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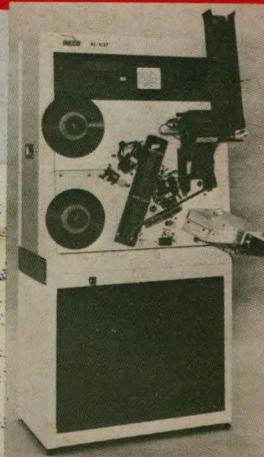
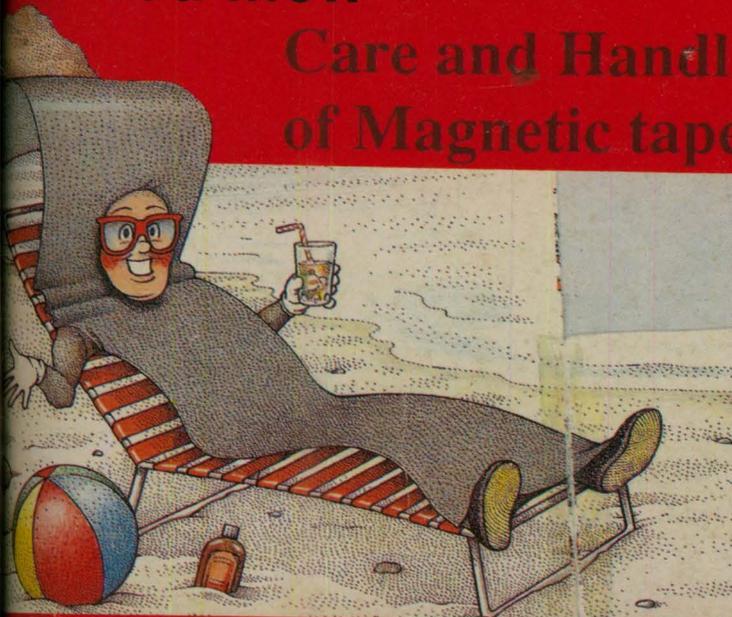
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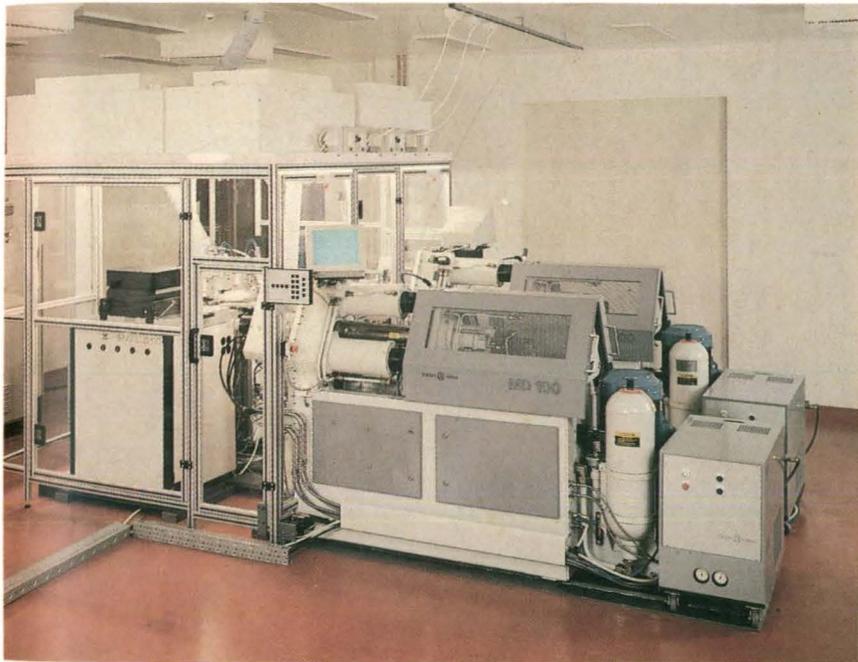
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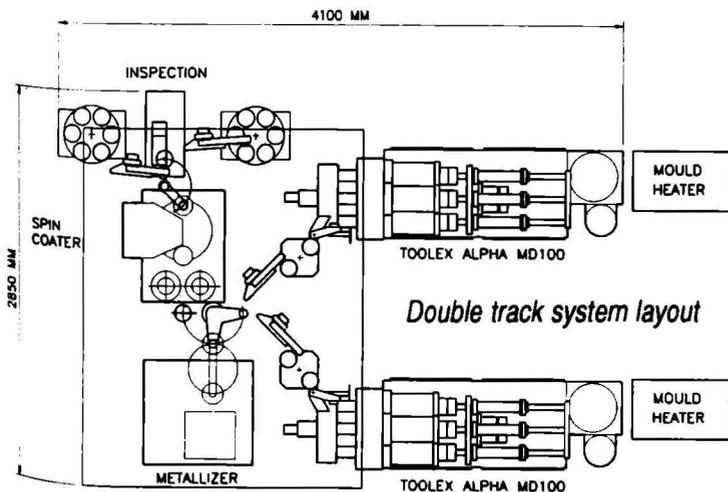
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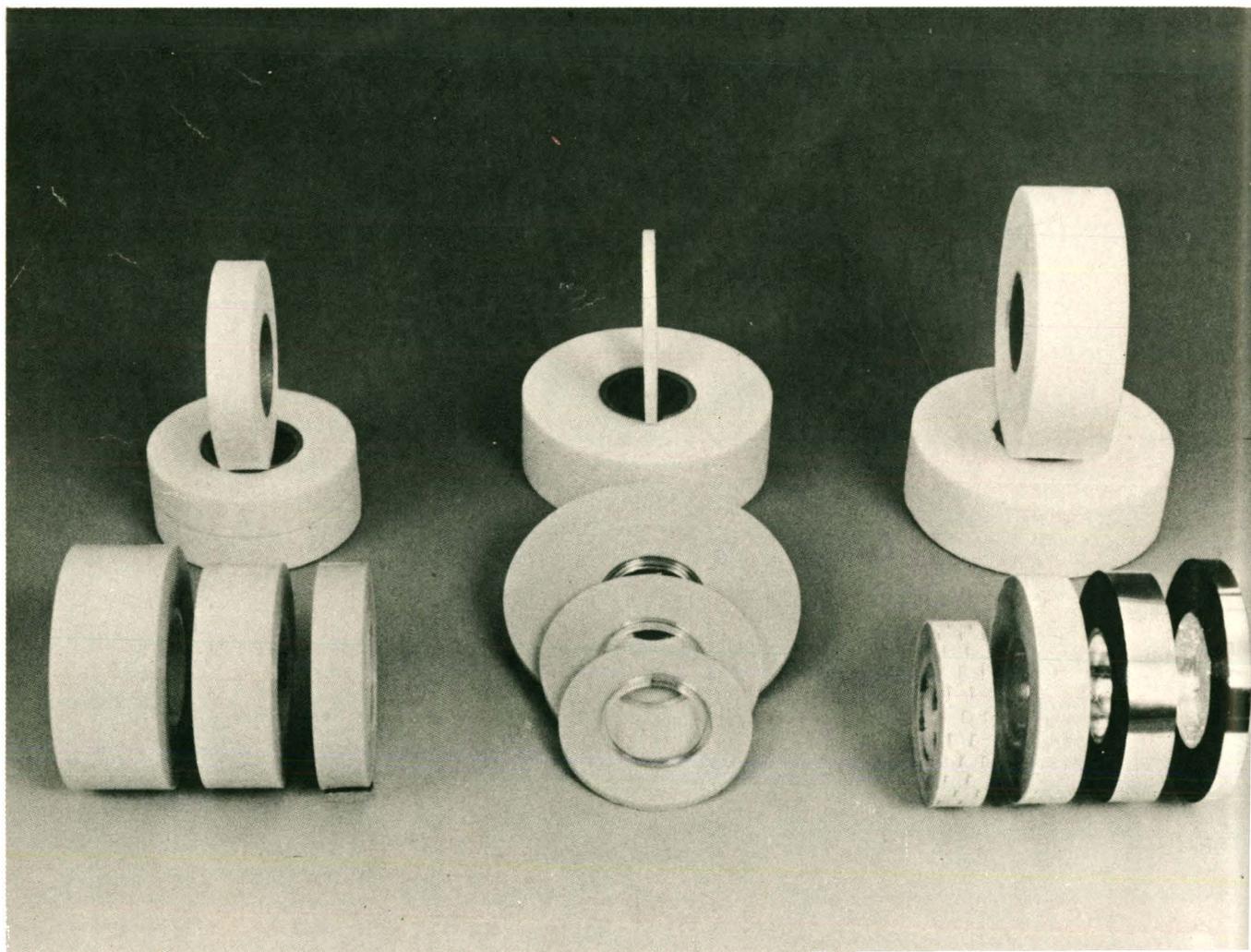


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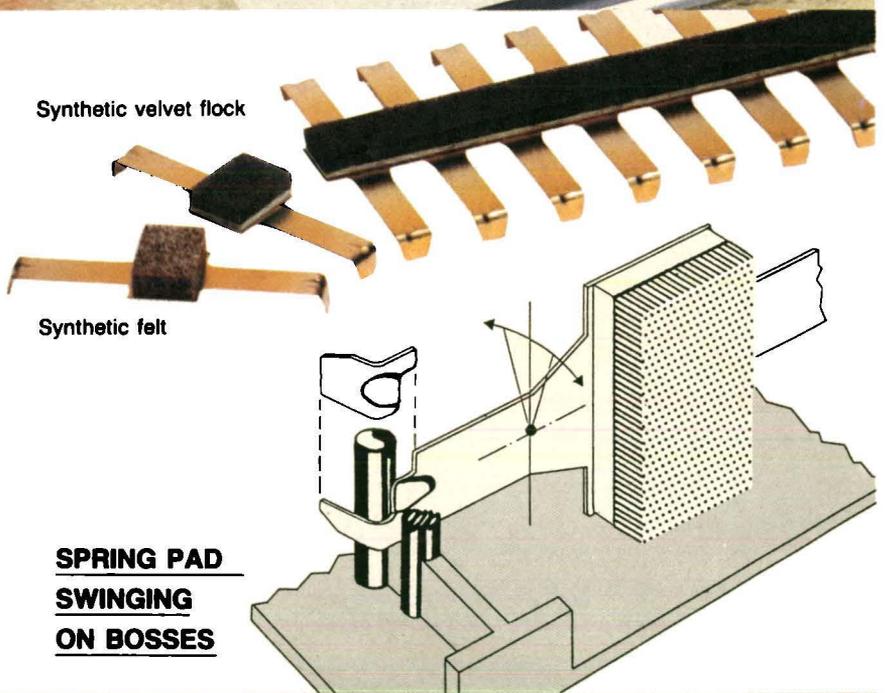
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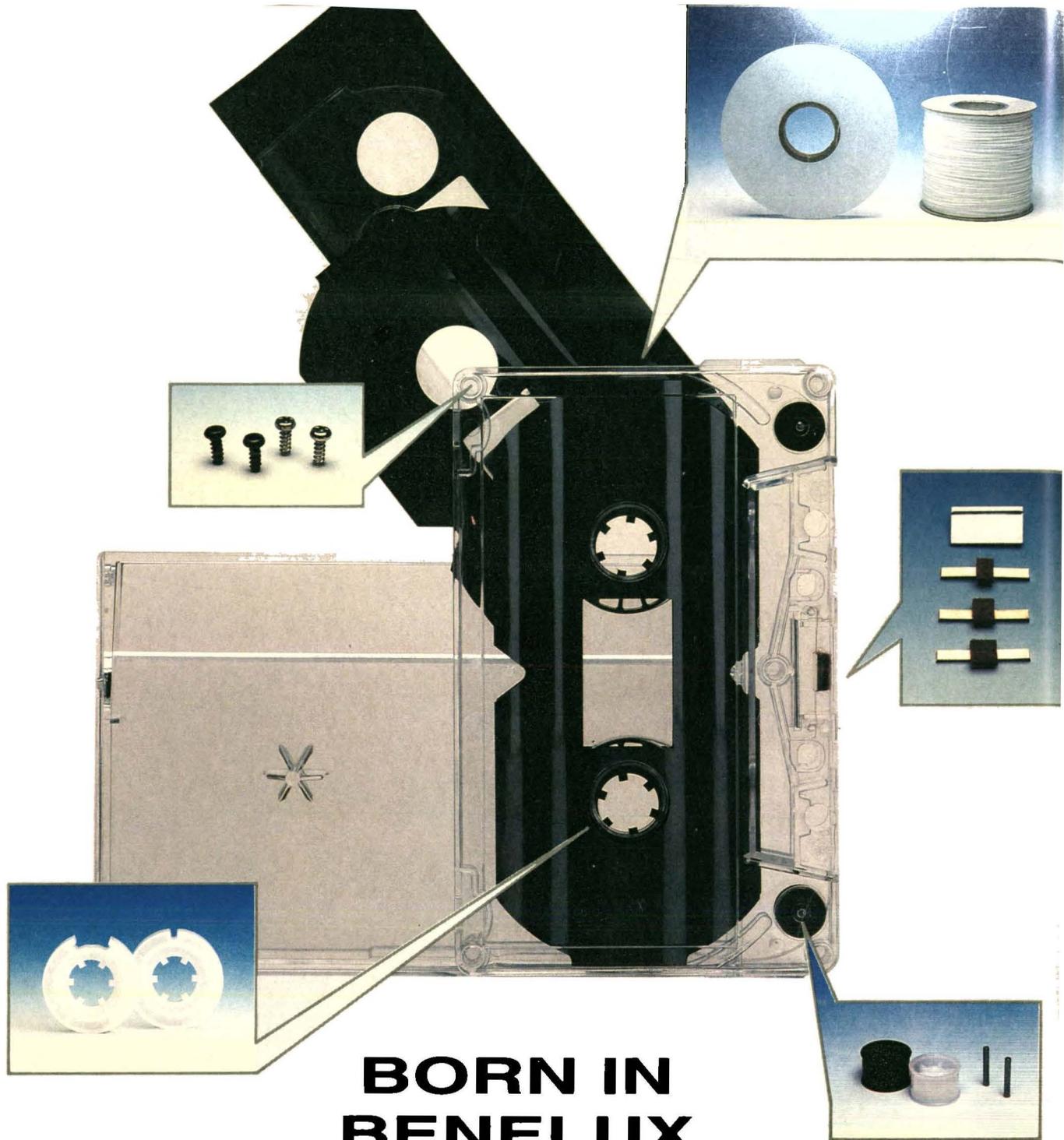


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trolled requested basis, only to qualified  
personnel.

## A NOTE FROM THE EDITOR

### India cannot do it.

The greatest country in the world, so many district people, as much, if not more, evolved than those of Europe. The Bengalis like the French, the Punjabi's like the Germans, the Gujaratis like the Spanish, the Rajasthanis like Swiss, the Tamils like the Greeks, the Maharastrians like the Italians, and as is evident, India has more. More in intellectuality, in language, in style. Yet our greatness is, we are one. Such humility, such togetherness, no other country has it. Therefore I say The Greatest Country in the world, cannot do it.

India cannot, as yet, produce products like Dolby, Bose, Bruel & Kjaer, Trident, Sony, Yamaha, Studer, or the other hundreds of internationally reprinted manufacturers, who produce audio video replication and studio equipment. India cannot do it. We have to import.

However, the availability, of all these products is poor, as yet. The demand is fabulous. What I have seen is that all these companies need is knowledgeable agents, distributors, or representatives.

All qualified electronic engineers, and also others in this line have a excellent opportunity to enter into a lucrative activity. There are hundreds of internationally reprinted brands, but only a few, are represented.

Playback readers may write in for addresses of manufacturers, they wish to represent. We are glad to help. It is our aim to see the Indian market fully opens up and the options available to the equipment buyer, is similar to those in USA or Europe. With this process knowledge will greatly improve.

In Broadcasting, where the field is still closed, in the near future, when this avenue too opens up fully, the demand for all audio, video and broadcasting equipment will boom. The future is great.

In the future issues readers will get more information and editorial on pro audio and video. More information on products and where to get them. also plan more usefull articles on sound quality and studio design and accoustics.

#### Compact Discs

Definitely in 193 CD plants will begin to operate in India. Hence Playback will begin to give a lot more information in this subject. On replication technologies, on CDI, on minidisc, etc.

DCC, I predict is doomed to failure. Read about it in Intl. News - DCC V Mini Disc, Battle Royal.

Daman sood, who the readers are aware is celebrating the 25th year of Western Outdoors. A useful article on the studio set-up. It shall make others emulate this ideal.

Head relapping is now acceptable to both the in cassette duplicators as well as loop-bin operators. So an article on this subject shall help maintenance engineers. It has been lifted from Mix magazine.

Otherwise, as usual, a very informative issue. Again much awaited. Playback now has its own DTP at the Juhu office. So in future we will be with you faster and surer.

Anil Chopra

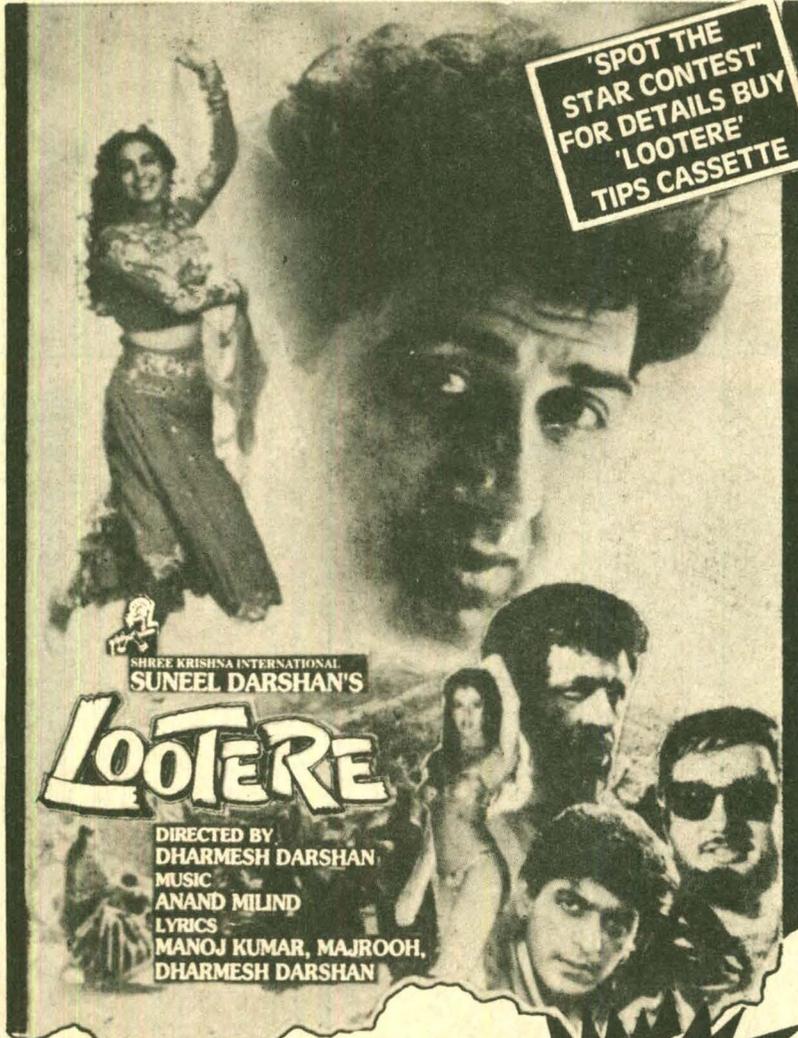
#### Writing for Playback

We invite readers and members of the industry to contribute their views and thoughts. If you would like to write for PLAYBACK please contact the Editor to discuss your idea. You may also send in your article in typed manuscripts for acceptance.

#### Subscriptions

India, Pakistan, Bangladesh, Nepal, Bhutan, Sri Lanka, Burma Rs 200 (or equivalent) for 12 issues. Foreign subscribers worldwide US \$ 55.

