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NATIONAL RECORDING INDUSTRY DIRECTORY

VOL. 4 NO. 2

FEBRUARY 1980

Mix



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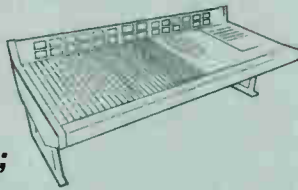
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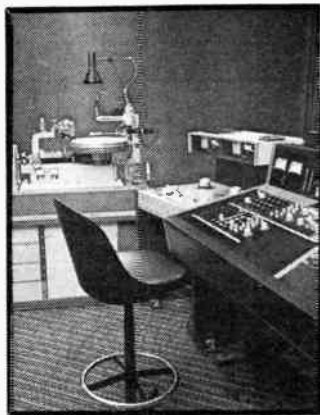
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the Mix

Recording Industry Publications

VOL. 4, ISSUE 2



Cover:

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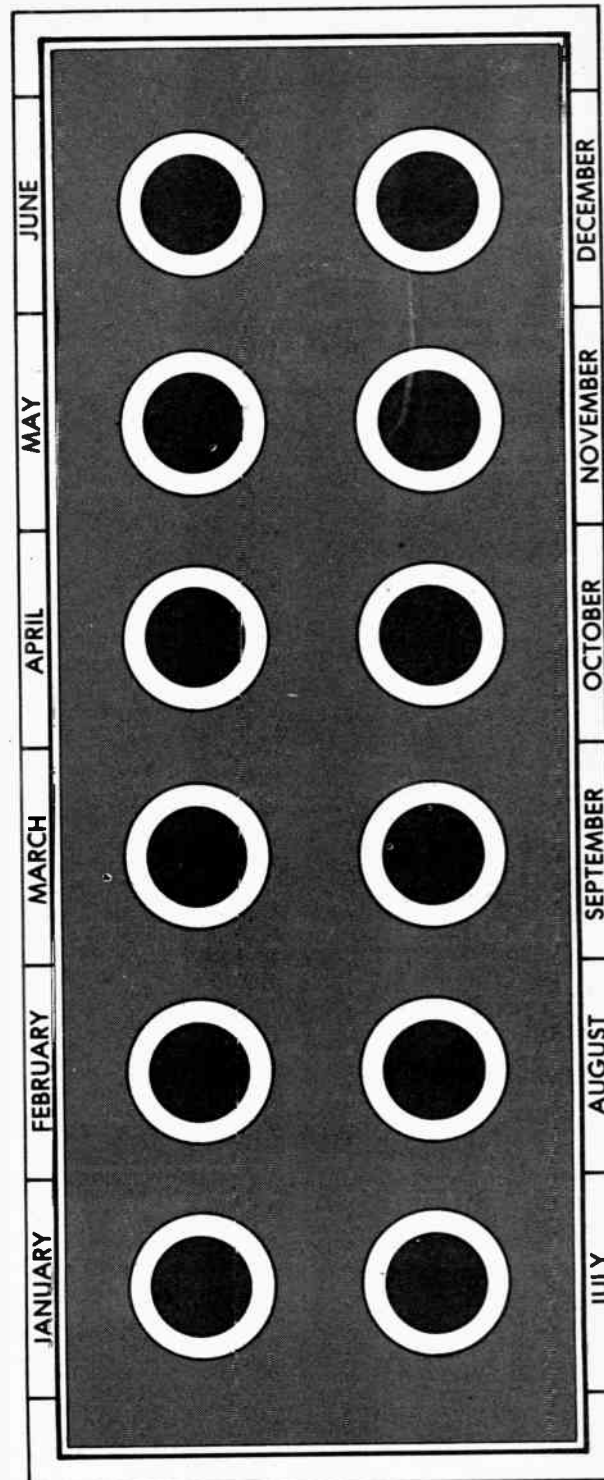
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CURRENT

VINYL CONSIDERATIONS: Cost vs Quality

by Martin Porter

In an age where the price of petro-chemicals is a political football that changes with the whims of the various OPEC nations, it has grown tougher and tougher to produce vinyl at a reasonable price and quality. In early January it was announced that there would be a 2-cent boost in polyvinyl chloride (PVC) prices that might result in a boost in LP prices. While the vinyl companies are often blamed for these consumer price hikes, those involved complain that they are far from getting their share, their share.

Two firms dominate the production and supply of vinyl compounds that make their way to the pressing plants across the country: Keysor-Century Inc. of Saugus, CA and Lenahan Inc. of Murfreesboro, Tennessee. According to Howard Hill of the Keysor Corporation, the parent company of Keysor-Century which produces approximately 70 million pounds of record vinyl each year and accounts for about 40 percent of domestic production, "Vinyl now runs around 50 cents a pound. You get lots of records from a pound of vinyl. We could raise our prices 10-20 percent without it real-

ly effecting the price of a record. The fact that the vinyl producers are to blame for record price hikes is just a bum rap."

What about other claims? Bill Riley, Custom Sales Manager of Alshire Inc., a pressing plant in Burbank, CA, remarks, "Today's vinyl is of an inconsistent quality. The vinyl makers have to straighten out their acts with formula quality control."

Howard Hill responds, "The vinyl on the market today is better than ever before. The pressing companies are pressing at faster cycles than ever and thus they are demanding more from our product. They are seeing variations in the vinyl that they never could see before. And we are put in the position by the record companies to supply the vinyl that will produce an acceptable record at the best price."

Part of the vinyl producers' difficulty has arisen from U.S. Labor Department investigations in 1976-1978 that discovered carcinogenics and other contaminants in the vinyl resin. Such production changes cost companies like Keysor as much

as \$4 million. The vinyl manufacturers say that this is all behind them now, that the principal problem is that the record companies are still not willing to pay the price of high grade vinyl they are capable of manufacturing that would clear up the clicks and pops that make recording engineers cringe.

Howard Hill says, "There is developing two vinyl markets. But a better grade vinyl costs more. We have a new manufacturing facility starting up next month for high grade vinyl but it will cost double the price."

It was with a new vinyl formula in mind that Lenahan built its California plant in Canyon Country. The new product that was introduced at a recent NARM convention supposedly flows faster and fills the grooves more compactly than any other material, with the end result being less irritation on the phonograph needle. According to Russ Peters the new compound will cost 2 or 3 cents a pound more.

He adds, "We have eliminated about 75 percent of the problems. We'll eventually get a record vinyl that can go 50 plays without deteriorating and that won't warp sitting in the package. It's just a matter of the compounds catching up with the electronics."

Keysor has invested \$1 million to build a separate, private production line to develop new production modes for the industry, and has formulated a computerized analysis of the end product to statistically look at record vinyl of the same compound and identify types of problems, for the first time.

"There are certain things, such as price, of which we have no control," Howard Hill explains. "But as far as the growing demands for quality recordings—we are ready, and we're excited about the future."

WINTER CES

by Linda Feldman

The January Consumer Electronics Show, in Las Vegas, was attended by over 55,000 during its four day run.

The newest contender to enter the video home entertainment market is the motion picture industry. Represented at the show were Paramount, Warner Brothers, Allied Artists, Columbia, Magnetic Video (20th Century Fox), Video Tape Network (Mr. Bill) and of course the X rated software companies.

New light weight portable VTR's (video tape recorders) and color cameras were shown by Hitachi and Quasar. Hitachi demonstrated a 13.5 pound portable VTR, (VT-7000A) along with a 3.97 pound color camera (VK-C750) with a suggested retail price of \$700. The Quasar portable VTR (VH5 300) weighs less than 11 pounds, including the batteries. Quasar also introduced two new light weight color cameras.

Magnavox and Pioneer both demonstrated their compatible consumer videodisc players. Pioneer will announce their marketing plans in March of 1980. Home computer companies like Apple,

EVENTS

Terry L. Sherwood of **MXR Innovations, Inc.**, Rochester, N.Y., is pleased to announce the appointment of **Lindsay E. Fresse** to the position of National Sales Manager for MXR's Professional Products and Musical Products Groups... the **University of Sound Arts** is offering to a limited number of Los Angeles area bands the opportunity to record multi-track demos at no cost to the band. Bands, producers and managers interested should contact **David L. Fry** at the University, weekdays 1-7 PM at 213/467-5256... **Dennis Wood** and **Terry Rangno**, former members of the Wee Five, have established **Raw Productions** of Santa Monica, CA, to specialize in the video music field offering services in remote audio and video recording, pre and post production... **Electro-Voice** has put together the PA Bible. For information on how to obtain it you can write to **Tim Rooney**, Electro-Voice, 600 Cecil St., Buchanan, MI, 49107... **Bill Kothen** and **Dick Bauerle** have made public the expansion of their studio, **Select Sound**, the only twenty-four track facility in the Buffalo, N.Y. area... **Don V. Larson** has been appointed Vice President and Chief Executive Officer of **Orange County Electronics International Inc.**, head office in Winnipeg, it has been announced by **Harry D. Garfield, M.D.**, President of the company... **Bob Ulius** announces the opening of **Sound Francisco**, a new division of **St. Regis & Leuenberger**, specializing in equipment for sound reinforcement and recording... **Mike D'Amore** has been appointed Midwest region sales manager of **Ampex Corporation's Audio-Video Systems Division**, it was announced by **R. Roger Watson**, national sales manager... San Francisco's **Music By The Bay** is offering a six week recording workshop with hands-on experience in a multi-track studio. For info call 415/474-5600... **TDK Electronics Corp.** has appointed **Adrian Delgado** to the position of Northeast Territorial Manager... **Jim Herrera** has joined the staff of **HUN Sound**, San Rafael, CA, to specialize in sales of pro audio and M.I. products.

We regretfully announce the passing of **Voyle Gilmore**, former executive vice president and head of A&R for Capitol Records. Voyle, a professional drummer in his early years, joined Capitol in the late Forties and grew with them through their golden years, until his retirement in 1968. Beginning in Capitol's San Francisco sales department, Voyle moved quickly into top level record production and made significant contributions to the careers of such artists as Les Paul, Glen Campbell, Frank Sinatra, The Kingston Trio and The Beatles.

An inspiration to all who knew him, Voyle Gilmore will be deeply missed and long remembered by our industry.

Commodore, etc. have become permanent entries at the Consumer Electronics Show.

All of this new technology has brought about lighter weight and more affordable product. The trend was best summed up by Sony with a futuristic environment displaying integrated hardware for a complete home entertainment center. A rear projection screen and home computer were the only things visible in the system programmed to review album cuts, television line up, movie credits, etc.—presto, instant library of program material.

VIEWPOINT

MUSICIANS UNITED

by Marc Davis

In the summer of 1969 a concert in Woodstock, New York, attended by half a million people, undeniably demonstrated to the world the existence of a social movement. Ten years later, another popular concert held in New York's Madison Square Garden presented that social movement with a statement of purpose: to preserve life through conservation and the development of safe energy sources.

An active participant at both major concerts, **Graham Nash** first entered the spotlight during the British invasion of the mid-sixties, as a member of the Hollies. The debut of Crosby Stills and Nash at Woodstock presented American rock's consummate super group—one that became noted for dazzling harmonies, prolific writing and skilled album production.

Today, Graham's energy, and much of his music, have become focused on the future of mankind. Joining forces with other activist musicians such as **Jackson Browne**, **Bonnie Raitt**, **James Taylor**, **Jesse Colin Young** and **John Hall**, Graham is a principal spokesman for **Musicians United for Safe Energy**, or **MUSE**.

September's five day Madison Square Garden concert series, titled "The MUSE Concerts for a Non-Nuclear Future" was the first major commercial event for the group and it relayed, in no uncertain terms, the unilateral support of this country's musical community. A stellar cast of musicians, engineers, producers and support people donated

their services for this project, with proceeds going to fund alternative energy groups and anti-nuclear alliances.

Nash sees **MUSE** as a powerful vehicle for communicating with millions of people through music, and as a source of funding for environmentally oriented groups. "MUSE does not claim to have the answers. We recognize the problems and are doing what we can to support the groups looking for solutions. We also see the value of keeping the questions in the public's mind. I want people to be scared to death about nuclear energy, because I'm scared to death about it. And I figure anyone as scared as me will work hard to stop it."

"By the middle of this decade," says Nash, "I would like to see people applying enough pressure so that the utilities will change their priorities from nuclear to solar. I don't mind them making money—they'll do that anyway by controlling the elements like copper and glass used to capture solar power. But it is critically important that we make the transition to safe energy sources."



Graham Nash, Jackson Browne, John Hall

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A Westinghouse Company

We are calling this our "Tape to Disc" issue of the Mix. Our listings and much of the editorial in this issue are devoted to what happens to the master tape after it leaves the recording studio, on its way to becoming a finished vinyl disc.

In recent years the process of manufacturing a record has gone through little change when compared with the overall recording process. However, the subtleties of disc manufacturing have greatly risen in prominence and today we hear increasing talk about independent disc mastering, pressing quality, vinyl costs—areas of relatively little concern just ten years ago.

What factors have brought about this increasing awareness of the tape to disc conversion? Certainly the increasing fidelity of playback equipment has created more discriminating listeners who have become increasingly sensitive to any shortcomings in their system. With this increased fidelity has come increased sophistication in the production of the recordings, often placing more demands on the disc's abilities. Cost factors have also reached new levels of importance of late, as has the demand for quality performance and workmanship. And, as we teeter on the edge of digital and all of its promise, we can't help but look at the disc and wonder if it will soon be replaced by something smaller, cheaper, more durable and better performing.

Our intent with this issue is not to define the

state of the art in mastering, processing and pressing of discs, but rather to stress that these are areas of prime importance to the finished product of all of those hours of pleasure and pain in the studio. By increasing our understanding of the manufacturing process, we are more likely to make better use of our budgets and time, and maybe even come out with a better product.

February's Features

Independence has been a flourishing attitude in our industry for many years—independent record producers, engineers, studios and even record labels. Recently, independent disc mastering has joined these ranks. For a look at one of the country's most active disc cutting facilities, Bobby Bank takes us on a tour of New York's Sterling Sound.

Pressing plants very often handle more than their share of criticism when disc quality is discussed. As the buck often stops with them, we sent Larry Thomas to interview three record pressers and get a first hand account of pressing problems, the vinyl situation, cost factors and a future view.

The rising quality of playback equipment has created a booming interest in super high quality pressings. We talked to the people of Mobile Fidelity Sound Labs to tell you about a relatively new company that buys original master tapes of "hit" albums and remanufactures the disc, optimizing each step of the way, in search of the recording's highest fidelity.

Insight into the manufacture of the album cover has been provided by Diane Rapaport. We have excerpted from her book, *How To Make And Sell Your Own Record*, to define graphics terminology and describe the considerations involved in getting the cover printed. As

is the aim of her book, Diane's discussion is primarily designed for those involved in independent record production.

"Hitsville, USA" is a nickname given to Motown Records, the description being certainly beyond dispute. With the recent completion of Hollywood's Motown Studios, the multi-million dollar facility is now opening to the public for the first time in its illustrious 21 years. In David Goggin's interview with the studios' general manager, Guy Costa, we see that the studios are in good hands and learn why Motown's success was no accident.

1980 appears to be an important year for the commercial acceptance of the videodisc. As many companies begin to shift their emphasis from research and development to marketing, Linda Feldman gives us an update on some available systems and future prospects.

Listings

This issue's listings survey the mastering, processing and pressing facilities in the Eastern, Central and Western United States. While not an entirely complete list, these facilities do the bulk of this country's disc manufacturing work and we present these listing as a reference guide for those readers directly involved in record production. All information in the listings was provided by response to Mix questionnaires in December, 1979 and January, 1980. The Mix takes no responsibility for the accuracy of the information and urges potential clients to investigate the important factors directly.

• • •

And finally, we'd like to welcome our new Southern California representative, Ann Heenan, to our staff. ☺

COMING

**Southern California Studios
 Independent Engineers Forum
 Criteria East and West
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ATTRACTIONS



KING OF THE JUNGLE



You're face-to-face with the most magnificent beast in the Pro Sound Jungle—the all new Model 1200A Power Amp from AB Systems.

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The King of the Jungle measures a slinky 5¼" x 19" x 15", so it fits all standard rack-mount installations. Yet it pumps out a full 500 watts per channel into a 4 ohm load. (300 watts into 8 ohms.) And when you compare its slender price—it'll bring out the beast in you too!

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Professional Recordings

by Larry Blakely

We have all watched the tremendous growth in recording studios over the last few years. Mix Magazine, in recent months, has listed hundreds of recording studios in the Northwest, Southern California, Nashville, and New York City areas that are open for business and selling time. These commercial studios range in recording format capabilities from 4 to 24 track and beyond and are supported mainly by aspiring artists making demo tapes or even producing record albums in hopes of obtaining a contract from a major record company. Of course, many of these studios are providing services to popular artists and groups with major record label recording contracts as well as producing radio and TV commercials, sound tracks for films or TV shows, demo tapes for song writers, and other services.

Even more impressive is the explosive growth in private and home recording facilities. In 1970 TEAC Corp. of America introduced a line of low cost multi-track reel-to-reel tape recorders along with a series of inexpensive mixing consoles and recording accessories. The availability of this inexpensive recording gear gives many aspiring musicians, songwriters, and recording producers the ability to set up their own private recording facilities. These private recording facilities are often paid for with the money that would be spent on a very few projects in a commercial recording studio. Equally advantageous is that these private recording facilities are available to them at any time they desire. The last ten years have seen a tremendous number of these private recording facilities spring up throughout the country, ranging in size from a 4 track recorder and a small mixer in a musician's living room, to a full blown 8 or 16 track studio in a basement or garage.

Most of these private facilities are and will continue to be owned by musicians who have the desire to express their musical ideas. New songs are being written and recorded in a form that will provide a good demo tape for a record company or a music publisher. Aspiring artists can now take the required time to make good demo tapes of themselves or their groups to be used for obtaining "bookings" or to be sent to record companies for audition. Some of the more knowledgeable and enthusiastic individuals actually record master tapes for singles or albums. As the number of private recording facilities continue to increase and those who use them become more proficient in the art of recording, there will become more and more finished record product (master tapes) available on the market and available for sale or lease to record companies.

Historically, if an aspiring artist wished to obtain a contract with a major record company, he could make a demo tape in a commercial recording studio and send it to several record companies, arrange for a private audition, or try

to get an A&R man to hear the artist during a live performance. As songwriting has expanded in popularity, we have found A&R departments of major record companies flooded with demo tapes, telephone calls from aspiring artists, and an endless number of persons attempting to make appointments in hopes of obtaining recording contracts. This route has become so cluttered with obstacles that most people eventually have become discouraged and have given it up.

Let us look at this from the side of the record company. For each new group or artist that a record company signs they must advance funds for the production of an album or single. This means that money must be spent for studio time,

not successful. There are far more records that are "flops" than "hits" and for a record company to be successful, it must have a sufficient number of "hits" and other popular selling records to pay its overhead, as well as the expenses for those record ventures that were not successful.

It can be seen that record companies are in the business of gambling on "hit" records. Today's high costs of doing business are keeping many of the record companies from taking the "long shots" that they were once able to afford. This means that fewer groups have the opportunity of obtaining recording contracts under the current system because it costs record companies too much money to launch new acts and finance failures. Hence, the record companies give increasing priority to artists or groups that are already known and currently popular, at the expense of promising new artists.

A Proposal

I propose an idea that can be a solution for the record companies, artists, and enterprising new business people as well. In view of the high costs to promote new talent and the reluctance to risk money at this time, and considering the tremendous number of private recording

facilities throughout the country, I suggest that there is a tremendous opportunity for individuals or companies to form independent *regional record companies*. Small record companies of this type could spring up in every major metropolitan area of the country. These small, but flexible companies could easily seek out the talent in their area; artists and groups that are popular and have the potential to sell a few thousand record albums in the immediate local market. Such albums can be sold during the dances or functions at which they perform, promoted through local radio, TV, and newspaper advertising, and/or through local record stores. This will give local talent a way to record their music and obtain local air play, as well as local record sales, and would be somewhat of an easy task for the regional record companies to obtain good working relationships with the disc jockeys of the local radio stations and obtain air play for these local groups and/or artists.

A regional record company gives artists a greater opportunity to be auditioned, signed, and showcased. It gives a community an opportunity to support and expose their local talent as well as provide new business for the community. It also provides a method for the major record labels to pick up singles or albums that have already shown sales potential on a regional basis and allows them to start with something that has a headstart on becoming a real winner. It provides a method of channeling the tremendous number of finished master tapes now available and will continue to be in far greater supply in the future. It gives more people a chance at their dreams of stardom, without being continually turned down by major record labels.

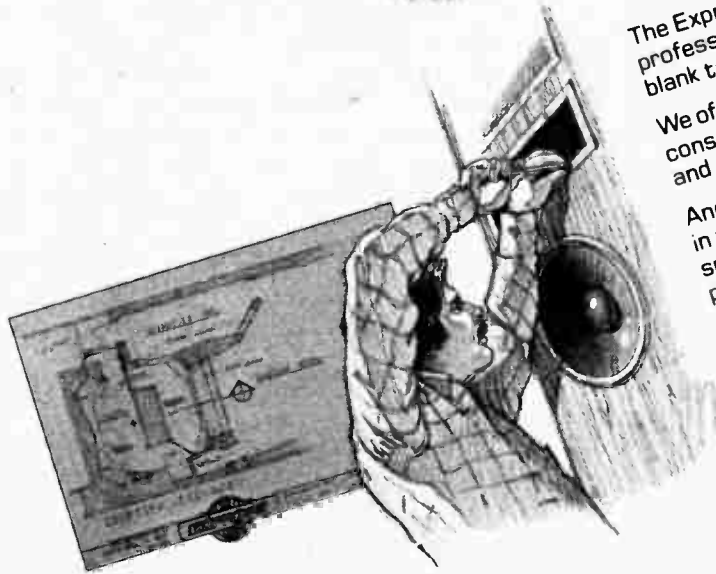
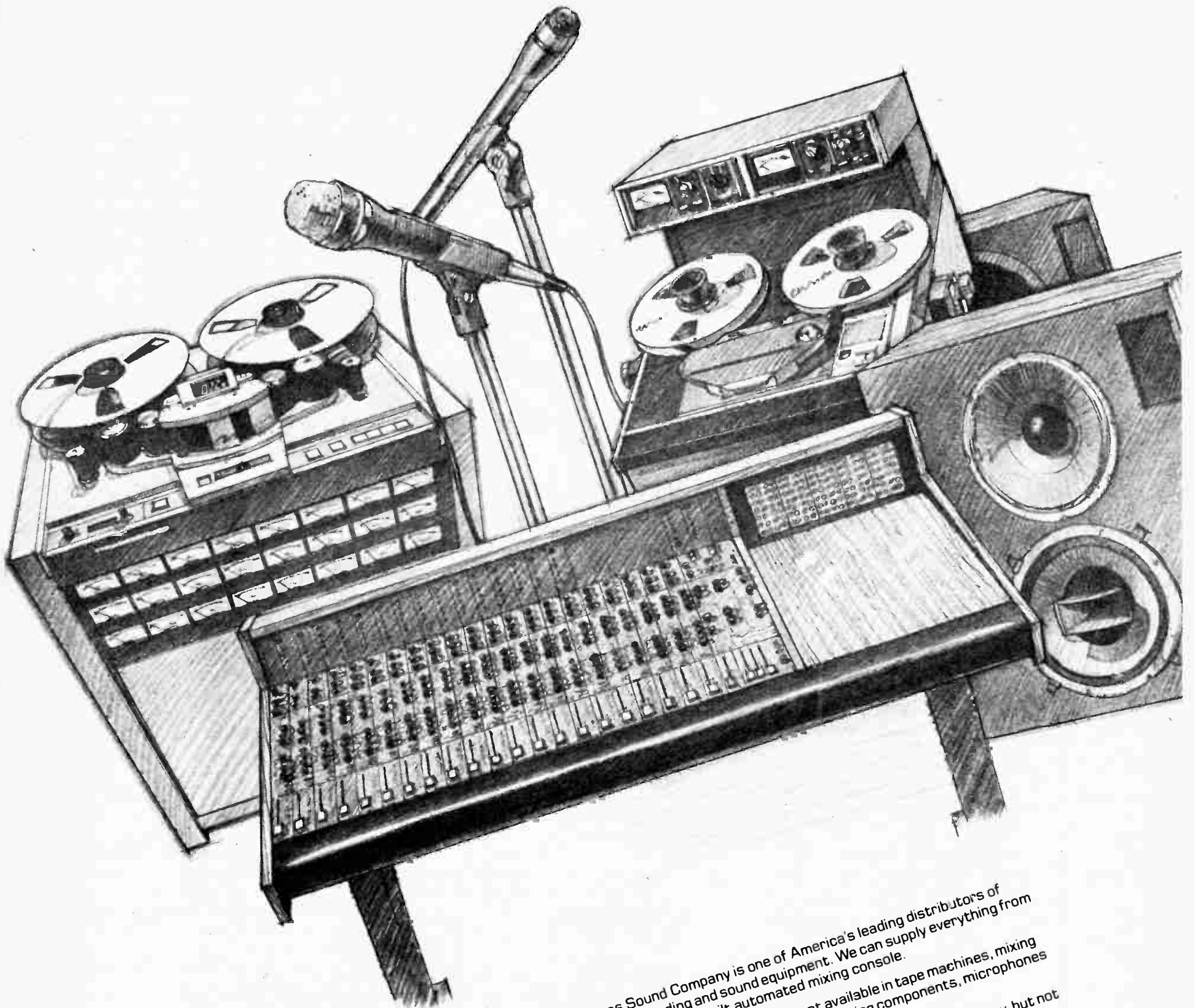
I feel that this would provide a method to accommodate the work of the recording industry and the talents of tomorrow. ☺

REGIONAL RECORD COMPANIES

arrangements, travel and lodging, and sometimes expenses for rental of additional musical instruments and/or auxiliary recording equipment. Today's costs for commercial recording studios are very expensive, usually \$100.00 to \$200.00 per hour, and studio costs for recording an album typically run from \$25,000 to \$250,000 or more. Additional expenses are incurred in the design of the album jacket, the pressing of promotional copies for radio stations, etc. It is often necessary for the record company to have a promotion man deliver these copies in person in an effort to ensure some air play or exposure of the album to that geographical area.

If the record is played and the listeners respond (usually with phone calls), the disc jockey will continue to play the record. A good response will place the record on the station playlist and will often be picked up by other stations in the area as well. When several major radio stations in a given area are getting strong listener response and playing a record often it is termed a "regional hit". This tells the major record company that there may be "gold in the hills" and the record is then pushed in other major markets by their record promotion people. These promoters will tell the disc jockeys in other metropolitan radio stations, "This record is on the playlists of 4 of the top stations in XYZ City and I think we have a hit. Try some sustained play in your market to see if your listeners respond as well."

