-H recorder	Oct/84	180	Studio Master Plus		
			Pearl TL04 Microphone	Oct/86	90	Tascam MS-16 recorder	Apr/85	168
						Ursa Major MSP-16 Multi-Tape stereo processor	Dec/85	140

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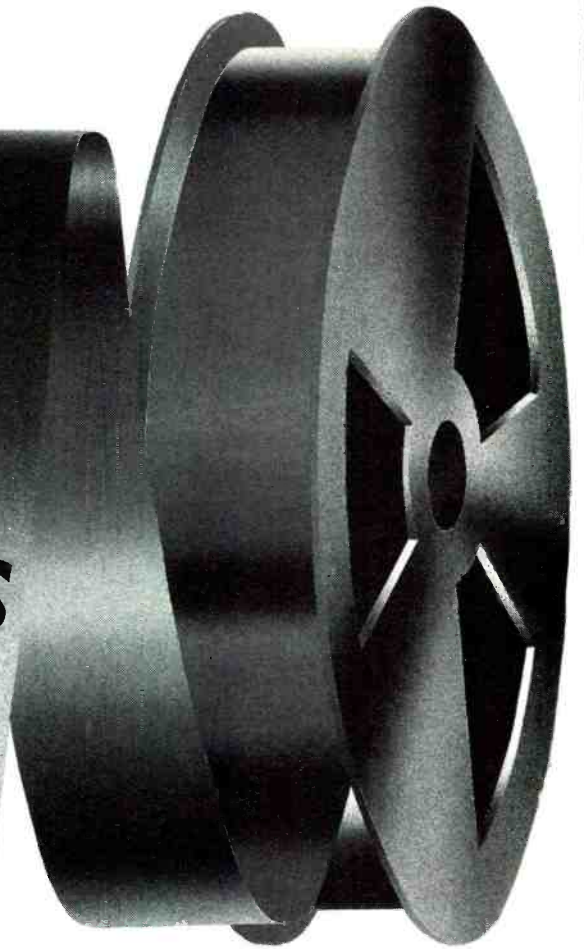
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Product Reviews, continued