# MUSIC OF A LIFETIME



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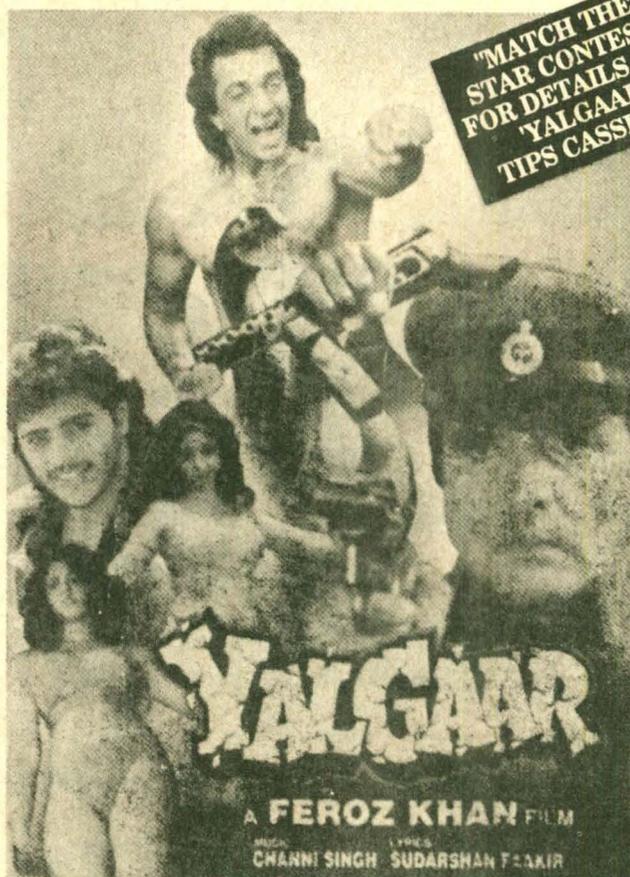


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Khel, Aaj Ka Goonda Raaj break through

## Subhash Ghai with Tips



'ALLAH BADA TU HAI' L to R - Mr. Sayed Ali (music Director), Ramesh Taurani of Tips, Payam Saeedi (Lyricist), Mohd. Aziz (Singer) Alka Yagnik (Singer) & Kamal Menghani of Tips.

With the signing of Subhash Ghai's 'Khalnayak' by Tips, the music business has completely entered into a new cycle. All links with the past are now broken. Undoubtedly, it is an achievement for Tips. One major wholesaler in Bombay remarked 'it cannot only be money. Subhash Ghai must have seen for himself the highly aggressive marketing for 'Khuda Gawah' and the money spent on publicity. I am sure Subhash Ghai has acknowledged Tips as a justified successor. HMV cannot claim any moral rights on any ground anymore.' In fact, the long shadow HMV stretched over these past few years on moral grounds and other pleadings, of its claim, to the topnotch film producers' soundtracks on account of history and emotion and morality, has finally disappeared with the chandelier lights coming on of the new carpetbeggars. It is rumoured in the market that 'Khalnayak' went for Rs. 7.5 million advance royalty with a commitment of Rs. 2.5 million for publicity.

### Raakesh Roshan

After the music success of 'Khudgarz', 'Kishan Kanaiya' and 'Khoon Bhari Maang' all Raakesh Roshan movies now, his 'Khel' has once again caught the imagination of the market. Tips has continued with

### Public image boost

'Allani Mogudu' is a Telugu film, which has a story line revolving around a music company - Surya. The success of this film has given Surya, the best public image and popularity.

Subhash Ghai, also boosted HMV in Karz, on a song dance sequence on a giant record. Gulshan Kurnar and Super Cassettes too got a similar boost from Dance Dance.

P.V.RAO

Raakesh Roshan now for the fourth movie for the last couple of years.

'Aaj Ka Goondaraj' is a top seller at the beginning of August. Anand Milind have a break through after a long time. It is a challenge sung by Ameet and 'Tota Mera Tota' have become hits.

### Releases

'Ek Ladka Ek Ladki', 'Apraadhi', 'Geet', Dev Anand's 'Pyaar Ka Taraana', 'Deedar', 'Qaid Mein Hain Bulbul', 'Saatwan Aasman', 'Heer Ranjha' have all been released.

### Basic

Shree Rajeev Gandhi is a Marathi powada album by Rashtriya shayar Babasaheb Deshmukh.

Moods of Bhagwanti Navani is a Sindhi bhajan album.

A Bhojpuri Popot and Shaadiki Galiyan sung by Ramlautan and composed by Vishwakarma.

Milan Singh the female in male voice offers Phankar Ek Awaaz Anek in volume 8.

Allah Bada Tu Hai by Mohd. Aziz and Alka Yagnik with Syed Ali's music is a muslim devotional number.

Shree Hanuman Chalisa with music by Dilip Dutta and sung by Mukesh Prabhakar and Devki Pandit.

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## Loopbins in India

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Sagarika

Sound Print

Sangeeta

Super Recording

T series - 4

Tips

Universal - 2

Vijayata

Venus - 3

Weston - 2

## Forthcoming are

Akash

Empire

Kapco

Lahiri

Surya

Sterling

Vishwa

Plus., an estimated 20 more loopbins are under various stages of project development which surely will be imported and commissioned in a year's time.

## Soundtrack Hits

Aaj Ka Goonda Raj : Tips

Beta : T series

Deewana : Venus

Jaan Tere Naam : Weston

Khuda Gawah : Tips

Khiladi : Venus

Platform : Venus

Saajan : Venus

Shola aur Shabnam : Venus

Sapne Saajan Ke : Lara

as on 5th August '92

## A.I.R. orders multitrack

The Delhi and Bombay studios of A.I.R. are soon to be equipped with either Studer or Saturn 16 channel multitrack taperecorders. Meltron and Pro Sound have both bid for Studer and Saturn respectively, their lowest quotations for this supply.

In the near future Delhi and Calcutta too will be equipped with such multitrack taperecorders.

## KIRAN VIDEO'S "PUSHPANJALI"



Mr. Akula Niranjan Rao chief of Kiran Electronics felicitating Dr. Dasari Narayana Rao at the "PUSHPANJALI" video cassette release function.

Far back in Telugu film industry most of the films made by veteran Producers were based entirely on story value and melodious music which was the bed rock of success. But as decades rolled by such legendary music has gone into oblivion eclipsed by the run of the mill music. The present generation are denied the mellifluous music of yester years which is always fresh in the memory of the older generation. Under such crucial circumstances Messrs. Kiran Electronics, Vijayawada have introduced a sensational event of collecting a series of good devotional songs from various Telugu films compiled as a musical chain and incorporated in their latest Video cassette titled "PUSHPANJALI". So Kiran Electronics got out a most colourful ceremony with an august assembly of elite from different walks on February 16th at Open House Conference Hall, Vijayawada. The noted journalist Mr. Turlapaty Kutumba Rao chaired the function, graced by the famous writer, director Dr. Dasari Narayana Rao as chief guest and Mr. Akula Narasimha Rao, Partner of Kiran Electronics was also present on the dais. The function commenced traditionally with the prayer song rendered by Dr. Ashok Konada.

Speaking on the occasion Dr. Dasari said that he is fortunate to have the privilege of participating in this function conducted by Kiran Electronics which goes a long way in this Video business. He also commended the laudable efforts made by Kiran Electronics in bringing out a Video cassette exclusively based on devotional songs. The first Video cassette was formally released by Dr. Dasari Narayana Rao and the very first Cassette was sold to Mr. Santhana Krishnan of Shri Balaji Classics, Madras. Mr. Akula Niranjana Rao the chief of Kiran Electronics proposed a vote of thanks.

P.V. RAO

# Webel mixers a success

Webel Mediatronics Limited, a leading manufacturer for Studio & Broadcasting Equipment since 1981, has recently developed an ALL MASTER FADER CONSOLE with its own in-house technology. This Console is used after the Audio - Video Routing Switcher in the MSR Room of a TV Broadcast Studio in order to control the audio level of the TV programme coming from various sources, viz. different Studios, Satellite etc.

In November 1991, the first unit was delivered to Doordarshan Kendra, Bombay. Satisfied with its performance, DD has placed a further order for 10 more units for

major Studios in the Country.

Among the new products of the Company special mention may be made of a 3/4 Channel light Portable Audio Mixing Console - available at a competitive price - is becoming popular for spot news, conference, commentator boxes, musical programmes, auditoria as well as many outdoor activities.

The Company has so far supplied more than 130 units of 8/12/16 Channel Audio Mixing Consoles in different Studios of Doordarshan throughout the country.

Mr. Goswami is the Managing Director of the PSU

## Huge AIR order for Digital Reverb

Playback has learnt AIR is processing its requirement for 103 numbers for high quality digital reverbs Pro Sound is offering BSS. Hy Tech Corporation, Delhi is offering K lark Teknik.

AIR is in the process of ordering big quantities of microphones, headphones, mixers and taperecorders.

## Rajes Art Printers Loop-bin Set-up

Rajeev Aggarwal is managing the new duplicating facility set-up in Bombay. A Lyrec loop bin and two twin slaves and one Tachos C-0 loader have been installed. The unit is catering to Magna Sound and other companies.

# Surya's glittering second anniversary



## Surya Recording Company 2nd anniversary celebration

A grand fete of colourful function was celebrated on April 9th at the prestigious Sri Thummalapalli Kalakshetram Auditorium, Vijayawada to mark the occasion of second anniversary of Surya Recording company which is a symbol of excellence in the audio field. This historic event has presented a glittering show of film luminaries, music lovers and the elite of the city.

This function was chaired by the noted journalist Sri. Turlapaty Kutumba Rao, while Sri. M.M. Keeravani the music composer was the chief guest along with artistes Suresh, Kumari. Sivaranjani, directors K.V.V. Satyanarayana, Gunasekhar, C.V. Jain (Jain Agencies, Hyderabad) Jet Speed chief Hemanth Shat (Bombay), writer Bhuwana Chandra who lent charm with their gracious presence on the dais.

Speaking on this occasion the music director

Sri. Keeravani said that the famed producer Sri. Ramoji Rao's Usha Kiran Movies stands as a symbol of strict discipline in the field of film making. Likewise he said that in the field of audio cassette industry, the noted Surya Recording company is solely committed to market qualitative standard audio cassettes without compromising on their quality. He also said that on one hand composing a melodious tune and recording the same on sophisticated equipment is one aspect and on the other hand producing a standard quality cassette and releasing in the market by Surya Recording Company is another aspect. Thus Surya Recording company's motto is to cater quality cassettes.

On this happy occasion colourful cultural activities like music concert, dance programmes etc., were conducted to entertain the distinguished audience.

P.V. Rao

Rs.20 million to exploit the S'tracks

# Too many players?

When Vishva Sound & Light advertised nearly 10 pages or so in Screen even the cynical were slightly jolted. What is the music business really about? It is understood that soundtracks is the name of the game. Taking off from the classic concept of a free person 'have ticket - will ride,' those who want to make it in the music business offer their concept 'have money - will buy,' soundtracks. Needless to say, the cost of the classiest soundtrack is rumoured to be now close to Rs.7.5 million plus many more guarantees for publicity, promotion, sales etc. etc., making it impossible to properly exploit top-of-the-line soundtrack for nothing less than Rs.20 million.

Featuring a list of those bidding for soundtrack rights (in alphabetical order).

G Series

H.M.V.

Lara

Music Bank

Master Sound

S Series

Sterling

Time

Tips

T series

Venus

Vishva

Weston

## Supreme Audio Cassettes launched in Hyderabad

A new audio recording concern, Supreme Enterprises at Hyderabad got out a most exquisite and lavish function at Krishna Oberoi Hotel, Hyderabad on 15th March on the occasion of the release of their first three audio cassettes, PELLAMCHEBITHY VINAALI, MEERA and SARASAALA SOGGAADU.

Mr. T.S. Rao, DG of Police was aware of piracy and naturally his presence spoke in favour of legit business.

R.V.R. Chowdhary, the partner of Supreme Enterprises said that hitherto many audio recording companies have adopted to loopbin recording of their audio cassettes only for certain films. So, now, he stressed the need to adopt recording on loopbin systems for all pictures without showing any distinction between big or small films.

Supreme has acquired 12 Telugu soundtracks. Also, basic repertoire sung by popular playback singers of the South are being recorded.

P.V. RAO

## Tape Coating Plants

Audio Fine - Madras.

Bathla Cassette Industries - New Delhi.

Vishva - Rajendra Penta - Aurangabad.

Garware - Aurangabad.

Murugappa - Mysore.

Indu - Hyderabad.

H.M.L. - Hyderabad.

Sakamichi - Umbergaon.

J.K. Magnetics - U.P.

T. Series - 2 plants - Noida.

Jai - Nasik.

I.M.L. - Simla.

Music Systems - New Delhi.

Melody Magnetics - New Delhi.

Weston - New Delhi.

Jammu-

Baroda -

Rajasthan - M. L. Jain.

Letape - New Delhi.

## Tips Audio rights acquisition

The s'tracks bazaar is witnessing new raiders. Each acquisition tantamounts to an accomplishment today. The A&R team is to necessarily have an eagle eye and good PR and good money backing and quick decisions to sign up s'tracks audio rights agreement.

Tips who are regarded with awe in the music business today for their determination to pick up the good soundtracks have acquired the following.

(1) Roopvati Productions 'Saajan Ka Ghar' with music by Nadeem Shraavan and lyrics by Sameer.

(2) Glamour Films still untitled venture starring Amitabh Bachchan and produced by Manoj Desai and Nazir Ahmed. Other cast and credits are still being finalized.

(3) Anas Films 'Rang' with music by Nadeem Shraavan and directed by Talat Jani for producer Mansoor and Siddiqui.

## Tips marketing

### Heer Ranjha consumer contest

Tips is running a consumer contest through Star & Style, Eve's Weekly and Debonair, namely, 'Tips - Star and Style HEER RANJHA' Costume Dress Contest. On purchase of a cassette an entry form is enclosed in the cassette which informs you to go to the nearest photo studio and get yourself clicked in size 5" X 7" dressed up as Heer or Ranjha (as the gender permits) and send it to Tips Cassettes. Ten best photos (5 Heer + 5 Ranjha) will be selected and called to Bombay for the 'HEER RANJHA' function. A panel of judges will then select the heer and Ranjha from among the 10. The couple will then be given a break/role in Harmesh Malhotra's next film. Other prizes include 1 year free subscription to 'Star and Style' for all the 10 contestants, Tips specially designed quartz clock, Star & Style special trophies and 200 consolation prizes of tips audio cassettes.

## Playback strengthens South reporting

In this issue already one will notice that the news on south companies is more than complete.

P.V. Rao has committed all his energies to Playback, these past few months. He now functions as both Asstt. Editor and Business Manager. Naturally, his responsibilities extend to advertising and marketing the magazine. The music business in the four South languages is amazingly strong and self-reliant, if one compares to other language markets like Marathi or Bengali or Gujarati where the regional market is more or less drowned in the Hindi film music blitz. The companies in the South like Echo, AVM, Sangeeta, Leo, Lahiri,

Surya, Tarangini, Empire and now Akash and Supreme are all big names and recognised by the music buffs.

Playback hopes that all these music companies will soon strengthen the media by extending advertising support.

All recording studios, duplication units and music companies, small or big, may please contact P. V. Rao to give their news and views at the following address..

P. Venkateswar Rao,  
Kadambari Apartments,  
1st Floor No.2, Tikki Road,  
Vijayawada 520010, Andhra Pradesh  
Tel No. 0866-477500.

## Scramble for S'tracks in Andhra

Of late, some more new recording companies, have set up audio business in Andhra Pradesh, and are offering huge amounts to filmmakers, without any ceiling it seems. As such, there is keen competition among themselves.

The filmmakers naturally are delighted,, getting paid much more than what the soundtracks deserve.

P.V. RAO.

# **CRESCENDO**

**SAYS**

# **"THANKS"**

**TO THOSE WHO HAVE CONTRIBUTED TO ITS SUCCESS**

**Rakesh Puri**

**Clement D'Cunha**

**CBS Records**

**Merlyn D'Souza**

**Jet-Speed Audio**

**Louis Banks**

**Silver Beats Music**

**Charles Vaz**

**Suntronics**

**Bashir Sheikh**

**Hazzard**

**Aditya Enterprises**

**Kim Cardoz**

**Estrada Marketing**

**Rhythm House**

**V. P. Sinari**

**United Music**

**Alurkar Music**



**Helix Music**

**CRESCENDO MUSIC & MARKETING**

MELODY SALON, AMA HOUSE

COLABA BOMBAY - 400 005

TEL : 231821

## Anup Jalota's Double M

Double M is the music label for Melody Music (I) Pvt. Ltd. Promoted by Anup Jalota, Anil Jalota, presumably Anup's brother is the chief of the company. Anil has 'vast experience in business management and marketing, is an asset to face the challenges for the new venture.' Shashi Bhomavat is the other director, 'he has experience in the field of publicity and promotion. It has become very easy for the company to tackle production of interna-

tional standard cassettes and designing and printing of inlays, posters, press ads etc. His creativity and experience will help to communicate the difference in our albums.'

Double M proposes to get up its own recording studio with state-of-the-art equipment. Compact discs and long playing records are also on the anvil. The company feels the demand for classics and Indian music is at the peak.

## Catrack into video:

The Chaandigarh based company is earning a name for itself in Punjabi music. The artistes Varinder Bachchan and Surinder Bachchan and Sarvajeet and Sukhivinder Panchi are releasing one hit after the other.

'Lalkara Jatida' has been released on video, as also a video magazine has been launched.

## Crescendo is Hot! Hot! Hot!



Merlyn D'souza and Kim Cardoz are hot property with the success of their album with Crescendo. Suresh Thomas informed Playback "For two months this album is the best-seller in Bombay. A virgin album with top dancing hits marketed at Rs. 35/- Sold nearly 18,000 pieces. The album was recorded at Clement D'Cunha's D.E.A.R. Studio. Hot Hot Hot II is on its way. "Some more instrumental albums are coming up. Commercial masala stuff". A solo album of Kim Cardoz is also on track. Hazard, the glamour rock group or punk group, if you please, has also been signed on. The album is under production at Napoleon Studio. Nakul Kamte is the sound engineer. Crescendo is paying for the studio time.

Louis Banks has a full instrumental jazz album recorded. Pan Crain with vocals is teamed up with Louis Banks for another jazz item.

Silver Beats is offering Hari Om Sharan, Mehndi Hasan, Shobha Gurtur, Vilayat Khan and Hari Prasad Chaurasia for release in the next one or two months.

### Music School

Manjula Gururaj, a playback singer, is running a music school for professional singers. Sadhana Music School, 114, Heryavadana Rao Road, Govipuram Extn, Near Ramakrishna Ashram, Bangalore - 560019.

## MIL Promote Indian band Halley's Disciples



### Halley's Disciples EMA

Khaled sings in Arabic. Star TV has aired the artistic 35 times a week, and MIL has pushed the album strongly with success.

Its avalanche of international releases continues. Salt & Pepper, Elton John, Lionel Richie, Chris De Burgh, Richie Sambora, John Mellen Camp and gospel, classical, country, jazz, instrumental et al.

A third national rock band has made its 'debut' headed by the vocalist Shagith Mathew. The album is titled 'EMA' i.e. extra marital affairs.

Cadizaza, a Portuguese and English album by Felix Flor has been promoted.

Penaz Masani is back with another album 'Mohabbat Ke Sagar.'

## Double - M distribution

## United Music to distribute CBS in Madras

United Music, who started operations as distributors for independent labels Super Music Company and Crescendo Music and Marketing, have recently concluded an exclusive distribution deal with International label CBS - Sony and Ghazal/Bhajan singer Anup Jalota's independent label, Double-M.

Nikhil Raghavan and Shashi Menon, promoters of United Music are excited about this development and are confident that their new tie-ups "will give our dealers the best of music from a wide repertoire range." Better dealer servicing will no doubt improve the music

business in general.

GO-Getters is their sister-concern, which is into organising entertainment shows. Their activities are not lagging behind either, with a few very successful shows under their belt, backed by multi-national companies and corporate giants.

Starting July, Go-Getters will be staging various kinds of entertainment shows. Shashi Menon feels "We have a very strong name in Co-Getters and we are trying to live upto it."

OUR FAX NO: 91 (22) 4930154

## Orange Pale, Madras represent Electro Sound and Gauss

To take advantage of the increasingly important and rapidly expanding cassette market in India, Electro Sound and Gauss have appointed Orange Pale Professional Audio in Madras. In addition, Orange Pale Professional Audio has been established as a service-parts-installation center to strengthen marketing effectiveness.

"Because of its size and complexity, the vast market potential in India makes it imperative to have full representation, including a local company that is fully equipped as a service, installation and parts facility," Jim Williams, president of Electro Sound and Gauss, said.

The full-line Electro Sound duplicating systems include Models 4800, 9000 and 5000, as well as test equipment (Series 4300) and cassette loader (Model 1850). The Gauss product line includes a high-speed duplicating system (Model 2400), and quality test equipment (Series 1100).