If the radio listeners in other markets respond in the same way the record is indeed a "hit". It can easily be seen that this procedure is very expensive, and hence we see why the record companies are so choosy and why it is so difficult to obtain recording contracts. Record companies lay a lot of money of the line and take a large chance of losing a lot of money if the record is



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as a so s o i o n s

happy & PRODUCTIVE employees

by Dennis Buss & Chris Haseleu

Most responsible employees desire a sense of direction in a job: they like to know where their efforts are taking them. One of the best methods open to the studio owner for developing this direction is the use of a formally written personnel management tool called a "job description." Basically, it is a form that contains four general areas of information:

1. The employee's official title and who is the immediate supervisor,
2. Summary of the job,
3. The specific duties and responsibilities of the engineer,
4. And an analysis of the approximate time spent on each duty. (For example: live music recording: 60%, jingles: 20%, A/V: 5%, studio time sales: 5%, etc.)

By continual review of the properly written job description, the employees can identify what is expected of them and direct their activities and skills toward accomplishing the specified duties. Obviously, this tool can be used in other areas of personnel administration as well: assisting in identifying qualified employees (recruitment), performance evaluations, lines of authority etc. Unfortunately, our consulting experience indicates that only a minority of the recording studios employ the use of this device. This should be an area of concern for members in the industry who wish to improve their studio's overall effectiveness.

Another proven method of supplying employees with the needed direction is continued accessibility to the studio owner (or in some cases, the studio's manager). During the initial training period, time must be given to the new employees in order for them to know what the job is supposed to involve, what standards of performance are expected, and how they are performing in each area of responsibility.

Mr. Russ Gorsline, owner of Rex Recording in Portland, Oregon, uses this approach to supply direction to the employee: "We use a one-to-one training technique (between myself and the engineers), show them how to do it, show them why it is, and show them where to find the information if there is formal information available." Both methods—the use of a job description and accessibility to the studio owner—should be a part of the studio's total training program to insure the direction the employee desires.

The next activity in the development of an effective training technique for the studio is the establishment of a productive training environment. Imaginative, inventive employees avoid

too much structure on the job. Accordingly, after the initial training steps provide the new employee the needed direction and required skills, efforts should be made to allow freedom for experimentation and personal growth. This idea is brought out in a comment by Ms. Rose Mann, studio manager for Kendun Studios in Los Angeles: "We give them the rooms in the studio, when they're open, to train themselves. In other words, you have to be in a room alone to experiment. Being an engineer is not just pushing buttons."

How to Keep Them Happy

A successful motivational technique by the studio owner results in a high degree of employee productivity (quantity and quality), and an environment that is challenging and rewarding. There have been numerous theories developed that claim to be the answer to low employee productivity and morale at the studio. Ours, however, has three elements that distinguish it from most of the others: it's broad enough to be applicable in most circumstances, it was developed for the creative employee (engineers, in our case), and it has been proven successful in practice. We call our technique the "atmosphere" theory to motivating the creative employee. It involves two broad activities: the identification of the engineers' job needs, and the manipulation of the employees' work atmosphere.

Most motivation theories suggest it is necessary to identify what the employees are seeking from a job (needs). One of the purposes of this article is to assist the studio owner in identifying some of the needs the engineers are hoping to satisfy. Below is a list of several needs that appear to be a priority to creative employees (a few were mentioned previously):

- Recognition of work done.
- A sense of accomplishment.
- Time for professional growth.
- Involvement in the studio operations.
- Association with other engineers, and other trade professionals.
- Freedom/or control over their job: avoidance of structure.

What about financial security, or management loyalty, or job security, or advancement, or numerous other similar needs? These are important to every employee; with some, the priorities. However, the behavioral make-up of the creative individual is different. Because of this, these needs can be considered basic to the engineer (and must be satisfied), but they are not a priority. The key here is that the satisfaction of the engineers' basic needs is not a motivational factor—it just causes a certain sense of stability. The employees are motivated to a higher degree of

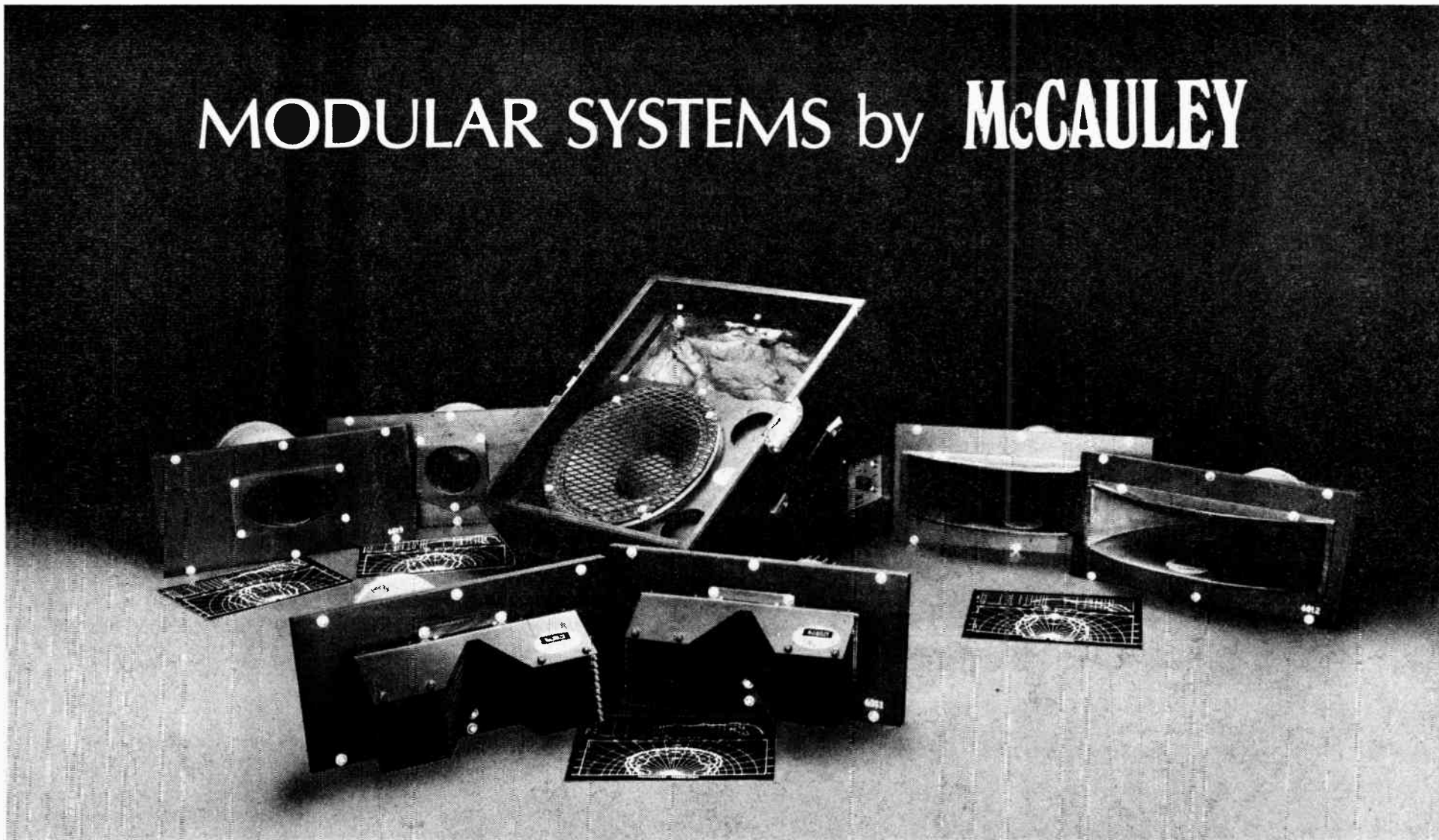
productivity and morale by the satisfaction of their priority needs. Accordingly, a common mistake is to think that by automatically giving dissatisfied employees a raise or a promotion, they will be motivated to a higher level of effectiveness. Nevertheless, these basic needs form an important part of the second activity of our "atmosphere" theory to motivation.

After the studio owner properly identifies the engineers' basic and priority needs the next activity is to manipulate the employees' work atmosphere so the basic needs are satisfied and, at the same time, the often difficult task of satisfying priority needs is attempted. Money, fringe benefits, title, safe working conditions—these, and others, are basic requirements of any job. The studio owner must strive to at least match what the general industry dictates as far as wages, promotions, etc. This will not necessarily cause employees to be motivated to produce at a higher level, or remain at the studio for long-term. However, it also will not cause them to be dissatisfied with their work atmosphere. The ability to *motivate* comes from appealing to the engineers' priority needs.

Other needs exist. By encouraging the engineers to join and participate in appropriate trade organizations (the Audio Engineering Society, for example) the need for professional association can be satisfied. The studio usually has periods when it's not being occupied. These downtimes can be used for personal recording projects by the engineers, thus satisfying the desire to have time for professional growth. The list can go on forever. Each engineer will have different priority needs: most will have multiple needs to be satisfied. The key to the atmosphere theory is to accurately identify the engineer's basic and priority needs and then be able to develop an environment (manipulate the work atmosphere) to accommodate the individual. A good example of this was mentioned to the authors by Ms. Sara Beebe, owner of Audio Engineering of Los Angeles: "...We have one engineer who has received his BA in composition from UCLA and is very interested in classical music and opera. He is a first rate engineer so we try to send him out to record the 'L.A. Philharmonic Orchestra' or to do the 'Coleman Chamber Orchestra' concert. So there is a personal identity and tie, as well as just the work as an engineer."

This article has attempted to suggest effective methods for the studio owner to recruit, train, and motivate the creative employee—specifically the engineer. However, we realize that this article assumes the studio owner has the skills needed to accurately identify and recruit the qualified engineer, to develop an effective job description, to identify and distinguish basic and priority job needs, etc. Some have these skills, but in actuality most studio owners have neither the time, nor the training in personnel administration to accomplish these tasks. We suggest that the studio owner should *at least attempt* to apply the concepts and theories as they apply. Some initial results will be realized before too long. In addition, there is professional management assistance throughout the country to aid the studio owner with their personnel problems. We do not have the space in this article to enumerate, however you may feel free to contact the authors, in care of the Mix, to assist in your particular situation. ☺

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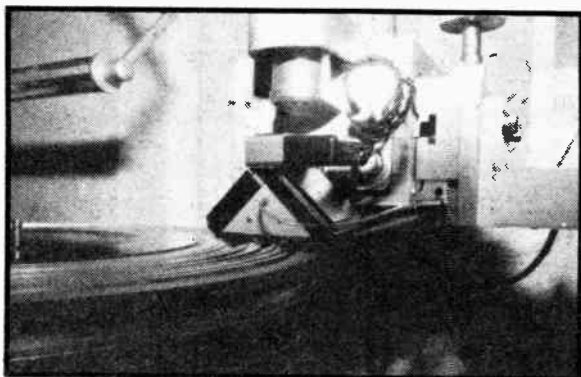
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STERLING SOUND CUTTING MASTERS

by Bobby Bank

Barry Manilow, The Cars, Paul Simon, Aerosmith, Village People, Rupert Holmes, Cheap Trick, Billy Joel, Foreigner, Steve Forbert, etc., etc., etc. What do all these artists have in common? Good question! Well, for one, these multi-platinum albums have been



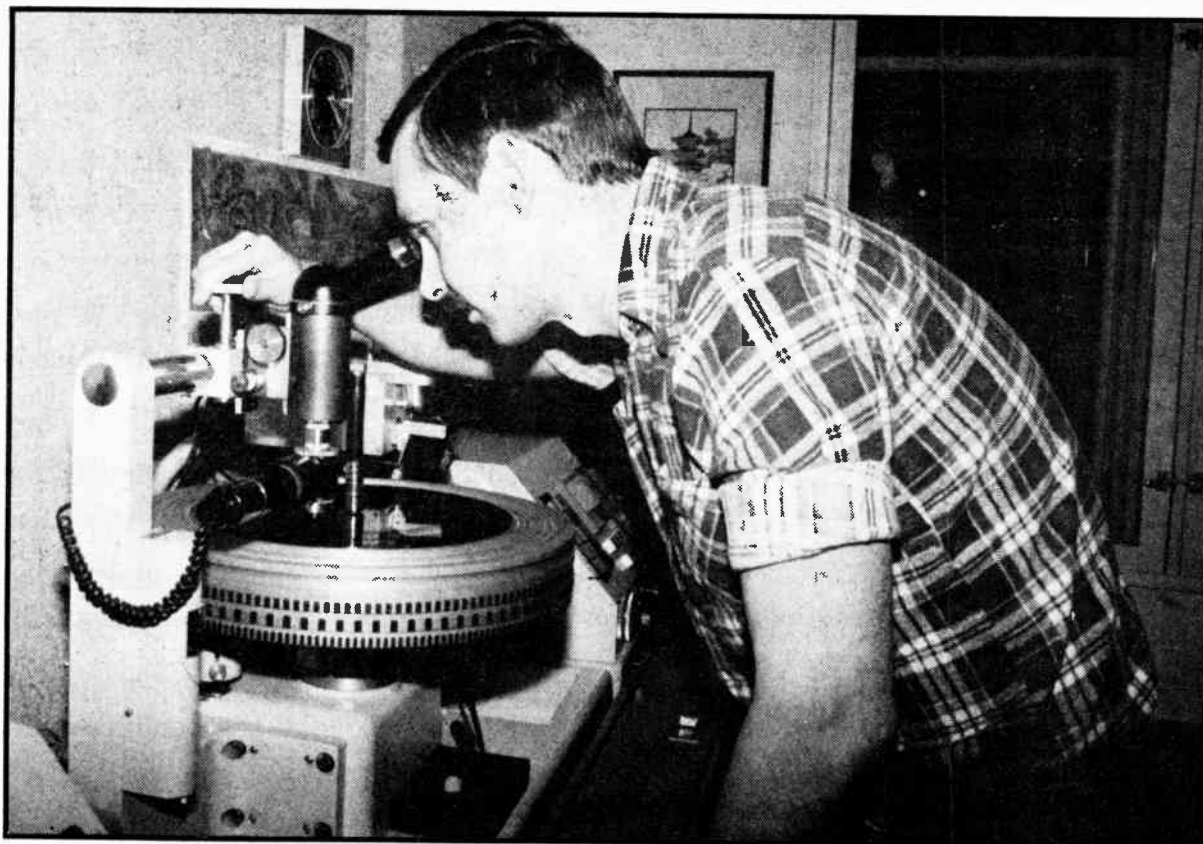
mastered at New York's Sterling Sound Studios—a major force in disc mastering techniques in this country. Sterling is successfully owned and operated by Lee Hulko and Joe Paschek. The staff consists of studio managers John Kubick and Lillian Hood, assisted by Nancy West. Sylvia Sotnick and Lestine Probert complete the office staff. The top notch maintenance department is run by Steve Addabbo and Bråd Johnson and, of course, Sterling's disc cutting engineers are George Marino, Ted Jensen, Greg Calbi, Jose Rodriguez and Jack Skinner. Rhonda Epstein operates Sterling's tape copy and editing facilities.

Disc cutting begins when the recording and mixing processes are completed. The final step is tape to disc transfer. At Sterling Sound, the state of the art design of the disc cutting facilities almost seem laboratory like. However, after speaking with some of the staff, I was able to gather some understanding of how disc cutting rooms operate and how a lacquer master is made. There are five cutting rooms at Sterling Sound. Each is compatible using the finest equipment available. At the same time, each of the rooms is tailored to the individual needs of the engineer who operates in that room. Each engineer has his own cutting room. The idea is to give the operating engineer complete confidence and yet extend producers and artists a comfortable common ground between the elaborate recording studio and average

home listening environments.

In setting up a record, the goal is for a personalized sound which will please both the average equipped listener and also the elaborately equipped listener. The sound of a record should identify with

George adds, "When you get groups and producers in, it becomes sort of a last shot for a record as far as the sound of the record goes. When you get five different people and five opinions, they all may be valid but there is only so much you can do. I just try to make the client happy."



Jose Rodriguez

the individual artist and yet sound good on all types of equipment.

George Marino reflects upon his past experience and remembers, "Nowadays a lot of groups are constantly on the move, recording in various studios in different parts of the country at different times, and what you want to do is come out with a good consistent sounding record. I would try to make the record sound as if it was all recorded under one roof, all as good as possible, and have a continuity to the album. You don't want somebody to turn up the bass for one cut, the treble for a different cut, so you try to keep everything as consistent as possible."

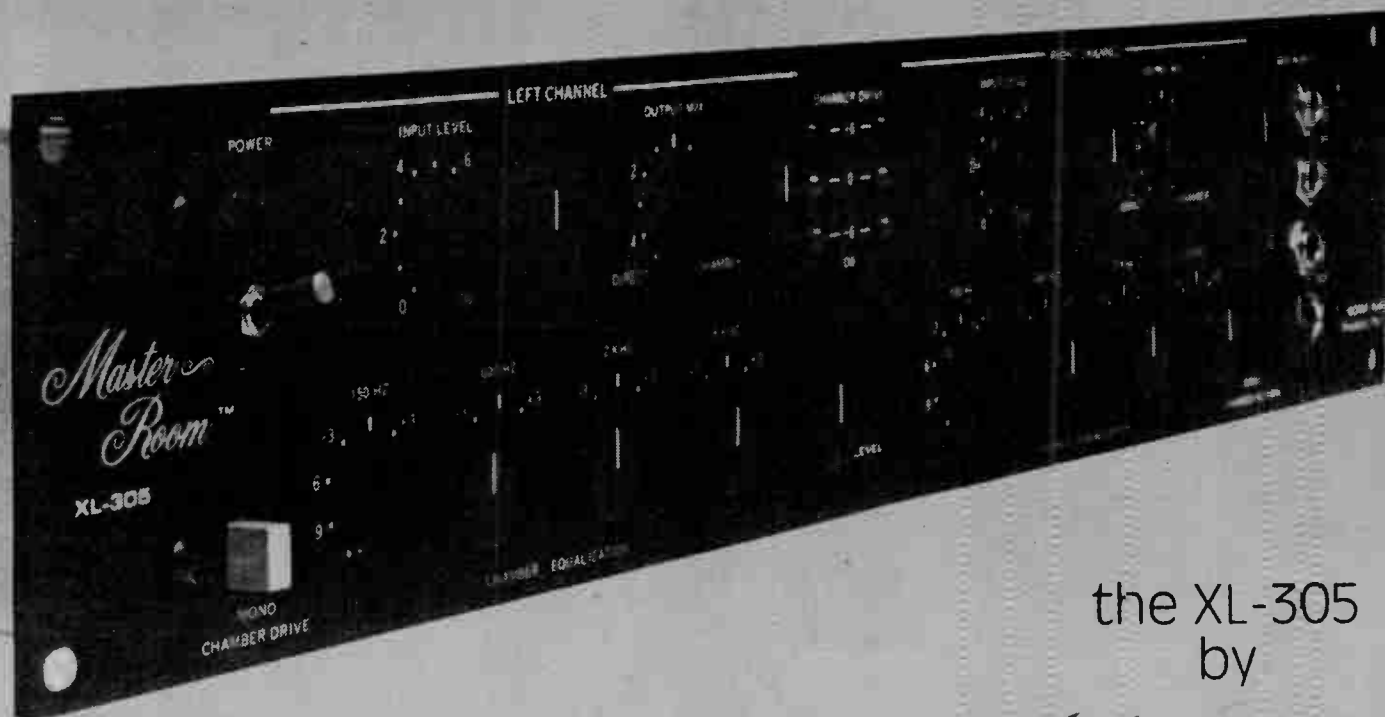
The mastering process begins when the master tape is placed on the playback machine which is aligned perfectly to a set of alignment tones that accompanies the master tape. By doing this, they always have an absolute reference point. As the master tape is played, it is channeled through a control console which allows the engineer to adjust levels, equalization, etc., therefore altering the master tape exactly to the desired sound. The point is to fine tune each cut on the album.

As the sound is being set up, it must be kept in mind that each sound will modulate the cutting stylus

Cont'd on page 36

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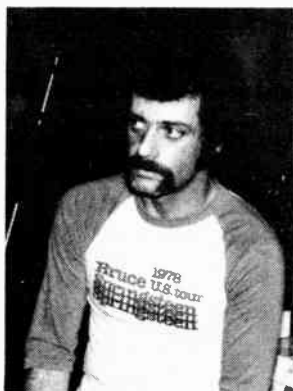
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FRED WAXLER—played in Bay Area bands from 1970 to 1974. Fred founded the original "Bananas at Large" on Monterey Boulevard in San Francisco in 1972. He is involved in guitar synthesis and the development of innovative guitar sounds. He is presently a consultant to several amp and instrument manufacturers, and composes music on his 80-8 system at home.

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RIC WILSON—played in various bands for 12 years. Ric has extensive experience in session work and has toured with "Syndicate of Sound". He is currently the guitarist for "Banshee."

— GUITAR SALES



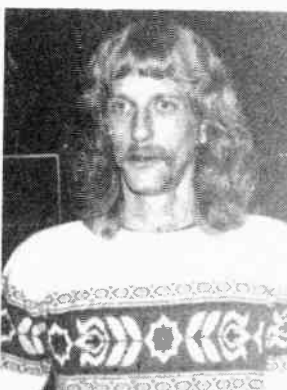
RICK MEYERS—has engineered demos and done session work for various bands and artists. For the past five years he has played keyboards for "Fat Chance".

— KEYBOARD SALES



J.D. SHARP—performed in the Bay Area from 1969 to 1974. J.D.'s synthesis experience dates from 1973, including modular and micro processor based units. J.D. is currently co-owner of an eight track recording studio and engineers both 8 and 16 track sessions. He is also known for his studio work with sequencers and string synthesiser effects.

— RECORDING/REINFORCEMENT SALES



TOM HALLSTEIN—has been involved with using and building synthesizers since 1970. He performed in the bay area from 1974 to 1978, both on keyboard and guitar. Tom presently operates a half inch, eight track studio.

— RECORDING SALES



RICH RACHEL — has played bass professionally for 3 years. He was Sound Engineer and Stage Manager for Sammy Hagar from 1976 through 1978 which covered three U.S. tours. He currently owns a professional sound company, which he has operated for the past 2 1/2 years.

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PRESSING MATTERS

The Manufacturers and the Issues

by Larry Thomas

When was the last time someone told you about a new record, and mentioned what a marvelous pressing it was? The fact is, when people talk about the quality of pressings at all, they usually seem to be complaining of how poor they are. It seems almost *de rigueur* for producers to moan about the poor sound of their test pressings, and to point an accusing finger at the plant. But is all this criticism really justified? Are records today really all that bad, and if so, what can be done to improve the situation? What can engineers and producers do to help bring about a better end product—i.e., the disc—onto the market place? To try to get some answers to these and other questions, I spoke recently to three Southern California pressing plant executives. Between them, their total experience in the industry amounts to almost fifty years, so they would seem to know whereof they speak.

Jim Auchterlonie, Vice President for Custom Sales, KM Records, Burbank. During his 32 years in record manufacturing, Auchterlonie has been "everything from press operator to plant manager." Before joining KM three years ago, he spent 22 years at Keysor-Century, a major vinyl manufacturer and pressing facility.

Bill Riley, Custom Sales Manager, Alshire International, Burbank. Riley came to his present position three years ago, after serving 7½ years as sales manager at Fidelatone Mfg., another custom pressing operation.

Gene Schutz, President, K-Disc (subsidiary of Keysor-Century Corp.), Saugus, Calif. Mr. Schutz has been involved with manufacturing and vinyl production for 4 years. He served as marketing director for Keysor-Century before taking charge of the record pressing subsidiary.

Do you feel that inferior or inconsistent quality in pressings is a widespread problem? If so, what do you see as the causes?

J.A.: I think there have been problems. I think they are starting to improve a lot. My own personal opinion is that when the direct-to-disc product came in it started to show us what *could* be done if enough care was taken to produce the product. Of course, it was more expensive to produce. And I think this is what we're talking about. I really feel that the industry in this country has been tied to a competitive marketplace, particularly in the commercial business —'How fast can I get them and how cheap can I get them?' And the two just aren't commensurate with quality.

B.R.: The quality of records today I basically see as good. Now I'm not going to say that we don't have problems in the industry, problems that are developed and manufactured by both pressing companies and the people who supply the raw material to us; along with, I might add, the [recorded] material

we're given to work with. You have a producer who crams a lot of time on a record, with a tremendous amount of level—and he can put it on the tape, he can put it on the lacquer; but we can't always get this thing on a record and get it out clean.

Also, rushing jobs. People call up—major producers—and say, "We need X thousand records by tomorrow morning." So, we just don't have the time for quality control that we need.

G.S.: There are many stages in the manufacturing of a record that will control the quality of the finished product — the mixdown, where you may get noisy tapes; the lacquer mastering, where you may get an improperly-cut or imperfect lacquer disc; the matrixing and pressing; the type of vinyl used; the thickness of the jacket; the polywrap shrink technique; and the packaging. An error in any of these areas can give a defective record. People make errors. The answer is to control these errors before they reach the marketplace.

What is being done, or can be done, to upgrade quality?

J.A.: I think we have to consider first of all that the industry has been strapped with an unrealistic unit cost to produce a record that is commensurate with good quality. My feeling is that the public would be getting a better product if the manufacturers could get more money for the product they produce. Obviously, these costs would have to be passed on to the consumer. And I think it goes back then to the person who is actually responsible for producing in the first place: are they willing to pay extra money to get the extra quality? Warner Bros. is making a move to buy their own manufacturing facilities, for the simple reason that they can control the quality. I don't know why they would have to do that unless they felt that quality was such an important part of producing a good product that they have to control it. And it's tough to control it when you're contracted.

"I think that the engineering people are going to have to become more familiar with our problems in pressing."

Bill Riley

G.S.: Most of the people in the industry are very aware of the image that we are supplying defective product into the market place. I know of no one who hasn't placed top priority on quality.

What can other sectors of the industry—labels, studios, producers, etc.—do to help the pressing plants improve the final product?

J.A.: One of the things we find, and I'm not so sure it's

necessarily indicative of the small producers—it's very indicative of the large producers—is an incomplete understanding of what goes on in the manufacture of the phonograph record after the tape has been made... I think one has to be realistic about what it takes to put it together properly. I think one has to be patient.

"Pressing technology has developed extensively... The industry has moved aggressively from the 'little black box' area to a more scientific approach."

Gene Schutz

B.R.: I think that the engineering people are going to have to become more familiar with our problems in pressing. I think engineers should know something about matrix and also something about the pressing process, and, be able to identify what's a matrix problem, what's a cutting problem, and what's a pressing problem. You don't do that with your ears—you can do it with your eyes.

G.S.: All areas of the record industry seem to need the finished product yesterday. We are the final step. Extra stress is placed on the pressing plant to get records out after the product may have been months in the studio, weeks at the jacket manufacturer, and sometimes weeks in test pressing approval. Perhaps a more dependable sales forecasting method is needed by the labels to determine when a product should be released in order to give time necessary for the pressing plants.

What about the quality and price of vinyl?

J.A.: I think most of the companies today are putting out a good grade of vinyl. You talk about Lennihan and Keysor-Century—they're putting out a good vinyl. There *is* an inconsistency in batches. There is a variable. I don't know if it can be that tightly controlled. We have just recently gone into importing some foreign materials, some Teldec materials. We haven't run enough of a cross-section yet to really establish any kind of horrendous difference between the two. We are hearing from some people who have very, very good ears—Doug Sax at Sheffield, the people at Nautilus, the people at Teldec—that there *is* a difference between the two.