Yamaha DMP-7 Digital Mixing Processor	Dec/87	86	Recording and Production Applications of Digital Sampling Devices	Dec/85	102	Remote Recording A Modified MS Recording Technique	Mth/Yr Oct/77	Pg 44
Yamaha REV-1 digital reverb	Jun/85	134	Recording and Production Techniques for the Boston Symphony Orchestra	Feb/86	62	Basic Design Factors for Remote Recording Facilities	Aug/88	63
Yamaha RM2408 console	Feb/85	168	Recording Forum: the Trend Toward Self-Production	Apr/70	11	Increased Height, Active Trapping, Improve Remote Van Control Room Acoustics	Apr/79	81
Project Studios Computer/Studio Interfacing at Studio Malibu	Mth/Yr Jun/89	Pg 24	Recording Joe Jackson Live to Digital	Aug/86	40	Mobile and Remote Recording	Apr/87	68
Edward Van Halen's 5150 Studio	Apr/85	68	Recording Miles Davis' "Aura" at Easy Sound	Feb/86	116	Multitrack Mobile Recording	Feb/84	74
Personal Use Studios	Feb/82	94	Recording Sonny & Cher at Larrabee Sound	Jun/72	11	Remote Recording: An RE/P Report	Aug/71	11
Peter Townshend Equipping and Operating His Collection of Eel Pie Studios	Feb/83	54	Recording Synthesizers and Drum Machines	Dec/82	50	The Greene-Crowe Modile: Audio Requirements for Remote TV Production	Oct/81	100
R-DAT DAT in the Professional Environment	Mth/Yr Aug/89	Pg 18	Recording Techniques: Phasing	Aug/70	27	Wally Heider Recording Sammy Davis Jr. Live at the "Now Groove"	Aug/70	13
Special Report: NBS Rejects CopyCode	Apr/88	84	Recording the Electric Bass	Apr/77	60	Reverberation Acoustic Comb Filter Effects	Mth/Yr Aug/79	Pg 62
Record Companies Winham Hill Records	Mth/Yr Aug/84	Pg 129	Session Profile: Recording Patrick Williams' "10th Avenue" Album	May/87	40	An Engineer's Guide to Reverb and Delay	Feb/87	28
Recording and Production Techniques A New Look at an Old Technique: Direct-to-Disc Recording	Mth/Yr Feb/74	Pg 37	The Acoustic Interface: Achieving Realistic Spatial Stereo Effects in the Studio	Aug/84	65	Artificial Reverb: Simulating Natural Acoustics	Aug/88	75
A Production Analysis: "Neil Young"	Jun/74	41	The "FyF System": A Quad Alternative	Jun/76	16	Construction of a Live Echo Chamber	Aug/79	72
Achieving Best Results from Eight-Track/Half-Inch	Apr/83	100	Thoughts On Quad Mixing	Oct/74	47	Evolution of Artificial Reverb	Feb/87	34
"An American Prayer" (Jim Morrison poetry album)	Apr/79	110	Recording Tape A New Generation of High-Energy Recording Tape	Mth/Yr Dec/74	Pg 13	Optimizing Control Room Reverberation Time	Aug/79	87
Anatomy of a Dance Single Remix	Oct/87	96	Digital Audio Tape: The Key to High-Performance Mastering	Jul/88	55	Programmable Digital Reverberation	Aug/79	92
Carole King, Lou Adler, Hank Cicalo at A&M Studios	Oct/71	9	How to Select and Treat a Mate: Your Studio Mastering Tape	Oct/78	70	Reverberation: An Overview	Aug/79	50
Classical Recording	Feb/72	11	Low-Print Mastering Tape	Apr/83	43	Small and Miniature Reverberation Chambers	Aug/78	36
Creative Use of Delay Rhythms	Feb/82	68	Mastering Tape Compatibility	Feb/78	36	Studio Testing for Reverberation, Echo, Transparency, Rattle and Noise	Aug/79	82
Digital Recording and Production Techniques	Aug/84	102	Recording the Grand Piano	Dec/77	40	Salary Surveys 1987 Salary Survey	Mth/Yr Jun/87	Pg 24
Direct to Two-Track Editing: A Nifty Idea	Oct/85	74	The Care and Handling of DAT Cassettes	Aug/89	26	Second Annual Salary Survey	Nov/88	42
Functional Equations for Recording and Production Engineers	May/88	44	The Handling and Storage of Magnetic Tape	Dec/70	21	Some Good News (Third Annual Salary Survey)	Nov/89	26
Getting More on Four	Aug/75	21	Understanding Magnetic Tape Performance Specifications	Jun/76	30	Sampling Legal Aspects of Digital Sound Sampling	Mth/Yr Apr/87	Pg 60
Going Beyond Natural Sound	Oct/84	86	Understanding the Print-Through Phenomenon	Dec/75	27	Signal Processing A "Cookbook" of Time Delay Applications	Mth/Yr Jun/77	Pg 59
Live Recording: The Boston Symphony Orchestra	Mar/89	60	Reference Data Reference Data for Recording Engineers	Mth/Yr Oct/72	Pg 15	Active Crossover Considerations	Jun/88	44
Panning: A Possible New Way to Define the Least Precise of the Mixing Options	Dec/86	44	Regional Profiles Florida's Sunny Future	Mth/Yr Nov/89	Pg 34	An Engineer's Guide to Compression and Limiting	Oct/86	56
Producing Music for the Moscow Ballet Tour	Oct/88	22	Nashville in the Eighties: Backwater or Bellweather?	Dec/84	118	Analog Signal Processing for Digital Recording	Apr/89	32
Production Analysis: The Doors "Strange Days"	Aug/75	27	Nashville: Old Traditions, New Frontiers	Aug/88	33	Dynamic Range Modification: Limiters, Compressors and Expanders	Oct/86	44
Quad Recording in Grace Cathedral	Jun/71	27	Nashville: The Third Coast Emerges	Aug/89	32	Phasing and Flanging Recording and Production	Aug/75	41
Recording a Cathedral Pipe Organ	Apr/78	58	San Francisco Area Small Studios	Oct/78	102		Jun/85	62

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Signal Processing, continued