"We are placing greater emphasis on the market in India because we feel there is an excellent opportunity for Electro Sound and Gauss to expand their presence in this

important and expanding cassette market," Williams said. "This organizational structure strengthens our service to existing customers and bolsters our opportunities in reaching new customers."

Orange Pale Professional Audio is directed by David Santwan, managing director. Santwan, involved in professional sound and electronics since 1978, established Orange Pale professional Audio in 1987 as a full technical support company, ranging from equipment design and engineering to electronics, service and maintenance.

Orange Pale Professional Audio includes four electronic engineers and eight service technicians on its staff, including specialists with experience in professional audio. Beside its expertise in audio cassette duplicating, the company designs recording studios and builds customized professional sound equipment, test systems and electronics accessories.

Orange Pale will work in co-ordination with dBm Ltd, London for Gauss and Audiomatic corporation, New York for Electro Sound.

## Film music free for Cable TV

Multi Media Communications has recently released a cassette for film music promotion and publicity. The cassette is to be distributed for to all cable operators all over India, says a press release from MultiMedia Communications. The press release also claimed that the first volume titled 'Sangeet Prachar' contains songs from films like 'Sapne Saajan Ke', 'Tahalka', 'Sason Ki Sargam', 'Paayal' and 'Khiladi'. The cassette is also supposed to carry trailers of 'Tahalka' and 'Khiladi'. Multi Media plans to make these cassette a fortnightly feature.

## Seengals Music Award 1992

Compact Disc India Ltd have announced 'Seengals Music Awards' for the most popular music director, playback singers and lyricist. The prizes, which will be awarded in the form of a trophy and cash awards will be presented to the winners in Bombay in November 1992. A public opinion poll will be the basis for selecting the winners of the award.

## Swarshree active again

The pioneer of Hindustani classical music in India, Swarshree released three new albums. Prakash Sangeet, Dinkar Kaikini and Jyotsna Ganpule are the artistes.

Way back in 1980, Achut Ganpule of Parshuram Potteries started Swarshree, a record label exclusively for Hindustani classical music. Today, the catalogue is more than 50 titles featuring all the top names in Hindustani classical. Since, the last couple of years, Swarshree was tied up with CBS for the new releases and marketing. Swarshree has decided now to delink from CBS and further releases will carry only the Swarshree label. Also, Mr. Ganpule has decided to once again record new classical talent as well as accomplished maestros and put together catalogue of not less than 100 classical Hindustani numbers.

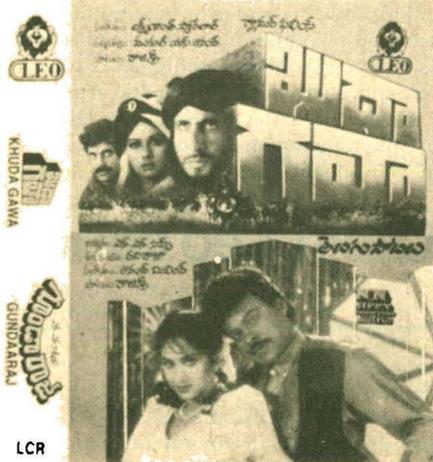
## Sri. Akula Niranjana Rao, Kiran Electronics Dead

Sri. Akula Niranjana Rao, the architect of Kiran Electronics and Kiran Videos, Vijayawada was cut short by his premature death in a road accident on 8th March, 1992.

By his tragic death there is a void in the field of Video which is an irreparable loss. He has to his credit the success of marketing more than 200 Telugu video cassettes under Kiran Videos trade mark, which became very popular in Andhra Pradesh and Madras.

P.V. RAO

## Leo acquires recording rights of Hindi Soundtrack



It is sensational news to the Telugu music lovers that Leo Audio Video (P) Ltd., has introduced another innovation one after the other in the field of audio.

The latest method they have introduced by acquiring the copy right of only music tracks of recent best Hindi musical hits Khuda Gawah, Aaj ka Goodaraj from Tips Recording Co., Bombay and mixing these music tracks with the Telugu lyrics sung by South India's popular playback singers. Thus the Hindi music track is mixed with Telugu lyrics track and marketed on LEO label in order to cater a section of Telugu music lovers. This marvellous experiment by Leo has achieved stupendous success in the largest sale of above two films audio cassettes in Telugu version.

## Suveen Disco Lighting

This company offers rope light 25' 4 line 240 watts. Automoving 8 flat beams. High power smoke machine. Solid state flasher. Strobe lights mirror balls, pin spot light, with motorised colour wheel.

Fame-O-Shahpuri  
8, Ratan House  
12, Tribhuvan Road  
Bombay-400004.

Tel: 3868311/3885511.

## Synclavier Post Pro at Prasad Studios, Madras

Prasad Studios are already operating the Synclavier Post Pro digital work station installed sometime back. Joe Gonsalves of Pace, Bombay informed Playback that an Adam Smith indented by Pace for Prasad Studios is being used for locking the Soundcraft TS 24 console to the Saturn 464 2" 24 track tape recorder and a Studer 1/4" 1/2 track tape recorder and also a perfect tone 35mm tape recorder.

## Leo's 'Novel Music Catalogue'

Leo Audio-Video Pvt. Ltd., Vijayawada, the leading audio recording company in Andhra Pradesh has introduced a novel pictorial catalogue attractively printed in off-set multi colour on glazed paper. A catalogue comprising of complete numbers of Leo audio cassettes as a ready reckoner. This kind of illustrated catalogue is the first of its kind. The colourful pictorial catalogue portrays the entire volumes of LEO audio cassettes in lay cards.

Nevertheless the amount invested will definitely yield good business returns to its company.

P.V. RAO

## Gharaana Mogudu Unprecedented Sale-Surya



### A. Sekhar chief of Surya Recording Co.

On the very first day of marketing Gharaana Mogudu itself, about 1,08,000 cassettes were sold like hot cakes which is phenomenal, out of which 25,000 were sold in Vijayawada alone. In Karnataka Bangalore also thousands of cassettes of this film were sold. On this happy occasion A. Sekhar, the chief of Surya announced that they will present a "Gold Cassette" to Megastar Chiranjeevi.

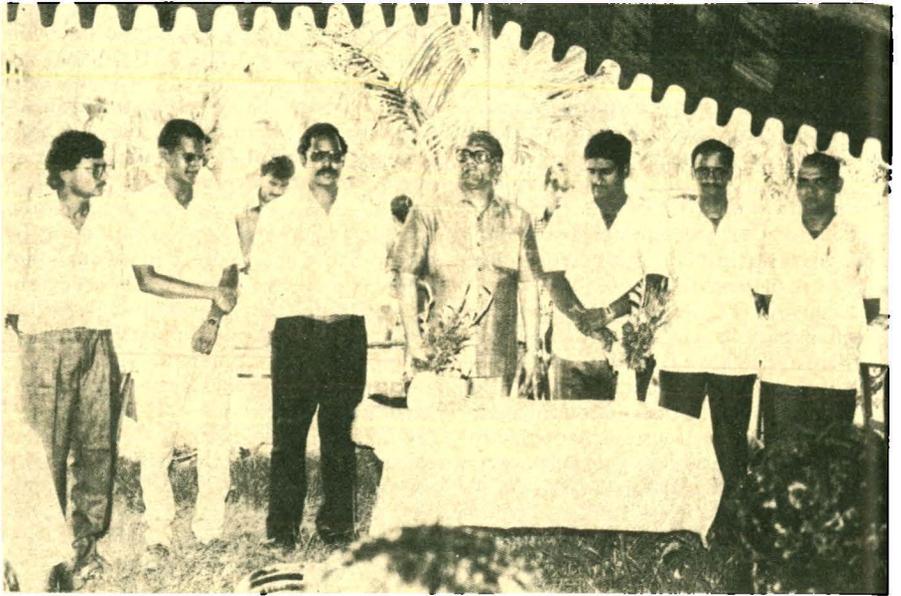
Surya, of Vijayawada, Andhra Pradesh, got out a colourful function at Rama Naidu Studios, at Jubilee Hills, Hyderabad on March 6th on the occasion of felicitation to the unit of 'SOORIGAADU' the forthcoming Telugu film produced by D. Rama Naidu, directed by Dr. Dasari Narayana Rao.

The matinee idol Krishna and his heroine directress wife Mrs. Vijaya Nirmala were present as distinguished guests, while the minister for Information and Public relations Sri. Pemi Krishna Murthy graced the occasion as chief guest. The first audio cassette of 'SOORIGAADU' was released by the Hon'ble Minister Sri. Pemi Krishna Murthy and bought by famed artiste Mohan Babu.

Surya has acquired the audio rights of pictures of leading Telugu film heroes in a short period. Besides, many prospective and leading producers are coming forward to offer their films. Rights acquired include Devi Film Production's - "GHARAANA MOGUDU", Yuvaratna arts 'Nippu Ravga', Verma Creations 'Anthem', S.S. Creations Production No.6, Sri Lakshmi Prasanna Pictures 'Brahma', Usha Kiran Movies 'Teja' etc., to name a few.

The credit of capturing the musical hits composed by the maestros Anand Milind, R.D. Burman, Bappi Lahiri etc., is also unique to Surya.

## Surya's Rs.56 million loopbin unit



Board of Director's of Surya Recording Company Ltd from left to right Mr. Noor Mohammed, Mr. M. Sitharamaiah Mr. Mohan M. Guttikonda, Mr. M.L. Attal (chairman), Mr. Sekhar Anne (Managing Director), Mr. P. Vasudera Rao & Mr. J. Koundinya

Messrs Surya Recording Company Limited (formerly Surya Recording Company) has laid the foundation stone by the Company's Chairman Sri. Athal for establishment of colossal project at Pedavutapalli a suburb of Vijayawada 30 k.m. away on 2nd June for installation of 'Loopbin' duplication unit of ultra modern sophisticated system.

This new project is a great boon to the recording companies in Andhra Pradesh as they can avoid the troubles and expenditure going to Bombay and Madras at present.

On this occasion the Managing Director of this company Mr. A. Sekhar held a press meet in which he briefed news scribes some

salient features of this project is estimated Rs. 5 crore 65 lakhs. Out of this Rs. 2 crore 76 lakhs will be realised through public shares. Rs. 1 crore 84 lakhs will be collected through Promoters. Rs. 90 lakhs to be collected through loans from financial institutions and Rs. 15 lakhs will be procured through subsidy by the government.

This project is expected to be ready by January 1993 with full production.

BOARD OF DIRECTORS : Sri. Vishwas A. Shinde (Technical Director) Mohan M. Guttikonda (Executive Director). Sitaramaiah Madineni, Noor Mohammed, Chandra Prakash Jain, P. Vasudeva Rao & J. Koundinya.

P. V. RAO

## Lahiri, Leo conduct anti-piracy raids

The police force have seized nearly 25,000 duplicate CXs and recording equipment from nearly 13 audio shops in Vijayawada. Police Commissioner of Vijayawada - Urban was approached by M/s. Lahiri and Leo. The anti-goonda squad was put into action and

Governorpet, Gandhinagar, Krishnalanka areas were raided relentlessly, to eliminate piracy!

In Andhra Pradesh, piracy has shifted from Hyderabad to Warangal, Khammam, Vijayawada, Rajahmundry, Visakhapatnam.

## Surge of loopbins in South

Very soon the installed capacity for loopbin duplication in the South could be met by local jobbers.

Loopbin units are as under.

- (1) Sangeeta
- (2) Super Audio
- (3) Echo
- (4) Coney
- (5) HML

(6) Ram Audio Vision

PLAYBACK & FASTFORWARD  
SEPTEMBER - OCTOBER 1992

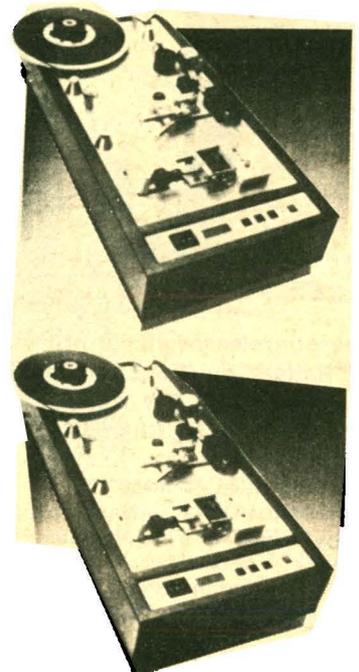
Soon, to set up are:-

- (1) Surya
- (2) Akash - Madhu Bangarappa
- (3) Lahiri

Plus, there are reports that Super Audio run by Navin Daswani will also be enhancing capacity with the Gauss loopbin.

All this makes good sense as a good Tamil or Telugu title has an initial run of 50000 CXs.

# Universal Cassettes offers The Best Duplication 'IN TOWN'



**Pioneers** in serving the audio industry in their growth. Since nearly a decade, we have gained experience in duplication services. This experience makes us the most reliable company to handle your repertoire.

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# Jagjit Singh on Venus



**Cassette release function of Jagjit Singh "Insearch" L/R : Mr. Umed Jain of (Venus) Mr. Rattan Soni (F & B Manager), Jagjit Singh, Mr. Vivek Nair (M.D. of Leela) Mrs. Shobha J., Capt. C.V. Nair (Chairman of Leela), Mr. Jeetendra (Chief Guest), Mr. Ramesh Jain & Mr. Champak Jain of Venus.**

In April Ghulam Ali's ghazal album was also released entitled 'Mehtaab.'

Insearch, a ghazal album by Jagjit Singh was launched with a live programme at Leela Kepinski. Venus has been extremely active in basic repertoire. In Marathi, two films 'Jeeva Laga' and 'Apradhi' and five marathi religious albums.

Suresh Wadkar, Kavita Krishnamurthy, Anupama Deshpande, Pradheep Bhide, Ajit Kadkade, Sharad Jambekar, Asha Bhonsle, Uttara Kelkar, Ashok Khande, Jyotsna Hardikar, Srikanth Kulkarni, Shivanand Patil, Sanjay Sawant, Sadhana Sargam and Chandrashekhhar Gaddgil have all sung on the Marathi albums. Music directors utilised are Prabhakar Pandit, Shankh Neel, Anil Mohile and Rishiraj. The repertoire includes Vedics stotras, evening prayers, morning songs, bhaktigeet etc.

#### **Punjabi**

Hakim Tarachand and Aa Pyar Kariye Oye Bale Bale. In this album, Sanjay Sawant and Anupama Deshpande have sung to Pradheep Laad and Ramesh Iyer's music. In Hakim Tara..... Shyamsunder Premi is the main artiste.

#### **Konkani**

Lawrence Saldanha and Bab Baltazar did two albums in April for the easter market.

#### **Hindi Basic**

Raju Shrivastava's mimicry cassette 'Haason Aur Hansao,' 'Dayake Masiah Sai,' 'Om Jai Jagdish Hare' and 'Sai Naam Smaran' featuring Sapna Mukherjee have been marketed.

## Kapco to double capacity

Kapco is based in Himachal Pradesh. In a year's time Sunil Kapoor and Anil Kapoor, the brothers have delivered quality and service to ensure hundred per cent capacity utilisation, upto 15000 to 20000 cassettes a day. They have been duplicating for Tips, Venus, Georgie Music, Echo, Catrack and any other companies based in Punjab and Delhi.

They now plan to double the capacity to 30000 cassettes a day. They shall be recording soon at 100:1 speed.

## CBS, New Delhi distributes Crescendo

Anil Dingra, the branch manager of CBS, New Delhi has taken up distribution of Crescendo and its allied catalogues for the states of U.P., Haryana, Punjabi, Rajasthan, Himachal Pradesh and J & K, as well as, into parts of Madhya Pradesh. This entire territory is exploited from New Delhi. The CBS office has a good sales staff and a very good dealer network. Crescendo is mainly into international music. Therefore, the arrangement makes sense for Crescendo as well as CBS who will cover their overhead costs.

## Cover version under two year ban

The notorious cover version clause 52 II which allowed T-series to duplicate the entire HV catalogue and made Vandana Vajpayee, a household name is no longer possible to utilise. Undoubtedly, it was a very useful clause and T-series did the right thing by providing music to millions at a cheap price. Now of course, the time is past for these things, and to stop this practice makes sense. We must understand that it was because of this clause that India was able to experience the cassette boom. We cannot overlook the benefit of the thousands of jobs it has provided, the huge economy in cassettes it has created and the strength it has provided to new music companies. It is only because of these reasons that the Indian music industry has matured and we can now call it an industry.

The copyright (2nd Amendment bill 1992), introduced in Lok Sabha on July 16, 1992 seeks to ban cover versions for two years after the first recording of a musical work. The fact that cover versions are still allowed after two years is a good thing. It will remove unhealthy competition in the initial stages and give hope and business in the later stages.

#### **Indian composers artistes protected:**

Indian composers may now need not have their musical work in notation to protect their work against copyright theft. Performers and artistes are also protected and now permission will be required to make an audio and video tape.

#### **Authors:**

Authors contracting their works will earn their rights again if the same is not exploited within one year.

The bill seeks to promote collective administration rights to copyright societies like the Performing Right Society.

#### **Copyright cess:**

Like in Europe and America, it is sought to charge a cess from manufacturers of taperecorders and video cassette recorders as these will be recording copyrighted work. So, all major manufacturers of taperecorders like Philips, Videocon, Nelco will have to pay royalty to the Performing Right Society to pay to the lyricists and composers whose creative works will be recorded on these machines ultimately.

**SEND NEWS**

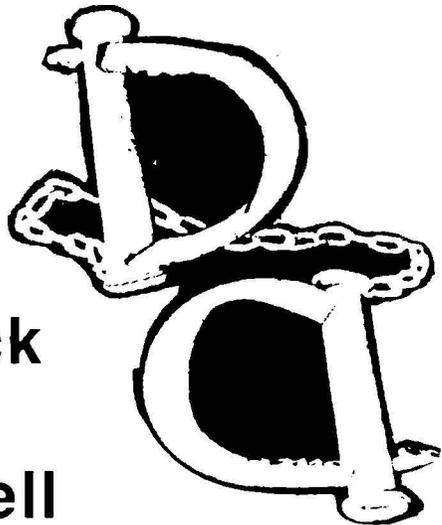
**BY FAX**

**91 (22) 4931054**

● TopStar, cassettes manufacturing company, a new label, released 'Welcome '92/ Nadeem Shraavan' non-stop. The album was produced at Suñny Supersound.

# Let the music industry flourish

- \* Strengthen IMCA
- \* Contribute to the anti-piracy fund.
- \* Collaborate to check the pirate.
- \* Do not stock and sell pirated goods.



## *IMCA leads the anti-piracy drive.*

IMCA has in the recent past successfully checked pirates. Seized 15 cassettes duplicator and over 5 lakhs cassettes. Two printing machines worth over Rs. 20 million and 15 thousand inlay card. It will continue its drive in the future.

Growth must be legitimate. Only strong and wealthy music companies can compensate the artistes. Invest in better and more creative repertoire. The Pirates cannot and will never sustain the artistes or good quality production capacity. Both of which are imperative to a healthy music industry. Join the mainstream.

List of members are Bremen, HMV, Lara, MIL, Music Bank, Mastersound, Royal, Sterling, Tips, Time, Venus, Vishwa, Weston.

**Remember, Piracy is a non-bailable offence. Also recording equipment and pirate cassettes seized belong to IMCA members.**

Indian Music Company's Association Vijay Deep, Junction of 9th & 12th Road, Khar (W) Bombay-52  
Tel : 6461609/6461591/6462899 Fax: 6462208.



## Vishwa Picks up Rajendra Penta for Rs.20.2 M

Rajendra Penta the coating plant at Ahmedabad was milked systematically by Rajendra Garg, the promoter. Finally, the plant was locked out and sealed by Sicom. Later it was auctioned in which HMV also bid amongst many other bidders. Vishwa Light and Sound clinched the purchase at Rs.2.2 M.

Earlier Vishwa had already earned a reputation by picking up numerous s'tracks and launching into the market with an advertisement, Blitz and Screen.

Jadu and Meera Ka Girdar two films have been launched by Vishwa featuring Nikhil/Vinay music.

Bhagyawan/Anand Milind and Kaise Kaise Rishte/Nadecmm Shraavan are already released.

In classical Romu Mazumdar on flute, Tarun Bhattacharya on santoor and Vishwa Mohan Bhatt on hawaii guitar has been recorded. A double album of santoor and hawaii guitar is already out.