I don't think the price is being manipulated. I think it's definitely related to the marketplace. Since the first oil embargo, vinyl material is continually taking a jump. It seems to go up in increments of two cents a pound. I think we've probably had four or five raises within the last year. It's something that manufacturers are continually contending with.

Cont'd on next page

PRESSING ON

Cont'd from page 17

B.R.: It'll change from day to day. From time to time we see a batch come through and I just can't believe how great it is. And then we'll have a batch that you couldn't believe the surface on.

The suppliers I've talked to are looking for the means of giving us a quieter vinyl—one that will flow fast, fill completely, and not give us a surface problem. Some of the vinyl that we're getting today is ex-

"I think the buying public is getting more concerned, and more aware of what a good pressing sounds like."

Jim Auchterlonie

tremely good. I think we can look forward to a much better product than what we've had.

G.S.: One of the most important factors, from a production standpoint, in any raw material is the consistency of that product. The vinyl that we purchase is consistent. The material is capable of forgiving some variations in steam pressure, water temperature and other normal variations. I have had problems

with vinyl pellets, but nothing of any major nature.

What new developments do you foresee for the record manufacturing industry in the 1980s?

J.A.: I think the industry in general is getting more concerned, I think the buying public is getting more concerned, and more *aware* of what a good pressing sounds like. You hear a lot of the records coming in from Germany and the foreign markets—JVC, for example—Why do they say the quality of this product is so much better than we're getting in this country? And I think it's a great challenge to the manufacturer to be aware of upgrading the product.

I think the video disc has a place in the market, but I don't consider it to be a threat to the record industry. I think it's just like stereo was, or tape—a punch to the business.

B.R.: The only thing new that I really see coming down is the video disc. I don't know that it's going to grow, but there's a lot of conversation about it.

I see one of the biggest boons to the record industry—not to the manufacturer, but to the record producers and record buyers—to be a lower rate of production, which is going to cause a higher *quality* production... Material costs, labor costs, and energy costs are going to demand that we produce a better product. We're just not going to be throwing out product for people at a fast rate and not giving them quality merchandise.

G.S.: The automatic press has made a large impact on the pressing industry during the '70s. Further development of the automatic press will have a continued impact. The move by smaller labels to major


label distribution channels has already hit the independent pressing facilities, and will continue to affect us.

Video disc technology may have an effect on us, but it will depend on which system wins the race. It may be the salvation of the independent pressing industry.

Final thoughts?

J.A.: I feel we're in a business like many businesses—we're looking for perfection. And I think that any company that's worth its salt is trying to attain that kind of goal. Whether it's the producer, the musicians, the engineer, the manufacturer—I think we're all looking for that area of perfection. There'll always be something that may want to hinder it, but getting the right kind of parts for the right kind of material with the right kind of people, I think one can start achieving the optimum.

B.R.: You should have a minimum amount of problems with your product at any time. And you should have reliability going back to your supplier. If I produce a record for you that starts out to meet your quality, but then fails, you should be able to come back to me and talk to me about it, and I should be able to do something about making it up to you. I don't feel the customer should ever lose.

G.S.: Pressing technology has developed extensively since the spread of automatic presses. The industry has moved aggressively from the little black box area to a more scientific approach... We have and are continuing to bet that the vinyl disc is the best possible medium for the industry. 

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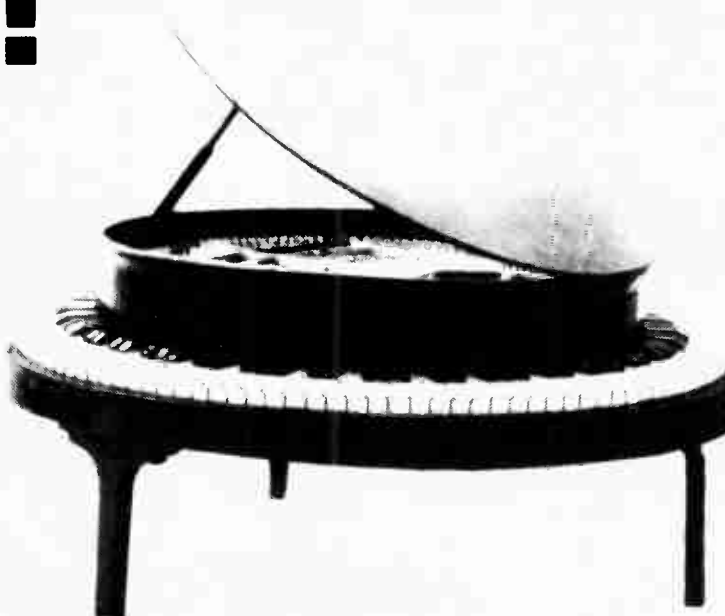
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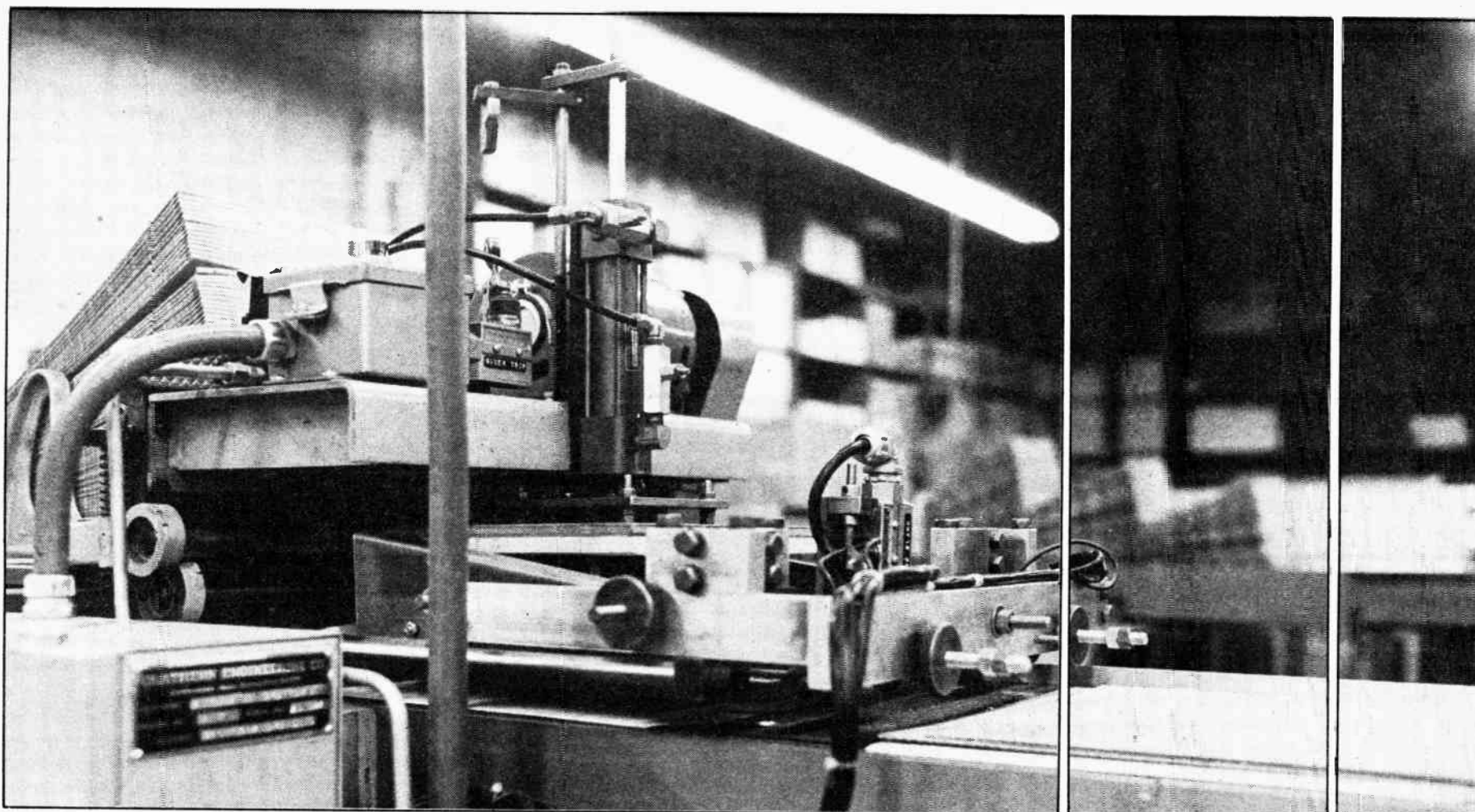
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Understanding the graphics and printing

by Diane Sward Rapaport

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The Printing Process

Before you select a printer for your album cover, you should have some understanding of the basic processes and the options available to you. The following description includes most of the terminology you will encounter when reviewing printers' brochures and determining the specifications for the printing of your cover. The procedures de-

scribed all refer to 'offset' printing, which involves a number of photographic steps from artwork to finished piece. Almost all printing related to record production is done by this method. While we consistently refer to 'album covers', some printers use the term 'record jacket' instead.

Color

The first basic decision in the printing process is the number of inks to be used—one-color, multiple flat colors, or four-color (full-color) process. The one-color method involves printing white or colored paper with black or another color of ink. A common economical design involves using type with a black and white photograph or a line drawing, with many variations possible. By using more than one color of ink, a broad range of effects can be achieved, depending on how the colors are combined.

Four-color, or full color, printing involves three primary colors—red, yellow, and blue—plus black, generally on white paper. The proper combination of these four colors allows for the reproduction of color artwork or photography, with solid areas of any color or shade. Many album covers are printed four-color on the front, with the back cover one-color, usually black on white.

Halftones

In order to print continuous-tone black and white photographs, they must first be converted into 'halftones'. This process breaks up each photograph with a dot-patterned screen. If you examine the printed photographs in this magazine with a magnifying glass, you will see the tiny dots. When viewed at normal distance, they produce the illusion of a full range of tones from black through grays to white.

Color Separations

Color photographs must also be converted with a complex halftone process known as making 'color separations'. Four halftones are made of the print or

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slide, each through a different filter, the result being a separate halftone for each of the three primary colors (red, yellow, and blue) plus black. When these four halftones are printed over each other, they combine to reproduce all of the colors of the original photograph. If you closely examine the printed color photograph on the cover of this magazine, you will see that it is made up entirely of red, yellow, blue, and black dots. Full-color artwork requires color separations.

Mechanicals

The process of printing starts when you deliver camera-ready artwork (also referred to as 'mechanicals') to the printer. This will consist of all the line art (type or lettering, borders and rules, black and white drawings) assembled on 'boards' (also referred to as 'flats'), correctly sized and placed in exact position. The finished mechanicals may also consist of overlays on transparent acetate for overlapping areas, and a top sheet of tissue indicating to the printer which areas are to be printed with which color ink. Photographs and full-color artwork are furnished separately, with their size and position indicated on the boards.

Negatives, Stripping, and Proofs

The people in the printer's 'camera department' photograph each layer of the mechanicals to produce negatives. Any special design elements, such as reversed areas (having the title in white on the dark area of a photograph) are separately prepared photographically. All photographs are converted into halftones. All the negatives—line art, each overlay, special bits of film, halftones—are then combined to produce one or more final negative for each color ink. In four-color printing, there will be one final negative each for red, yellow, blue, and black.

Once this process, called 'stripping', is completed, the printer will prepare optional (but very necessary) proofs to enable you to check the work. These can take a number of forms, depending on the method of printing used. For a one-color or simple two- or three-color job, you will be furnished with a composite photographic print of the final negatives, called a 'blueline' or 'brownline' according to the proofing material used. If you are using a complex multiple-color or four-color process, you will usually be furnished with a 'color key', consisting of one layer of acetate for each color.

Checking Proofs

The single most important role that you can play in the printing process is to make sure that you order proofs and that you and your graphic designer carefully check them. This is the point of no return before thousands of copies of your record will be printed. It is your responsibility if errors are not caught, no matter how much at fault the printer or separator may

be. Make sure that both you and your graphic designer are satisfied that the proofs are correct before giving your printer the go-ahead.

First check for mechanical errors. you'll be amazed at the mistakes that can occur in the process of converting your mechanicals into final negatives: broken lines, improperly sized photographs, or a line of type simply missing because it fell off the flats.

In the blue- or brownline, it is difficult to check the actual color, but an experienced eye can determine if a halftone will reproduce the original with fidelity.

Color keys will fairly accurately represent how the colors will look when printed. The word 'fairly' is used because it is impossible to match exactly the inks as they will run on the press. Your graphic designer will be the best judge of when the colors are right and will know what changes to request if they are not. If the colors are off, the separator should redo the work at no extra cost.

Printing

Upon acceptance of the proofs, the negatives are exposed onto metal plates which have been coated with photographic emulsion. After processing, one or more plates are mounted on the press. Each plate picks up its designated color ink and deposits it on a rubber roller, which in turn transfers the ink onto the paper. A quantity of paper must always be run through the press until all the inks are registering properly and the color is even. This is referred to in the trade as 'making ready'.

The fronts of album covers are usually printed on white, seventy-pound, gloss-coated paper, which gives them a slippery, or slick, feeling (the results are termed 'slicks'). Album cover backs are generally printed on cheaper, uncoated stock. you could request a glossy stock for the back, or perhaps a dull-coated paper for the entire album. 'Shore-pak' covers are printed directly onto cardboard. These are sometimes thinner and less protective than slicks which are printed separately and glued onto heavier

cardboard.

For economy and efficiency, full-color covers (and/or backs) are usually printed, or 'gang run', on presses that accommodate six, twelve, or twenty-four album covers. As color separations vary slightly from one to the next, the inks on the press will be adjusted to match exactly the colors for only one set of separations. Hence, all the other album covers being simultaneously printed will come out similar but not necessarily identical to the colors indicated on the proof. In the experience of most major and independent label artists and their designers, the color is almost always adequate.

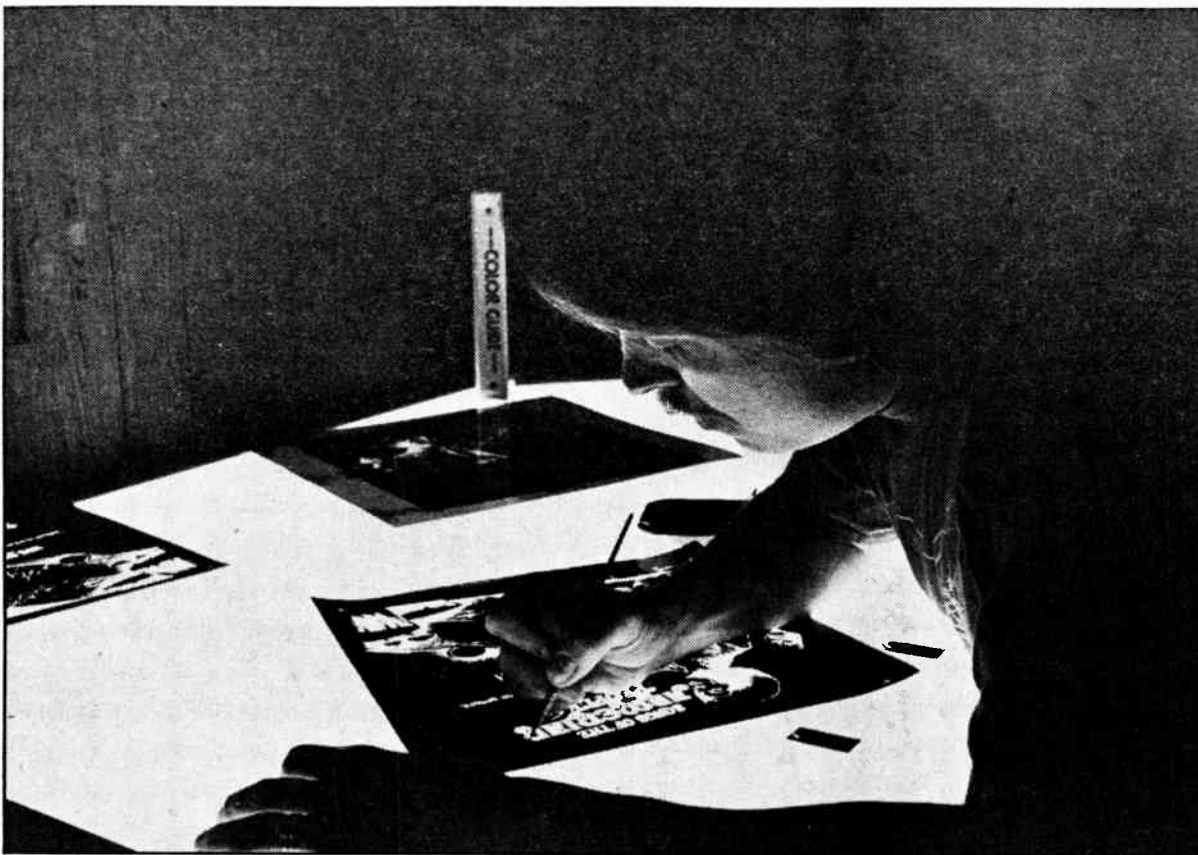
If you want the colors absolutely identical, you can ask the printer for an exact 'color match'. To obtain this, the printer will either run your job separately or adjust the inks on a gang run to your set of color separations.

One-, two-, and three-color printing is not gang run. These jobs are usually done on smaller presses, often requiring a separate run for each ink.

If the cover is complex and exact color and/or registration is essential, a 'press proof' will sometimes be requested. This is made after the press and inks are set up, but before the quantity run is actually made, to check how the final piece will look printed on the actual paper. Press proofs should not be confused with color keys or other proofs with which you will be furnished when color separations have been completed.

Fabrication

When the ink on the slicks or cardboard is dry, the covers are usually coated with varnish for further protection against scratches, as well as for a richer, glossier look. Some firms offer a more expensive form of coating, called lamination, which is shinier but requires different machinery, takes slightly longer, and costs more. Other firms omit varnishing entirely, stating that the paper they use doesn't need it. The ink may scuff easily, however. Always ask



The Stripping process involves preparing a separate sheet of film, the full size of the cover, for each color ink to be run on the printing press. KM Records, Burbank, California.

whether varnishing is included in the printing; if it is not, ask to see samples of unvarnished, printed paper.

After varnishing, the slicks are trimmed, glued on to cardboard stock, and then folded into covers. Printing firms often refer to these later processes, including varnishing, as 'fabrication'.

When the covers have been fabricated, they will be shipped to the pressing plant and collated with your records. Because records should be boxed immediately after they have been pressed, the plant will wait to press records until receiving the covers and any inserts that are being printed.

Labels and Special Inserts

The printing of labels is usually done by the pressing plants, not by the cover printer (unless they are located in the same firm), so that they can be pressed directly onto the vinyl at the moment the records are formed.

Special inserts, such as lyric sheets or postcards, can be done by a local printer, by the printer who does your covers, or sometimes at the pressing plant. If you use a separate printer, be sure to have the inserts delivered to the pressing plant in plenty of time for collating. Manufacturers will not press your records until everything is there and ready to be packaged.

Time and Money

It takes four to six weeks from the time your graphic designer ships the mechanicals to the printer to complete fabrication of your album cover. Mechanicals for your labels should be shipped at the same time as album cover mechanicals, since they will also take four to six weeks to be printed, particularly if color work is involved. Usually you would begin processing your master tape at this time as well. If you are having special inserts printed separately, make sure they are finished and shipped at the same time as fabricated covers so as not to hold up pressing records.

Price comparisons are difficult to work out in advance of knowing what your cover design will be. However, you can make rough estimates so that you and your graphic designer can decide on a method of printing, as well as what extras you can afford.

Most of the processes described in the preceding pages are considered individually by printers when estimating costs. The most commonly requested and most often used 'extra' elements are halftones or color separations, proofs (color keys and/or brown- or bluelines), different color inks, extra slicks, and varnishing. Optional, more expensive, and less commonly requested extras are press proofs, color match printing, non-standard papers, lamination, full-color labels, specially printed inserts, and double-fold covers. Stripping, which all jobs require, is also considered individually by printers.

Depending on your final cover design, these elements can add up to quite a bit of money. Detailed bids should be sought in writing from various printers by you or your graphic designer when the cover design is finalized; agreements made by phone should be confirmed in writing. Some printers combine costs for various processes and offer them at a package price; for example, some quote special prices for one-, two-, three-, and full-color printing with the cost of halftones, color separations, printing, and fabrication included in the price.



A portion of a halftone enlarged 6 times shows how the screening process breaks a continuous tone photograph or drawing into a series of tiny dots, making it suitable for offset printing.

Often, package prices don't include charges for important items, such as extra stripping, color keys, or varnishing. Prices seldom indicate whether the printing is onto slicks or cardboard. If you are considering package prices, make sure your final estimate from the printer details costs based on your final design. If you are also considering omitting a process offered in the package price—for example, color separations—ask for an appropriate reduction in the final bid.

Because the process of making separations is delicate, your graphic designer may request that they be made in a color lab whose work he or she knows and trusts. Unless you are choosing a special package plan priced for economy and efficiency, costs of separations at color labs will be roughly comparable to those at most printers.

The following outlines average charges or methods of figuring charges for the various printing processes. It will give you a rough idea of what printing is likely to cost.

The cost of converting black and white photographs to halftones varies from \$3.50 to \$15.50 per photograph, according to its size.

The cost of color separations varies from \$300 to \$750, depending on the size of the artwork, the reputation of the lab, and the nature of the artwork itself. For example, artwork containing both pastel tones and bold color is more difficult to separate than artwork containing only broad areas of bold color.

Stripping charges are usually figured at an hourly rate, depending on how many photographs (or other film work, such as reverses) are used, and whether the printing will be in one, two, three, or four colors. The process of stripping photographs and other elements for a two- or three-color printing job can be as complex and delicate as assembling color separations, and costs should be carefully estimated and compared when initially discussing graphics with

your designer. Occasionally the cost of halftones and stripping are estimated together, particularly for a one-color photographic cover or back, but it is always wise to ask.

Brown- or blueline proofs are sometimes supplied automatically, but often at an extra charge of no higher than \$20. You should always request them.

The price of separations usually includes a set of color keys or other proofs. If they do not, be sure to request them. The additional cost is usually no higher than \$50 a set.

Printing costs are usually based on using a seventy-pound, coated paper for the front and a cheaper, uncoated stock for the back. Requests for different papers will always increase costs, sometimes by as much as one third. Your cover can be printed directly onto cardboard, but you are likely to save money only if you are pressing at least 5000 records and the front and back cover are both full-color.

The cheapest method of printing is the one-color process with black ink for both the front and back cover. It is cheapest because it uses standard ink and paper, only one metal plate is involved, and the flow of ink can be more easily adjusted in the presses, thus wasting less paper in make-ready. A substitution of ink color rarely costs more than \$20. Printing cost for 5000 one-color slicks, back and front covers, averages \$350.

After this one-color method, a two-, three-, or full-color front with a one-color back costs the least. Printing costs for 5000 back and front cover slicks average \$400. The biggest surprise is that, if you discount the cost of color separations and/or stripping, printing costs for two- or three-color are roughly the same as for full-color. This is because most album cover printers consider two- and three-color printing a specialty job, to be run separately on different presses; the cost is comparable to gang running full-color with six, twelve, or twenty-four other covers.

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□ Most expensive is full-color on both the front and the back; costs average \$500 for 5000 front and back cover slicks. Color match will increase costs from one-third to one-half. If a press proof is desired prior to printing, it will cost upwards of \$100, since it will require setting up the presses and inks as though the job will actually be run.

□ No matter how many color inks are used in the final printing, you will find that the cost for printing covers drops radically as you order increased quantities. For example, one printer offers 1000 full-color slicks for the front covers including varnishing for \$225, but 5000 of them cost only \$263. This means that it's much less expensive to print extra slicks initially than to pay for reruns. A good number to run initially is 5000 to 6000, even if you only need 2500

collated with records. The printer will usually be happy to store the extra slicks until you are ready to fabricate them into covers. The printer will not, however, store fabricated covers, since 300 covers take up about as much space as 5000 slicks. You can request that some of the slicks be shipped to you for promotional purposes.

□ Fabrication of slicks onto cardboard averages \$135 for 1000 covers and \$500 for 5000 covers. Note that there is no significant cost saving with the increased quantity. For this reason, you should fabricate only as many covers as you have use for.

□ 7" record covers can be printed on coated, glossy cardboard similar to an album cover, or on thinner paper, similar to the quality of an album dust sleeve. As with slicks, the printing price drops radically as you order increased quantities. For example, 1000 four-color covers printed on cardboard cost \$525, while 5000 covers cost only \$560.

□ Label costs are estimated in a manner similar to estimating album covers. The most common and cheapest prices are for one-color labels, with a choice from six to ten colored papers and either black or silver ink. The average price for one-color labels for 5000 records is \$110. Costs for additional elements are extra, although they are scaled lower because of the label's small size. Separations for full-color labels, for example, average under \$100.

□ Design, typesetting, and layout charges for labels tend to be reasonable, since some of the copy and artwork on the album cover will be repeated on the label. Although printers offer these services, it's best

to supply camera-ready artwork—it keeps the look of the label consistent with the rest of the album package design. All manufacturers will supply explicit information about label sizing and proper preparation of artwork.

□ Some printers offer package prices for both the design *and* the manufacturing of covers (called 'stock' or 'economy' album covers).

Remember: any special requirements, even ones that might seem minor to you, can result in an astronomical rise in costs, as can *any* changes in the original artwork once the processes have been initiated. A graphic designer experienced in album cover design can steer you away from costly extras and last-minute changes.

Tight Budgets

Once your album cover is designed, it is very difficult to trim actual printing costs, as they are directly related to the design. However, you can cut some of the luxuries to fit a tighter budget.

You might decide on an economy package plan and avoid having separations made at a different lab; you might omit printing a lyric insert until a second pressing; you can choose to have your labels printed in one color.

There are also things you should *not* omit. Don't decide against ordering proofs—they are your only check against error; don't run smaller quantities of your cover, as costs for much larger runs are negligible. Finally, last-minute, panicked changes in the original artwork are almost always a disaster. ☹

ONE ON ONE

You're a band. You've worked long, hard hours to get your music together. Now you're ready to put it on tape. You want to know that the person behind the board cares as much about your sound as you do. When the tape starts to roll, you want an engineer who approaches his job as though he were a member of the band—someone who's involved.

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DOO REVIVING DOO OLD MASTERS

by David Schwartz

Traditionally, best selling albums and 'audiophile' quality have been mutually exclusive concepts. The reasons were obvious. A million-plus selling album required maximum mileage for each metal part, frequent compromises in vinyl consistency and relatively little quality control. Speed was essential, in that hit

ty came up with an interesting idea. They decided to acquire the master tapes of several popular and well recorded albums and remaster the discs to the most exacting standards, process and press the discs with great care and precision onto the finest quality vinyl available and then package the album in a way that

and amps, JVC transfer console, Scully tape transport with hand-made electronics and Saki glass ferrite heads and a John Meyer Sound Labs monitor system. There are no transformers between the playback head of the tape machine and the cutting head at the disc recording end. This feature, Stan



albums had to be processed and shipped quickly enough to capitalize on the popular demand for the record. Although defective discs were frequently returned, most of the record buyers were less concerned with the sonic quality of the record than the fact that they had a new record to play. Playback systems, too, were of such a level so imperfections in disc quality were par for the course—a course which included mandatory amounts of turntable rumble, phono arm and speaker resonances, wow, flutter and a smorgasboard of distortions.