Applications of Noise Gates and Expanders		
Sonic Restoration Through NoNOISE	Sep/89	32
The Limiting Factor, or Factors of Limiting	Oct/80	130
There Will Be a Slight Delay	Feb/72	28
Time Delay in the Studio	Jun/77	51
Where, Oh Where did My Presence Go?	Oct/77	68
Why You Can't Wait For Digital Delay	Aug/76	55

SMPTE Time Code	Mth/Yr	Pg
Practical Applications of SMPTE Time Code in Audio, Video and Film Post-Production	Oct/83	184
Time Code and Synchronization Part 1: Keeping Music Video and Films in Sync with Audio Playback	Aug/87	60
Part 2: The Link Between Film Production and Videotape Post Production	Sep/87	40
Part 3: Time Code Myths, Misconceptions and BooBoos	Oct/87	30

Sound Contracting	Mth/Yr	Pg
Design and Installation of a High-Quality Sound System for the Golden Nugget Casino	Apr/85	104
High-Quality Sound System Design for New England's Sullivan Stadium	Apr/84	91
The Crystal Cathedral	Oct/83	86
The Growing Importance of High-Quality, Versatile Audio for Convention Centers and Related Venues	Feb/83	92
Theater Sound System Design and Installation	Jun/84	102

Sound Reinforcement	Mth/Yr	Pg
A Standardized Mobile Snake/ Splitter System	Oct/80	122
Acoustical Measurement Techniques for Sound System Equalization	Jun/88	30
Anatomy of an Injunction: Pacific Amphitheatre Fights Noise Level Complaints	Aug/84	54
Another Look at the Mathematics For Sound Systems	Feb/78	70
Application and Utilization of Click Tracks to Provide High Quality	Oct/84	158

Sound and Synchronization		
Applications of the Central Array Design Program for Computer-Assisted Optimization of Loudspeaker Systems	Aug/83	40
Audio Analysts' Concert Sound for the Styx "Kilroy Was Here" Tour	Jun/83	50
Audio for Theatrical Presentation	Feb/82	84
Beatlemania	Apr/79	89
Britannia Row Productions on the Road at the Seattle Coliseum with Stevie Wonder	Apr/81	46
Building the Biggest PA in the Galaxy	Jan/89	46
Carlo Sound System for the Oak Ridge Boys	Feb/84	50
Clair Bros. on the Road at L.A.'s Sports Arena with Bruce Springsteen	Feb/81	50
Clubs, Clubs, Clubs, Clubs Concert Sound Reinforcement Approaches Maturity	Feb/74	43
Concert Sound System Development	Apr/87	22
Consoles for Live Performance Use	Jan/87	46
Design Evolution of Two-Box Packaged Loudspeaker Systems	Feb/88	30
Designing and Packaging Equipment for use in Touring Sound Systems	Dec/85	46
Disco Audio System Design	Oct/79	60
Discotheque Sound Systems	Oct/75	31
Earth Wind & Fire at the Los Angeles Forum	Apr/82	70
Eighties Sound on the Road	Apr/87	40
Electronically Controlled Speaker Systems	Jan/89	22
Electronics and the Symphony Orchestra	Jun/86	58
Electrotec Productions' Sound System for Roxy Music Tour	Aug/83	58
Field Testing New Concert Sound Technology	Aug/86	74
Film and the BB's in Concert	Sep/88	60
Flying an Areal Concert Sound System	Feb/85	54
Flying Arrays for Performances in the Round	Jun/88	18
Frank Sinatra ... "Singin' in the Rain" for 140,000 at Rio's Maracana Stadium	Aug/80	80
George Michael on Tour	Jun/89	54
High Technology on the Road	Feb/86	38
In Search of the Lost Cord (wireless mics)	Oct/77	76
Interfacing the Portable Sound System with the Permanent Sound System	Feb/77	19
Jimmy Buffett's "Floriday's" Tour	Oct/86	80