## Pace Represents Drawmer

Joe Gonsalves informed Playback the appointment of his company as exclusive agents for Drawmer.

The company has recently launched the DL251 spectral compressor which is featured in the equipment pages of this of Playback.

## Another Tachos for Rajes Art Printers

Rajesh Art Printers have already installed another Tachos seasonal loader from Lyrec. Earlier, the loopbin unit had only one loader which was insufficient for the two Lyrec twin slaves operating at 80:1 speed.

## Dinesh Patel's Divya Shakti

## Sudhakar Bokade with Sterling

Sudhakar Bokade has emerged as the greatest, most sought after film producer for his musical worth. Sambandh, his next film was contracted by Sterling amidst keen competition in the Bombay market. It is rumoured that this film has been contracted for a whopping Rs. 7.5 million. This soundtrack is going to catapult Sterling into the limelight.

After 'Phool Aur Kante', a musical blockbuster, Dinesh Patel's next 'Divya Shakti' with Nadeem-Shraavan's music has been released by



Left: Jack Coughlin : President of Brampton Board of Trade, Bhaskaran Menon: President of OMI, Hon. Minister of State (Finance and Privatisation), John McDermid: Govt. of Canada, Albert Ganesh: Canadian Imperial Bank of Commerce.

Magnasound, the exclusive Licensee in India for Warner Music International has become a trend setter for the music industry in the forty months since it began operations. Innovative packaging, simultaneous releases, international quality sound, mega stars, the best local talent and tons of market savvy have seen Magnasound capture market share in a manner never witnessed previously. Apart from being a trailblazer in the field of international music marketing, Magnasound also set the Indian Classical scene alight by recording 40 albums in the space of one month. The spectacular success of Ustad Allarakha and Zakir Hussain's "Together" saw Magnasound ingratiate itself with classical music aficionados.

With its recent tie up for international

marketing rights with the Madras based Master Recording Company, Magnasound plans to create another music marketing saga.

The Master Recording Company, better known as Sangeetha has doyens like Dr. S. Ramanathan, Dr. N. Ramani, M.S. Gopal Krishna, U.K. Sivaraman, Dr. Emami Shaukara Shastri, Dr. M. Balamurlikrishna, the late Maharajapuram Santhanam, U. Srinivas, K.J. Yesudas, S. Janaki and others on its roster.

Magnasound has appointed OMI, a Canada based Company as its Licensee for manufacturing and marketing of CDs of these artistes in the Western markets. Besides the Sangeetha repertoire, OMI has also been granted rights to market products under the Magnasound label which

continued on page No.

## Concorde CD rights with MIL

Vijay Lazarus informed Playback MIL would release 5 CDs in August from Concorde catalogue. It holds the CD rights world wide for 30 Concorde titles. It plans to release 5 CDs every month.

MIL is also distributing Sagarika, the record label owned by Mr. Das of Sagarika Acoustronics which is primarily into the loopbin duplication business.

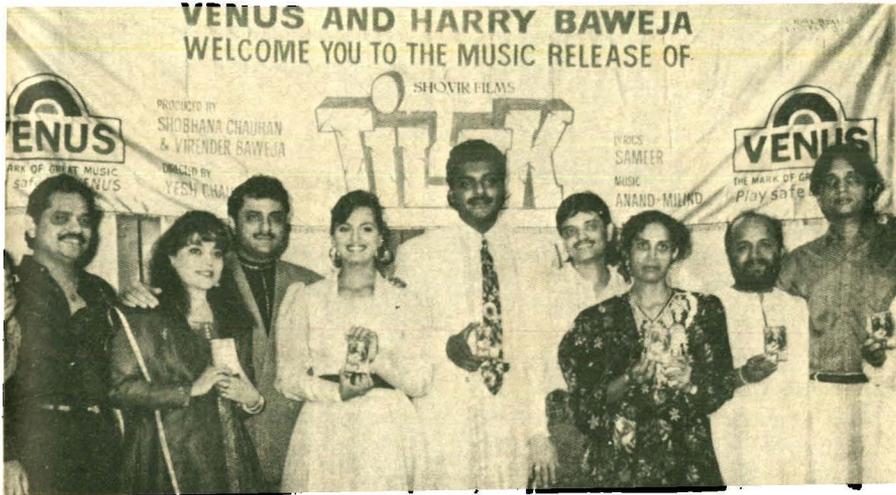
Sterling in a big way.

'Phoolwati' by Ram-Laxman and 'Dilwale Kabhi Na Kehna' by Nadeem-Shraavan have been released. Also, Amitabh Bachchan non-stop sung by Sudesh Bhonsle and Sujata Goswami is another release.

### Basic

A Hindi pop album 'Pyara Pyara Bombay Town' by Usha Uthup with Tabun's music and a Punjabi album by Sukhvinder is also out.

## Deewana, Shola Aur Shabnam, Platform are hits S'tracks success for Venus



At Centaur, cassette release function of music cassette of film **TILAK**, L/R: Virender Baweja (Producer), Ganesh C. Jain (Venus), Sapna Mukherji (Singer), Harry Baweja, Shilpa Shirodkar (Heroine), Siddarth (Hero), Champak Jain (Venus), Shobhana Chauhan (Producer), Sammeer (Lyrics writer), Ratan Jain (Venus) Milind (Music Director)

There have been many big sellers this year, but nothing comparable to 'Saajan', 'Maine Pyaar Kiya' or 'Aashiqui'. Venus however, right through 1992 starting from 'Shola Aur Shabnam', 'Deewana' and now 'Platform' have been consistently having a hit.

'Yugandhar', a Laxmi-Puare film could probably hit the bull's eye.

This company has been very very selective about its audio rights choosing with great care. They have even soundtrack releases, but more often than not on the basis of either the strength of the film or musical quality good sales are achieved.

'Zid' however, with O.P. Nayyar's music did not take off at all. 'Mashoo' by Anand Laxman, 'Nargis' by Basu Chakravarty and 'Balwan' by Mahesh Kishore were other releases this year. 38 non-stop Amitabh Dhamaka vol.2 is also released.

### Venus signs on 10 Soundtracks

'Kaala Pani' - Nadeem Shrivani, 'Dil Hain Betaab' - Laxmi/Puare, 'Chhaliya' - Surendra//Shyam, 'Yugandhar' - Laxmi/Puare, 'Aag Aur Toofan', Jatin Lalit, 'Pelchaan' - Anand-Milind, 'Lashkara' - Nadeem-Shrivani and Production No.2 - Shyam Surendra.

'Dil Hain Betaab' is a K.C. Bokadia film, 'Kaala Pani' is Mahesh Bhatt's film, 'Chhaliya' is by Abbas Mustan who did 'Khiladi' for Venus, 'Yugandhar' is by N.Chandra, 'Aag Aur Toofan' is by Raj Sippy.

### Khiladi Premiere

The Jain brothers performed pooja for the success of 'Khiladi'. On May 6, the entire Jain family went to Shirdi Sai Baba Mandir. After the star-studded premiere there were fireworks outside the theatre followed by cocktails and dinner at the Juhu Centaur hotel.

To promote the film, a 'Khiladi' singer contest was schemed.

## S Series backs Anu Malik

Promoter of S Series, Hashmi is more confident after the release of Jigar. "I launched the album with 4 lakh and there is a repeat demand for another 2.5 lakh."

To achieve this result, a radical approach succeeded. Stars of the movie, like Jackie Shroff and Karishma of Police Officer were filmed speaking to the audience to buy original S Series cassettes. This promotion was carried out on video cassettes all over India.

Hashmi is backing Anu Malik in Phool Aur Angar and Aa Gale Lag Jja two new soundtracks, soon to be released. "Phool Aur Angar will create havoc. It will herald the come-back of Anu Malik."

Hashmi feels strongly about the present system. "There is no guarantee that a big name music director, whose S track requires a minimum investment of 10 lakh, will necessarily be a hit. Bekhudi is a disaster. Also, I believe only those companies whose albums are cost-effective can survive in this business."

The third soundtrack forthcoming from S Series is Ashique.

## Master Sound lose approx. 30 Million

Prem Ramchandani, chief of Master Sound since its inception was sometime back asked to go on leave. It is rumoured he has single-handedly cost the company Rs.30M. due to bad management and wrong decisions. The launch of the company was heralded by massive hoardings all over the country. An unproductive expense costing the company nearly five to six million. Lavish parties and badly-timed releases resulted in further losses.

Navnit Patel the NRI promoter of the company, has now taken full charge of the operations. His first move was to cut down expenses on all the wasteful advertising including all hoardings. Proper understanding of the market demand and conservative production was the next step. This has resulted in depletion of piled-up stocks and better cash flow.

Master Sound is launching Mohabbat Ka Sagar and committed to the music industry in the future.

## Payal strengthens Music Bank

Music Bank run by Anil Arora and Vinod Arora of Delhi, got into the soundtrack market signing up, among their forthcoming, Mehul Kumar's Taranga/L.P., Ravindra Soni's Shudra/Bappi, Ratan Kumar's Madari/K.A., Hardeep Chatarth's Danveer/L.P., Mukesh Kumar's Tandav/A.M.

Released recently, in a big function, was Vinod Chaudhary's Anaam. The company is banking on the soundtrack and Nadeem Shrivani, the film being a 4 track stereo soundtrack.

Payal has been the biggest success upto date and has sold considerably well to keep the record label going strong. Charanjit Ahuja has been promoted with his forthcoming soundtrack, Kohra.



Function organised to introduce Music Director Charanjit Ahuja's new film **KOHRA** L/R Vinod Kumar Arora (Music Bank) S.B. Choudhary, Partho Ghosh (Director) Anil Kumar Arora (Music Bank Charanjit Ahuja (Music Director)

# It's a question of Time

Dhirubhai Shah, undoubtedly, the pioneer of Video finally decided to pick up the soundtrack copyrights as well as enter the music business in totality. Time Audio, this Ganpati season launched 'Bappa Morya' with 40,000 cassettes and a huge hoarding outside the Siddhivinayak temple at Prabhadevi, the foremost Ganesh shrine amongst Ganapati devotees. Pravinbhai, in charge of A & R at Time Audio informed Playback the company had already acquired 20 soundtracks. Krishna Avatar, Tandav and Shriman Ashiq were amongst them.

"We are producing 5000 Video cassettes everyday and each cassette carries a trailer plugging our audio copyrights and video copyrights. This kind of publicity is incomparable by any standards," says Pravinbhai.

The scenario for the future could be thus: Time will buy the soundtracks and video copyrights of all those films, of which it would be, earlier on, buying only the video rights. In a position to copyright both, audio and video, Time will get a better price vis-a-vis other music companies in the market for only audio rights. This in itself being the greatest benefit already, Time with a very strong video distribution, can establish excellent distribution for its audio cassettes. It will be in a position to better the publicity because both the video publicity budget and audio publicity budget will combine. While the competition will have to pay for publicity in the video cassette, for Time it is in-house free publicity, similar to what we have already witnessed in the case of T-Series. T-Series had backed out from picking up the audio and video rights after entering into the video industry, hot on its succession in the music business. Time which has held its ground in the video business has in fact taken up the challenge of audio business only after it has proved to be a money earner and audio rights have climbed to the level of 75 lakh for a single soundtrack.

Looking at all the above factors, there is no option but to ponder-it's a question of time.

## Naushad S'track on Weston

Weston is active in the soundtracks market. 'Teri Payal Mere Geet' with Naushad's music and 'Bewafa Se Wafa', another Sawan Kumar film with great expectations and 'Bol Radha Bol' with Anand Milind's music and directed by David Dhawan whose earlier film 'Shola Aur Shabnam' was successful musically on the Venus label.

## Executive Talent



**K.B. Tukaram**  
Cauvery Recording  
**K. B. Tukaram**  
Cauvery Recording

The 36 year old Mr. K.B. Tukaram is a man of strong conviction who believes that slow and steady wins the race in the longer run. Thus, he started his career steadily, and never haphazardly jumped into any business assignment until he fathomed the depth of his venture.

After obtaining diploma in I.T.I (Electronics), he started his career in 1975 in servicing and selling electronic goods. In 1986, he established his own label 'Cauvery' under the name Cauvery Recording company which prospered by acquiring nearly 200 titles as of to date, both private as well as film music tracks. 'State Rowdy' is the highest seller from film catalogue, and 'Sri Devi Pelli' (Mimicry) and 'Ayyappa Amruthadaara' (devotional) are from basic side.

He also has an ancillary unit of manufacturing audio cassette components like shells, plastic containers etc. He is very co-operative with his customers and has established himself as a self-made man.

31, A.M.C. Complex, Governorpet,  
Vijayawada 520 002 (Andhra Pradesh)  
Telephone: 74399/67895

### **P. Ramakrishna** Leo Audio-Video

Potluri Rammakrishna (29 years) a modest and amiable young man is the Architect of Leo Audio-Video Pvt. Ltd., Vijayawada which was established in 1986 under his able guidance. This company made fast strides and reached the apex of business in the field of Audio (Telugu).

P. Ramakrishna started his career as a technician in servicing of TVs and Radios in Vijayawada and gradually rose to the position of being Managing Director of this company by sheer virtue of vigorous efforts made in his career so far.

Today, Leo has to its credit about 400 films audio and 100 basic programmes. Out of this lot, Telugu film 'Chanti' and all Mega Star Chiranjeevi starrer films are the largest sellers of Leo trade mark. In basic repertoire, Christian hymns are the highlights of this catalogue.

Mr. Ramakrishna is ably supported by two lieutenants in his efforts, one is Mr. Anand who looks after the picture confirmations in Madras and the other is Mr. D. Subrahmanyam who is in charge of sales and marketing side in Vijayawada.

Prakasam Road,  
Vijayawada 520002, (A.P.)  
Tel: 67665/74968



**D. Subrahmanyam**



**P. Ramakrishna**  
Leo Audio-Video  
**D. Subrahmanyam**  
Leo Audio-Video

The many splendoured personality Mr. D. Subrahmanyam (39 years) popularly called 'DS' has undergone many vicissitudes in his brilliant career starting with a humble beginning and scaling to the highest peak of fame and fortune.

He started his career as an ordinary clerk in the noted Gramophone Company in Madras in 1973. After serving for 12 years in various capacities, he left this company in the year 1986. He then joined another reputed recording company M/s. C.B.S. in Hyderabad as its Branch Manager in the sales and marketing division. After serving for 2½ years in CBS., Hyderabad, he joined another reputed concern namely M/s. Leo Audio Video Pvt. Ltd., Vijayawada as its General Manager in 1989.

In his vast experience, he is well versed in all aspects of the latest audio recording field. He can also be classified as an indispensable asset to the marketing side of Leo Audio Video Pvt. Ltd., Vijayawada.

Prakasam Road,  
Vijayawada 520002 (A.P.)  
Tel: 67665/74968

### **P. V. Chalama Rao** Geetmala Enterprises

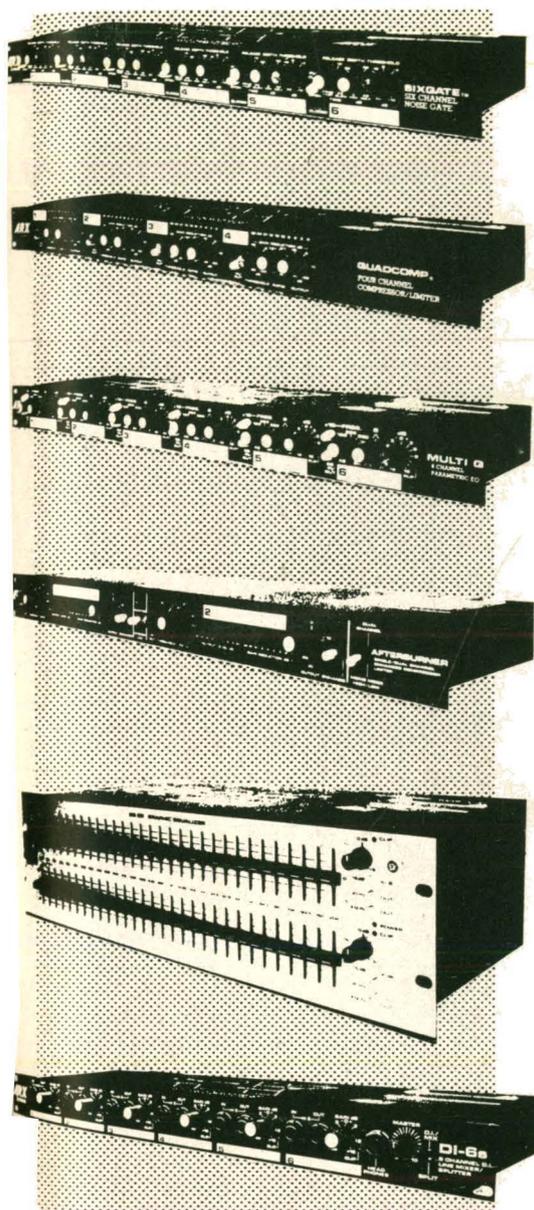
Mr. P.V. Chalama Rao (33 years) has adopted a unique policy of self-contentment in his audio business. He is highly prudent and therefore, does not precipitate head long in the competitive race of investing fantastic sums in the speculative business of audio cassettes to acquire rights of film music tracks, but instead he entirely concentrates on private programmes only which fetch him better dividends.

Mr. Chalama Rao after completion of I.C.W.A.I course, obtained diploma in Radio & Electronics, and later in the year 1985 plunged into the audio field and started his own venture 'Geetmala.' This label enjoys the credit of producing nearly 130 private programmes.

Prakasam Road,  
29-14-24, Governorpet,  
Vijayawada-520002 (Andhra Pradesh).  
Tel: 65481/72209

**P.V. RAO**

# READY TO RACK



**SIXGATE.** Six full function noise gates in a one rack unit package. Each gate has controls for Release, Depth and Threshold, Open/Closed LEDs, Key Inputs/Sidechain Inserts, plus Balanced Inputs and Outputs. Ultra low noise opto isolated circuitry makes the Sixgate a truly useful audio tool for all applications.

**QUADCOMP.** Four compressor/limiters in a one rack unit package. Each has controls for Threshold, Ratio and Output gain, 10 LED gain reduction display, Sidechain Inserts, plus Balanced Inputs and Outputs. Class A VCAs and true RMS converters ensure the Quadcomp delivers low distortion and accurate dynamics control.

**MULTI Q.** Six Channel Parametric EQ. Each channel covers the complete audio spectrum and can be linked to each other for multi band equalization. There are Frequency select, Cut/ Boost and Bandwidth controls, and balanced Inputs and Outputs. Ultra low noise circuitry makes the Multi Q a unique creative audio tool.

**AFTERBURNER.** Single/Dual channel enhanced compressor limiter. Its unique design lets it be set up as a Dual channel or Single channel, Dual Band compressor. Plus, its Enhance function restores lost Low and High frequencies from compressed material. **ASK FOR THE APPLICATION NOTES!**

**EQ 60.** Dual Channel 30 band *Constant Q* graphic equalizer in a compact 3 rack unit package. Designed to give flawless professional performance, the EQ 60 has innovative ultra low noise Constant Q circuitry, individually trimmed filters for total accuracy, and Balanced inputs and outputs on XLR and TRS connectors. Its compact High Density design and precision electronics make the EQ 60 the ideal solution for all EQ needs, including the exacting requirements of Digital Audio.

**DI-6s.** The ultimate audio problem solver. 6 active balanced Direct Injection units, a 6 into 1 line mixer, a 1 to 6 splitter, plus a headphone amp, all in the one compact package! Ultra low noise, AC mains powered, and individual audio Earth/Ground lifts on each channel. **ASK FOR THE APPLICATION NOTES!**

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33 Advantage Road, Highett, Vic 3190, Australia. Tel: 61 3 555 7859 Fax: 61 3 5556747

# Crescendo-Silver Beats Agreement



From left: Guest Sadhana Batra, Mrs Joshi, Bhisen Joshi, Shrinivas Khale, Hariprasad Choursia, Narain Agrawal, (chief of Crescendo) and Raveendra Jain on the cassette release function of 'Krishna Kahiye, Ram Japiye'.

In what could be termed as a 'Unique' tie-up, Silver Beats has joined hands with Crescendo, a music company recently launched by Suresh Thomas, to market and promote its products. This trend-setting arrangement permits one Company to concentrate only on repertoire development while the other Crescendo undertakes the task of manufacturing and marketing. The profits of the sales of these albums are to be shared in mutually agreeable proportions as both Companies, specialists in their own field, jointly strengthen their marketing base.