The last few years, however, have brought about a renaissance in audio awareness. Great strides have been made in the quality of sound leaving the recording studio and, simultaneously, high levels of stereo component quality have begun to reach the consumer. For the most part, though, the average pressings have not improved. Vinyl quality and large scale pressings are still a thorn in the ear of the serious music listener.

Perceiving this dilemma, the folks at Mobile Fidelity

would provide safety for the fragile product.

This kind of treatment isn't cheap. In fact most of their catalog lists at about \$16 per disc. But for those looking for quality sound in some of the classic albums of our time, the good listening may justify the price.

Mobile Fidelity was formed twenty years ago by Brad Miller, a producer whose fascination with recording environmental sounds led him to the production of several Mystic Moods Orchestra recordings. It was only in the last two years, however, that Miller teamed with former radio program director Gary Giorgi and mastering engineer Stan Riker to produce their "Original Master Recording" series, a catalog which includes

such titles as Pink Floyd's "Dark Side Of The Moon," Supertramp's "Crime Of The Century," Steely Dan's "Katy Lied," The Beatles' "Abbey Road," Fleetwood Mac's album of the same name and about twenty other best sellers.

The program works like this. Gary will usually decide what album they should next pursue, based on personal taste, sonic quality and proven sales ability. Next, they approach the original label to secure a licensing agreement on the original two-track master tape. This license ensures that artist royalties are paid and that the label has the right of technical approval of the project.

Upon acquisition of the master tape, the disc cutting operations become the responsibility of Stan Riker, a former JVC cutting engineer whose background includes three years of heading up quality control at a pressing plant. Stan does Mobile Fidelity's cutting in a room which they lease from JVC. The room, which incorporates extensive modifications for Mobile Fidelity's special purposes, includes a Neumann lathe with Ortofon cutting head



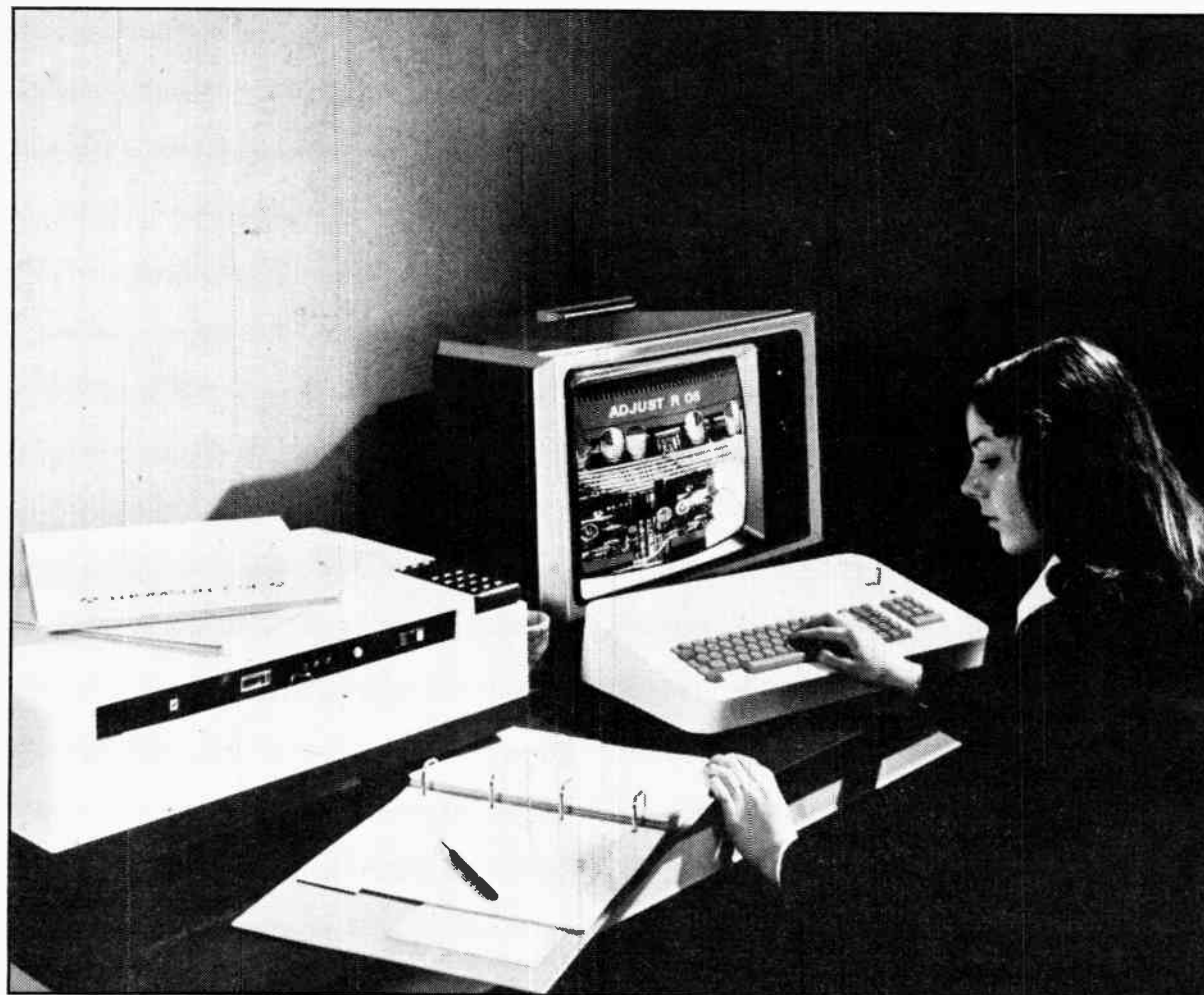
points out, compares with six transformers per channel in conventional cutting and results in much better stereo imaging.

The actual cutting is done at 1/2 speed. For instance, if the master tape is recorded at 15 ips, the disc cutter is run at 16 2/3 rpm, while the playback deck is moving at 7 1/2 ips. This allows the cutter to better respond to the high frequency excursions. There is no equalization, compression or signal processing added at the cutting stage, in order to preserve the sound of the tape as it was mixed in the studio.

The freshly cut lacquer is then refrigerated and shipped to Japan, in thermal packaging, where it is carefully plated and then pressed to Super Vinyl. Victor of Japan developed Super Vinyl which is, according to Gary Giorgi, "about three evolutionary steps better than the CD-4 vinyl that we started with two years ago." He describes Super Vinyl as being very hard with less surface noise, less inclination to

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Marketing the Videodisc



Thomson CSF Videodisc Player, microcomputer and display

by Linda Feldman

New York 1976, *Billboard Magazine* — "The types of software (program material) likely to be distributed on the new video disc formats — and the role of the music industry among others — is the theme of the first annual International Videodisc Programming Conference." Today, 1980, the videodisc player is no longer just a dream in the minds of research and development departments. The videodisc software producer has evolved.

Of the 27 companies that were working on the videodisc player in 1976, only a handful have risen to the surface: Magnavox with a consumer and industrial unit, Thomson CSF for the institutional market and RCA, consumer.

What will the market bring forth in the 1980's? Let's take a look at the above three systems to get an idea of what we can expect from this evolving medium.

System 1 Consumer & Industrial

With the advanced science of N.V. Phillips of the Netherlands and America's MCA, a joint venture of technology allowed the first consumer optical videodisc player to be selectively marketed by Magnavox in the U.S. (Atlanta, Seattle and Dallas), in 1979.

IBM joined forces with MCA to assist in developing, manufacturing and marketing of the videodisc software and these two companies will be equal owners in an association known as DiscoVision Associates. The consumer disc is currently being distributed through MCA, under the name MCA DiscoVision.

Through a joint venture between Universal (MCA) and Pioneer of Japan, an industrial model, differing slightly in design from the consumer model, has also evolved and has been sold to such giants as General Motors.

The consumer player currently has a suggested retail price of about \$775. MCA offers a typical half-hour videodisc program at a suggested retail price of about \$5.95-\$9.95. A complete two-hour recent feature film retails for about \$24.95.

The Magnavox player employs an optical system — a tiny laser light beam — to relay images and sound from the videodisc to your TV screen. The player optically scans the recorded information on the disc to recreate a clear sharp picture and reproduces sound through the television receiver. The technology in this videodisc player makes possible the high density storage of visual images and sound on a durable disc.

Ron Hill, Magnavision Sales Manager reports, "No needle or stylus ever touches the disc, so that repeated play should not wear out or diminish the videodisc quality." The plastic coating on the 12 inch videodisc protects it from finger prints, dust and surface scratches.

The compact videodisc player is quickly and easily attached to the antenna terminals of any home color or black and white television receiver. With few moving parts, the player is as easy to operate as a conventional phonograph.

In the standard play mode, the system allows the user to stop, slow or reverse programs at any given point desired. Additional features include random access, fast motion, instant replay and frame by frame readout. Any one of up to 55,000 frames on a disc can be located within five seconds. The Magnavox disc currently has a playing time of 30 minutes per side. A one-hour extended play is also available, however, some features such as freeze frame are sacrificed for this extra time.

The system's stereo audio track can also be handled through a home stereophonic amplifier to reproduce a higher sound quality than is now available in home televisions. Unfortunately, most current software is of *monaural* configuration.

Both channels of audio switch on automatically through the television. Each of the sound channels are available at the rear audio panel connection through stereo aux for stereo or bilingual (a different language on each channel) programming.

Available through licensed dealers are such films as "Jaws II," "Animal House," "Saturday Night Fever," and classic Marx Brothers movies. Fotomat is expected to rent or sell the disc sometime in 1980. The videodisc will also be available through mail order or telephone, from Spencer Gifts, a wholly owned MCA subsidiary.

In addition to feature films and music, "how to's" can be purchased. The problem with many of the instruction materials, though, is that they have not yet been specifically designed for the videodisc consumer. Learning to play tennis, golf or cook your favorite dish in the kitchen does not always work when your player is in the bedroom or recreation room. If the consumer is to receive maximum benefits from instructional materials, they must be carefully produced and directed.

System 2 Institutional

Thomson CSF, (Part of The Thomson Group of France) has developed an optical videodisc player and a prerecorded videodisc system. The product is currently being used by Hughes, Westinghouse, the U.S. Army, University of Iowa, the medical profes-



Thomson CSF transparent disc

sion and others. Within these markets, the unit is being used for training, maintenance and education.

Current cost is \$3,500, although the price is expected to come down within the year. The uniqueness of this system is that the player is able to read the information on both sides of the clear disc without having to manually turn it over. The player is thus able to focus on one side of the disc without interference from the opposite side.

The 12 inch flexible disc is a thin foil of clear plastic material and is stamped as a two sided recording.

Not meant to be handled, the disc is packaged into a cassette consisting of a tray, which holds the disc, and a sleeve that encases the tray. For play, the cassette is inserted into a slot at the front of the player. The tray is engaged by pulling the sleeve out as the tray and disc automatically remain in the unit. To remove the disc, the empty sleeve is reinserted, which disengages the tray and removes the entire cassette.

The modulation of recorded signal corresponds to variations of successive spaces between the edges of the micropits along the axis of the track. To each revolution of the disc corresponds one complete interlaced video frame in order to afford easy playback of freeze frame or speed different than standard program.

It must be remembered that the U.S. works on 60 cycles and Europe 50 cycles. The U.S. operates on 30 frames per sec and Europe 25. The U.S. disc spins at 1800 RPM (revolutions per minute) and Europe 1500 RPM.

Thus, the disc is not compatible between the two continents and a separate duplicating system must be used for the two standards. With a bilingual teaching aid, the multi language is good within a specific standard.

Thomson CSF has reached a non-exclusive agreement with 3M, in the United States, to reproduce their software here. The play time is 27½ minutes per side or 55 minutes complete uninterrupted playing time. Extended play time of 110 minutes is available, however, like Magnavox, certain features must be sacrificed, i.e., freeze frame.

The optical videodisc player has such features as slow motion, normal play, freeze frame, remote control, etc. The player can be used with any television receiver, TV monitor, audio equipment and computer.

With the two channels of audio that are possible, you may find instructions for the teacher on channel one with channel two for the student, or a two step learning course.

Thomson CSF uses the same unit in Europe and America. They have simplified the design of the player so that by inserting a different printed video card, the same machine can be used with either standard. A servo-controlled motor is also used.

Warren Singer, V.P. of Thomson CSF explains, "We have a "wait and see" attitude about entering the consumer field. We know that the program material is of extreme importance for the success of the consumer market. You can't just take existing material and transfer it over." Thomson has developed a prototype for the consumer market and a prototype record unit for broadcast. Judging against the competition, the record unit is way out of \$ range for the consumer market.

Thomson's institutional videodisc software is designed to solve problems and add computer assisted instructions and should be a strong contender in the 80's.

System 3 - Consumer

RCA is the newest contender to the consumer marketplace, with a capacitance system and 15 years of research and development. The marketplace should see the videodisc player and disc software entering the stores by December 1980; full market penetration by the first quarter of 1981.

Like Magnavox and Thomson CSF, the unit is playback only. Unlike these two companies, it is not an optical laser disc system. The capacitance system employs a grooved disc that is played with a low cost diamond stylus. According to Dr. Jay Brandlinger, head of the videodisc operation, the discs have been tested for hundreds of hours of play.

The disc revolves at 450 revolutions per minute. Play time is currently up to one hour of programming per side.

What makes the RCA system so attractive is the price, expected to retail under \$500 for the 1981 entry. The fidelity and audio are reported to be competitive with the optical systems.

The 12 inch disc is stored in a plastic sleeve which resembles a record album cover. The sleeve, when inserted into a slot at the front of the player, positions on the turntable. The disc is removed from the machine by reinserting the empty sleeve, much like the Thomson CSF system.

The videodisc player interfaces with any television set. The first 200,000 to 250,000 units are expected to be in a mono configuration. With most of the production material currently available in monaural, this should not create too much of a problem for the consumer. By the time productions and televisions evolve into stereo, one thinks that RCA will have a stereo unit on the market possibly at a lower cost than the Magnavox units.

The catalog division is being handled through RCA SelectaVision. The first year's catalog is ex-

pected to have some 300 titles, several in the \$15-\$20 range according to Herb Schlosser, RCA SelectaVision Executive Vice President.

The program material will consist of feature films, music and "how to" programs. Recent agreements have been reached for Walt Disney, Don Kirshner and Charlie Brown programs.

SelectaVision appears to know the importance of a good strong catalog for the consumer in order to successfully market their system. Like some other software companies, narrow casting will be available (production of specific topics for small but well defined markets). The consumer with specialized taste already knows that television networks can not afford to always produce to his or her taste.

Summing it all up

European, American and Japanese companies are acquiring licenses. For example BSR, Clarion, Mitsubishi, Pioneer, Plessey (Garrards parent company) Sharp, Toshiba and others have acquired the RCA, although a license does not necessarily mean that a company must, or will manufacture the unit. In 1979 Sony unveiled a videodisc player of their own. Sony and Phillips exchanged patents covering the video technology of the two companies.

Who else is in the wings? Mitsubishi with their Vis-O-Pac and JVC with VHD/SHD. Which way will they go? With their own system or another's?

1980 is just the beginning. In the next 10 years home computers, videodisc players, video tape recorders, audio discs and 50 television stations in every home will be as common as turning on your television is now. The audio/video record production will be a challenge to many talented artists. The prospects are exciting, the technology is here and the popularity is just around the corner. ☺

Linda Feldman was formerly Training Manager for TEAC, a sound engineer and studio manager for an audio/video post production house for film and television. Currently, Feldman is a marketing consultant to the audio/video industry, where she has worked for such companies as Billboard Magazine.



The Magnavision optical videodisc player

HITSVILLE



GUY COSTA and MOTOWN STUDIOS

by David Goggin

The Motown recording studios, officially titled "Motown Hitsville, USA," have just completed a massive \$2,000,000 renovation. The company has had a profound effect on the music industry and the new recording studios reflect that position. The studio is headed by Guy Costa, a man in his mid-thirties with half his life spent in recording.

Guy is crisp and definite in his speech and mannerisms. He deals energetically with a staff of 35, three studios, disc mastering...in other words, a big operation. Curiously enough, there is a feeling of warmth and a family atmosphere as he takes me on a whirlwind tour of the building. As the finishing touches are being made, we encounter engineers tweaking machines, tech men installing monitors, workers drilling holes, and decorators putting up woodwork. Through it all, Guy is greeted by everyone like the mayor of a small town. They seem to enjoy his presence and everyone waves and smiles along with their particular reports. He is obviously in touch with every phase of the operation from security and maintenance to engineering and traffic. He is accessible. He takes the phone calls and reviews the requests. He walks a carpenter through a problem and offers suggestions. He is an obvious choice for top man in a studio.

LE USA'

Where did all this begin?

The original Motown studio began in the basement of a house in Detroit about eighteen years ago. When we came to Los Angeles in 1969, we had a temporary location until the Poppy Studios came up for sale in '71. That's the building you're in now...a building specifically designed for recording. In 1978, I made a proposal to Motown to spend \$2,000,000 for major changes and also proposed that we open the studio to outside clients.

Have you been "down" since 1978?

No...in fact, last year was our biggest year. Under construction, we never had more than one studio down at one time. It's murder, believe me, with the contractors and construction crews. We worked during odd hours. We had relays and lights flashing. The "record" light would go on and we would have gigantic floodlights light up and all the workers stop. It was hysterical.

What percentage of your clientele will be Motown artists?

It'll probably be 60% outside, 40% inside.

Will Motown artists have priority on time?

We've agreed to give Motown the option on block booking time. We will always leave one studio for Motown...open to the extent that if an outside client wants to book in, he may be dropped out with a few hours notice, and with that will go a reduced rate.

What changes have resulted from your opening the studio to the outside?

Well, for one thing we are more conscious of the appearance of the studio and the extras involved in a session. It used to be: "So what if the furniture is old...tough, you're not getting any wine with your session..." The philosophy, the attitudes, and the people have changed. Now Motown is a client, just like everybody else.

How do you deal with a staff as large as this one?

Well, we have started a training program for all the assistants and the technical people. We've come up with a system of accountability. In an organization as big as this one, it's very difficult to find anybody responsible for anything. We have a system where, on a rotating basis, one man is in charge of one studio. He is responsible for maintaining the studio properly on the engineering side. One assistant is

responsible for the overall cleanliness. Not only do we have accountability, but a more equitable way of evaluating individual responsibility.

Considering how close you are to the center of Hollywood, it's very quiet here?

It is a secluded spot. We have a park across the street. There are tennis courts. There must be a dozen nice restaurants nearby. One of the things we are putting together is a studio handbook for new clients with miniature track sheets, and maps of this area, office extensions, lists of restaurants, and services...something that will help make the place immediately comfortable.

Could you elaborate on your training program?

The training program is designed to get everybody familiar with our Neve/Necam systems. We want to get everyone, first, back to the basics of recording. The days of E.Q. are waning very quickly. My whole concept is: go into the studio, see what's there. If you get it in the control room, fine. If you don't, start all over again. If that means exchanging your microphones, changing your baffles...then do it. You have to get the right sound first, before you start changing it. The basic philosophy is capturing what's there...and then modifying it as a science or an art.

Have we gone through a period of processing overkill?

We have gone through a period of disaster cases. You can pick out the records...you can actually pick out *sides* on a record that are good or bad. The evolution of recording over just the last year has been tremendous. We're finally getting sounds back together again. We are focusing what the reality of sound is all about. Standards of clarity and cleanliness are being set...standards that were all too often just thrown away in an attempt to get everything...to get the kitchen sink on the record. Some of the smaller studios have put the focus on us, the bigger studios, to be conscious of keeping it clean...opening the sound up, and taking the time at the beginning. A lot of the bigger studios are manufacturing operations that just crank 'em out. We don't want to get like that. I think the success of a studio is in the number of clients who come through and the evolution and development of sound as opposed to blocking out a studio with one artist for six months. I would like this studio to be involved with a lot more and varied producers. It'll give our assistant engineers, the engineers we have in-house, a broader scope.

Even though you have millions of dollars worth

of equipment, you are trying to get back to the source...?

Right. What has happened is we got into a multi-track dilemma in this industry because we had tremendous flexibility. But we lost control of the flexibility to the point where we could add everything but the kitchen sink to the multi-track master. Then we would look for the genius who could make sense out of this cacophony of sound. Well, he didn't exist. All you had was garbage...and another thing, people didn't listen in perspective.

They would be doing vocals and you would be lucky if you heard the other tracks. You might get a great vocal, but when you laid it in with the other tracks, it disappeared. And everybody was a soloist. Listen to the multi-tracks. Every track...even five or six tracks of drums...every track is a solo. You would try to put them together and it didn't work. What is happening now is getting back to the basics. Let's have the flexibility, but within the guidelines of reality. Keep it so it does lay together. That's our philosophy here. Every time somebody does something here, they can go into the producer's room and listen to it in perspective. Listen to it and say: "How does it really sound when I'm not in the control room, hyped up with the flashing lights...where is it when I have to walk out of the studio emotionally detached from it?" Our producer's room is a big comfortable room where you can get away and sit down, listen to a hi-fi system...punch up your studio. Compare your records...play somebody else's records. Get an idea of what your mixes are. If you really want to get carried away, go up to the disc room...cut a disc and know immediately what you have.

Hi-fi systems have gotten better...so the sound has gotten better. We have set certain standards...the acceptance of jazz in all formats, the direct-to-disc, the digital...standards that pop music has got to reach for as far as quality. So now we are reaching for that.

What about digital?

Well, we had all of the digital machines in. We had the Sony, the Soundstream, and the 3M. We had all three in simultaneously for evaluation. We did a comparison test of live versus recorded sound on the three digital machines. Probably the most important thing that came out of it was the fact that our consoles, fortunately, were at least 6 to 12 db quieter than the throughput of the machines.

What was that word...throughput?

OK...it's difficult to do a live-to-record comparison, because what happens is you never get the same

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performance from the performer as you get from the digital playback. So the way we set up the test, everybody lined up their machines properly. Then we did a complete AB comparison...input to output, tones, tapes, toneburst...all that funny stuff. Then, once we assured ourselves that the recording medium itself, the tape, did not add any coloration to the A-to-D, D-to-A process, then we just bypassed the tape, then went A-to-D, D-to-A electrically...so the "thruput" means you're not going through tape, you're going through the conversion process, and back down to the conversion process and listening to it at the exact second that it went in. What we did was compare the live to the A-to-D, D-to-A output of each machine. We had a vocalist. We had a good piano player. We had a percussionist. Rather than get creative and try to do a tune, we simply compared sounds. This is a bell...this is a chime. Back and forth...live to thruput...and that's how we performed our analysis of the digital. We found that all three machines were more than acceptable from a quality standpoint. I would really not care at this point to make a commitment as to which one I felt was better. To be honest with you, things that were good about one machine, or better in one machine than another...(and I'm not talking about mechanics, I'm talking about the sound)...one had a little bit tighter bass...one a little clearer top. One was a little noisier...that kind of thing. Given the test, it was very difficult to make a decision.

So this was a decision to go digital?

No, this was a decision as to what digital machine would I want to pick. We've already decided to go digital.

When will it happen?

Probably within the first two quarters of 1980.

Will everything in the studios be digital?

The recorders will be. That's a big problem for me. Right now, the only company that makes a multi-track recorder that's available is 3M. Soundstream will be available by leasing. Sony has a 2-track mastering system...by June they will have a multi-track system. But my problem is...You know I really believe in standardization in all three of our rooms...I feel that once I commit, whether it be in the multi-track and mixing format, or just the mixing format...once I commit, I've got to go through all three studios. We have a lot of clients coming in and out. Once we start, we are going to have to stick with it. It's a major commitment and it's upwards of \$500,000 to convert.

How will that effect the ease with which somebody might do some of their tracks here and some elsewhere? They have to do it all here, right?

Well, that's not our intent...but the only multi-track format that is available beside A&M, the Record Plant, Warner Bros., and then ourselves...it doesn't exist. You start digital and that's where you end up.

But let's say we have a major client in here...perhaps the Commodores or somebody like that. They elect to go digital but they want to work in other studios while they're out on the road. They would take an analog transfer with them to use in any conventional studio, and then when they return, we use an interlock system and lay the analog masters back into the digital multi-track master.



Sunrise Studio

I think the most important thing is to get the original tracks digitally, to get the overdubs, sweetening, and stuff like that digitally, vocals and things like that. The way it's coming down, it's hard to say...A lot of people are taking pilot tracks home and playing with them...practicing their vocals...and once they finally have exactly what they want...they go into the studio and say: "Now, let's lay it down." They'll spend three or four hours and replicate the performance that they took a month to work on. Artists are concerned with cost right now. They know that they can't afford to spend two or three hundred thousand dollars on an album, 'cause royalties just don't pay back that fast. So they are looking for more efficient ways of going about it.

Do you think that digital will provide a superior end product?

There's no question about it. What it does, it allows you the ability to more easily manipulate in the mixing end. You don't have the tape noise to worry about. You don't have phase shift to worry about. You don't have the multiple generations and the ping-pongs...and all that kind of stuff. That coupled with a good mixing system...and we have the Neve/Necam system in all three rooms...gives you the ultimate flexibility. You can just pop tracks in and out wherever you want. You can equalize 'em to death...and you don't have the problems that are really inherent in the analog state. Yet there are still people that use the analog format itself for its own color. We may lay the rhythm track down on analog because that's what the producer wants and then transfer it to the digital master.

Then you will have the analog capability?

Yes...we have our analog multi-tracks and also synchronizers. We have the API synchronizer, the BTX, we've even got an old Unilog system and all kinds of resolvers.

How many rooms do you have?

We have three recording rooms: Sunset, Sunrise, and Dawn. Each room has the Neve/Necam 8078

console and is equipped with two multi-tracks. They all have access to the live chambers as well as the EMT's. We have seven live chambers, five EMT's, some Fairchild's and a few funny little echo chambers that people might want. Mixing is automated with the Necam system...the one where the faders move up and down.

The big room is quite big...how high is the ceiling in there?

The ceiling that you see is 22'...and then there's another 8' above that. So it's thirty feet to the top of the building. There are two dimensions that are important in the room. The outside dimensions are 40' by 50', but suspended within the room itself are four internal curves...diffusers, and they're all tuned...bass baffles, low frequency absorbers...

Who designed the room?

B,B,& N (Bolt, Beranek & Newmar) are the designers. The studio was originally designed and primarily set up for live and natural type recording...not a dead studio by any stretch of the imagination. Most of the new studios today are into live and natural...as opposed to dead sound. We had this in '69. Through 1975, probably 70-75% of the Motown records were done here...a little less in the latter years. It's a very natural sound. Most people think of our rooms as "live". We use baffles to bring them back down. We have thirty 5' by 10' baffles that can be moved around.

What was the biggest group of musicians you had on one date?

I had thirty-nine in here on a scoring date. That was with the older console and we only had 24 inputs.

How many do you have now?

We have 40 inputs and 32 auxiliary on each console and we have tie-lines that make it possible to use two consoles on one date.

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What sort of monitors do you have?