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Mathematics for Sound Systems	Apr/78	82	Stray Cats on Tour with dB Sound's New Four-Way Speaker System	Apr/84	76	The Future of Live Performance Sound Design	Aug/82	58
Michael Jackson on Tour	Feb/89	40	Supertramp on the Road with Delicate Production Company	Dec/83	56	The Grateful Dead — A Continuous Development of Concert Sound Design for Twenty Years	Jun/83	98
Neil Diamond's Invisible, Underneath Vocal Stage Monitor	Oct/76	20	Suzanne Vega at Radio City Music Hall	Jan/88	54	The Mississippi Delta Blues Festival	Feb/84	122
Neil Diamond Arena Tour	Apr/86	46	The Chicagofest	Oct/81	72	The Montreaux Jazz Festival	Feb/82	74
Notre Dame Collegiate Jazz Festival	Jun/83	104	The Concert Soundman	Dec/73	43			
"On the Road Again" — Willie Nelson and Family Tour	Apr/83	48	The Doobie Brothers Touring System	Oct/78	56			
Outdoor Sound Reinforcement for the Pacific Symphony Orchestra	Sep/89	38	The Emerging Importance	Oct/76	16			
Peace Sundry Festival at the Pasadena Rose Bowl	Oct/82	92						
Practical Solutions to Concert Grounding Problems	Feb/80	42						
Prince on Tour	Mar/89	32						
Quad Audio for the Rock Opera "Tommy"	Apr/72	33						
Recent Developments in Concert- Sound System Design and Operation	Jun/84	54						
Recording the "Tunnel of Love" Tour	Nov/88	57						
Regional Sound System Design: A Profile of Baus Engineering and Vista Sound	Oct/87	40						
Remote Recording: Chet Atkins HBO/Cinemax "Sessions Series"	Jan/89	40						
Science and the Performing Arts	Oct/84	140						
Servo-Driven Loudspeakers	Oct/85	85						
Showco: Doing the Audio for the Rolling Stones	Dec/81	62						
Something New in Direct Boxes: Two-Microphone Substitution Devices	Feb/74	53						
Sound Company Profile: Modular Sound Reinforcement	Aug/84	54						
Sound Design for Outdoor Arenas	Dec/86	72						
Sound On-Stage Using the Power Physics Flown Loudspeaker System	Jun/85	46						
Sound Reinforcement for Barry Manilow	Jun/81	74						
Sound Reinforcement for the 29th Annual Grammy Awards	May/87	72						
Sound System Design in Australia and New Zealand	Jun/82	54						
Sound System Design for Eugene Performing Arts Center, Oregon	Dec/82	86						
Sound System Design for the Concord Pavilion	Mar/87	50						
Sound System Design for the Summer Olympic Games	Dec/84	62						
Stage Monitoring: Engelbert Humperdinck	Apr/85	52						



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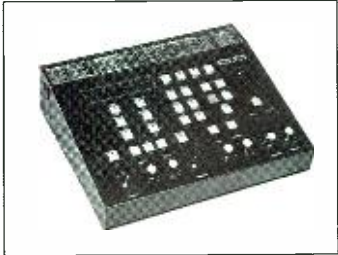


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May 1990 Recording Engineer/Producer • 93

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Studio Design and Construction, continued

Hummingbird Studios, Nashville	Apr/84	136
HVAC for Audio Facilities	Aug/88	72
Live End-Dead End Control Room Acoustics ... Time Delay Spectrometry ... Pressure Zone Microphones	Feb/79	40
Multifunction Studio Design and Construction	Oct/86	30
New Thinking About the Acoustical Design of Control Rooms: The Everything Audio Approach	Apr/75	51
Quiet Air (Conditioning) for the Recording Studio	Jun/80	50
Rocshire Studios — An Intricate Reconstruction to Improve Sound Isolation Between Studio and Control Room	Dec/83	96
Solutions to 3 Commonly Encountered Architectural and Acoustic Studio Design Problems	Feb/76	11
Sound Insulation Requirements for Recording Studios	Apr/79	62
Studio Design: Ergonomic Considerations	Aug/88	59
Studio Design for Quadraphonic Recording	Aug/70	17
Studio Design Requirements for the Next Decade	Apr/79	68
The Myth of the Magical Studio	Aug/74	49
The Rudi Breuer Approach	Apr/79	45
Treasure Isle Recording: Live Acoustic Treatment for Control Room and Studio Area	Oct/83	126
Tres Virgos (LEDE installation)	Dec/82	78
Westlake Studio C	Aug/83	50
Studio Diplomacy	Mth/Yr	Pg
The Tact Factor: Keeping Your Cool While All Those Around You Are Losing Theirs, Part 1	Feb/84	90
Part 2: An Ounce of Prevention	Aug/84	84
Part 3: Time is Money	Apr/86	62
Synthesizers	Mth/Yr	Pg
A Guide to Computer- Controlled Synthesizers for use in the Studio	Dec/83	109
A New Generation of Polyphonic Synthesizers	Jun/76	48
Controlling Synthesizers and Sequencers via SMPTE Time Code and MIDI	Apr/85	146
Digital Synthesis at Parkfield	Dec/85	62
Electronic Soul	Feb/72	21
Interfacing MIDI-Equipped Synthesizers, Sequencers	Oct/84	176