'Krishna Kahiye, Ram Japiye' is the first of a series of products to be released. The album features four Bhajans by the modern day 'Tansen', Pt. Bhimsen Joshi and includes the all time great 'Jo Bhaje Hari Ko Sada' that used to be sung by his Guru, Sawai Gandharv. The lyrics of the three other bhajans have been written by Narain Agrawal and the music composed by Srinivas Khale.

Silver Beats, headed by poetess, Sadhana Batra, is to focus its attention primarily on recording Indian Classical artistes and will allow new and upcoming artistes who are struggling to get a break. Mrs. Batra, who has produced serials for struggling to get a break. Mrs. Batra, who has produced serials for Doordarshan earlier, says that she has been inspired to start a music company of his nature by His holiness Guru Samartha Dada Maharaj, who was a great lover of music. It was his blessings (prior to his demise) that have motivated e to venture out on this mission", says Mrs. Batra.

Silver Beats is further supported by Mr. Narain Agarwal's involvement in the Company as a director. Mr. Agarwal is one of India's leading Bhajan writer and has organised several social and cultural programmes in the past. Agarwal has excellent rapport with leading musicians and singers in the industry and is in the process of recording major artistes for Silver Beats.

continued from page No.  
**Magnasound's licencee in Canada .....**

include maestros like Ustad Allarakha, Ustad Zakir Hussain, Pt. Shiv Kumar Sharma, Begum Parveen Sultana, Ustad Dilshad Khan, Shobha Gurtu and others in the Hindustani Classical category, renowned ghazal singer, hariharan and India's first Hindi rap act - Baba Sehgal.

OMI is headed by an Indian based in Canada, Mr. Bhaskaran Menon. Mr. Menon has had tremendous experience in marketing of inter-national brands and was the Group Marketing Manager of a reputed chain of department stores in the Gulf.

Magnasound will work closely with OMI on every aspect of sales and marketing. Mr. Shashi Gopal, Managing Director, of Magnasound is sure that what Magnasound did for international music in India, OMI will be able to achieve for Indian music in the international market and here's why:

For the first time, a group of professionals experienced in music marketing and retailing have got together to promote Indian music globally.

Access to state-of-the-art manufacturing facilities means that for the first time Indian re-pertoire will be available on high quality compact discs.

For the first time, an attempt has been made to present albums of Indian maestros outside the ambience of sarce and masala stores. The re-pertoire will be sold through majoor record shops and retail chains like other premier music products.

For the first time, Indian repertoire will be packaged and marketed to international standards - simultaneous world-wide releases, air-play on ethnic radio stations, in-store p.o.p, live concerts, press campaigns and other promotional avenues are being explored.

For the first time, the interests of Indian artistes will be protected against pirates as OMI will seek to register the copy and publishing rights in all countries where release is planned.

There are numerous instances of international labels being brought into the country. This almost always entails outflow of foreign exchange in terms of royalties. Probably for the first time the reverse is taking place.

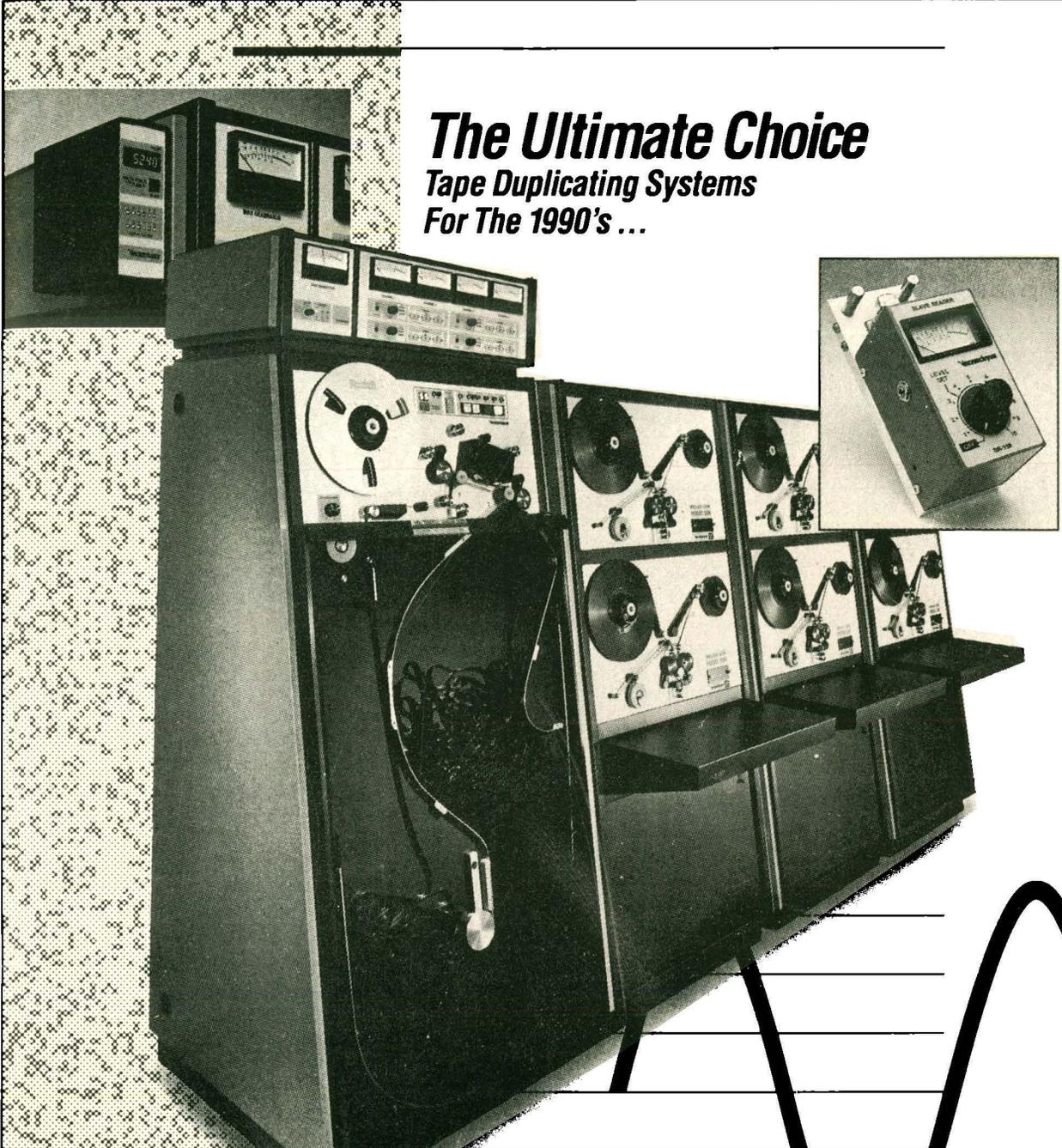
OMI will release about 18-20 new titles every month. The first set of compact discs were released on 21st April, by Hoon-Minister of State (Finance & Privatisation) Mr. John McDermid, Government of Canada, at a release function held at Brampton.

Playback  
the pro  
and audio  
industry  
media  
Tel: 6464560

## Orange Pale develops speed convertor

David Santwan informed Playback about the success of his design efforts to increase the duplication speed of Otari DP 80 loop bin system from 64:1 to 80:1. An attachment to be connected to the machine will enhance the running speed of the master and slaves.

Even in-cassette duplicators like Sony CCP and Otari 4050 can be connected with the speed convertor. The speed convertor increases the speed by 20 per cent. So the 8 times faster duplicator will operate at ten times faster.



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# Broadcast India '92 Twice as Big

The response from the internationally reputed broadcast equipment manufacturers for Broadcast India '92 is encouraging enough. It is heartening to note most of last year's exhibitors will once again be present. The Indian market yet, is not as big as the European and American market. However, undoubtedly it is the next market in the world. The exhibitor's list amply proves the expectations of broadcast equipment as well as pro audio equipment.

Ramesh Meer, the chief of Saicom Trade Fairs & Exhibitions Pvt. Ltd., the organisers, declares, "This year the show is twice the size as of Broadcast India '91. Eighty per cent of the stands are full. Balance 20% will be booked by mid-September." Broadcast India '93 is on schedule at the World Trade Centre, Bombay on 29-31 Oct.

Thereafter, Ramesh Meer is considering holding the exhibition every two years.

Exhibitors include:

- Sony Corporation, Japan
- BTS-Broadcast Television Systems GmbH
- Quantel, UK
- Tektronix USA
- Cel Broadcast, UK
- Leader Corporation of Japan
- Getris Images, France
- Pinnacle Systems Inc, USA
- Management Graphics USA
- Magnefax USA
- RCS-Radio Computing Services Inc, USA
- RTI Research Technology, UK
- Ulimatte Corporation, USA
- Videssence Inc, USA
- Audio Precision, USA
- Comercial Data Services, USA
- Ortel Corporation, USA
- Vidicom, USA
- Da-Lite Screen Company Inc., USA
- Electro Sound, USA
- Gauss, USA
- Otari Singapore PTE Ltd
- Leitch Europe Limited, Canada
- Matrox, Canada
- Strand Lighting, UK
- Ams Industries Plc, UK
- Vinten Broadcast Limited, UK
- Lyrec of Denmark
- Sachtler Ag, Germany
- Soundcraft, UK
- Dolby Labs., UK
- Lexicon USA
- AKG Acousitcs Limied, Austria/India
- GCEL India, Bharat Electronic Limited India
- Playback & Fastforward
- Pro Sound, India

- R & S Electronics, India
- Broadcast Asia, Singapore
- Tapematic, Italy
- XACA India
- Cine Products USA
- Videoboom, India
- Screen World Publications, India
- Cine Magic India
- Saicom Broadcast Engineering India
- Neutrik AG, Switzerland
- New Video, India
- M.S.P. Enterprises (MX Connectors) India
- Quiet Sound, UAE
- Video Point, India
- Pentacom, India
- Seem Subtitling, Norway
- Print Link, India
- Electronic Arts, Bombay
- Cine Magic, India
- Amek/Tac, UK Daxco PTE Ltd, Singapore
- Elektor Electronics Pvt. Ltd., India
- Media Motion Technology Ltd UK
- Robocom Business Systems P. Ltd, India
- Enterprise Systems Group, Australia
- Fast Electronic GMBH, Germany.

Under Consideration:

- Panasonic, Japan
- JVC, Japan
- FOR-A, Japan
- Abekas Video
- Systems, UK
- Miller Fluid Heads, Australia
- Avid Technology
- Panther GMBH, Germany
- CCA electronics, USA
- Richardsons Electronics, USA
- Timewave Corporaion, USA
- CMX, USA
- Apex Machine Company, USA
- C.E.D. Ceta Electronic Design (UK) Ltd
- Valintino Inc, USA
- Clear-Com Intercom Systems, USA
- Computer Assisted Technologies Inc, USA
- Lyan Lamb (Europe) Ltd
- Michael Steven & Partners Ltd, UK
- Microtime Inc, USA
- Parallax Graphics Systems Ltd, UK
- Rank Cintel Limited, UK
- Techex Ltd, USA
- Tritex Marketing Limited, UK
- Hitachi, Japan
- Fujinon, Japan
- Lee Filter Ltd, UK
- Technosystems S.P.A. Italy.

# Technical Symposium at Broadcast India '92

Sony is presenting two papers. (1) Digital Betacam towards the future by Sadao Hasoi of Sony Corporation, Japan. (2) Sony's HYPER HAD CCD technology by Ryus Uki Ijiri. N.J. Nair, Chief Engineer of Doordarshan, is the chairman, Technical Committee.

Pinnacle, USA is presenting Dveator - merging 3D modelling and real-time effects by Ajay Chopra.

Getris Image, France is presenting a 2D Paint and Animation Graphic System to be used in a high level broadcast network.

RCS, USA is presenting a computer to be used in Music Scheduling.

Nexus Int., UK is presenting the television system used for Barcelona Olympic Games.

Ortel Corp., USA is presenting fiberoptic inter-facility links for satellite broadcasting ground stations using high speed microwave lasers and photoiodes.

Dolby, UK is presenting Dolby SR used in audio recording and post production.

Dolby is also making presentations on cinema sound and the emergence of the Dolby Stereo Standards.

Audio Precision, USA will present a paper on the subject of testing broadcast audio program channels in a second.

Rohde & Schwarz is presenting a paper on the subject of setting of new standards in noise video analysis.

CineMedia Technologies is presenting DDO Broadcast & DDO Postproduction (Direct to Disk) optical - Phillip Gossin.

To allow for comprehensive coverage of the widest range of topics possible there will be two parallel sessions with time allocated for the important discussion periods which are an essential feature of any Technical Programme.

The Symposium will be held at Chavan Auditorium Centre, Bombay.

## Equipments Highlighted!

- Management Graphics, an American copany, brought out a machine - Solitaire - give a video footage and transfers colour video images onto 35 mm celluloid film.
- Video machine, SC, brought out by Fast Electronics, Germany, is a card which when put into the computer will convert the PC computer into a studio quality sound editing and video graphics equipment.
- Matrox, from Canada, is a similar card which when put into the computer enables it to carry out non-linear editing.

Go fast forward on exhibitions in Playback keep abreast of technology.

## Musicmakers' Bhakti vandan

Music maker cassette manufacturing company released its first album, bhakti vandan by Usha Mangeshkar and Ram Shankar. Lyrics are by Inder Singh Zadar.

The next few albums will be Sai Bhajan by Kavita Krishnamurthy and Ram Shankar, Phooljriyan, a fiery cassette by Raju Shrivastava, and Chilann, a ghazal cassette by Suresh Wadkar and Nobina Irjankar. P. Gautam is the A&R manager.



Function held of launching of MUSIC MAKERS CASSETTE MFG. CO. & the release of its audio cassette -BHAKTIVANDAN'. from left: lyricist Inder Singh Zadar, Chief Guest Shri Jagjit Singh, singer Usha Mangeshkar and Mr. P. Gautam A & R Manager.

## JSA blanks very popular

Hemant Shah and Suresh Makhija have developed a very superior blank audio cassette



for the Audio field to satisfy the quality requirements for the flawless home recording. The superiority lies in the unique cassette shell. It is combined from three separate moulds. The top base plate and the intricate centre is moulded separately. It is this system which guarantees a smoother tape path and less drag ultimately resulting in better recording. Suresh Thomas who is marketing the blank countrywide informed Playback that sales of JSA blanks had already exceeded 60,000 and, by the looks of its, it was the best seller.

It is available in C-60 - Rs.39/-, C-74 - Rs.42/- and C-90 - Rs.45/-. Suresh Thomas informs, "I flicked the idea of C-74 from a Sony ad." The C-74 is presumably to duplicate an entire compact disc.

## Audio Music Tracks for sale

Worship of God through devotional songs elevates devotees to realm of Godhood. Every religion forms the ingredients of virtue and morality through the medium of songs. We have wide range pre-recorded music of songs of different cults like Ayappa, Sai Baba, Sri Rama, Lord Venkateswara, Jesus Christ etc., which can be mixed and dubbed into the other languages. GOOD NEWS for Indian's settled in America, Europe, Asia, Middle East and Africa who are invited to place bulk orders for these devotional pre-recorded audio cassettes Parties interested may please contact :

**GEETMALA ENTERPRISES**  
Admn. Office : 29-14-24, Prakasam Road,  
Governorpet, Vijayawada - 520 002  
Grams: GEETMMALA  
TEL : 77209, 65481  
Telex : 0475-294 TUSC-IN-ATTNGME

## Digital Studio at Lokandwala Complex

Vinod Vora, Amit Biswas and Ashok Shukla have set up Ava Audio Lab. Pte. Ltd. Ava Audio is setting up a digital studio at Lokandwala Complex. The highlight will be the digidesign Pro Tools digital audio post-production system. Soundcraft Delta console, Lexicon Effects and Tannoy monitors includes the other equipment.

The digidesign incorporates three key recording technologies in a single system. (1) High fidelity multi channel hard disk recording with powerful editing tools and digital signal processing. (2) Integrated digital audio and MIDI recording and editing. (3) High resolution digital mixing with dynamic and state based automation and total session recall.

For musicians, it is ideal for every production step from tracking to final mix. Video and film professionals can apply to

Continued on page No. 26

## Ganpati, Divali, Navratri, Durga Puja

# Peak business time during festival season

From mid-August the entire industry gears up for the forthcoming 'season'. The Season is all over the country. It is the religious festival season of India. In August itself, there is Rakhi and Janmashtami. Immediately thereafter, as well as in the south in Tamil Nadu, Ganpati is celebrated very fervently. Many Marathi Ganpati albums are launched in Bombay. In Madras, numerous Ganpati albums in Tamil are released. Immediately after Ganpati the eastern market is heated up with the Durga puja fever. Both Orissa and Bengal witness releases from big as well as from small labels. The Delhi market is heated up with numerous albums of Mata bhajans. In Western India there are dandiya and garba releases during Navratri, especially in Gujarat

And Rajasthan.

In Maharashtra, Ganpati season starts immediately after Janmashtami and Rakhi and continues right till Divali, from which time, bonuses are released all over the country and fresh buying starts. In the whole of Central India and U.P., Ram bhajans and various folk material on all gods start selling during this period.

The cumulative impact of the festival season is despite increased duplicating capacity. Loopbin duplication is offered at a premium. There is a shortage of capacity come what may. The season witnesses a demand for in-cassette duplicators in the second-hand market. The inlay printers are under pressure. C-Os and tape are priced materials. Everything looks so

Continued on page No. 26

## Music Cos. sponsor Ganpati, Govindas

No biz like show biz. Ask the organisers of the Govinda gangs who roam their demarcated area for 'matka phodi' and you'll find music companies on top of their list for sponsorship. This year one witnessed more than one such govinda group sporting Venus T-shirts advertising Khiladi and other fast selling s'tracks. Tips too, has been sponsoring.

Ganpati mandals need sizeable sponsorship funds to put up mandals, play the music, install the idol and for immersion expenses. Almost all around Bombay the

mandals also put up huge hoardings advertising the sponsor. Venus which has been consistently exploiting Ganpati season with Marathi albums, have sponsored many such Ganpati mandals and advertised. In India, with music, celebrations and festivals, all linked, the music companies definitely benefit by being able to get into the act.

Musicassettes of DHUN, ROOP KIRANI CHOORON KA RAJA, ANGAAR, KAL KI AWAZ (JHANKAR) AND DIL AASHNA HAI are being distributed to many Ganpati Pandals.

## Playback Business Manager in New Delhi

Soumita Vasudeva joins Playback from July end to look after its business and editorial interests in New Delhi.

Pro Audio manufacturers and music companies can send their news to Bombay directly. Otherwise, they may reach it in New Delhi to Ms. Vasudeva, C-585, Defence Clony, New Delhi 110024.

New Delhi has become a strong centre both in music business as well as pro audio manufacturing. With the appointment of a local manager, the companies based in the capital shall take the opportunity to be in closer touch with the magazine. And, hopefully, provide news and be able to support the magazine more than in the past.

## Crescendo distributes Alurkar & Rhythm Classics

In a distribution agreement, Alurkar, the Pune based label, famous for Hindustani and Marathi classical repertoire, has entered into an all-India distribution arrangement with Suresh Thomas of Crescendo. Rhythm

House Classics, the record label operated by the Curmally's of Rhythm House, the famous retail outlet at Kala Ghoda, Bombay has also signed an agreement for all-India distribution with Crescendo.

## Sanket offers Loopbin and slaves

Vinay Thakkar informed Playback on the final launch of the indigenous loopbin and slaves developed by him. "I have put in 24 hours of hard work nearly everyday for the past one year and happy with the results."

The slave operating at 32:1 speed. It has been modelled on the popular German make, ASONA. Each twin slave has 8 motors. Two motors for take up and supply and two motors for the dual capstan. The motors are DC brushless close loop. Vinay explained the benefits of this motor. "The DC motor ensures zero drifting. In the case of AC motors where the line frequency drops to 47 hertz for example, the speed is af-

fected. In our slaves this will not happen. I can guarantee there shall be no wow and flutter problems. Frequency response, technically is as good as the ASONA." However, on the trial runs I have seen that all the Indian tapes duplicated are recording at their optimum. As the reputed duplications equipment manufacturers worldwide may offer any kind of technical specifications but, the material available, if it can be recorded to its optimum, I think nothing more is needed."

The machine has been built as sturdily as possible according to Vinay keeping in conditions.