Well, first of all, as I see it, you've got two monitor philosophies. Those that tend to go with the Altec, UREI, Time-Align system and then you've got the super-fidelity speakers: the JBL's, all the esoteric extended range monitors. You've got people that just refuse to work in one or the other. But there is a compromise, because obviously you've got people that mix their records on one format and they come out decent...and you've got others that mix on the other and their's come out decent. So obviously, there is a common bond between the two. Maybe we are looking for the pie in the sky, but we are looking for the compatible speaker system...one that satisfies the hard core, old line producer...the guy who cut his teeth on 604's...and that's what he really likes. I'm talking about the whole type of 604...the Mastering Labs, the Big Reds, the UREI's and that type of thing. The people who are used to that system feel that they have to work hard to get their mixes...and that's what their success is. The people that are used to the full-range systems say that they can hear all the nuances and idiosyncrasies in their mix...or they tend to concentrate on what the problems are. Obviously, the common bond is hit records. I think there is a way to get to both...and we're looking to do that right now.

We are now at a complete four-way system using dual 15's, a 10", a 1" midrange, and a 1/2" super-tweeter. It seems to do the job...as of three hours ago anyway.

Could you talk about the operation of your staff and studio?

Maintenance starts at 6:30 in the morning everyday without fail and that's our standard. Sundays are excluded unless we have a session. We have three daily shifts. Morning shift starts at 6:30 AM, we have a shift that starts at 3 PM, and one that starts at 7 at night. We have six maintenance people and an engineering secretary. We have three people in the traffic department, five engineers, and seven assistants. We run about 35 people. Our hours of operation are 9 AM to 3 AM and our rate structure is one rate, 24 hours a day...it makes billing easier: \$150 an hour for everybody, with full use of everything in the room.

Who has recorded here in the past year?

Since we opened up to the outside, we've done the Kenny Rankin album, we did some of the Diana Ross, Germaine Jackson, the Commodores, Conway Twitty, Smokey Robinson, a couple of National Geographic scores, some commercials...

Do you engineer?

Yes, 2 or 3 times a week.

How do you see engineering evolving?

Well, engineers are now co-producing frequently...points are being made available for particular engineers...advances and things like that.

Are more women entering the field?

Well, we have five female engineers.

Were they trained here?

They cut their teeth here...in fact, Jane Clark did most of the work on the Kenny Rankin album.

How has the engineer evolved from a technician to a person who is part of the creative process?

Because the technical end became so heavy, the more successful producers evolved out of the engineering field...Phil Ramone, Richard Perry, and others...the majority of them are ex-recording engineers. Because they came out of that area they tend to work with people that are recording engineers. Their position is one of "OK, let me sit back and produce...but I know exactly what I want from an engineering standpoint, so I want to find a higher quality recording engineer to complement my approaches and techniques." It is virtually impossible to engineer and produce simultaneously. You can't do it...you're not being fair to yourself...your artist or anything else. You can't be objective about the creative performances and at the same time technically tune in to all of the ramifications of engineering. You just can't do it. That's one of the reasons I have elected to concentrate on producing, but still do

We have a philosophy about equipment. We add quite often, and when we buy a piece of equipment that a studio would normally rent, we rent it to our clients until we have recovered our investment and then it is available at no charge to whoever comes in.

Can a studio ever stop?

My feeling is that anything that you do in a recording studio today...you have to be willing to change it in three years...totally change it. Otherwise, you shouldn't be in the business. I think we are going to see a lot of acoustical changes in the studios themselves...as opposed to the control rooms...over the next few years. There will be a tendency to get back to live, well-diffused rooms...a lot less baffling, goboes...more extensive use of microphones, more natural sound. I see a lot of work on live chambers, various chambers for various instruments, chambers that are tuned for individual vocalists...chambers that are actually tuned with glass or whatever, for that particular quality of sound that someone is looking



Dawn Studio

some engineering. It gives me the opportunity to give the people that are here the benefit of my experience...to bring them along with the way that I engineer, coupled with other engineers that come in and use our facility. Our people can get a broad perspective. Recording engineers are getting both creative and technical experience and are participating. A lot of artists are producing themselves now and the engineer gets involved. He gives some objective creative input. As I see it, there will be more and more points available for the recording engineers. Obviously, we are talking about the cream of the crop.

I also see the time coming where the recording studios are going to be part and parcel of the productions...maybe even to the extent that studios will participate in maybe a point or two on an album. It will contribute the whole being of the studio to creating a hit product...staff, extra engineers...taking that income as part of a profit sharing plan...taking on some of the brunt of the costs and investing in the albums.

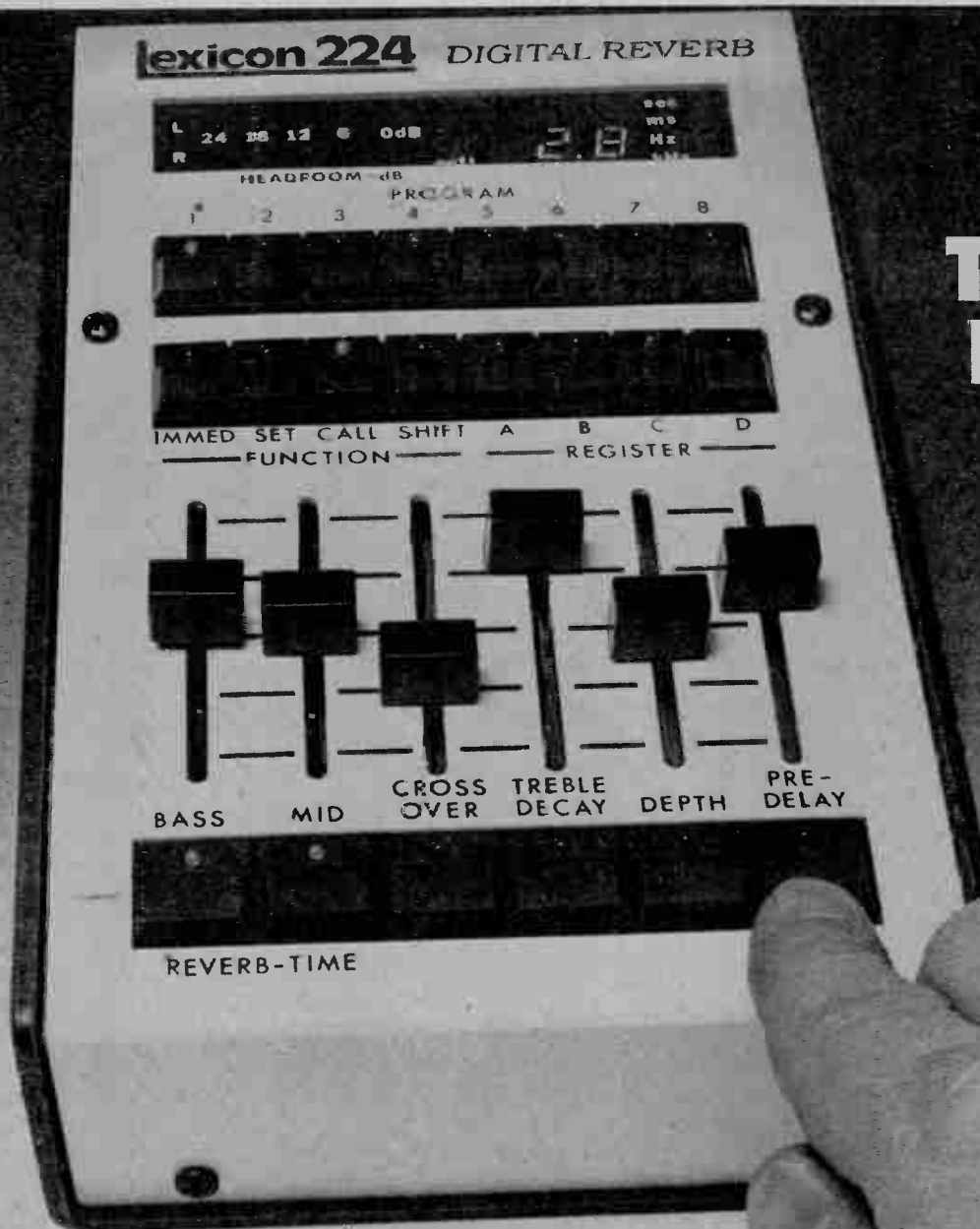
How often do you add to your rack?

for. There will be a concentration on acoustical delays. For instance, we are building eleven acoustical delay lines in the basement. They are 4" pipe, tapped with microphones along the pipes, individually equalized so that we can have a variety of acoustical delays. We can bring them in to feed the echo chambers. I see taking a couple of our chambers and cutting them down to almost half the size...to maybe 900 cubic feet, and making them hard, for image enhancement and doubling-types of effects.

So there's always room for experimentation?

Totally. I also see some sanity returning to the levels that people are using in the studios. One of the things that I am really critical of is reference levels in monitoring. You should try to monitor between 90 and 95 dB SPL in a room so you always have a point of reference. I try and teach our people that in every studio, if you take a zero signal, and turn your volume control up to 2 o'clock, that's 90 dB SPL approximately. That's the level you should be listening to at all times. Over a five or six hour period you

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maybe go to 3 o'clock or 3:30, because of ear fatigue. If you find yourself going past that point, you're losing it. It's just a normal check and balance. A sanity type of thing. I'm a stickler for bringing a point of reference into a studio and going back to it as you're doing a mix...whether it be a record that you've done before, a tape, or a record that you're targeting for as far as a sound concept...and during the period of a mix, maybe even every hour, sitting back and listening to it...so that you're not saturated with the same thing. I've found that when you concentrate six or seven hours on a mix, the ear tends to even out the anomalies that should be dealt with electrically or acoustically. It's really important to keep a fresh perspective.

This is obviously not a business that someone can get into without some capital.

Well, you can't even start a room with any significance for under three-quarters of a million dollars.

Does that leave room for smaller studios?

There's always going to be room for smaller studios. You have people that can't afford to spend the bucks for top of the line equipment and million dollar rooms...budgets that will only tolerate \$100 an hour. There's always room. It's from these new, young guys, in the smaller rooms...the guys that are working their butts off, that the new ideas come. A very good friend of mine owns Power Station in New York, Tony Bongiovi. I can remember when I was back in Bell Sound Studios in '67, '68. Tony used to come around with these ridiculous, idiotic questions...he was new, just learning. We'd build an amplifier. He'd take it home and try it...experiment and everything. Tony right now has one of the hottest studios in the country. It's guys like that, that make our industry. Young kids that come in and just have the instinct and the talents. So, you can never turn your head. I wish I had a program where I could have four or five trainees at all times...a 90 day to six month training program, free of charge...use 'em for golfers...get 'em in the studio...and see what kind of talent pops through. Because, I tell ya', there are a lot of kids I would have liked to have brought in, but I don't really have the vehicle for handling them. There's nothing worse than getting six guys in here...all sitting around. We are hoping within the next year to develop a more inclusive training program to the point where we can get some more trainees in here...and see what pops up. We are playing with novel ways of dealing with people...new talent.

What do you look for in potential new blood?

Well, so much of it is personality...someone with a good sense of logic. Good musical sense...not necessarily the ability to play an instrument or compose...but someone sensitive to music. Someone who can listen to a record and be conversant about what they like or don't like. Someone who has a logical approach to problem solving...a fair amount of manual dexterity is important...a person who has a sensitive personality...a good mixer, somebody who has a fairly well-rounded background, so that they can communicate with the artist...someone who is not interested in getting the autograph of every artist that walks in the door. Someone who knows their place. Someone who is willing to serve...because, we are probably the most service oriented business that exists. That's what we're here for. We are here to do a very technical job in a very creative fashion. Part of the job of a good engineer is to make sure the date

always keeps moving. In the end, the client appreciates that. We need people that are dedicated...people that are looking to engineering as a vocation...because you're not immediately going to make a lot of money at it. You're going to be here for four or five years before you make any bucks.

But if you ARE good?

If you are good, you can make \$100,000 a year...easily. It's nothing today...some of the independent engineers are working steadily in excess of 30 to 40 hours a week at a comfortable \$30-\$40 an hour. That ain't bad...and there are guys that are making a lot more. When you get to that level, the trend is to go into production. A lot of engineers take a real kick in the pants from a monetary standpoint just to get their opportunity to produce or co-produce...because you tend to get in a rut. You've been mixing for ten or fifteen years...you've tried about everything. Experience tells you what microphone to use...

Will there continue to be room for more people to enter the business?

There's always room for good people...because the industry is full of bad people. The good go to the top. We as an industry have taken a good hard look at the fat. Motown has obviously trimmed...everybody else has trimmed...and the studio is taking a hard look at its people. I would rather have fewer people...give 'em a few bucks more and have 'em work harder, than to pull people along.

A good engineer has to listen to what the client is *trying* to say, not necessarily what he *is* saying. You have to understand what the artist is trying to get across. If he is having a hard time getting a headphone balance...doesn't like what he is hearing...stop trying over and over to get a balance. Go out there and put on the headphone. Talk in the microphone...listen. Communication and sensitivity are the keys. One has to understand the pressures on a big date. It's important to get the lights right and all the little things. We even have a client file that lists what they like...red or white wine, whatever it is to accommodate them, so that when they come, they feel at

home. We keep a file on set-up preferences for each producer...microphone choices, how they like their cassettes made...Dolby or non-Dolby. The little things that count.

Do you have any other hints that might make life easier for recording people?

We went through a whole thing with cables. We just made up 200 microphone cables. We made them in colors, and the colors signify length. We put matching random numbers on both ends so you can trace a cable quickly. We bought rawhide straps to bind them. The cables are wound with a double flip so they can be thrown out and not tangle...and the rawhide is used to tie them up without chewing into the cable. We built indestructible AC boxes with anodized aluminum plate. You can bash 'em. We use hospital grade Hubble connectors...try and destroy 'em. We have a staff meeting each week. Here's something we came up with last week...wireless headsets for setting up a session. You pull all the faders down, set all the cue system in the pre-position and you can walk around with a pair of wireless headphones...plug a mike in..."hello, hello"...it's tested. We have battery operated noise generators. Do you realize how much time it saves with the poor engineers? He no longer had to worry about it...he knows the mike is working, he knows the cardioid pattern is right...he's done it all by himself. We make it mandatory that our technical engineering staff is out of the room 45 minutes before the start of a date. We have a standing rule: only one maintenance man is allowed in a room at a time, unless it's a disaster case. Somebody calls up with a problem...one guy comes in. All you need is three guys rushing in...you'd think the world had just died.

A lot of our procedures are evolving out of what different outside people want. The key is that rather than me, as a manager, sitting up here and making rules and guidelines, based on what has to be my limited experience, we have weekly staff meetings. We even have a "dummy-of-the-week" club for assistants who have goofed up. They have a list of what they screwed up on, so that they know...and so does everybody else. It makes sure that we get better and better. ☺



Sunset Studio



WHATEVER

by Mr. Bonzai

Managing a recording studio means getting payment for the sessions you book... but if you get too uptight about monetary concerns you may scare off the business. It's a dangerous line the manager must walk, and it calls for perception, tact, diplomacy, and psychology.

We had just returned from lunch and Layla, our receptionist, was taking down the "Location Recording" sign when the phone rang. We hadn't actually been location recording, but it looks a lot better than "Out to Lunch." Promote a busy image and you will keep your studio busy, is my motto. Cart, our engineer, and Smilin' Deaf Eddie, our tech man, had just gone into the control room to trace a leaky capacitor or some such electronic gremlin. I took the phone call in the lobby and found myself talking to somebody I was supposed to recognize.

"Hello, can I help you? This is Mr. Bonzai, the manager."

"This is Sandy Bar, the drummer," the voice informed me.

"Oh... yes?" I tried to sound friendly and professional.

"I'm the drummer for Horris Edward."

There was a slight pause while I was supposed to be impressed, I guessed, but I couldn't place Horris Edward. I decided to fake it. "Oh, *Horris Edward*... yes, can I help you?"

"Well, Horris is looking for a studio to do some demos in, and asked me to call you guys at Ryan Recording."

Business is business, whether it's Horris Edward or Morris the Cat. I told them we had some time open that afternoon if they wanted to come by and check out the studio. Afterwards, I walked into the control room to tell Cart.

"Cart... just got a phone call. Do you know who Horris Edward is?"

"HORRIS EDWARD!... are you kidding? You know the song: 'Whatever'?"

I pondered. "Oh... sure." I quoted the familiar lyrics.

"Whatever you say... I love you.

Whatever you do... I love you.

Whatever's right... I'm not uptight..."

whoa-oh-oh-oh... whatever."

Cart spoke in amazement. "Horris Edward's 'Whatever' is one of the biggest songs of all time. It's been covered by over 2,000 artists... everybody from Gary Coleman to Ethel Merman. There are jazz versions, country versions, classical versions... there's even a punk version!"

Keeping up with all the stars of the music industry is a full time job and I had a stack of unread Billboards and Cashboxes to testify to my ignorance. So I didn't remember who Horris Edward was... big deal. After all, he hadn't had a hit in eight years. But I had to admit his profound influence on the '70s, the "Whatever Generation."

Horris Edward is an Italian. His complete name is Horris Edward Vermicelli. He had dropped the Vermicelli in hopes of appealing to a broader marketplace, much like the stars of those spaghetti westerns who adopt English surnames. He had written, performed, produced, and recorded "Whatever" on a Radio Stack cassette deck in his home in Italy. The song eventually sold over 30 million copies. Unfortunately, Horris signed over the rights to an olive oil corporation and saw very little of the money. His family, the Vermicelli's, had a history of being ripped off. They invented string pasta in the middle ages, but never got royalties on a single strand of spaghetti.

Horris Edward is one of those music people who is living on his next record... but he at least turned out to be a real gentleman. I was sitting in the lobby when the cars arrived. Horris was driving a stretched Lincoln with a custom convertible top. Lincoln makes only one Mark XII each year, and Horris had this year's. His drummer, Sandy Bar, was driving a Maserati that was so low, it could drive under a limbo dancer. The third person in the party was Limey Whitehead, Horris' manager and former chiroprapist. The three of them strode confidently into the studio and we all introduced ourselves. I had to think, "If they're so big, what are they doing here?"

"I have just written the next 'Whatever,'" Horris informed us. "I prefer to work on it at a smaller studio for reasons of privacy..."

That's a good enough reason. Maybe it would lead to something bigger. As Cart gave Horris and Sandy a tour, Limey and I discussed business.

"We would like a 50% deposit on the session..."

Limey was shocked. "Oh... just ring up Stan Allen at DCA records... he'll take care of everything."

I have to admit I took a chance, and decided to wing it until I had spoken with DCA. It was risky, but if I had pushed it, they might have gone elsewhere.

The next day, the musicians arrived and unpacked their instruments. Sandy's drums were a joy to behold and a bitch to record. He was supplementing his income with Horris by sharing the rights to his new drum with the Diamond Drum Company. Sandy's invention, the Phaser Stundrum, will be on the market soon, or so they tell me. What it consists of, is a set of drums with light-sensitive discs underneath the heads. They are played with laser pistols which fire a beam at the designated point on the drumhead. He looked like Buck Rogers all ablaze, playing the drums like a gun-fighter. We all got free "Stundrum" T-shirts from Sandy.

By the third day, I was still unable to get in touch with Stan Allen at DCA. I had spoken with his secretary in Los Angeles, his assistant in New York, and the accounting department in Mooselips, North Dakota... but no luck. They were going to "get back to me."

I had to take a chance. If DCA was not going to pay, I had to know. When I brought it up, I could tell that Horris was hurt. He looked up at the ceiling and spoke sensitively.

"Listen... don't worry. If DCA is taking too long, I'll pay for the time myself. Call Rolf, my accountant."

While I was in the control room, I heard a little of Horris' new hit "Really." It went like this:

"Really... yes, I need you, really.

Just a little really...

Can you deal with it..."

Really... whoa-oh-oh-oh, really."

Well, if "Whatever" could sell 30 million, I guess "Really" could. Limey informed me that Horris was working on a deal for the soundtrack of Claude LeDouche's new film, "Poof!" (English translation: "Get Out Your Air Freshener.")

While they were working at our studio, I did my best to make life and recording go smoothly. Keeping the session rolling is very important. Horris asked if we could get him some congas, so I started hunting some down.

Everyone's congas were gone, but when I spoke with our buddy, Hamhock Washington, he suggested we give Snicky Smith a call. I didn't know Snicky personally, but with Hamhock's recommendation he said we could borrow his drums. Horris loaned me his Lincoln to go get them. I felt like a South American dictator driving the monstrous limo.

Snicky lived in one of those anonymous apartment complexes of Southern California. They all look the same and have names like "Walnut Knoll" or "Oak Valley." They never have walnuts, knolls, oaks, or valleys. Snicky greeted me at the door and there was something vaguely familiar about him.

"Hi, I'm Snicky... the congas are in the bedroom. I'm off the road for a few weeks and don't need 'em."

On the wall in Snicky's bedroom I found the clue to his identity. There he was as a boy with the familiar mouse ears and T-shirt, shaking hands with Goofy. This was *Snicky*, the former Mouseketeer. Since the Disney days, he had drummed with such groups as "Patrick Henry and the Patriots" and "The Amalgamation." What a strange life. Start out as a Mouseketeer and live out your life with invisible mouse ears. I'm sure Walt would have something to say about this if they thawed him out.

Back at the studio, while Sandy was laying down the conga overdubs, I finally got through to Horris' accountant, Rolf Wursthinger. Mr. Wursthinger was a real hard driver and I reluctantly agreed to a ten day receivable on the studio time. I was worried, but after all, we had Horris "Whatever" Edward in the studio and that was good P.R.

Horris finished his song and shot out the door to get to the airport in time to reach Paris by that afternoon. Sandy, Limey, and the others packed up and left. We waited.

We waited quite awhile. At first we were worried when we found that Rolf had gone on vacation and Sandy's phone had been disconnected. Later, we learned that "his dog had chewed the cord." Finally, we got a postcard from Horris. The film deal had fallen through and DCA had decided not to pick up his option. He asked that we trust him and hang in there.

We had no choice but to hang. As the weeks slipped by, we gradually gave up on Horris Edward, but about a month later he came driving up to the studio. He personally handed me a check covering all of the recording time and materials, plus a 25% bonus for being so patient. This time the gamble had paid off. It turned out that the U.S. Postal Department was paying him \$100,000 for the commercial rights to "Whatever." They were going to use it as a jingle to upgrade their image.

Whatever. ☺

whatever

we'll show you ours, if you'll show us yours!

The Mix is interested in finding out who our readers are. We'd appreciate it if you would fill out the form below and return it to us so we can learn more about you and what you like. To show our appreciation, we will send you a free copy of our next issue. Thanks for your time.

1. What is your age?
 15-25 25-34 35-40 over 50.
2. Are you male or female?
3. What is your occupation?
A. RECORDING STUDIO
 Owner
 Engineer
 Staff
 Independent
 Maintenance
 Producer
 Independent
 Staff
 Studio Employee
B. MUSICIAN
 Full Time
 Part Time
 On contract to record label
C. PROFESSIONAL AUDIO
 Manufacturer
 Dealer
 Store Owner
 Employee
 Manufacturers Rep.
 Designer
 Consultant
D. MISCELLANEOUS
 Radio/TV
 Student
 Other (please specify) _____
4. How long have you been involved in recording?

5. How much time do you spend in recording studios in one month?

6. What other recording related publications do you read?

7. Do you have recording equipment in your home?
 professional reel to reel cassette
8. Where did you get your copy of The Mix?

9. What other listings, features or articles would you like to see in future editions of The Mix?

10. Comments or suggestions?

Please return this form to:
 The Mix Publications
 P.O. Box 6395
 Albany Branch
 Berkeley, CA 94706

name _____
 address _____
 city _____
 state _____ zip _____

Thank you. Watch for your free copy of our next issue to be delivered soon.

REVIVING OLD MASTERS

Cont'd from page 25

develop surface static charges and, if Victor's predictions are correct, will last 100 times longer than standard American vinyl.

The pressings are limited to a theoretical maximum of 200,000 albums and Victor's quality control dictates a tolerance for record flatness of one mil from the label to the outer edge, although Giorgi says the average warpage is more like .2 mil. The flatness of the record is insured by special shipping packages which return the discs to California where they are assembled into static-free inner sleeves and stiff cardboard jacket inserts. This care and attention to detail becomes evident when the defects, which consumers return to Mobile Fidelity rather than the retail outlet, amount to only about .002% of production.

The folks at Mobile Fidelity like to think of their discs as 'audio components' and, as such, market the great majority through audio dealerships, as opposed to record stores. This also serves to avoid competition with the original labels.

That Mobile Fidelity's operation is, at least in part, a labour of love is summed up by Giorgi. "We really highest quality phonograph record. And I figured that in the end, if nothing else happened, I would have copies of my favorite records made the way I only started off to prove that we could make the knew they should sound, if there were no holds barred in manufacturing. The fact that anybody else likes them and buys them is, to me, extraordinary and serendipity." ☺

Mobile Fidelity's Reference System

Pickups:
 Promethean Phase Two
 G.A.S. Sleeping Beauty—Shibata, with Verion transformer
 Mark III (non-linear) with MLAS D-6 card
 Ortofon MC 20 with Ortofon pre-preamp
Arms:
 SME 3009/2, modified
 Grace 714
 JH Formula 4
Turntables:
 Revox B-790
 Denon
Preamps:
 Mark Levinson ML-1
 Spatial Coherence
 Audio Research SP-6
Speakers:
 Beveridge Model 2 (includes amps)
 UREI 604 E "Time Align"™ (mastering center)
 Sub-woofer, RH Labs, driven by G.A.S. Ampzilla II
Crossover:
 Crown VFX-2, used as low pass filter below 55 Hz
Master Lacquer Cutting System Components:
 Neumann VMS 70 lathe, with quartz-lock motor drive by JVC
 Neumann SAL 74 amplifier system, modified—no input transformers
 Neumann SX 74 cutting head
 Transformerless console, custom built by JVC
 All playback decks, heads and electronics modified to accommodate half-speed EQ curve, and maximum separation, imaging and frequency response.

STERLING SOUND CUTTING MASTERS

Cont'd from page 14

differently, therefore, cutting an infinite variety of groove shapes into the lacquer. Each groove shape must be kept within the limitations of the disc so that it can be played back on a wide range of equipment.

Once the sound has been set up and carefully noted, the side is cut from start to finish without stopping; each sound adjustment made precisely on cue. Generally described as transferring electrical energy (the tape) to mechanical energy (the disc), the intricate cutting process begins. A blank disc is carefully inspected and placed on the disc cutting lathe. The cutting head is lowered to the disc and the stylus begins etching grooves into the blank disc. The blank master is an aluminum disc coated with lacquer. Since it's a soft substance, the heated cutting stylus actually cuts grooves into the lacquer. As the grooves are being cut, the excess material is removed by a vacuum system leaving a permanent impression on the disc, (a lacquer master).