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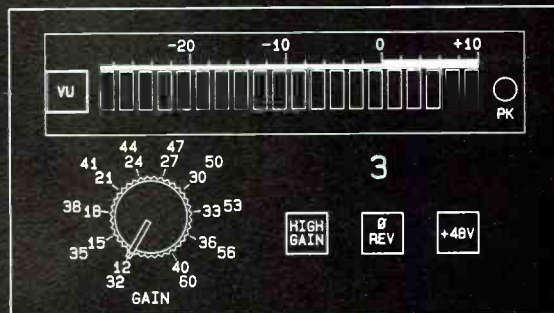
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and Drum Machines to SMPTE Time Code and Personal Computers
 Recording and Production Techniques for Digital Synthesizers Apr/85 76
 Recording Original Music and Sound Effects for a Videodisk Project Oct/84 170
 Synthesizers in the Studio, Part 1: New Technology and a New Production Philosophy Aug/85 92
 Part 2: Studio and Live Performance Oct/85 96
 Applications of Digital Synthesizers with Sampling, Time Code and MIDI Control Capabilities Apr/70 17
 The Synthesizer: Is it the Ultimate Musical Weapon? Aug/76 26
 The Synthesizer as a Signal Processor

Tape Machines
 A Care Package for Audio Recorders Feb/71 25
 A Modified Editing Function for the Scully 280/284 Series Deck Aug/73 41

Alignment, Part 1: The Tools Feb/75 19
 An Alien View of Multitrack Tape Machine Alignment Dec/75 31
 An Unlikely Marriage of Recording Formats Jun/82 26
 Produces Remarkable Offspring (24-, 16- and 32-track machines)
 Analog Multitrack Recorders: A New Breed Aug/89 49
 Anatomy of a Magnetic Head Apr/76 26
 Are You Biased? Aug/89 30
 Audio From the Magnetic Recorder's Point of View Oct/76 61
 Ferrite vs. Metal Tape Heads Apr/76 26
 Magnetic Reproducer Equalization Accuracy Oct/78 84
 Multitrack Recorders (Table listing features of used machines) Jun/79 96
 Narrow-Gauge Multitrack Applications Jan/87 24
 Need 24 Tracks—32 Tracks? Try Using Two Tape Machines in Sync Jun/72 23
 (Non-Creative) Phasing Effects in Multitrack Magnetic Recorders Feb/77 51
 Shopping for a Used 2-Inch Tape Machine Jul/88 26

Tape Machine Care and Repair Jun/84 68
 Today's Magnetic Recorders Aug/72 39

Test and Measuring
 Noise Index Measurements Mth/Yr Pg
 Feb/78 12
 Performing Meaningful Noise Level Measurements in Theory and Practice Oct/83 118
 Real Time Audio Spectrometry Aug/71 27
 Spectrum Analysis Applied to Audio Systems Jun/75 41
 Diagnostics Oct/75 47
 Spectrum Analysis in the Recording Studio Jan/87 50
 Test and Measurement Equipment, Part 1 Feb/87 44
 Part 2: Jun/77 47
 The Equalization Myth Aug/75 15
 Troubleshooting an Audio System Without Test Equipment

Used Equipment
 Equipment With a Past: The Vintage Audio Gear Market Mth/Yr Pg
 Jun/79 99