## Continued from page No. 25 Digital Studio at .....

any aspect of audio post-production like saving sound effects and dialogue editing. In the MIDI project studio Pro Tools is the perfect tool for combining audio tracks and MIDI sequencer.

Amit Biswas is the son of the famous music composer, Anil Biswas, Ashok Shukla was earlier a sound recordist with T-series and Vinod Vora is marketing Macintosh computers in India. The digidesign is a Macintosh based editing system like the Studor Dyaxis.

## Continued from page No. 25 Peak business time...

rosy, that, almost all companies start talking of expansion and are further encouraged in soundtracks and recordings.

A lot of big films are slated for release during the advent of the season. This year Bol Radha Bol, Khel, Kal Ki Awaaz, Jina Marna Tere Sang, Bewafaa Se Wafa, Heer Ranja, Balwaan and Sone Ki Lanka were released. With the success of a couple of soundtracks the pressure of production is immense. The 'Season' continues upto November.

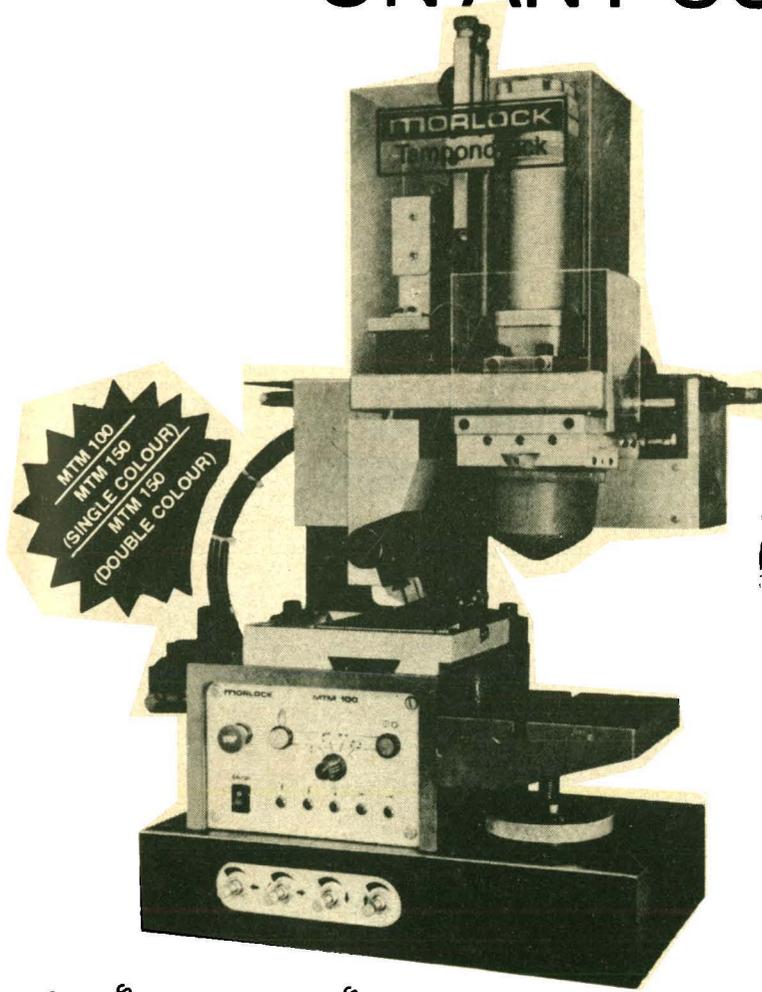


"SHRADHANJALI" a tribute to singers/musicians by Lataji on her completing 50 years of singing, being recorded at EMI's Abbey Road Studio, London by HVM.

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Juhu Road, Santacruz (W), Bombay - 400 054  
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# T series : many S'tracks in the offing

Irrespective of the fact that all the big names have contracted their forthcoming soundtrack to the competition, T series is confident as ever.

Vikram Wagh, Deputy General Manager of Super cassettes declared 'if you check in the past one year the number of releases v/s. the number of hits, our ratio is much higher.'

Yet, a string of releases in the recent past of outside production soundtracks confirms Vikram Wagh's contention 'contrary to the general impression we have not stopped purchasing copyrights. Earlier, we were buying right, left and centre, now we are selective and consider various factors in mind.'

'Jaanam,' 'Mehboob Mere Mehboob,' 'Junoon,' the new movie by Mahesh Bhatt, 'Chor Aur Chand,' 'Maina' and 'Aaja Sanam' of outside producers have been released in the last one or two months.

T series' own productions soundtracks which will be released in the next one or two months are 'Aaja Meri Jaan,' 'Kasam Teri Kasam' and 'Shabnam.' The composers are "various."

Maybe, not top-of-the-line, but T series has proved that as a music company it has the ability to create or supervise the creation of path breaking, imaginative and mass appeal music. Not to speak of the commitment and marketing abilities to insure that the music in which they have faith is promoted fully to achieve its optimum potential.

## Classical bang :

It is learnt that T series is preparing a classical big bang very soon. They have an extremely strong classical catalogue and have done a sizeable amount of recordings. Our basic is also very strong compared to the other companies' informed Vikram Wagh.

In fact, this reporter was informed at Lajpat Rai market, New Delhi, by Mr. Narang, a leading dealer 'the competition has definitely increased the sales of film cassettes, but if you count all the basic titles which T series is stocking up with us very well all the time then T series is definitely number one.'

# New Video Limited

New Video Limited (NVL) is a dedicated technology based company set to meet the broadcast and institutional television engineering requirements of the country. From custom designed professional hardware, system design, manufacturing and total customer oriented approach, NVL is a single window solution for the supply of professional video and audio electronics in the country.

The company offers coders and generators. Video duplication equipment.

Monitors.

Signal distribution and routing systems.

The product range includes the PAL Master Sync pulse generator SPG-1000.

In video duplication, MRC-1000 master remote controller and MSC-1000 switcher commander.

Professional audio distribution amplifier 1:6 ADAP-1006 and pulse distribution amplifier model PDAM-1006.

Both high resolution and composite video colour monitors are available in 14" and 20" from this company.

The company has offices in New Delhi, Bombay, Calcutta, Madras and Hyderabad.

They are also the India agent for all Sony professional audio and video equipments.

# Leo In Releasing Spree

Leo Audio Video recording company got out an elegant audio cassette release function held at Hotel Bhaskar Palace, Hyderabad on April 6th for Detective Naaradha. This Telugu film has the unique combination for the first time of Box office magic touch Mohan Babu, the music maestro Ilaya Raja and creative director Vamsy. The first audio cassette of the film was formally released by Mohan Babu and purchased by Creative Commercials chief K.S. Rama Rao amidst thunderous applause by the distinguished gathering.

The highlight of the function was the participation of Mohan Babu who was the focal point of attraction. His earlier hits 'Alludu Gaaru', 'Assembly Rowdy' were also marketed by Leo successfully.

Appa Rao of Leo Audio Video expressed his desire to celebrate the Platinum Disc presentation function in the presence of Ilaya Raja before the release of the film itself, as already 50000 audio cassettes have been marketed as a first phase of sale.

## Rare feat

P. Ramakrishna, revealed to P.V. Rao of Playback that their concerted efforts achieved a prodigious feat of marketing 50000 audio cassettes of Telugu film 'Detective Naaradha' within an incredible span of 3 days only, as evidenced by the fact that the original music track was handed over on 3rd April and pre-recorded cassettes marketed on 6th April.

P.V. RAO.

# LEO Double Platinum for Chanti from Leo



A panorama of film fare was held at Lalitha Kala Thoranam, open air auditorium in Hyderabad on April 19th to mark the 100th day celebration of the sensational Telugu hit film "CHANTI" produced by Sri. K.S. Rama Rao on the banner of Creative Commercials.

The high-light of the grand function is the presentation of "Double Platinum Disc" to the film unit by Messers. Leo Audio Video, who are the copyright owners of CHANTI audio. This milestone which is a hallmark of Leo Audio Video can be described it as their stupendous

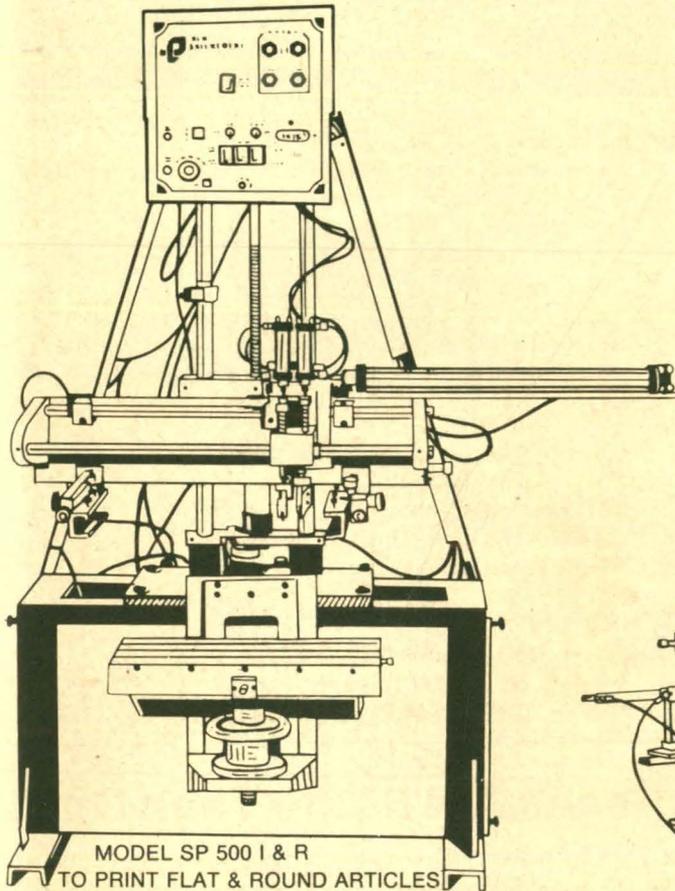
achievement in the annals of audio field.

The colourful grandeur showmanship of this hit film which is based on melodious blending of music composed by the music wizard Ilaya Raja, created an unprecedented record sale of 120000 audio cassettes. To celebrate this phenomenal event, Leo Audio Video has taken the honour by presenting the coveted Double Platinum Disc to Creative film maker Sri. K.S. Rama Rao, lyric writers Sri. Veturi, Sri. Sahithi, hero Venkatesh, heroine Meena through business magnate Sri. T. Subbarami Reddy.

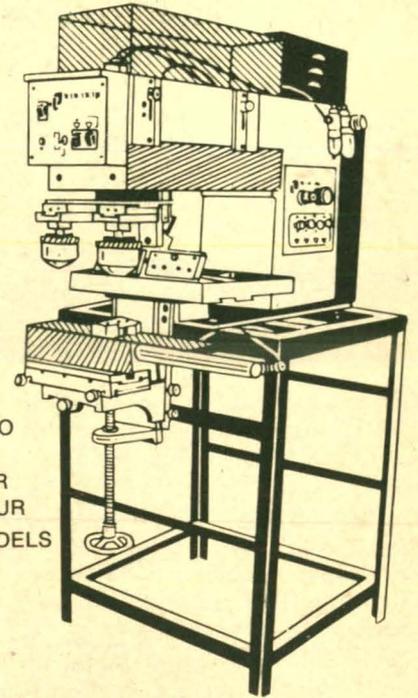
P.V. RAO

Manufacturers of

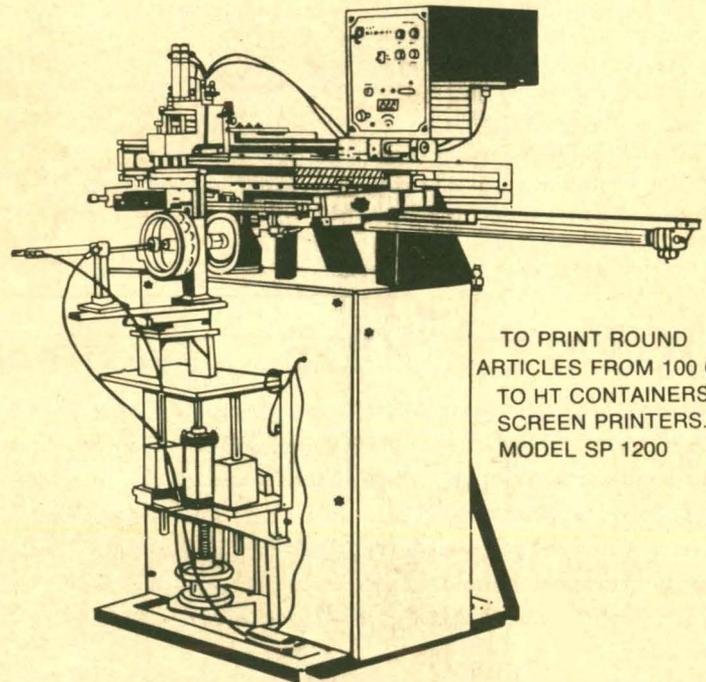
# PAD PRINTING MACHINES and SCREEN PRINTING MACHINES



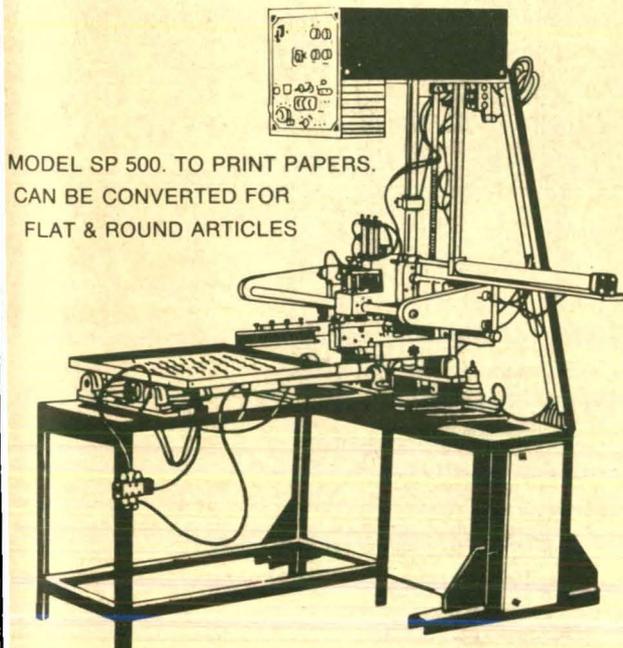
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# ORBAN 787 A Programmable Mic Processor



Orban ... a division of AKG Acoustics Inc., U.S.A. proudly presents, - An excellent Programmable Equaliser for Mic/Line Inputs, designed specifically for use in Broadcast, recording studios.

A Programmable Equaliser capable of a wide variety of functions:

- Compressor / Limiter
- De-esser (High frequency Equaliser)
- Noise Gate
- Three band "Constant-Q" Parametric Equaliser

The 787 A is a microprocessor - based programmable Equaliser which can store up to 99 complete setups for instant recall.

#### Special Features :

- \* An effects send and return port with programmable return level.
- \* Standard line-level input. However, an optional professional quality transformer Mic preamp is available for Mic inputs.
- \* Optional MIDI, RS - 232, or separate basic remote control with numeric display for console mounting.
- \* Easy-to-read bargraph displays.
- \* Numeric display shows current settings of selected control

parameters.

\* Security code to prevent unauthorised tampering with presets in addition to acrylic security cover.

#### Applications :

1. Broadcast voice processing - to get the same optimum sound every day for every voice.
2. Multitrack recording and commercial production - can increase efficiency in recording and production facilities.
3. Optional second-channel slave unit (787 ASC) - available for Dual Mono (or) stereo operation.

#### For further details please contact:

Mr. N. Viswanathan,  
Marketing Manager,  
AKG Acoustics (India) Ltd.,  
Hindustan Times House,  
7th Floor,  
18/20 K.G. Marg,  
New Delhi-110001.  
Tel : 331 4332(Direct) 331 4328  
Fax : 011-331-6839.

## AKG's C 1000S... Two Heads Are Better Than One !!

The AKG C 1000S Condenser Microphone, packs power, high sensitivity, low handling noise and sleek looks into a remarkably easy-to-handle, microphone ... making it as practical as it is versatile. This is supplied with a snap-on PPC 1000 (Polar Pattern Converter), which lets you easily vary the mic's pick-up pattern from cardioid to hypercardioid. So you can use it for instrument and/or vocals and not have to worry about picking & choosing mics backstage.

Its high output due to a sensitivity of 6mV/Pa gives the C 1000S a clear edge over most competitive designs. But high output alone doesn't make a professional microphone.

Some of the salient features of C 1000S are :

- \* Removable, washable inner wind and pop screen (many competitive mics have inner windscreens that cannot be cleaned because they are permanently fixed to the capsule or cap and thus by and by degrade the sound);
- \* Rugged Case
- \* Back electret condenser capsule
- \* Easily convertible polar pattern,
- \* Built-in recessed, on/off switch
- \* Alternative phantom or 9 V - battery - powering

\* Specially designed body contour to fit snugly into palm of hand to minimise hand fatigue and risks of being dropped

These are only some of the reasons why today's professional musicians and sound engineers prefer and trust in AKG's high quality C 1000S microphone.

#### SPECIFICATIONS

Polar Pattern : Cardioid / Hypercardioid  
Frequency Range : 50-20,000 Hz  
Sensitivity : 6mV/Pa ( = -45 dBV)  
Impedance : 200 Ohms  
Mas. SPL for 0.5% THD : 137 dB  
Size (inch) : 1.3 Dia x 8.7

#### For further details please contact :

Mr. N. Viswanathan,  
Marketing Manager,  
AKG Acoustics (India) Ltd.,  
Hindustan Times House,  
7th Floor,  
18/20 K.G. Marg, New Delhi-110001.  
Tel : 331 4332(Direct) 331 4328  
Fax : 011-331-6839.

## MAGNEFAX 48 : 1 Economical Loop Bin System



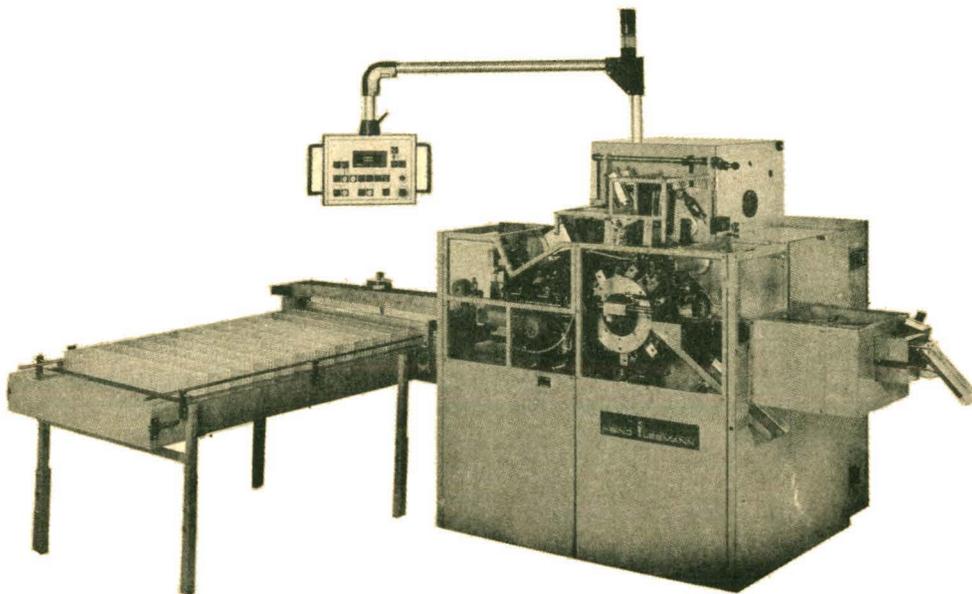
### SPECIFICATIONS FOR 7800 SERIES

MATER FORMAT	: 7.5IPS/Four Track
NUMBER OF SLAVES	: Seven
DUPLICATING SPEED	: 24:1, 180 IPS Master, 45 IPS Slave, 48:1 also available.
BIN CAPACITY	: 200 feet maximum
OUTPUT	: 2400 C-60's per 8 hour shift
VACUUM SOURCE	: Included
HEADS	: Long life, Permalloy, Staggered Reproduce & Record
RECORD ADJUSTMENTS	: Individual level, Bias, & Bias Traps, per track, per head
PACKER ARMS	: Gravity operated
FREQUENCY RESPONSE	: 30 Hz to 18 KHz $\pm$ 2dB (20 KHz-3dB)
DISTORTION	: <.5% THD at NOL
SIGNAL TO NOISE RATIO	: Within 2 dB of bulk erased tape
CROSSTALK REJECTION	: >65 dB between sides A and B at a KHz >40 dB between left and right tracks at 1 KHz
WOW AND FLUTTER	: <.06% Peak A
CUE TONE	: Adjustable to loader, 5 Hz to 20 Hz
METERING	: Digital. Peak reading w/memory hold
BIAS	: 2.5 MHz, Four synchronized oscillators
COUNTER	: Digital readout. Preset to 9999
DIMENSIONS	: 39" W x 32" D x 32" H table top
SHIPPING WEIGHT	: 275 lbs.