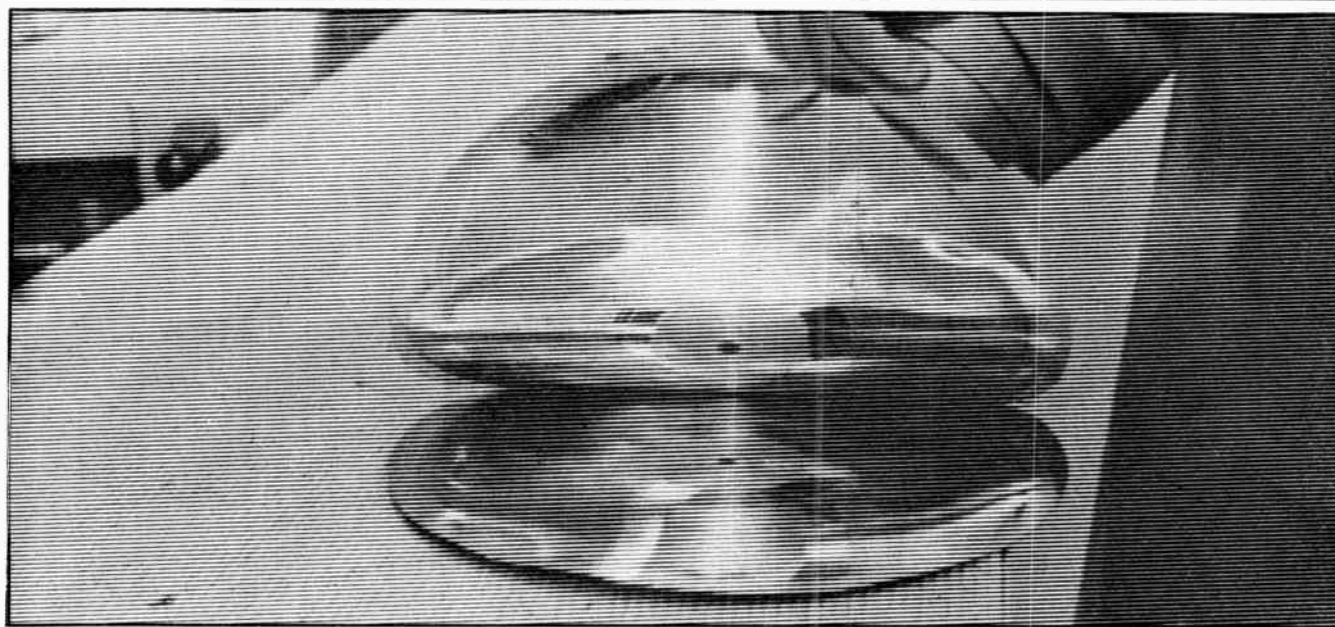
George Marino with Neumann VMS 80 Board

Normal procedure is to go through the process first cutting what is called a reference acetate. This disc can be taken by the artist, producer or record company executive and listened to on their own system so they can give final approval before the lacquer master is cut.

The overall impression I got from Sterling Sound is one of complete professionalism and attention to detail. The physical premises are classy and very comfortable but most important of all are the people working at Sterling. They are continuing to live up to the fine reputation that they have earned over the past ten years. ☺

TAPE TO DISC

EASTERN CENTRAL WESTERN



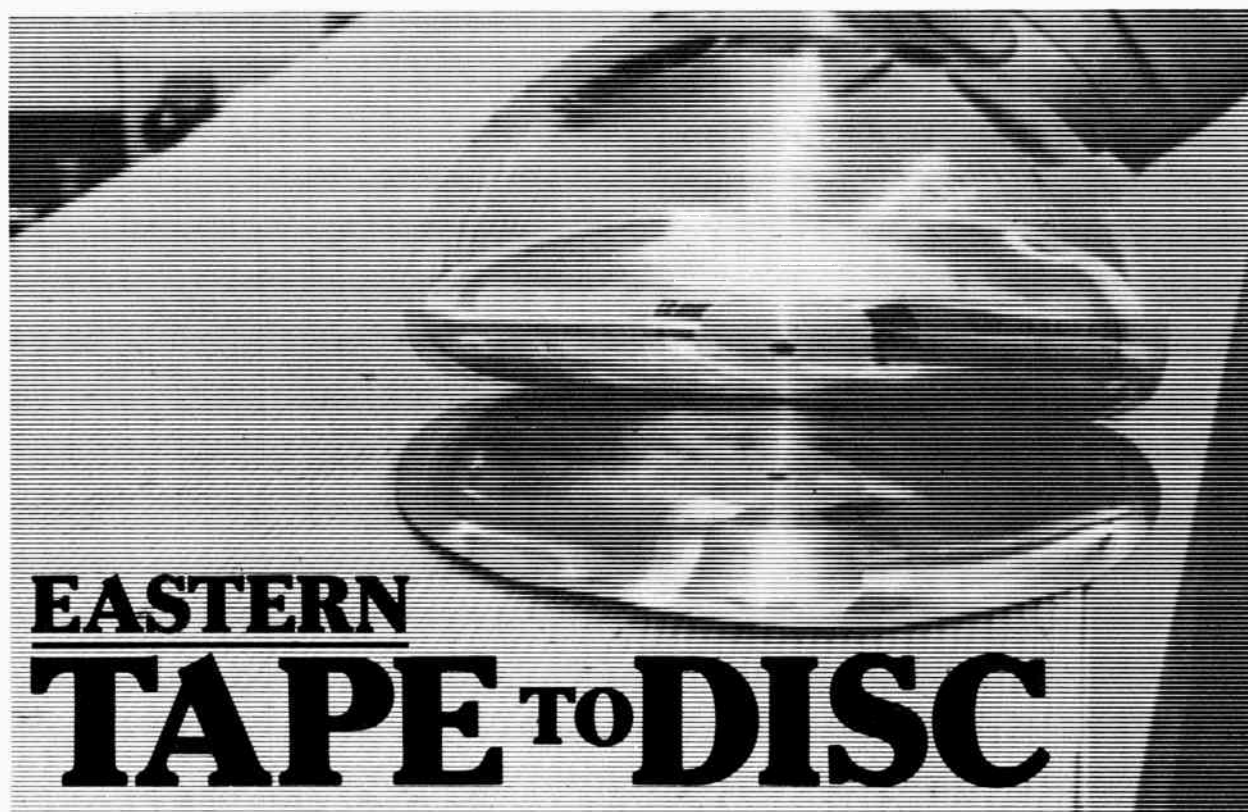
Pressing

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Alco Research & Eng.	Hollywood, CA 44
All Disc Records	Roselle, NJ 38
Alpha Records	Plantation, FL 38
Alshire International	Burbank, CA 44
Ameritone Records	Ontario, CA 44
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Audio Precision, Inc.	Arnold, MO 42
Award Record Mfg. Inc.	Inglewood, CA 44
Boddie Record Mfg. & Recording Inc.	Cleveland, OH 42
Cadet Records Inc.	Los Angeles, CA 44
Chateau East Sound Prod.	Anaheim, CA 46
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Nashville International Custom Products	Nashville, TN 42
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The Reference Point Disc Mastering	Burbank, CA 48
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All information in the listings was provided by response to Mix questionnaires in December, 1979 and January, 1980. The Mix takes no responsibility for the accuracy of the information and urges potential clients to investigate the important factors directly.



EASTERN TAPE TO DISC

A-1 SOUND STUDIOS

2130 Broadway, New York, NY 10023
(212) 362-2603

Contact: Herb Abramson.

MASTERING:

Tape Machines: Studer B67.

Cutting Lathes: Scully.

Cutting Amps: Westrex.

Cutting Heads: Westrex.

Limiters: UREI.

Transfer Panel: Custom.

Monitor Speakers: Altec 604.

Engineers: Herb Abramsen.

Rates: 12" Master: \$50/side; 7" Master: \$25/side; 12" Ref. Dub: \$40/dbl face; \$25/single face; 7" Ref. Dub: \$15/double face, \$10/1 side.

ALL DISC RECORDS—Division of Capitol Records Inc.

625 W. First Ave., Roselle, NJ 07203
(201) 245-7415

Contact: Bob Carter, General Manager.

PRESSING:

Presses: 27 Lened (auto.) and 10 manual.

Vinyl: PVC pellets.

Capacities: 60,000/daily.

Other Services: Upon inquiry.

ALPHA RECORDS

1400 N.W. 65th Ave., Plantation, FL 33313
(305) 587-6011

Contact: Richard Smith, President.

PRESSING:

Presses: 2 Lened.

Vinyl: Keycor high quality.

Capacities: 5,000 LPs a day.

Other Services: Total package work from pressing to final product including album cover design and labeling.

Rates: On request.

AUDIO MATRIX INC.

915 Westchester Ave., Bronx, NY 10455
(212) 589-3500

Contact: Bob Stillman, General Manager.

PLATING:

Rates: One-step 7": \$30.00 ea; One-step 12": \$40/side; Two-step 7": \$40.00 ea; Two-step 12": \$65/side; Full processing 7": \$45.00 ea; Full processing 12": \$75/side; Stamper only 7": \$15/side; Stamper only 12": \$20/side.

COLUMBIA RECORD PRODUCTION

49 E. 52nd St., New York, NY 10022
(212) 957-4881

MASTERING

COLUMBIA RECORD PRODUCTIONS

Woodbury-Glassboro Rd., Pitman, NJ 08071
(609) 589-8000

PRESSING

DISC COMMUNICATIONS

743 Fifth Ave., New York, NY 10022
(212) 371-0390

Contact: Susan Murphy, Director/Custom Sales.

PRESSING: Broker.

DONORA MFG. CO. INC.

658 Blue Point Rd., Holtsville, NY 11742
(516) 654-1110; (212) 895-1955

Contact: Ray Kissel, President.

PRESSING:

Presses: (8) 7" and 12" compression.

Vinyl: Keycor-Century.

Capacities: 10,000 - 15,000 units per day.

ELECTROSOUND GROUP, INC.

1 Goldisc Road, Holbrook, NY 11741
(212) 581-5641

Contact: Ron Roberto, Sales Manager.

PRESSING:

Presses: 135 Various.

Vinyl: Various.

Capacities: 4 plants across the U.S. produce 360,000 discs daily.

ERH SALES CORP.

221 West 57th St., New York, NY 10019
(212) 582-4200

Contact: Bob Shavelson, VP for Sales.

MASTERING:

Tape Machines: Ampex ATR-100.

Cutting Lathes: Neumann.

Cutting Amps: Haeco.

Cutting Heads: Neumann.

Limiters: Yes.

Rates: 12" Master: Custom only.

PRESSING:

Presses: 6 semi manual.

Vinyl: 100% pure Keycor.

Capacities: 12,000/day.

Other Services: Special discounts to studios or commissions available for referrals. Other plants available.

Credits: Special high quality.

EUROPADISK PLATING CO., LTD.

333 W. 52nd St., New York, NY 10019
(212) 765-5571

Contact: James Shelton, President.

PLATING:

Rates: One-step 7": \$45/ea; One-step 12": \$45/ea; Master only 7": \$45/ea; Master only 12": \$45/ea; Two-step 7": \$75/ea; Two-step 12": \$75/ea; Mother only 7": \$35/ea; Mother only 12": \$35/ea; Full processing 7": \$90/ea; Full processing 12": \$90/ea; Stamper only 7": \$15/ea; Stamper only 12": \$15/ea; Direct-to-disc: Same as above.

EVA-TONE SOUNDSHEETS, INC.

4801 Ulmerton Rd., Clearwater, Fla 33520
(813) 577-7000

Contact: Larry Johnson, Dir. of Marketing.

MASTERING:

Tape Machines: Ampex 440, Ampex 354, MCI JH110A.

Cutting Lathes: Scully.

Cutting Amps: Westrex 1706, Westrex RA 1700.

Cutting Heads: Westrex 2B, Westrex 3DII.

Limiters: UREI 1176 LN, Universal 176, Audimax 4440A.

Monitor Speakers: 9844A Altec, Altec Voice of Theater, KLH, Auratone.

Engineers: Norm Welch, Ron Rill, Wayne McElhose.

PRESSING:

Capacities: 2½ million Soundsheets per week.

Other Services: Manufacturers of flexible vinyl, Soundsheets in .006" thick PVC.

FRANKFORD-WAYNE MASTERING LABS, INC.

134 North 12th St., Philadelphia, PA 19107
(215) 561-1794

Contact: Tom Steele, President.

MASTERING: ½-speed cutting.

Tape Machines: Ampex, 3M, MCI, Technics.

Cutting Lathes: Ramsteele/Scully, Ramsteele/Block CompuDisk.

Cutting Amps: Ramsteele Audio.

Cutting Heads: Westrex 3D II AH, Ortofon DSS-732.

Limiters: CBS Labs, Ramsteele Audio, Suntec limiter.

Transfer Panel: Ramsteele Audio.

Monitor Speakers: Big Reds, JBL 4331s, Auratone.

Engineers: Nimitr Sarikanada, David Moyssiadis, Tom Steele; Lynn Steele, Studio Manager.

Rates: 12" Master: \$80/side; 7" Master: \$35/side; 12" Ref. Dub: \$75; 7" Ref. Dub: \$35.

Engineering Time and Set-up: Varies between \$90 - \$160 depending on room (we have 3 fully equipped rooms) and time of day.

Credits: (The Sound of Philadelphia) All albums & singles for: Billy Paul, Lou Rawls, Teddy Pendergrass, McFadden & Whitehead, O'Jays, Dexter Wansel, The Jones Girls, MFSB.

FRANKFORD-WAYNE MASTERING LABS, INC.

1697 Broadway, New York, NY 10019
(212) 582-5473

Contact: Tom Steele, President.

MASTERING: ½-speed cutting.

Tape Machines: Scully, Otari, Ampex, 3M, MCI, Technics.

Cutting Lathes: Scully/Capps, Scully, Ramsteele/Block CompuDisk.

Cutting Amps: Ramsteele, Westrex RA-1700, Neumann, Haeco.

Cutting Heads: Westrex 3D2-AH, Ortofon DSS-732, Neumann SX-74.

Limiters: CBS Labs, Sontec Digital Tracking, UREI.

Transfer Panel: Ramsteele Audio.

Monitor Speakers: Big Reds, JBL 4330s, Auratones R.O.R., UREI Time Aligned, JBL 4311s.

Engineers: Tom Steele, Tom Coyne, Dom Romeo, Herb Powers, Joe Gastwirt and Ken Eichser. Studio Manager: Melody Santiago.

Rates: 12" Master: \$80/side; 7" Master: \$35/side; 12" Ref. Dub: \$75; 7" Ref. Dub: \$35.

Engineering Time and Set-up: Varies between \$90 - \$160 depending on room and time of day, (we have 5 fully equipped rooms).

Credits: Singles and LPs by France Jolli, Kool and the Gang, Stanley Turrentine and Inner Life. We do approx. 25% R&B and Disco.

GOLDISC RECORDINGS

1 Goldisc Rd., Holbrook, NY 11741
(516) 589-0462

Contact: John Finnigan, General Manager.

PRESSING:

Plating Rates: Upon request.

Presses: 40 Lened, 10 Capital.

Vinyl: Teneco.

Capacities: 12"—95,000/day; 7"—30,000/day.

Other Services: In plant label printing, fulfillment services.

Rates: Upon request.

Peavey equalizers have been designed using the latest computer assisted design techniques and precision components to offer the musician, sound man, and home audiophile flawless performance without extravagant cost or compromises in quality.

The Stereo Graphic features two independent ten-band sections with 15 dB cut or boost at ten center frequencies. Filters are provided for each channel with continuously variable 12 dB high and low cut or boost.

The EQ-27 features 27 bands at one-third octave centers throughout the audio range and is fully compatible with the most professional real time analyzers.

Each system's input circuitry can be matched to a wide range of signal levels thanks to special gain/attenuator level controls. Balanced and unbalanced outputs are equipped on each unit with protection for any accidental overvoltage or short circuit situation that may occur.

Because of a high level transformer balanced output circuitry, the Stereo Graphic and EQ-27 have the capability of providing greater than +16 dBm into 600 ohms making them excellent as high quality line amplifiers.

The Peavey Stereo Graphic and EQ-27 are technically two of the finest equalizers available today. Exceptional performance and compatibility with a wide range of signal and impedance levels make these units an unmatched professional value.

PEAVEY STEREO GRAPHIC & EQ-27 price/performance no other graphics can equal.



Complete specifications and descriptions of the Stereo Graphic and EQ-27 are available upon request

by writing our Literature and Promotional Department, Peavey Electronics; 711 A Street; Meridian, Miss. 39301.





UP TO **50%** MORE LEVEL OR UP TO **30%** MORE TIME !

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Frankford/Wayne now offers the most advanced state-of-the-art cutting facility in the world. Microprocessor/Computer controlled tape and disc cutting equipment now makes it possible to put adjacent grooves as close together as theoretical limits allow. This can mean increases in level of up to 50% or 30% more allowable time than conventional domestic or European "stock" systems have offered. The sophistication of this new system means that the engineer and producer can work together to produce the aesthetically perfect disc without worrying about the equipment. No one can produce a louder, cleaner, better sounding, technically correct master disc anywhere in the world — That's a statement.



Featuring:

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 215-561-1794

CONFUSED ABOUT FOREIGN & DOMESTIC PROGRAM LEVELS ?

This chart should set you straight. Due to a difference in measuring techniques these levels are equivalent. (This difference is not related to the difference in describing a given program level on "VU" and Peak Reading instruments).

Relative Level (dB)	0	+2	+3	+4	+6
American Standard (ANSI) (nWb/m)	185	230	261 (260)	295	369 (370)
German Standard (DIN) (nWb/m)	200	250	280	320	400

Confused About What Test Tape To Use?

End confusion and buy STL Test Tapes. In the last 10 years STL has produced a greater variety of precision test tapes and films than any other manufacturer.

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The Standard Tape Manual

This is a handy compilation of regularly used reference material for the audio tape recordist. \$45.00.

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STANDARD TAPE LABORATORY, Inc.
 26120 Eden Landing Road / #5 / Hayward, CA 94545
 (415) 786-3546

TAPE TO DISC EASTERN

MASTERDISK

16 W. 61st St. New York, NY 10023
 (212) 541-5022

Contact: Doug Levine, General Manager.

MASTERING: 1/2-speed cutting.

Tape Machines: Studer A80.

Cutting Lathes: Neumann equipped with Zuma disc mastering computer.

Cutting Amps: Neumann.

Cutting Heads: Neumann SX74.

Limiters: NTP.

Transfer Panel: Neumann.

Monitor Speakers: Quad Electrostatic, Hartley bass speaker, Pioneer tweeters, Altec Model 19, Freed Model M, JBL 4311s.

Engineers: Robert Ludwig, Bill Kipper, Howard Weinberg, and David Crawford.

Rates: 12" Master: \$80/side; 7" Master: \$30/side; 12" Ref. Dub: \$50; 7" Ref. Dub: \$15.

Engineering Time and Set-up: \$100.00.

Credits: Kinks, Billy Joel (Stranger LP), Frank Zappa (Sheik Yerbouti), Fleetwood Mac, Hall & Oates, Atlanta Rhythm Section (all LPs), Genya Raven and all of the Nonesuch label.

PETER PAN IND.

88 St. Francis St., Newark, NJ 07105
 (201) 344-4214

Contact: Donald Kasen, Vice President.

PRESSING:

Presses: 20 SMT & PPI.

Vinyl: Keysor.

Capacities: 250,000 LPs per week.

Other Services: Printing of labels.

Rates: On individual needs.

THE RECORD FACTORY, INC.

10120 Marble Court, Cockeysville, Maryland 21030
 (301) 628-2920

Contact: Richard Van Horn, Manager.

MASTERING:

Tape Machines: Scully.

Cutting Lathes: Neumann AM-32B with Sontec Compudisk.

Cutting Amps: Neumann.

Cutting Heads: Neumann SX-74.

Limiters: Sontec DRC-400.

Transfer Panel: Custom with Sontec parametric equalizers.

Engineers: Walt Copeland.

PRESSING:

Presses: 6 Fabel, Finebilt, ITI.

Vinyl: Black: Lenahan; colors: Keysor-Century.

Capacities: Specialists in short-run, high quality record production.

Other Services: Jackets, labels, mailing.

Rates: On request.

SHELLEY PRODUCTS

220 Broadway, Huntington Station, NY 11746
 (516) 423-7090

Contact: Clark Galehouse, President.

MASTERING: 1/2-speed cutting.

Tape Machines: Telefunken, Ampex ATR.

Cutting Lathes: Neumann.

Cutting Amps: Westrex.

Cutting Heads: Westrex.

Transfer Panel: Automation Gotham.

Monitor Speakers: UREI.

Rates: On request.

TAPE TO DISC EASTERN

STERLING SOUND INC.

1790 Broadway, New York, NY 10019
(212) 757-8519

Contact: John Kubick, Studio Manager.

MASTERING: 1/2-speed cutting.

Tape Machines: Studer, Telefunken.

Cutting Lathes: Neumann.

Cutting Amps: Neumann.

Cutting Heads: Neumann.

Limiters: Various.

Transfer Panel: Neumann.

Monitor Speakers: Various, about 10 types.

Engineers: George Marino, Greg Calbi, Ted Jensen, Jose Rodriguez, Jack Skinner.

Rates: On request.

Credits: Barry Manilow, David Bowie, Cars, Cheap Trick, The Eagles, Foreigner, Dan Hartman, Billy Joel, Journey, The Kinks, Tom Petty, Talking Heads, Village People, Styx.

TRACY-VAL CORPORATION

201 Linden Ave., Somerdale, NJ 08083
(609) 627-3000

Contact: James Miller, President; or Joan Miller.

PLATING:

Rates: Please inquire by mail or phone.

TRES-LANTA RECORD PRESSING INC.

190 Boulevard S.E., Atlanta, GA 30312

Contact: Carl W. Queen, President and Manager.

PRESSING:

Presses: 2 plus adding 2 Finebilt and Johnson.

Vinyl: Pure from Ky. Thermo.

Capacities: 200/hr or 4800/day.

Other Services: Mastering, plating, labels & record jackets—eight-tracks manu. (here).

Rates: \$.50/lps, \$.22/45s in lots of 1,000 or more, smaller lots slightly higher \$1.25 w/full color labels in lots of 1,000 for 8-tracks and cassettes.

Credits: Over 100 Bluegrass albums stocked for API (Atteiram) Records, pressing for Jam Studios, Perfection Sound, L. David Young Music, Sam Wilhoit Studio and Prod., PMA Studios, Tri-South Corp and Sunshine Studios.

TRUTONE RECORDS

183 Terrace St., Haworth, NJ 07641
(201) 385-0940

Contact: Carl Rowatti, Studio Manager/Chief Engineer; Adrienne Rowatti, Business Manager.

MASTERING: 1/2-speed cutting available soon.

Tape Machines: MCI JH-110M, Ampex ATR 102, Ampex AG440B.

Cutting Lathes: Scully lathes with Capps computer.

Cutting Amps: Westrex RA 1700, with 1702 A power amp. Haeco SD-240A.

Cutting Heads: Westrex 3DIIAH.

Limiters: Teletronix LA2A, Fairchild 670.

Transfer Panel: Custom.

Monitor Speakers: JBL, Big Reds, Auratone.

Engineers: Carl Rowatti, Phil Austin, Steve Robb.

Rates: 12" Master: \$70/side; 7" Master: \$25/side; 12" Ref. Dub: \$50; 7" Ref. Dub: \$18.00.

Engineering Time and Set-up: \$50/hr.

Credits: "Shoot Me" Tasha Thomas; "Rappers Delight" Sugarhill Gang; "O Solo Mio" Luciano Pavarotti (single & LP); "O Holy Night" Luciano Pavarotti; "Freak Your Boom, Boom" Hank Ballard; Beethoven Piano Sonatas (Quintessence)—longest commercially released side in USA, 44:00 & 38:00.

PRESSING:

Plating Rates: Direct-to-disc: Various depending on location and time frame—On location only.

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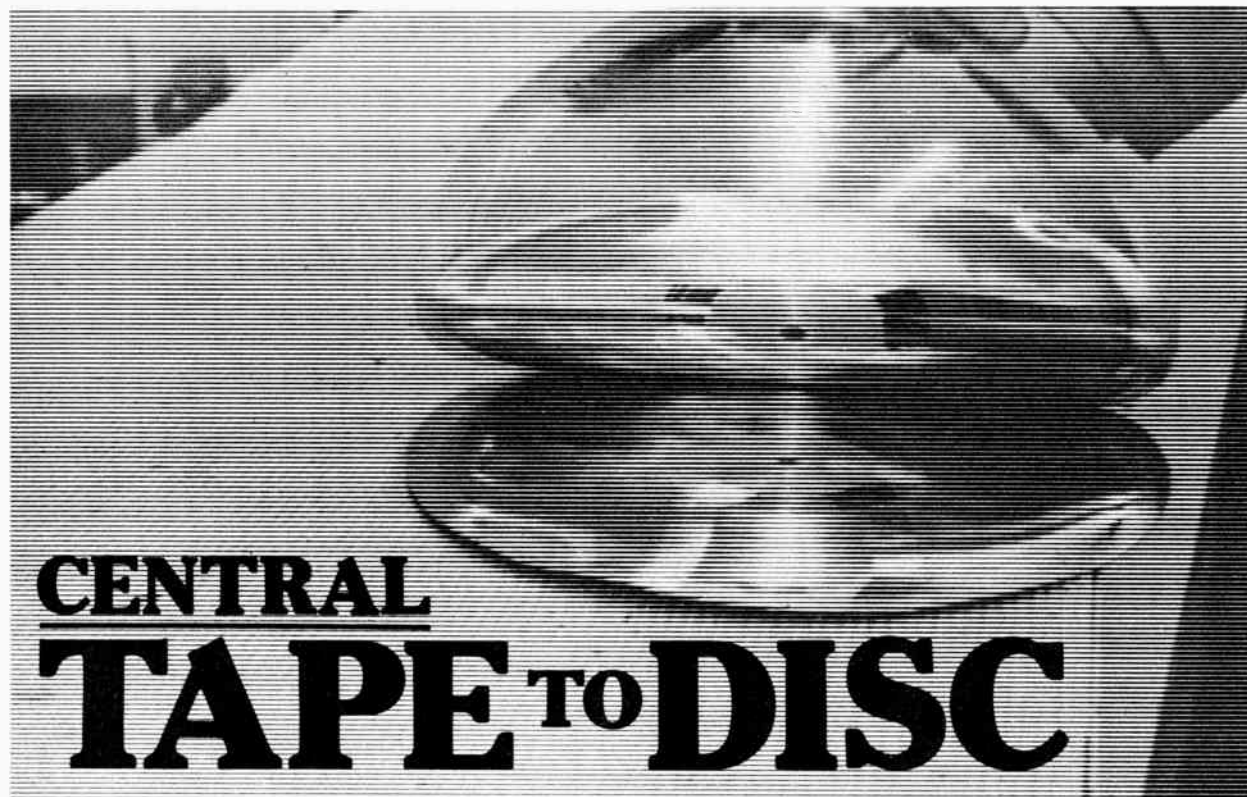
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Sony	UREI	Minicom	Wire Works
Klark-Teknik	Home Racks	TOA Electronics	TDK
Anvil Cases	MXR	Marantz	Aembic
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Mastering Labs			

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CENTRAL TAPE TO DISC

A+R RECORD MFG. CORP.