Video
 Video for the Audio Man Mth/Yr Pg
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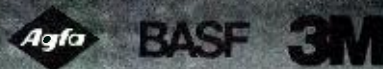


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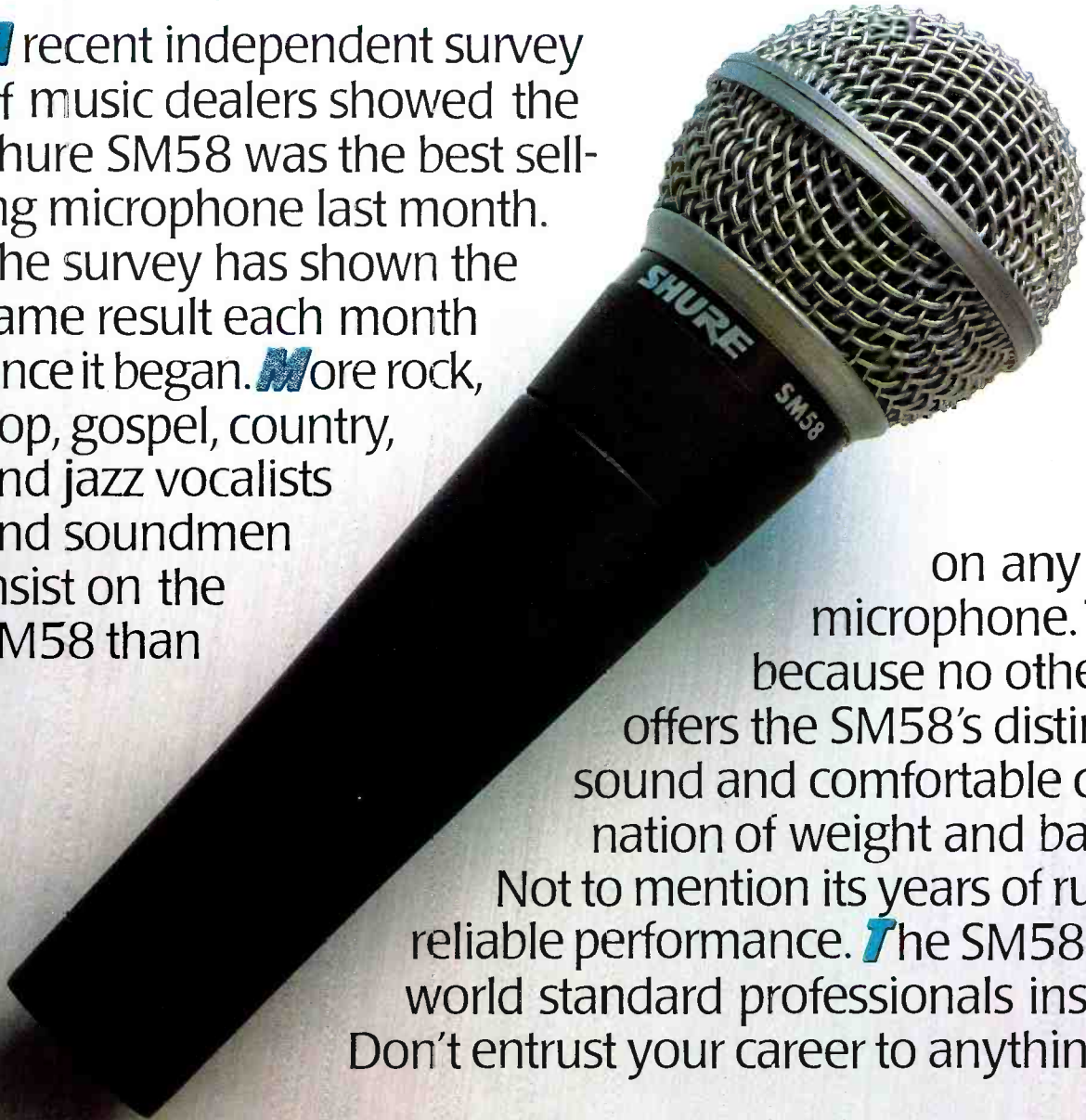
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