For further Information contact :

Dennis W. Tallakson	Paramjeet Singh
MAGNEFAX	Goden Magnetics
INTERNATIONAL, INC.	15/1 Gurgaon Road P.O. Maruti,
Route 1, Box 764, Rogers, AR 72756.	Gurgaon, Haryana.
501/925-1818.	Fax : 91-11-6872944
FAX 501/925-1841	TEI : 011-5563275.

## HEINO ILSEMANN Inlay And Cassette Inserting Machine



An ideal machine to get over the bottleneck experienced in any loopbin unit today.

The KZM4 is the most reputed machine in the world today. It will automatically insert the inlay card, cassette and the additional insert. All major movements are mechanically driven by cams and monitored by a computer controlled system.

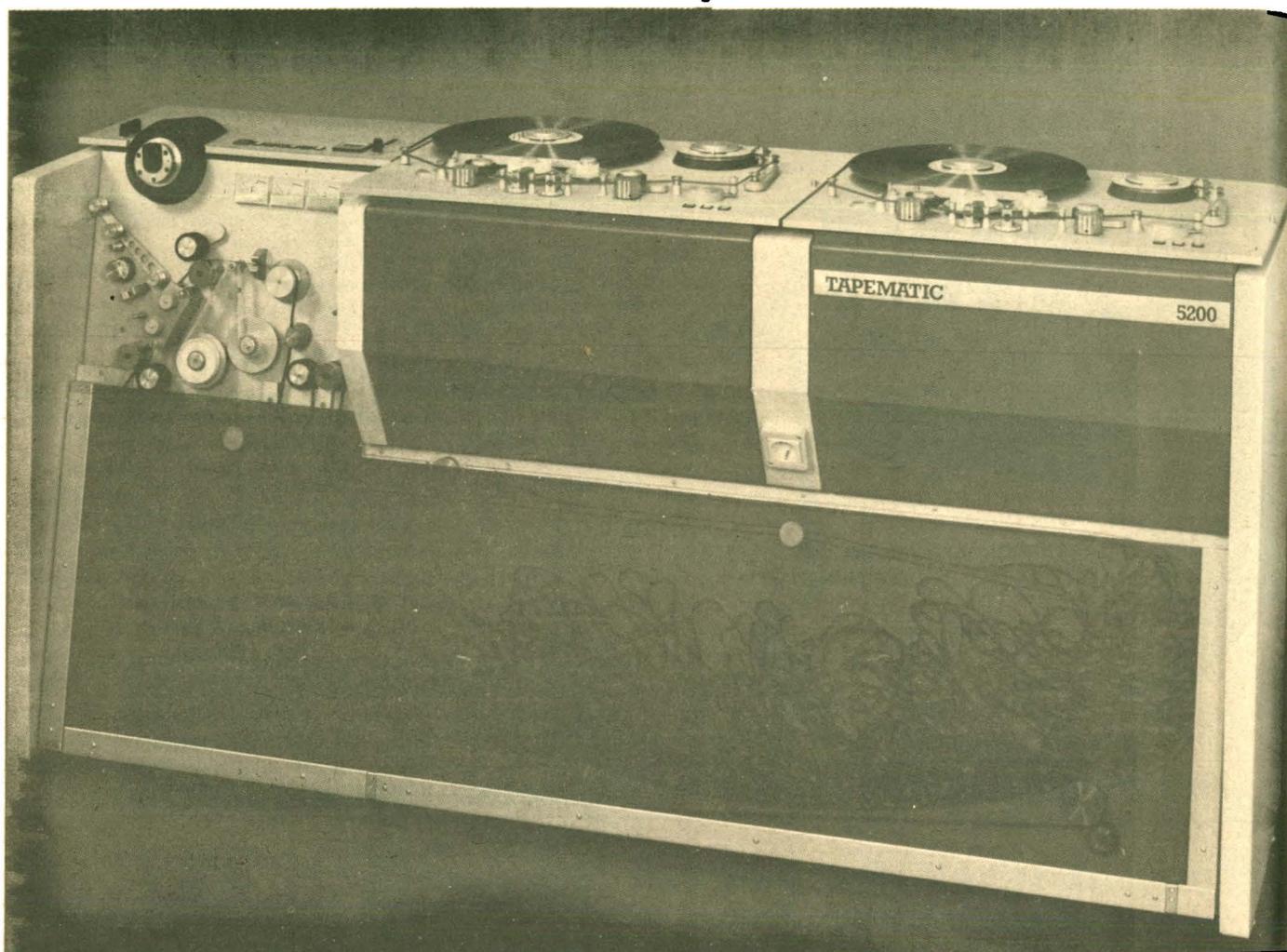
CAPACITY	: * 40.... 120 cycles/minute.
Special equipment	: * Magazine equipment for 120 boxes * Magazine equipment for 800 boxes

- \* Folding station for long inserts
- \* Outfeed conveyor chain with turning device
- \* Stacking device
- \* Additional insert station
- \* Cross outfeed, left or right

For further information contact :

**HEINO ILSEMANN**  
Verpackungsmaschinen-Vertriebs-GmbH,  
Zum Panrepel 24, D-2800 Bremen 44, Germany.  
Telephone : (0421) 48606-0. Fax : (0421) 486 06 48.1

# TAPEMATIC Dupcentre 5200



## Master Slave combination

This new model 5200 is a combination of a master and two slave units within one cabinet.

The system can be expanded with the addition of traditional slaves units, such as the 5128.

Apart from being a very compact unit that larger companies will find useful to run the very small production run on. A new company just starting will find the unit a principle building block to which they can add to at a later date.

## Revolutionary design

Many years of experience has shown that the vertical loop-bin is superior in tape handling, but a narrow bin also has its drawbacks. The long profile obtained in the layout of the DUPcentre has provided the necessary space for the tape to lay without having the excessive weight on the bottom layers from the tape above.

## Master

- Auto start of the slave units.
- totalizer of copies duplicated, with automatic stop following a predetermined quantity.
- V.U. switching :

+6dB Program

0db Line-up.

-20dB Test tape.

Fully automatic change over of the slave E.Q. and bias from the masters remote control.

## Slave

Individual bias and record amplifiers for each of the four tracks.

Ferrite heads, ensuring high quality and long life.

Unique packer arm guaranteeing a smooth and precision pack.

A special hub allows complete height adjustment to accommodate the various pancake hubs.

Dolby HX-Pro can be added.

For further details contact:

**RON GOODWIN**

**TAPEMATIC**

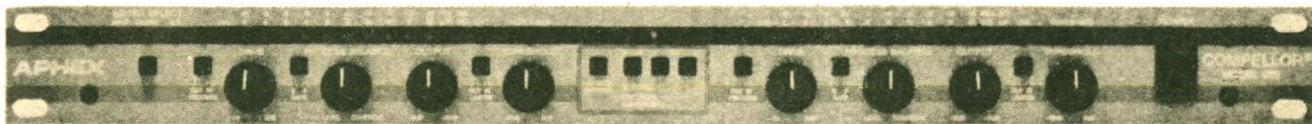
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**20060 Ornago/Milano/Italy**

**Tel: 39 (0) 39/6010145**

**Fax: 39 (0) 39/6010558.**

## APHEX Compellor Compressor Limiter



The Compellor is the world's most acclaimed audio level processor. The user simply decides how much the lowest level signal will be brought up and the proportion of leveling to compression, and trims the output for unity gain. The result sounds as if someone is riding faders extremely well. There is no change in the sound quality-only level correction-automatic and seamless.

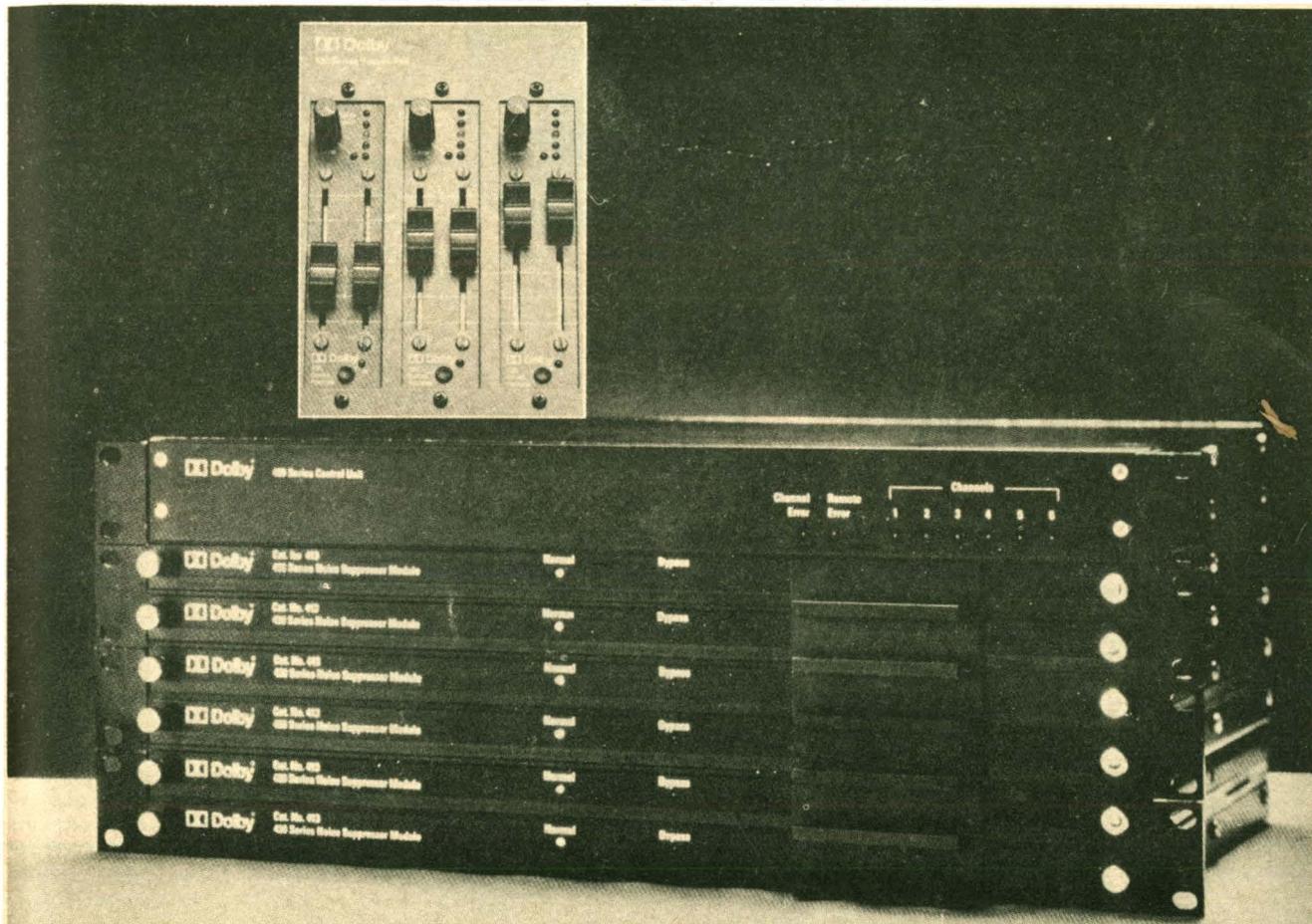
### APPLICATIONS :

Broadcasting, Production, Sound Reinforcement, Film Dubbing, Cable TV Systems, STL / Phone Line Driver, Carting / Tape Duplication, MIC Processing.

For further information Contact : PROSOUND

Phone : (022) 6269147 Fax : (022) 6269691 Telex : 011 76893

## DOLBY 430 Series



The Dolby 430 Series is a background noise suppressor system for reducing the broadband noises such as wind or traffic rumble that often mar location recordings. Many mixers in film and television post-production already rely on Dolby Laboratories Cat. No. 43, a background noise suppression unit based on a modified version of Dolby A-type noise reduction. The 430 series takes this concept further by using a modified version of Dolby SR<sup>1</sup> patented combination of fixed and sliding bands to give more stable signal handling and a significantly reduced chance of audible side effects.

While superior in performance to the CAT. No 43, the 430 Series uses fewer controls. Low-and high-frequency faders adjust the amount of noise suppression above and below dominant mid-fre-

quency signals such as dialogue. A pull-to-engage controls permits varying the pre-set operating level for recordings at unusually high or low levels (overall gains of the units remains fixed).

The 430 Series is a modular system providing from one to six channels of background noise suppression. A single control unit provides power and control signals for up to three 1U-high frames, each with one or two channels of processing. All operating controls are mounted in a remote control module which may be located up to 15 meters (50 feet) from the control unit. These remote controls have been specifically designed for console mounting. Alternatively, a housing is available to allow for stand-alone operation.

For further information Contact : PROSOUND

Phone : (022) 6269147 Fax : (022) 6269691 Telex : 011 76893

## TANNOY P B M Series P B M 6.5



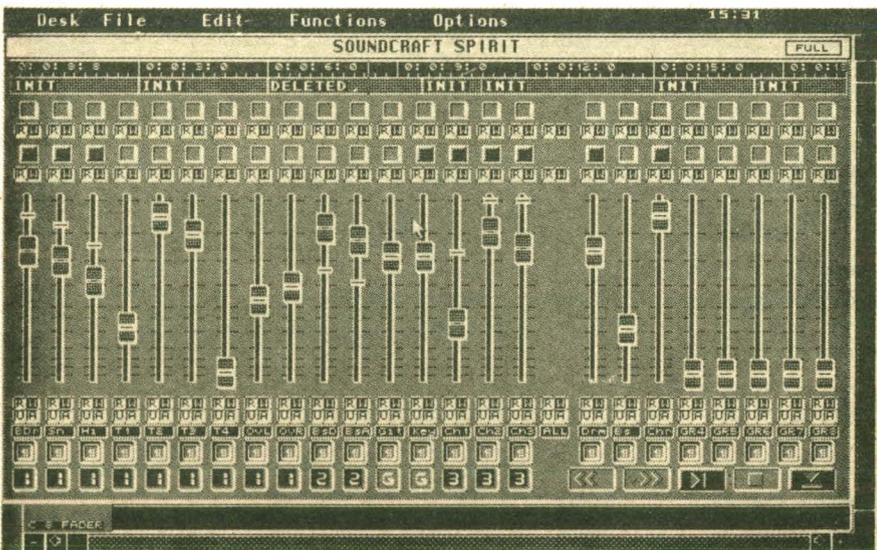
This newly-updated classic maintains all the musicality of the original design and now sports a new styled medite cabinet with radius fold edging.

This new cabinet is identical to the original in volume and driver, crossover accompaniment, but significantly reduces high frequency diffraction as the cabinet edges. This produces an even more convincing stereo image.

- \* New radius edge design.
- \* Medite construction.
- \* Low vertical profile for minimal sight line construction.
- \* Stylish pewter grey vinyl finish.
- \* Optium-tuned rear fitting port.
- \* Hardwired pro duty crossover.
- \* Gold-plated 3/4" - spaced 5-way binding posts.
- \* Fluid cooled 3/4" polyamide high frequency dome.
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- \* 5 year warranty.

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 24 - A, 1st Floor, Ghanshyam Industrial Estate, Veera Desai Road, Andheri (West),  
 Bombay - 400 058. Phone : (022) 6269147  
 Fax : (022) 6269691 Telex : 011 76893

## SOUNDCRAFT Spirit Auto



MIDI muting system the automation of fader levels-the key to automated mixing-was never an option. Although it was possible to blend the levels of sequenced instruments through the sequencer itself, this was only a partial solution. In the modern recording environment multitracks and sequenced instruments are often synced together using timecode. Using SPIRIT AUTO, an automated mix of both multitracked and sequenced instruments is now possible. A mix can be saved to floppy disk allowing you to build, improve and save in easy stages. There is no need to remember and attempt to reproduce difficult fader movements with each run through-no need to write down all your fader settings. Instead you return exactly to where you left off days, or even months later.

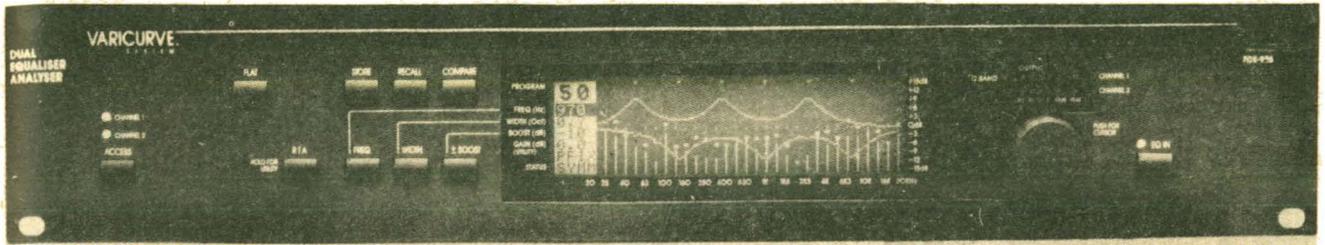
The most powerful solution for those really serious about their mixing, DEVELOPED EXCLUSIVELY FOR SOUNDCRAFT, STEINBERG AUTOMATION SOFTWARE has been designed for musicians not technicians. The software provides a graphical and intuitive approach to mixing in that segments of VCA data can be cut and pasted to different points in a mix, very like sequencer material. Steinberg Automation Software can be run as stand alone then sequencer

SPIRIT AUTO provides VCA automation of CHANNEL FADERS, CHANNEL MUTES AND MONITOR MUTES. As with MIDI muting systems, mutes can be used as gates to eliminate unwanted noise from channel and monitor paths. However SPIRIT AUTO is in a different class as creative tool. With any

software and automation can be run together under Apple MIDI Manager.

For further information Contact : **PROSOUND**  
 Phone : (022) 6269147 Fax : (022) 6269691 Telex : 011 76893

## BSS-FCS-926 Varicurve System Dual Equaliser Anylyser



VARICURVE is an advanced system of EQ processing and control elements which can be customised tailored to suit any audio production environment. From a single stereo 6-band/mono 12-band unit upto 32 channels of programmable equalisation, each processing element can be individually controlled via MIDI, PA-422, SMPTE or radio remote control. The FCS-926 combines a digitally-controlled analogue parametric filter set with intuitive assignable controls, fully interactive graphic display and integral analyser.

The FCS-920 is a 1U slave module with the same EQ processing facilities as the FCS-926 but with no front panel controls. The FPC-900 is a hand-held remote controller capable of addressing a system of up to 16 individual FCS-926 and/or FCS-920 units via a standard radio-mic link or XLR cable.

VARICURVE's multiband parametric equalisation creates a more accurate and sonically superior composite EQ contour than conventional manual or programmable graphic equalisers. Custom, digitally controlled analogue filters provide a constant-Q response for consistent selectivity. Filter topology is structured to prevent unpredictable internal clipping for optimum flexibility and fidelity.

For Further Information contact :

**PRO - SOUND**

**24-A, 1st Floor, Ghanshyam Industrial Estate**

**Veera Desai Road, Andheri (West),**

**Bombay- 400 058.**

**Phone- (022) 6269147**

**Fax (022) 6269691**

**Telex (011) 76893**

## MITEC Progressive Systems



The Studio Server has been designed to offer features and quality in a compact package. Designed as an "Inline Console" it is available as a 8 or 16 channel rack mount and as a 24 channel free standing console. Features include 4 band EQ, 4 Auxiliary sends, 4 Stereo Line inputs and comprehensive master section. All three models feature the ability to switch Aux's 3 & 4 to input channels effectively giving you double the amount of inputs for mixdown. Many other features are easily

accessible by switching rather than by the more time consuming patching.

The Roadie is a two model range of easy to use live Sound Reinforcement Desks. Available as an 8 or 16 channel into 2, both desks are rack mountable or free standing. Features include 4 band EQ, 2 Auxiliary sends, 2 Stereo Line inputs, Electronically Balanced XLR In/Outputs and separate power supply.