902 N. Industrial Blvd., Dallas, TX 75207
(214) 741-2027; 800-527-9026
Contact: Dick McGrew, President.
MASTERING: 1/2-speed cutting.
Tape Machines: Studer A-80, B-62, Otari MX-5000.
Cutting Lathes: Neumann VMS-70.
Cutting Amps: Neumann.
Cutting Heads: Neumann SX-74.
Limiters: EMT, PDM, PYE TVT
Transfer Panel: Automated Processes.
Monitor Speakers: Crown ESS 224.

Rates: 12" Master: \$125/2 sides; 7" Master: \$40/2 sides; 12" Ref. Dub: \$60/2 sides; 7" Ref. Dub: \$25/2 sides.
Credits: Several jazz albums nominated for Grammys.
PRESSING:
Presses: 5 full automation.
Vinyl: Keycor-Century E 287-S for both 45s and LPs.
Capacities: 10M/day.
Other Services: 8 track tape and cassette duplicating, album production.

ARDENT MASTERING INC.

2000 Madison Ave., Memphis, TN 38104
(901) 725-0855
Contact: Joe Hardy, Manager.
MASTERING:
Tape Machines: MCI JH110-2.
Cutting Lathes: Neumann DMN-70.
Cutting Amps: Neumann.
Cutting Heads: Neumann SX-74.
Limiters: EMT, Neve, ADR.
Transfer Panel: Neumann, Neve.
Monitor Speakers: JBL 4340's.
Engineers: Larry Nix, Bo Bohannon.
Rates: On request.

Credits: Bar-Kays, Con Funk Shun, ZZ Top, Parliament/Funkadelic, Amazing Rhythm Aces, Robin Trower, Anita Ward, David Ruffin.

AUDIO PRECISION, INC.

#6 Grandview Park Dr., Arnold, MO 63010
(314) 464-2333
Contact: Bob Blevins, President.
MASTERING:
Rates: On request.

PRESSING:
Plating Rates: On request.
Presses: 4 (3 LP/1 45) SMT.
Vinyl: Keycor-Century.
Capacities: 4,000 per 8 hr shift.
Other Services: Labels, printing, jacket fabrication.
Rates: On request, competitively priced.
Credits: Many independents as well as MCA, Capitol.

BODDIE RECORD MFG. & RECORDING INC.

12202 Union Ave., Cleveland, Ohio 44105
(216) 752-3440
Contact: Tom Boddie, President; Louise Boddie, V.P.
MASTERING:
Tape Machines: Ampex 351.
Cutting Lathes: Fairchild 740.
Cutting Amps: Fairchild 644.
Cutting Heads: Fairchild 642.
Transfer Panel: Custom.
Engineers: T. Boddie.

Rates: 12" Master: \$70/side; 7" Master: \$30/side; 12" Ref. Dub: \$15/side; 7" Ref. Dub: \$4/side.
Credits: Cleveland Recording, Schnieder Recording, Agency Recording, Accel Recording, After Dark Recording, Bounty Records, Luan Records, Temple Records, Maggie Records, Caribe, Soul Mine, Del Nite, Gospel Time, Van, Plaid.
PRESSING:
Plating Rates: One-step 7": \$30; One-step 12": \$50; Master only 7": \$60; Master only 12": \$140; Direct-to-disc: Open.
Presses: 2 Finebilt.
Vinyl: Pure Keycor.
Capacities: 1200/8 hr.
Other Services: Jackets.
Rates: Per quote from layout.
Credits: All listed in mastering section, plus: Truth, Maximusic, Calico, Cejeco, Brighter Day, Day-Woods, Dee-Jay, Big Mack.

CBS RECORDING STUDIOS

34 Music Square E., Nashville, TN 37203
(615) 259-4321
Contact: Norm Anderson, Manager.

MASTERING:
Tape Machines: MCI & Scully.
Cutting Lathes: 3 Scully lathes w/ exclusive CBS Discomputer.
Cutting Amps: Westrex 3DII.
Cutting Heads: Westrex helium cooled.
Limiters: LA3A, dbx, various others; Equalizers: graphics, Pultecs, echo available.
Monitor Speakers: Altec Big Reds and 604Es.
Engineers: M.C. Rather, Jerry Watson.

COLUMBIA RECORD PRODUCTIONS

34 Music Square E., Nashville, TN 37203
(615) 259-4321
MASTERING
COLUMBIA RECORD PRODUCTIONS
1400 Fruitridge Ave., Terre Haute, IN 47805
(812) 466-8770
Contact: Ken Lemry, Plant Manager.
PRESSING

DELTRON RECORD PRESSING INC.

United Artist Tower, Suite 309, 50 Music Sq. W.,
Nashville TN 37203

(615) 327-2594

Contact: Roger Ricker, President.

PRESSING:

Presses: 10 Finebilt.

Vinyl: Pure vinyl.

Capacities: 25,000 LP/wk; 40,000 45's/wk.

Other Services: Recording, promotion, distribution 8 track, cassettes.

Rates: 1000 full color LPs \$1340.00, 1000 45's: \$312.00 includes finished product from master tape.

THE DISKWERKS—Division of Hedden West

1244 Remington Rd., Schaumburg, IL 60195

(312) 885-1330

Contact: Mike Freeman, Manager.

MASTERING:

Tape Machines: Studer A-80, Studer B-67.

Cutting Lathes: Neumann VMS-70.

Cutting Amps: Neumann SAL-74.

Cutting Heads: Neumann SX-74.

Limiters: NTP-179-120.

Transfer Panel: Neumann SP-77.

Monitor Speakers: JBL 4343, Auratones, Misc. bookshelf.

Engineers: Gary Hedden, Ron Lewter, Keving Vogts.

Rates: 12" Master: \$60/side; 7" Master: \$20/side; 12" Ref. Dub: \$30/side; 7" Ref. Dub: \$10/side.

Engineering Time and Set-up: \$50/hour.

Credits: Pezband "30 Seconds Over Schaumburg" Passport Records; Shoes "Black Vinyl" Jem Records; Heaven & Earth, Mercury Records; Gene Chandler "When You're #1" 20th Century; "Niteflyte" Ariola Records; Phil Keaggy "The Master & The Musician" Word Records; Sweet Bottom, Tantrum, Ovation Records; The Impressions, 20th Century; Walter Jackson, 20th Century.

JOEY RECORDS

6703 W. Commerce, San Antonio, TX 78207

(512) 432-7893

Contact: Mr. Lopez, General Manager.

PRESSING:

Presses: 6 Finebilt.

Vinyl: Lenahan Steel.

Capacities: 6600 singles a day, 1000 LPs per day.

Other Services: Recording studio,—"ZAZ"—

6711 W. Commerce.

NASHVILLE ALBUM PRODUCTIONS

107 Music City Circle, Nashville, TN 37214

(615) 256-0121

Contact: Steve Botts.

PRESSING

NASHVILLE INTERNATIONAL CUSTOM PRODUCTS

512 5th Ave. South, Nashville, TN 37203

(615) 242-3488

Contact: Reggie Churchwell.

MASTERING:

Tape Machines: Scully and Studer.

Cutting Lathes: Neumann VMS-70 w/computer control.

Cutting Heads: Westrex and Ortofon.

Limiters: Electrodyne, Quad 8, Sphere.

Monitor Speakers: Electro-Voice Sentry III.

Engineers: Bob Sowell.

Rates: Call for rates.

PRESSING:

Plating Rates: Two-step 7": \$40/side; Two-step 12": \$65/side.

Presses: 12 Hamilton w/automation.

Other Services: Also do artwork, typesetting, color seps. and complete jackets.

Rates: Call for rates.

NASHVILLE PHONO MATRIX, INC.

310 Chestnut St., Nashville, TN 37210

(615) 244-2405

Contact: Betty J. Kemp, President.

PRESSING:

Plating Rates: One-step 7": \$10; One-step 12": \$11; Master only 7": \$7.50; Master only 12": \$8.50; Two-step 7": \$17; Two-step 12": \$18.50, Mother only 7": \$7.00, Mother only 12": \$7.50; Full processing 7": \$24; Full processing 12": \$27; Stamper only 7": \$9.50; Stamper only 12": \$10.50, Direct-to-disc: 7": \$54/side; 12": \$87/side.

RAINBOW RECORD PRESSING
2721 Irving Blvd., Dallas, TX 75207
(214) 630-6401
Contact: Jack Whitt, Vice President.
PRESSING:
Presses: 5 SMT automatics.
Vinyl: Keysor B-450.
Capacities: Monthly: 80,000 LPs, 40,000 7".
Other Services: Album jacket production.
Rates: Above industry (very quality conscious).

RIO GRANDE MUSIC
119 S. San Houston Blvd., San Benito, TX 78586
(512) 399-5377
Contact: John Phillips.
PRESSING:
Presses: 3 Finebilt semi-automatic.
Vinyl: Pure vinyl.
Capacities: 500/day LPs, 1500/day 45s.
Other Services: Artwork.

RITE RECORD PRODUCTIONS, INC.
9745 Mangham Drive, Cincinnati, Ohio 45215
(513) 733-5533
Contact: Philip M. Burkhardt, Executive Vice President.
MASTERING: 1/2-speed Cutting.
Tape Machines: MCI JH 110-M.
Cutting Lathes: Neumann VMS Special.
Cutting Amps: VG66S (solid state), Neumann LV 60 (tube rack).
Cutting Heads: Neumann SX-74.
Limiters: Teletronix LA2A, dbx 160.
Transfer Panel: Ortofon CPS 741.
Monitor Speakers: 4 Altec 9844-A.
Engineers: Lan A. Ackley, Tony Payne.
Rates: 12" Master: \$65/side; 7" Master: \$25/side; 12" Ref. Dub: \$50/side; 7" Ref. Dub: \$20/side.
Engineering Time and Set-up: \$25/hr.
PRESSING:
Plating Rates: One-step 7": \$20; One-step 12": \$25; Master only 7": \$20; Master only 12": \$22.50; Two-step 7": \$40; Two-step 12": \$45; Mother only 7": \$16; Mother only 12": \$20; Full processing 7": \$56; Stamper only 12": \$65; Stamper only 7": \$20; Stamper only 12": \$25; Direct-to-disc: Quoted upon request.
Presses: 4 SMT & Lened automatic.
Vinyl: Lenahan (pure).
Capacities: 4000 7" per shift; 2000 12" per shift.
Other Services: Record label printing, album jacket printing, and fabricating.
Rates: 7" 21¢ ea (complete), 12" 52¢ ea (complete).

SOUND STUDIOS
230 N. Michigan Ave., Chicago, IL 60601
(312) 236-4814
Contact: Dan Tynus, V.P., Gen. Manager.
MASTERING: 1/2-speed Cutting.
Tape Machines: 3M.
Cutting Lathes: Scully automated, Neumann, Haeco mono. lathe.
Cutting Amps: Westrex 3-D2.
Cutting Heads: Westrex 2-B.
Limiters: Neve, Fairchild.
Monitor Speakers: Electro-Voice Sentry.
Engineers: Denny Camp, chief eng; Bill Beyer; Richard Mastella.
Rates: On request.
PRESSING:
Plating Rates: On request.
Vinyl: Lenahan virgin.
Capacities: Call for information.
Other Services: In-house label printing, typesetting, album fabricating, whole album package.

TEXAS RECORD MFG.
1422 W. Poplar, San Antonio, TX 78207
(512) 733-6138
Contact: James (Jimmy) Burton, Plant Manager.
PRESSING

VILLE PLATTE RECORD MFG.
P.O. Box 10/120 East Cypress St., Ville Platte, LA 70586
(318) 363-2104 or 2105
Contact: Ron Soileau, Sales Manager.
PRESSING:
Plating Rates: One-step 7": \$39; One-step 12": \$49; Two-step 7": \$53; Two-step 12": \$65; Full processing 7": \$66; Full processing 12": \$84.
Presses: 10 Semi-automatic.
Vinyl: Virgin vinyl.
Capacities: 45s: 6000/; LPs 12": 2,000/shift.
Other Services: Full color printing of 12" record labels, and also printing of 7" record sleeves.

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We make no superficial claim to being the best record pressing plant in the country, the fastest, or the least expensive...

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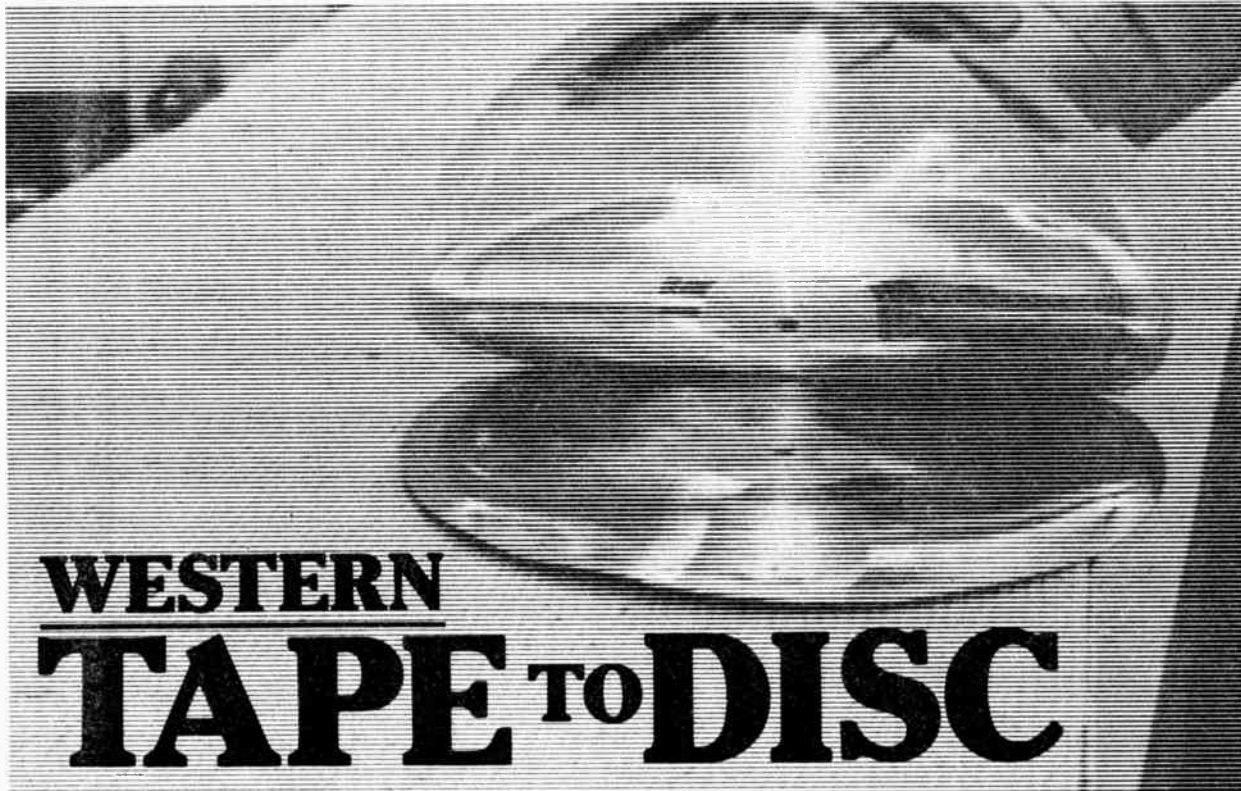
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WESTERN TAPE TO DISC

ALBERTI RECORD MFG. CO.

312 Monterey Pass Rd., Monterey Park, CA 91754
(213) 282-5181
Contact: S.J. Alberti, President.
PRESSING:
Presses: 16 compression.
Vinyl: Keysor Chemical.
Other Services: Labels.
Rates: 7" \$24, 12" \$45.

ALCO RESEARCH & ENG.

6201 Santa Monica Blvd., Hollywood, CA 90038
(213) 466-1101
Contact: R.W. Adams, Chief Engineer.
PRESSING:
Presses: 16 Adams.
Vinyl: Pure.
Capacities: 40,000 12"/week, 100,000 7"/week.
Other Services: Matrix, labels, processing, mastering, jackets.
Rates: On request.
Credits: Specialize in Latin music.

ALLEN ZENTZ MASTERING

1020 N. Sycamore, Hollywood, CA 90038
(213) 851-8300
Contact: Stuart B. Olson, General Manager.
MASTERING:
Tape Machines: Telefunken, Magnetophon 15A.
Cutting Lathes: Dual Neumann, VM 570.
Cutting Amps: Dual Neumann, SAL 74.
Cutting Heads: Neumann, SX74.
Limiters: NTP.
Transfer Panel: Neumann SP75.
Monitor Speakers: UREI Time Aligns.
Engineers: Brian Gardner, Chris Bellman.
Rates: 12" Master: \$85/side; 7" Master: \$35/side; 12" Ref. Dub: \$85 (double-faced); 7" Ref. Dub: \$35 (double-faced).
Engineering Time and Set-up: \$125.00/hr.
Credits: All Donna Summer's albums, ELO, Elton John, John Denver, Beach Boys, Melissa Manchester, Chicago, Midnight Express Soundtrack, Rufus, Al Stewart, Dionne Warwick, Main Event Soundtrack, Gloria Gaynor, Village People, Dan Hill, Loggins & Messina, Jim Messina, Stephanie Mills, Kiss, John Klemmer, Funkadelic, Tony Orlando, Michael Jackson, etc.

ALSHIRE INTERNATIONAL

1011-15 Isabel St., Burbank, CA 91510
(P.O. Box 7107)
(213) 849-4671
Contact: Al Sherman, President.
MASTERING:
Tape Machines: MCI JH110M, Ampex 440, 3M M64.
Cutting Lathes: VMS 70 Neumann.
Cutting Amps: SAL 74.
Cutting Heads: SX 74.
Limiters: dbx 162.

Transfer Panel: Quad 8 custom mastering console.
Monitor Speakers: JBL 4320's and Auratones.
Engineers: Dave Travis.
Rates: 12" Master: \$70/side; 7" Master: \$45/side; 12" Ref. Dub: S/F \$45, D/F \$70; 7" Ref. Dub: S/F \$15, D/F \$25.
Engineering Time and Set-up: Editing/Assembling \$40/hr, EQ time \$60/hr.
PRESSING:
Plating Rates: One-step 7": \$18; One-step 12": \$25; Master only 7": \$17; Master only 12": \$22; Two-step 7": \$32.50; Two-step 12": \$50; Mother only 7": \$17; Mother only 12": \$22; Full processing 7": \$45; Full processing 12": \$67; Stamper only 7": \$17; Stamper only 12": \$22; Direct-to-disc: \$85.
Presses: 8 SMT automatic.
Vinyl: Keysor.
Capacities: 25,000/day.
Other Services: Layout and separations, printing.
Rates: Competitive.

AMERITONE RECORDS

P.O. Box 1762, Ontario, CA 91782
(714) 982-6052
Contact: Leonard L. Waitowicz, Owner.
MASTERING:
Rates: 12" Master: \$75; 7" Master: \$22.50; 12" Ref. Dub: \$80; 7" Ref. Dub: \$35.
PRESSING:
Plating Rates: One-step 7": \$18.50; One-step 12": \$24; Master only 7": \$22.50; Master only 12": \$75; Two-step 7": \$37; Two-step 12": \$48; Mother only 7": \$18.50; Mother only 12": \$24; Full processing 7": \$55.50; Full processing 12": \$70; Stamper only 7": \$18.50; Stamper only 12": \$24; Direct-to-disc: \$100 per side.
Presses: 3 Finebilt.
Vinyl: Keysor-Century.
Capacities: 50,000.
Other Services: Complete package.
Rates: 1000 LPs from tape complete for \$1375 including test press.

ARTISAN SOUND

1600 North Wilcox, Hollywood, CA 90028
(213) 461-2751
Contact: Jo Hansch, Studio Manager.
MASTERING:
Tape Machines: Studer A800, A80-2 2 track.
Cutting Lathes: Neumann VMS-70.
Cutting Amps: SAL-74.
Cutting Heads: SX-74.
Limiters: Custom.
Transfer Panel: Sierra Audio custom.
Monitor Speakers: Sierra Audio SMIII.
Engineers: Jo Hansch, Greg Fulginiti.
Rates: 12" Master: \$95; 7" Master: \$30/side; 12" Ref. Dub: \$55/side; 7" Ref. Dub: \$20/side.
Engineering Time and Set-up: \$125/hr.

Credits: Rocky II Soundtrack, Santana "Marathon" LP; Maxine Nightingale "Lead Me On"; Journey (2 record set) "In The Beginning"; The Babys, "Union Jacks"; Wayne Henderson "Emphasis"; Shaun Cassidy "Live"; Leif Garrett; Crosby Stills Nash & Young "4 Way Street"; "Black Sabbath"; Rolling Stones "Let It Bleed"; Grateful Dead "American Beauty".

THE AUTOMATT

829 Folsom St., San Francisco, CA 94107
(415) 777-4111
Contact: Paul Stubblebine, Mastering Engineer, Cheryl Ward, and Julia Jones Studio Administrators.
MASTERING:
Tape Machines: MCI JH 110M, MCI JH 110A, Ampex.
Cutting Lathes: Scully.
Cutting Amps: Westrex.
Cutting Heads: Westrex 3D II AH.
Limiters: All types available.
Transfer Panel: CBS.
Monitor Speakers: UREI 813, JBL 4311, Auratone.
Engineers: Paul Stubblebine.
Rates: 12" Master: \$82.50 & \$25/hr; 7" Master: \$27.50 & \$25/hr; 12" Ref. Dub: \$77 & \$25/hr; 7" Ref. Dub: \$27.50 & \$25/hr; EQ and Runtown time: \$100/hr.
Credits: "Apocalypse Now" soundtrack (Elektra), Herbie Hancock "Feels Don't Fail Me Now" (CBS), The Clash "Give 'Em Enough Rope" (CBS), Susan Muscarella "Rainflowers" (Pacific Arts), Grateful Dead "Shakedown Street" (GD/WB), Blue Oyster Cult "Some Enchanted Evening" (CBS), Chick Corea & Herbie Hancock (Polydor), Carlos Santana "Oneness" (CBS), SVT "Heart of Stone" (415), Gato Barbieri "Tropico" (A&M), Stoneground "Play It Loud" (Crystal Clear).

AWARD RECORD MFG., INC.

11018 La Cienega Blvd., Inglewood, CA 90304
(213) 845-2281
Contact: Marty Amsoorian, President; George Abajian, V.P.
PRESSING:
Plating Rates: (Per Side): One-step 7": \$20; One-step 12": \$25; Two-step 7": \$36; Two-step 12": \$47; Full processing 7": \$48; Full processing 12": \$65.
Presses: 3 Lened Automatic.
Vinyl: Keysor-Century.
Capacities: 10,000/day.
Other Services: Label printing: \$41/100, \$44/500, \$49/1000, \$124/5,000, \$216/10,000, \$509/25,000. Also jacket printing and fabrication, including 4-color process.
Rates: \$.68/100, \$.57/500, \$.55/1000, \$.52/5000, \$.51/10,000, \$.50/25,000.

CADET RECORDS INC.

5810 S. Normandie Ave., Los Angeles, CA 90044
(213) 753-5121
Contact: Don Macmillan, General Manager.
PRESSING:
Plating Rates: One-step 7": \$16; One-step 12": \$20.50; Master only 7": \$13.50; Master only 12": \$20; Two-step 7": \$29.50; Two-step 12": \$40.50; Mother only 7": \$13.50; Mother only 12": \$20; Full processing 7": \$40; Full processing 12": \$60; Stamper only 7": \$13; Stamper only 12": \$20.
Presses: 56 Manual and auto.
Vinyl: Keysor.
Capacities: 35,000 LPs/8 hrs, 10,000 7".
Other Services: 8 track and carts.

CAPITOL RECORDS

1750 N. Vine St., Hollywood, CA 90028
(213) 462-6252, Ext 442.
Contact: John Kraus, Recording Manager.
MASTERING:
Tape Machines: Studer A-80, 3M custom.
Cutting Lathes: Neumann VMS 66, Neumann VMS 70, Scully.
Cutting Amps: Neumann SAL-74, Westrex Solid State.
Cutting Heads: Neumann SX-74, Westrex 3D.
Limiters: Neumann AL, Westrex HFL, many outboard types.
Transfer Panel: Neve, custom.
Monitor Speakers: Capitol, JBL.
Engineers: Ken Perry, Wally Traugott, Gene Thompson, Ed Saunders, Jay Maynard, Bill Tennis, Maurice Long, Wayne Dailey.
Rates: 12" Master: \$75; 7" Master: \$28; 12" Ref. Dub: S/F \$45, D/F \$75; 7" Ref. Dub: S/F \$15, D/F \$25.
Engineering Time and Set-up: Runtown, EQ and Edit Time: \$90/hr Disc Room.
30 ips simultaneous LP EQ Copy \$100.00—includes materials;
15 ips simultaneous LP EQ Copy \$75.00—includes materials;
7½ ips simultaneous LP EQ Copy \$50.00—includes materials;
Cassette simultaneous LP EQ Copy \$30.00—includes materials.
2-Track tape edit room \$60/hr.

M A S T E R S



A SPECIAL THANKS

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IAM's Mastering Room features a re-engineered Neuman VMS-70 cutting system with automatic variable stylus heat among other unique features and the SX-74 cutter head. An In-house designed console with minimum electronics and maximum versatility includes Sontec equalization.

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"Listening to the disc is the most pleasant surprise I've had, hearing a disc transfer sound like the original recording."

Tim Weisberg "Tip of The Weisberg" Nautilus Records & Tapes



International Automated Media 17422 Murphy Avenue, Irvine, CA 92714, Telephone; (714) 751-2015



CHATEAU EAST SOUND PROD.

1040 N. Grove St., Suite R, Anaheim, CA 92807
(714) 630-0145

Contact: E.W. Younger, General Manager.

PRESSING:

Presses: 4 Finebilt

Vinyl: Keysor-Century B-450.

Capacities: 24,000 LPs/week; 36,000 45s/week.

Other Services: Full recording production packages from tape to disc. Full recording studio.

Rates: Please call for rates.

COLUMBIA RECORD PRODUCTIONS

1930 Century Park West, Century City, CA 90067
(213) 566-4820

Contact: Mike Coolidge, Sales Manager.

PRESSING**CRYSTAL-SOUND RECORDING STUDIOS**

1014 N. Vine St., Hollywood, CA 90038
(213) 466-6452

Contact: Micheline Kalfa, Manager.

MASTERING:

Tape Machines: Studer A-80.

Cutting Lathes: Neumann VMS-70.

Cutting Amps: Yamaha.

Cutting Heads: Neumann SX-74.

Limiters: PDM, EMT 156.

Transfer Panel: Crystalab custom.

Monitor Speakers: JBL custom.

Engineers: Michael Panish.

Rates: 12" Master: \$80/side; Disco singles: \$40/side; 7" Master: \$30/side; 12" Ref. Dub: \$45/SF; \$60/DF; 7" Ref. Dub: \$20/SF; \$25/DF.

Engineering Time and Set-up: \$80/hr

Disco 12" ref: \$30/SF; \$45/DF.

Master tape copies w/disc EQ and level including tape, box and time: \$75/side for albums, \$30/side for disco singles, \$30/side for singles

Credits: Luther Tucker, Bob Larne (producer), Stevie Wonder, David Naughton, Poco, Harvey Mason, Doucette, Nigel Olsson, War, Lenny Williams, Miracles, Patrice Rushen.

FANTASY STUDIOS

10th and Parker, Berkeley, CA 94710
(415) 549-2500

Contact: Jim Stern.

MASTERING: 1/2-speed Cutting.

Tape Machines: Custom Studer A-80 w/A 800 electronics.

Cutting Lathes: Neumann with Compudisc computer and quartz drive.

Cutting Amps: Neumann SAL-74.

Cutting Heads: Neumann SX-74.

Limiters: UREI, PDM, ADR, Quad 8.

Transfer Panel: Custom.

Monitor Speakers: Hidy.

Engineers: David Turner.

Rates: Call for rates.

Credits: Also direct to disc available.

FIDELATONE MFG. CO.

12838 Weber Way, Hawthorne, CA 90250
(213) 678-4346

Contact: Richard L. Artz, President.

MASTERING:

Tape Machines: Telefunken.

Cutting Lathes: Neumann.

Rates: 12" Master: \$70/side; 7" Master: \$25/side; 12" Ref. Dub: \$65/double face; 7" Ref. Dub: \$28.50/double face.

PRESSING:

Plating Rates: (Per Side): One-step 7": \$15; One-step 12": \$18.50; Two-step 7": \$27; Two-step 12": \$35; Full processing 7": \$36.50; Full processing 12": \$47.

Presses: 28 Semi automatic.

Vinyl: Keysor B-450.

GOLD STAR

8252 Santa Monica Blvd., Hollywood, CA 90038
(213) 489-1173

Contact: Bruce Gold, Owner.

MASTERING:

Tape Machines: Scully, Ampex.

Cutting Lathes: Neumann, Westrex.

TAPE TO DISC WESTERN

Cutting Amps: Westrex.

Cutting Heads: Westrex.

Limiters: UREI.

Transfer Panel: Gold Star custom; filters, crossovers, EQs.

Monitor Speakers: Altec 604-E.

Engineers: Stan Ross, Dave Gold, Jerry Napier, Bruce Gold, Ed Epstein, Don Snyder, Larry Levine, Rick Uro.

Rates: On request.

PRESSING: Pressing and Plating information on request. Call for information.

H.R. PRODUCTIONS

530 Chenery St., San Francisco, CA 94131
(415) 333-1369

Contact: Jack Brindle.

PRESSING

We are one of the only brokers for low-priced record pressing in Northern California. We specialize in complete album packages, and work closely with several reliable mastering studios, pressing plants, and printers. Packages include mastering, matrix, pressings, labels, printing, fabrication of jackets, and shrinkwrap. 1,000 LP packages start at about \$1,350.00

HEIDER RECORDING

1604 N. Cahuenga Blvd., Hollywood, CA 90028
(213) 466-5474

Contact: Mr. Philip Cross, Director of Mastering.

MASTERING:

Tape Machines: Studer A-80 mastering machine, Ampex ATR 100 copy machine.

Cutting Lathes: Neumann VMS 70.

Cutting Amps: Neumann SAL 74.

Cutting Heads: Neumann SX74.

Limiters: Neve.

Transfer Panel: Neve custom disc mastering console.

Monitor Speakers: UREI Time Align and JBL 4311.

Engineers: Philip Cross, Lanky Linstrout.

Rates: 12" Master: \$80/side; 7" Master: \$30/side; 12" Ref. Dub: \$65/DF; 7" Ref. Dub: \$18.50/DF; EQ and Editing Time \$125/hr.

Credits: John Stewart, Lalo Schiffrin, 3 Degrees, Amii Stewart, Crosby & Nash, McCoo & Davis, Elvis Presley, Al Hudson.

L.A.M. (INTERNATIONAL AUTOMATED MEDIA)

17422 Murphy Avenue, Irvine, CA 92714
(714) 751-2015

Contact: Rick Donaldson, Sr. Mastering Engineer.

MASTERING:

Tape Machines: Studer A80.

Cutting Lathes: Neumann VMS 70 customized.

Cutting Amps: Crest.

Cutting Heads: Neumann SX74.

Limiters: PSE 26A mastering limiter/compressor/expander.

Transfer Panel: Custom built, high speed, minimum electronics, Sontec EQ, full AB system.

Monitor Speakers: UREI 538 Time Align, JBL 4311, Auratones.

Engineers: Richard Donaldson, Bruce Leek, Scott Spain.

Rates: 12" Master: \$70 digital & audiophile, \$65/side; 7" Master: \$28/side; 12" Ref. Dub: \$65/both sides; 7" Ref. Dub: \$14/1 side \$24/2 sides.

Engineering Time and Set-up: \$95/hr.

Credits: We are a high quality oriented facility constantly updating for accurate transfers. Our customers include: Soundstream, Telarc, Chalfont, Varese Sarabande, Nautilus, Tim Weisberg, Word Records, and many others.

JVC CUTTING CENTER

6363 Sunset, Suite 500, Hollywood, CA 90028
(213) 467-1166

Contact: Lyn Eade.

MASTERING: 1/2-speed Cutting.

Tape Machines: MCI 110M Transport with custom electronics and heads.

Cutting Lathes: Neumann VMS 70.

Cutting Amps: Neumann SAL 74 (modified by JVC).

Cutting Heads: Neumann SX-77.

Limiters: JVC's.

Transfer Panel: JVC transformer free.

Monitor Speakers: UREI Time Align.

Engineers: Jack E. Hunt.

Rates: 12" Master: \$140/1/2-speed, \$85/real time; 7" Master: \$50/1/2-speed, \$35/real time; 12" Ref. Dub: \$140/1/2-speed DF, \$80/real time; 7" Ref. Dub: \$50/1/2-speed double face, \$35/real time.

Credits: Stevie Wonder "Secret Life Of Plants", Chuck Mangione; 1/2-speed exclusive cutting for Nautilus and Direct Disk; "Black and Blue" by Rolling Stones; Frank Zappa "Joe's Garage"; ELO "Discovery".

KDISC

26000 Springbrook Ave., Saugus, CA 91350
(213) 365-3991. (805) 259-2360

Contact: Eugene R. Schutz, President.

MASTERING:

Tape Machines: Studer A80.

Cutting Lathes: Scully/Capps.

Cutting Amps: Westrex Solid State.

Cutting Heads: Westrex 3DII, helium cooled.

Limiters: UREI LA3A.

Transfer Panel: Custom designed.

Monitor Speakers: Altec, JBL, Auratone.

Engineers: Lois Downs, Charlotte Moore, Patricia Lee, Laverne Atkinson.

Rates: 12" Master: \$75/side; 7" Master: \$30; 12" Ref. Dub: \$35/SF, \$55/DF; 7" Ref. Dub: \$15/SF, \$25/DF.

PRESSING:

Plating Rates: One-step 7": \$20; One-step 12": \$25; Full processing 7": \$35; Full processing 12": \$50; Stamper only 7": \$10; Stamper only 12": \$15.

Direct-to-disc: Special quotation only.

Presses: 6 SMT 7 & 12" automatics and semi automatics.

Vinyl: Keysor B450 and/or E287.

Other Services: Complete in-house print shop and fabrication.

Rates: Prices available for any or all manufacturing steps. Write or call for quotation and price list. Plant Manager Chuck Swift. KDisc is a subsidiary of Keysor-Century Corporation.

KDISC MASTERING

6550 Sunset Blvd., Hollywood, CA 90028
(213) 466-1323, or 1324

Contact: Bill Lightner, Studio Manager.

MASTERING: 1/2-speed Cutting.

Tape Machines: Studer A-80 preview transport.

Cutting Lathes: Neumann VMS80, Neumann VMS66.

Cutting Amps: Neumann SAL 74, Neumann VG 74.

Cutting Heads: Neumann SX 74.

Limiters: UREI, various models.

Transfer Panel: Custom console.

Monitor Speakers: JBL modified 4300 series, Auratones.

Engineers: Bill Lightner, Carol Hibbs.

Rates: 12" Master: \$75/side; 7" Master: \$30; 12" Ref. Dub: \$30/SF, \$55/DF; 7" Ref. Dub: \$15/SF, \$25/DF.

Credits: KDisc proudly offers the first VMS 80 on the West Coast. This new lathe from Neumann complements a complete 2 studio operation offering tandem cutting and the Zumavdio computer update package for the finest and most accurate transfer of your program.

KENDUN RECORDERS SERVICE CORP.

619 S. Glenwood Place, Burbank, CA 91506
(213) 843-8096

Contact: Kent Duncan, President.

MASTERING: 1/2-speed Cutting, two identical cutting rooms.

Tape Machines: Studer PVWA-800, 4 ATR 2 tracks.

Cutting Lathes: Neumann VMS-70.

Cutting Amps: SAL-74.

Cutting Heads: SX-74.

Limiters: Custom.

Transfer Panel: Sierra Audio.

Monitor Speakers: Sierra Audio SMIII.

Engineers: Kent Duncan, John Golden, Geoff Sykes, Jeff Sanders, Jim Sintetos.

TAPE TO DISC WESTERN

Rates: 12" Master: \$95; 7" Master: \$30; 12" Ref. Dub: \$95; 7" Ref. Dub: \$25.

Engineering Time and Set-up: \$125/hr.

Credits: Alice Cooper, Steve Martin, Ian Matthews, Glen Campbell, Billy Preston, Yvonne Elliman, Best of RSO, Santana, Chick Corea, Chuck Mangione, Linda Clifford, John Denver, Peaches & Herb, Rick James, John Mayall, Frank Zappa, Sylvester, Norman Connors, Molly Hatchet, Gloria Gaynor, Chilliwack.

KM RECORDS, INC.

2980 N. Ontario St., Burbank, CA 91504
(213) 841-3400

Contact: Jim Auchterlonie, V.P. Custom Sales.

MASTERING:

Tape Machines: Ampex 440C.

Cutting Lathes: Neumann VMS 70.

Cutting Amps: Neumann VG-66.

Cutting Heads: Neumann SX-74.

Limiters: dbx.

Transfer Panel: Custom built Quad/Eight.

Monitor Speakers: PASE reference monitors.

Engineers: Dave Ellsworth, Bruce Leek.

Rates: 12" Master: \$75/side; 7" Master: \$25/side; 12" Ref. Dub: \$10 plus studio time; 7" Ref. Dub: \$7.50 plus studio time.

PRESSING:

Plating Rates: One-step 12": \$30; Two-step 12": \$60; Full processing 12": \$90.

Presses: 4 Tolex-Alpha.

Vinyl: Telelec, Keysor 287.

Capacities: 50,000 units per week.

Other Services: Mastering, matrix, printing, jacket fabrication, pressing 12" only.

Credits: Warner Brothers, Varese Sarabano, Discovery Records, Hindsight Recording, Creative World of Stan Kenton, Klavier, Kicking Mule.

KORELICH ENGINEERING

6331 Santa Monica Blvd., Hollywood, CA 90038
(213) 462-2545

Contact: Pete Korelich.

PRESSING

JAMES G. LEE RECORD PROCESSING

145 W. 154th St., Gardena, CA 90247
(213) 321-2187

Contact: Judy Wheehon, Office Manager.

PLATING:

Rates: On Request.

THE MASTERING LAB

6093 Hollywood Blvd., Hollywood, CA 90028
(213) 466-8589

Contact: Sandy or Kathy.

MASTERING:

Tape Machines: Ampex 200 with custom electronics.

Cutting Lathes: Scully and Neumann in tandem.

Cutting Amps: Tube type Mastering Lab.

Cutting Heads: 74s, 68s.

Limiters: Tube type Mastering Lab.

Transfer Panel: Mastering Lab.

Monitor Speakers: Sheffield Lab.

Engineers: Lois Walker, Mike Reese, Doug Sax.

Rates: 12" Master: \$75/side; 7" Master: \$28/side; 12" Ref. Dub: \$70/side; 7" Ref. Dub: \$16/side.

Engineering Time and Set-up: \$120/hr.

Credits: We do the direct to disc cutting for Sheffield Labs.

PRESSING:

Plating Rates: Master only 12": \$30/side; Mother only 12": \$30/side; Full processing 12": \$90/side; Stamper only 12": \$30/side.

Direct-to-disc: Same as above prices.



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SERVICE

Recently Audio Works—the most complete and innovative service there is in repairing and design—has joined our facility.

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We also have an extensive Stock for rent. That includes: Microphones, Mixers, Studio Monitors, Signal Processing Gear, Test Equipment, Speaker Cabinets for Instruments, PA Systems including: Bass Bins, Mids, Horns, Snakes, Amplifiers, and a complete touring sound system....

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647 IRWIN ST. SAN RAFAEL CA. 94901

KDISC mastering

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TAPE TO DISC

WESTERN

MCA WHITNEY

1516 W. Glencaks Blvd., Glendale, CA 91201
(213) 245-6801

Contact: Bunny Brown, Booking Manager.

MASTERING:

Tape Machines: Studer Playback A80 Mark II, Copying: 3M 79, Ampex ATR 102.

Cutting Lathes: Neumann VMS 70.

Cutting Amps: Neumann.

Cutting Heads: Neumann 74.

Limiters: NTP, all other majors.

Transfer Panel: Neumann SP75.

Monitor Speakers: Mastering Lab Super Red System 604E, Mastering Lab crossover.

Engineers: Steve Hall, Eddy Schreyer, Larry Boden.

Rates: On request.

Credits: Barry White, Nick Gilder, Tanya Tucker, Blondie, The Knack, Exile, Pat Benatar.

MONARCH RECORD MFG.

9545 San Fernando Rd., Sun Valley, CA 91352
(213) 767-8833

Contact: Larry Schmidt, Plant Manager.

PRESSING:

Presses: 35 12" presses, 12 7" dual capacity—SMT, HPM injection.

Vinyl: Keysor.

Capacities: 105,000 12"/day, 90,000 7"/day.

Other Services: Matrix, in-house printing.

Rates: On request.

NATURAL SOUND RECORDING STUDIO

9851 Prospect Ave., Santee, CA 92071
(714) 448-6000

Contact: Lou Mattazaro, Owner.

PRESSING BROKER

Other Services: Packages, album covers, art work.

PRC RECORDING

9220 Sunset Blvd., Los Angeles, CA 90069
(213) 275-0303

Contact: Aaron Costello, Sales; Kim Baker.

PRESSING:

Presses: 20 12", 14 7"—Hamilton, SMT.

Vinyl: Virgin, reprocessed.

Other Services: Matrix dept., printing, finishing.

Rates: On request.

RAINBO RECORDS (MANUFACTURING CORPORATION)

1738 Berkeley St., Santa Monica, CA 90404
(213) 829-3476, TWX 910-343-7420

Contact: James Doyle, Steve Sheldon, Jack G. Brown.

PRESSING:

Plating Rates: Full processing 7": \$40; Full processing 12": \$55 — per side, we usually go full processing for in-house customers.

Presses: 20 Lened Automatics "77-78.

Vinyl: Keysor 450.

Capacities: 50,000/3 shift day, 7 and 12 inch/black & colored vinyl.

Other Services: Tape duplicating, albums, special sleeves as courtesy.

Rates: Competitive.

RECORD TECHNOLOGY, INC.

486 Dawson Dr., Camarillo, CA 93010
(805) 484-2747

Contact: Bill Bauer, President.

PRESSING:

Plating Rates: One-step 7": \$15.50; One-step 12": \$20; Master only 7": \$13; Master only 12": \$17; Two-step 7": \$28; Two-step 12": \$37; Mother only 7": \$13; Mother only 12": \$17; Full processing 7": \$38; Full processing 12": \$51; Stamper only 7": \$12.50; Stamper only 12": \$16.50.

Presses: 10 12" automatics and manuals.

Vinyl: Virgin domestic and imported.

Capacities: 5000 daily.

Other Services: Graphics available.

Rates: Varies with production costs and quantities.

THE REFERENCE POINT DISC MASTERING

4020 West Magnolia Blvd., Suite F, Burbank, CA 91505
(213) 845-5184

Contact: Richard Simpson, Owner/Engineer.

MASTERING:

Tape Machines: MCI JH-110M, 3M 400 Series, Technics RS1500, Nakamichi 500.

Cutting Lathes: Neumann AM 32B.

Cutting Amps: VG66.

Cutting Heads: Neumann SX68.

Limiters: Inovonics Model 201.

Transfer Panel: Custom, including dual Orban parametric 622B EQs.

Monitor Speakers: JBL 4315, Little Reds, Auratones.

Engineers: Richard Simpson.

Rates: 12" Master: \$70 ea; 7" Master: \$25/side; 12" Ref. Dub: \$60/DF; 7" Ref. Dub: \$17.50 ea DF.

Engineering Time and Set-up: First half hour free, beyond that \$75/hr.

Credits: John Denver, Elvis Presley, Johnny Mathis, Gladys Knight, Henry Mancini, Ray Conniff, Willie Nelson & Leon Russell, Hues Corporation etc. Various direct to disk projects. Numerous projects for independent producers and independent labels. Received twelve Gold Records over the years for my part in making a hit record.

RESEARCH CRAFT, DIVISION OF CAPITOL RECORDS, INC.

1011 N. Fuller Ave., Los Angeles, CA 90046
(213) 876-3440

Contact: Danny Escalante, General Manager.

PRESSING:

Plating Rates: One-step 7": \$15; One-step 12": \$18; Master only 7": \$16.50; Master only 12": \$18.50; Two-step 7": \$27.50; Two-step 12": \$32.50; Mother only 7": \$12; Mother only 12": \$15; Full processing 7": \$34.50; Full processing 12": \$42.50; Stamper only 7": \$10; Stamper only 12": \$12.

Presses: 16 (of which 4 manual) Lened.

Vinyl: PVC Pellets.

Capacities: 20,000/day.

Other Services: Upon inquiry.

ROCKY MOUNTAIN

Route 2, Box 1354A, Cheyenne, WY 82001
(307) 638-8733

Contact: Georgia.

MASTERING:

Tape Machines: Ampex.

Cutting Lathes: Scully.

TAPE TO DISC WESTERN

Cutting Amps: Westrex.
Cutting Heads: Westrex.
Limiters: Fairchild.
Transfer Panel: Custom.
Monitor Speakers: DTRs.
Engineers: Ray Alexander.
Rates: 12" Master: \$65/side; 7" Master: \$31/side; Engineering Time and Set-up: \$25/hr.
Credits: Keysor-Century, Nationwide Papers, Transco Products.
PRESSING:
Plating Rates: One-step 7": \$25; One-step 12": \$30; Master only 7": \$25; Master Only 12": \$30; Two-step 7": \$50; Two-step 12": \$60; Mother only 7": \$25; Mother only 12": \$30; Full processing 7": \$75; Full processing 12": \$90; Stamper only 7": \$25; Stamper only 12": \$30.
Presses: 2 Finebilt manuals.
Vinyl: Pure vinyl.
Capacities: 6,000/day.
Other Services: Printing jackets, boxes, mailers, art works.

SCOTT/SUNSTORM RECORDING STUDIOS

8255 Beverly Blvd., Los Angeles, CA 90048
 (213) 658-5990

Contact: Kimberly Rodman, Traffic.

MASTERING:

Tape Machines: Studer A80.
Cutting Lathes: Neumann VMS70.
Cutting Amps: Neumann SAL 74 system.
Cutting Heads: Neumann SX 74.
Limiters: UREI 1176LNs.
Transfer Panel: Custom DeMedio/Bushnell Electronics.
Monitor Speakers: Custom JBL/Augsperger design, JBL 4310s, Auratones.
Engineers: Walt Weiskopf
Rates: 12" Master: \$75; 7" Master: \$30; 12" Ref. Dub: \$70/DF, \$50/SF; 7" Ref. Dub: \$18.50/DF, \$15/SF.
 Engineering Time and Set-up: \$125/hr.
Credits: Levon Helm & The RCO Allstars, John Mayall, The Flcaters, The Dixie Hummingbirds, The Nights, Joe Barry, The Robert Lyons Singers.

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Tape Machines: 3M, Inovonics.

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Cutting Amps: Neumann VG 66.

Cutting Heads: Neumann SX 86.

Limiters: UREI, Infonic.

Transfer Panel: Graphics, Neumann Model, Custom

Monitor Speakers: Altec 604E & JBL.

Engineers: Leo Kulka.

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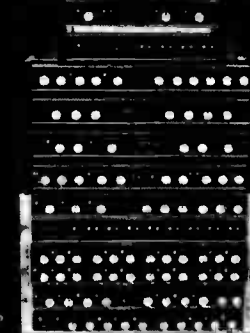


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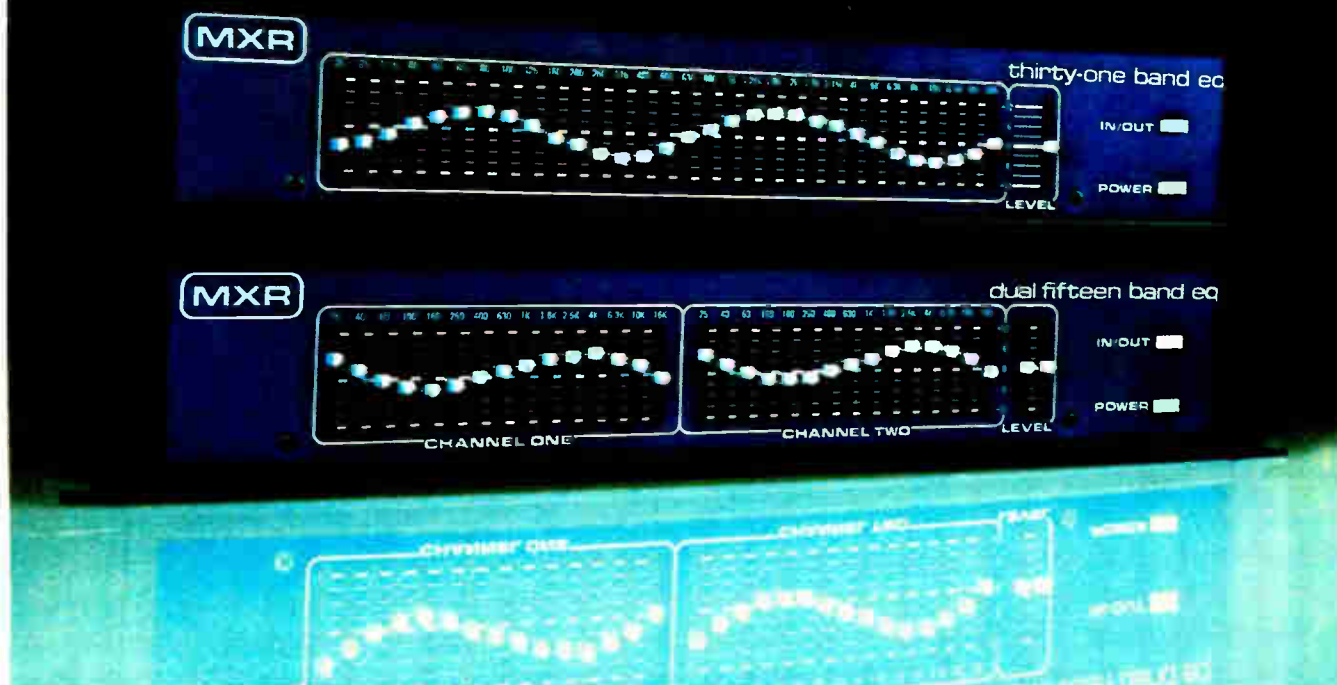
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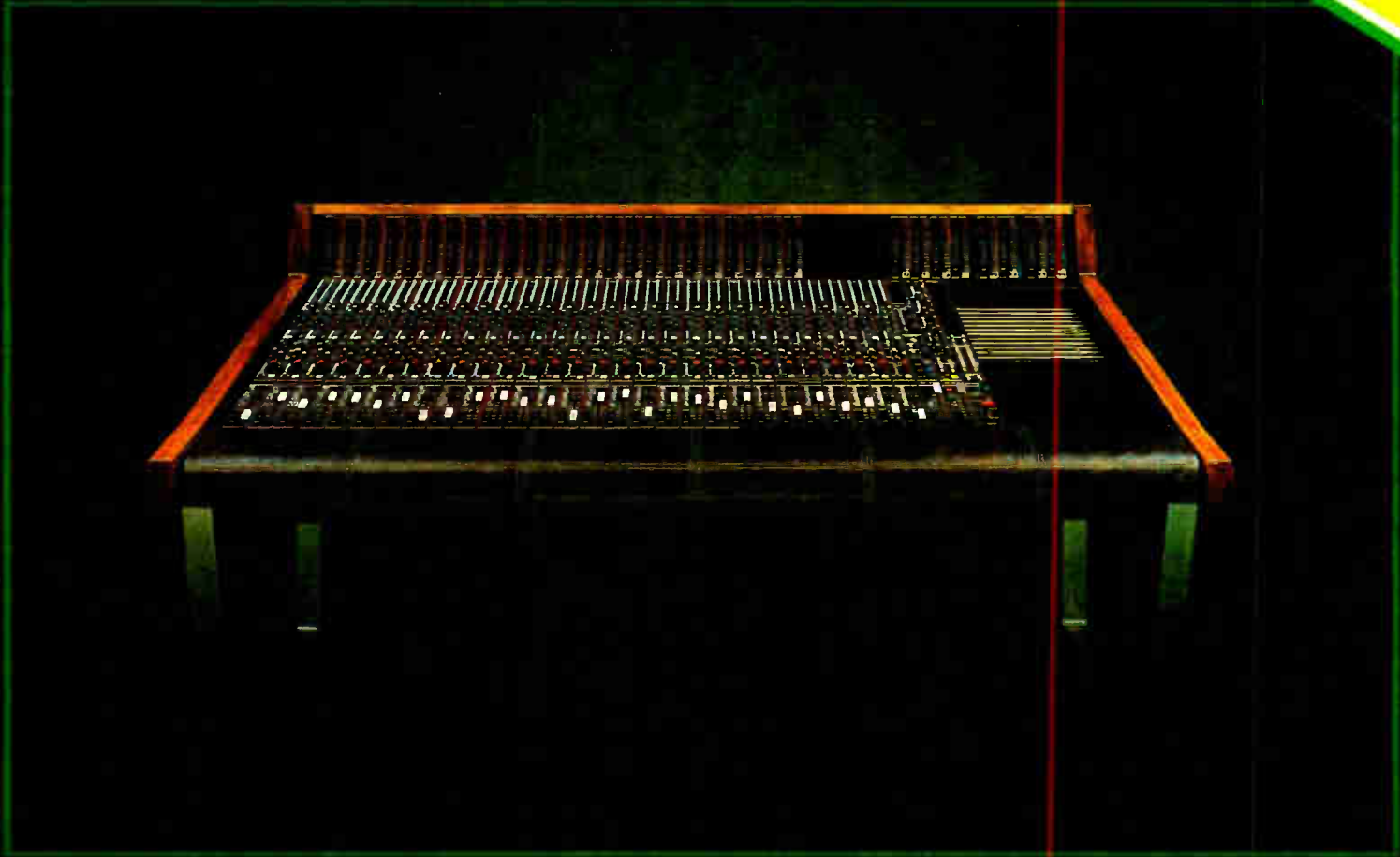
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