The Stage Server comes as either a 16-8 rackmount or freestanding 24-8 dedicated professional Monitor console. Both feature a full 4 band EQ and Electronically Balanced Input and Group Master Outputs. Individual peak and 0db LED indicators with LED ramps for Group Outputs. Separate insert points on all Inputs and Group Outputs plus standard Talkback circuit complete

the picture.

For Further Information Contact : **Ray Bond**

**Export Director**

**Te Deum Engineering Pte. Ltd.,**

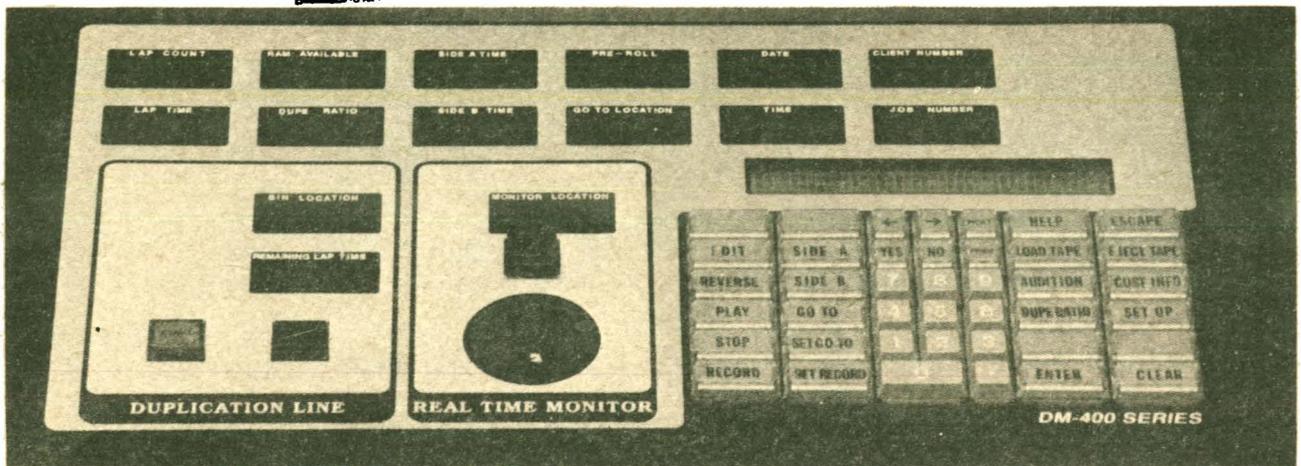
**45, Genting Lane,**

**# 02-02 Genting Complex, Singapore-1334.**

**Tel : 7429131**

**Fax : (65) 7428103**

# DUPLITRONICS Digital Master for duplication



The DIIS Process begins with the replacement of your existing bin-loop master with a DM 400 DHS. Using any high speed slave currently available, the system can be configured to be instantly switched back and forth from different makes of slaves. All control of the system is accomplished via a User Interface.

Mastering is accomplished on a Super VHS cassette. Errors occurring during the mastering process can be eliminated using the extensive editing functions available. You need only to master at real time once.

Loading of the high speed master into RAM takes place at approximately 25:1. DHS uses a highly sophisticated system for detecting and correcting errors called EDAC.

At the heart of the DM 400 DHS is a 16 Bit super high speed solid state memory sub-system. Data is stored and sampled at 44.1 KHz in a totally uncompressed and unaltered form. The DHS may be configured to operate at any 2 speeds from 1:1 all the way through 256:1.

Once program is loaded into RAM, you may listen to any or all portions of audio stored in RAM, even when the bin is operating at duplicating speed.

#### Features :

- 25:1 High Speed Program Load
- Error Detection and Correction
- Reduced Mastering Costs
- Direct Digital Recordings
- Output of up to 256:1
- Advanced Self Diagnostics
- Maintenance Free
- Total Harmonic Distortion < .04%
- Virtually Undetectable Crosstalk
- Absolute quality consistency
- Absolute Phase +/- 15°
- DCC Convertibility
- (SRTM) Real Time Monitor
- Frequency Response +/-33db-20Hz-20KHz

For further information contact :

Flemming Jensen

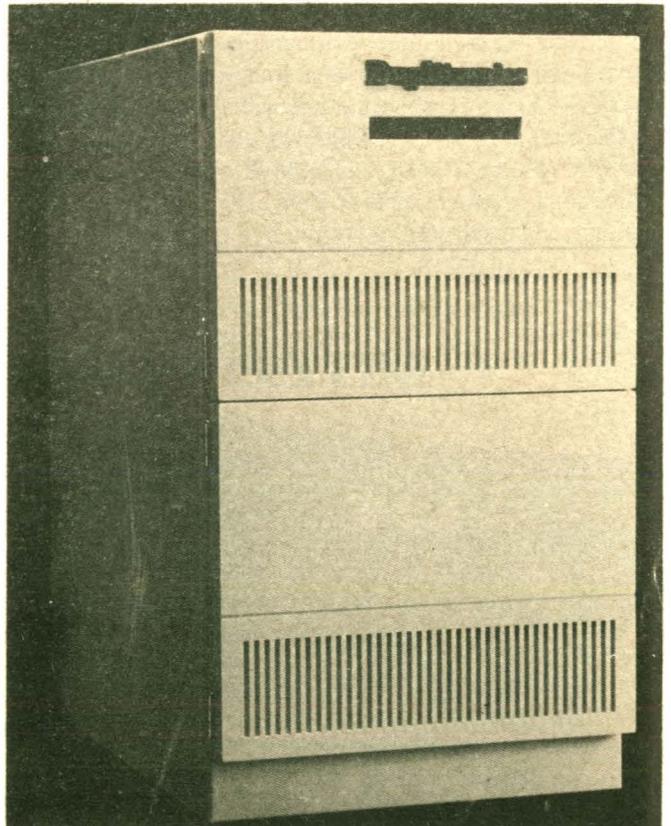
Lyrec Manufacturing A/S Box: 123 (Mileparken 22)

DK-2740 Skovlunde, Denmark.

Tel : 45 44 532522 Fax : 45 44 535335.

Duplitrronics Inc. : 160 Abbott Drive Wheeling, Illinois 60090

Tel. 708. 459.6610 Fax : 708.459.6615.



## Sollas PP Banding for Cassette

You can do away with the boxes. The latest technique is to just take 10 cassettes and place it in the machine and in an instant the 10 cassettes are wrapped in a PP band. The band holds the 10 cassettes together as if packed in a box, but the benefit is that the original can be seen clearly as also the bottom part of the cassette if it is printed clearly.

#### Advantages :

Characteristic Features :

For further information please contact : Sollas Holland

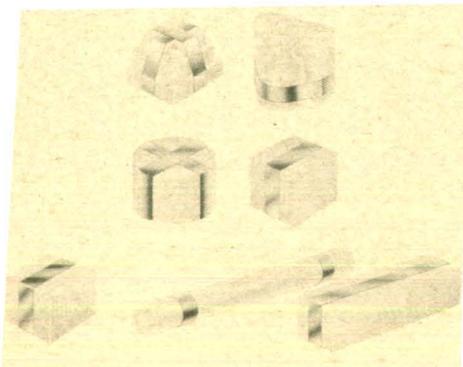
Sollas Holland B.V. Bruynvisweg 1, 1531 AX Wormer, Holland.

● Tel : 075-28 47 51 ● Fax : 075-28 02 66

For India please contact : Envoy Marketing & Distributors

P.B.No. 6160, B.G. Kher Marg, Bombay- 400 006. Tel : 307 58 87 / 362 72 20.

Fax : (022) 4930154.





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**Fax : 011-331-6839**

**Telex : 031-62994**

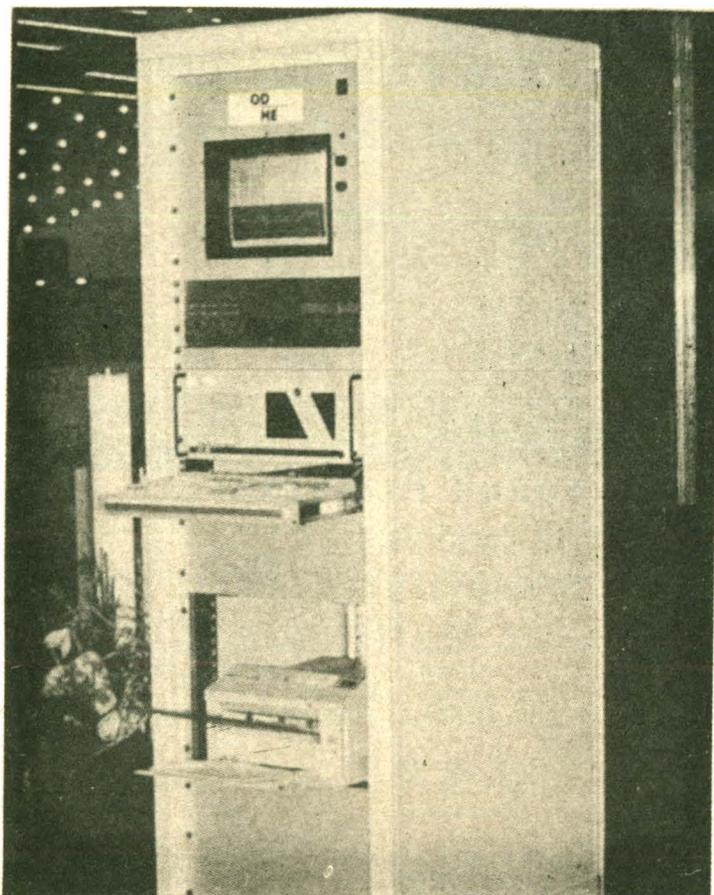
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Pragati Maidan  
Stall No.182 in Hall 7F**

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## ODME ABC 200 error counter



Dutch based optical media equipment manufacturer, ODME, has released details of its ABC 200 test system. Mounted in a stand alone 19 inch rack cabinet the ABC 200 is designed to provide CD plants with a self contained, off line Red Book CD test system.

Major components include (from top to bottom) a 14 inch VGA colour monitor; low profile 19 inch keyboard with integral trackball; pc bus industrial computer (20 MHz/386) with ODME designed CD testcard, modified professional Studer A727 CD player and high resolution Hewlett Packard Laser jet III.

All commands for the system are displayed as menu items on the screen and can be actioned with a simple mouse click. Different user levels ensure only necessary information is displayed to the user at any time. For comparative or long term tracking of performance values all data can be stored on hard disk. The laser printer provides high resolution graphics and is also capable of providing tabulated data on a single A4 sheet of paper.

Future developments will include a multi player system (upto five players) all of which will fit inside the original cabinet (the printer sits at the bottom of the rack, the additional players above). In the multiplayer test system evaluation of each disc will be simultaneous, potentially reducing test time down to 20% of the single player system. Measuring parameters for the system include : BLER, E1.1/2.1/3.1; Bursts, E1.2/2.2/3.2; Radial Noise, Push-Pull 13, III, Symmetry and TOC.

## AMEK'S The big by Langley

The AMEK/TAC group of companies are proud to announce a console system so innovative that it requires a new brand name-Langley-and so powerful it could only ever have one product name-big. big by Langley is the first affordable Superconsole System.

The big concept combines a professional on-board AUTOMATION system with an incredibly powerful RECALL SYSTEM and IN-LINE flexibility to give a standard pack-

age that rewrites the book on console design.

The basis of the big system is a compact steel chassis and motherboard framework that houses 28 In-Line Input Modules, 4 Stereo Effects Returns and an additional 4 routable Stereo Line Inputs which double as Fader Controlled Subgroups. The input module equalizer can be split to yield 64 equalized inputs on mixdown, 72 inputs in total, and the 8 auxiliary sends can be re-routed to give up to 20 sends when mixing. The large chassis accommodates up to 44 input modules.

For easy operation big dispenses with the need for conventional 'Record' and 'Mix' modes. A flexible module routing system, how-

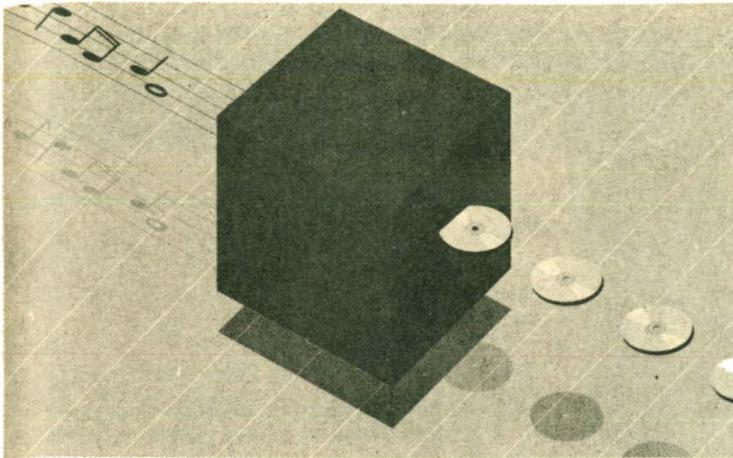
ever, using local Module Status Switches makes any number of operating styles possible. The AUTOMATION is MINITRUE, standard on all big console systems and closely related to the established AMEK Supertrue system used on hundreds of top level AMEK consoles worldwide. MINITRUE gives fast, accurate, SMPTE-time-code based control of Fader, Monitor Mute, Channel Mute and Auxiliary Send 1 and 2 Mute information and has an extensive complement of on-line and off-line features including 16 VCA Groups.

big by Langley comes fully equipped with a RECALL SYSTEM giving accurate recall Channel and Return switch and pot settings with the exception of the AFL/Solo switch. Channels can be recalled individually to repeat favourite settings or in sequence across the console to return to a previous mix. Accurate matching can be made visually using the screen display and when the Recall System is used in conjunction with MINITRUE, complex mixes can be reproduced with phenomenal speed and precision.

The big picture is complete with the upgrade option to AMEK Virtual Dynamics. Virtual Dynamics is a gain shaping system comprising software controlled Compressors, Gates, Expanders, Limiters and Autopanners for each channel which can be adjusted in real time. Favourite settings can be archived for future use and Virtual Dynamics fully integrates with MINITRUE automation.

For further detail contact :

## LEYBOLD Compact Line CD plant



Leybold has chosen an integrated design, reducing the number of interfaces, this creating the 'Compact Line' CD replication line. A CD manufacturing machine, so to speak, instead of assembling of components of various subsuppliers. The entire unit takes up 18m<sup>2</sup> of floor space.

All stages of CD replication from injection molding through metallization lacquering and printing to quality control inspection, have been incorporating into a self contained system.

### TechnicaDataCOMPACTLINE

Products	CD-Audio, CD-Video, CD-ROM, CD-I
Disc sizes	120 mm, 80mm
Material	Polycarbonate (PC)
Injection molding clamping force	: 600 KN nominal
Sputtering	: Al (other material e.g. CuAl, Au, etc. on request)
Coating target life	: 80,000 discs at 55 nm
Target exchange time	: approx. 10 min to restart sputtering
Lacquer coating	UV-type
Label printing	2 or 3 color screen printing with UV drying
Quality inspection	automatic dual CCD-camera system
System cycle time	6.5 s equivalent to 550 CD's/hour
Typical output (three shift operation)	approx. 3 million CD's/year

## OTARI AL - 632 Dual Cassette Loader

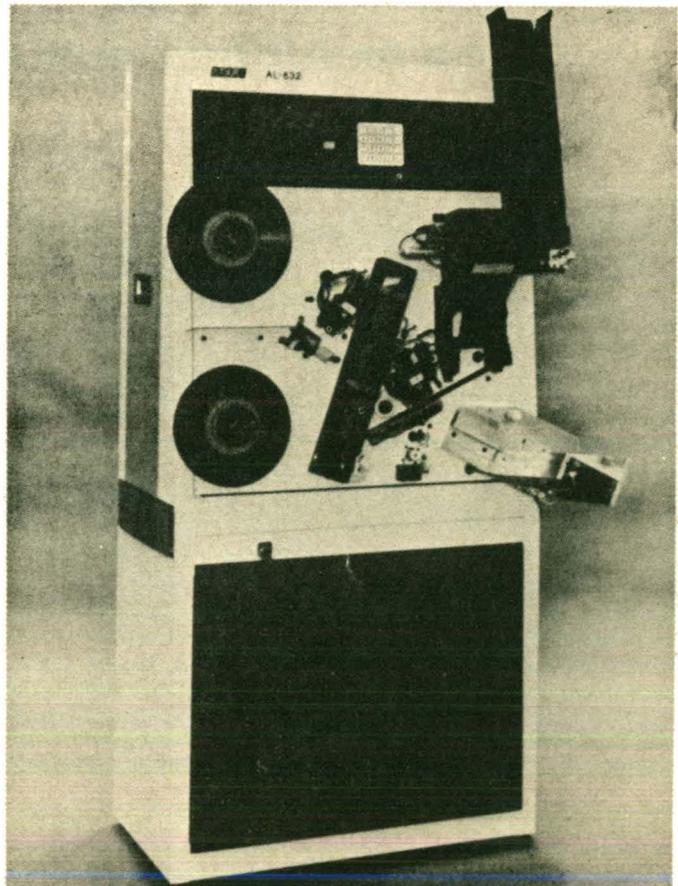
### FEATURES :

Dual supply design allows for uninterrupted production  
High speed design handles 400-425 C-60 cassettes per hour

Proven reliability of King IV rotary splicer design provides consistent quality splices with minimal maintenance  
Handles blank or prerecorded pancakes

### SPECIFICATIONS :

Tape Format	: 0.15" width cassette tape (minimum thickness C-120).
Cassette Type	: Philips standard Compact Cassette or Philips Digital Compact Cassette with optional conversion kit.
Maximum Supply Diameter	: 14"NAB standard hub.
Leader Tape	: Industry standard 28" (71.12 cm).
Splicing Tape	: 0.130" width (3.3 mm) King B-50 or equivalent.
Winding Speed	: Maximum speed 1200 ips (30.48 m/sec).
Cycle Time	: (C-60 blank) 14" pancake 7.8 sec. average.
Length Counting	: Four-digit LCD displayed in time units.
Cue Tone Sensing	: 6.5 to 10 Hz, more than -20db from DIN standard level (-30 db max). Cue search speed : 160 ips (4 m/sec).
Supply Voltage	: Single phase 100-240 VAC: 0-60 Hz.
Air Source	: 4.25 cfm (120L/min) @ 65 psig (4.57 kg/cm <sup>2</sup> ).
(not supplied)	No external vacuum required.



## ARX PowerMax Full Range Loudspeaker



ARX has released a new series of compact, trapezoid, high SPL Loudspeaker Systems featuring state of the art passive crossovers. The PowerMax 1 full range loudspeaker features the ARX HPB12 High Excursion Low Frequency Driver & the EXF16 High Frequency Compression Driver. The PowerMax 1 utilises an all new Linkwitz Riley 24db Passive Crossover to ensure phase coherence through the crossover region.

The PowerMax 1 is available in two versions, the standard PowerMax 1 and the PowerMax 1F version for flown applications.

The PowerPro Loudspeaker System Processor features dual channel operation, ARX's innovative ISC system protection, phase and frequency correction, balanced XLR inputs and XLR outputs in a compact, one rack unit package.

A new compact high SPL Sub Woofer for the PowerMax series of Loudspeakers is also available. The PowerSub sub woofer features two ARX LFB12 High Excursion Very Low Frequency Drivers in a dual vented chamber arrangement.

The PowerSub features a speaker stand insert for pole mounting, XLR inputs, and is designed to operate via a power amplifier from the Sub output of the PowerPro Loudspeaker System processor.

In addition to the PowerMax 1 the new PowerMax 2 features the new ARX HPB15 Driver.

The PowerMax 3 is a multi profile monitor featuring operating angles of 30 and 60 degrees. Like the rest of the PowerMax series, it is finished in ARX's new, non skid Duratex finish.

For further information contact : **Colin Park** (Asia and Pacific) ARX Systems

33 Advantage Road, Hightett Victoria 3190, Australia.

Phone : (61) (3) 555 7859 Fax : (61) (3) 555 6747

ARX Systems Singapore

5 Koek Road, #03-16 Cuppage Plaza, Singapore 0922.

Phone : 65-733-3465 Fax : 65-734-2116.

## Toolex Alpha Double Track CD Plant

The Double Track System has a capacity of 600 CDs per hour the Double Track around 1000.

The system can be installed in limited spaces without especially reinforced floors and they consume less power.

The complete turnkey CD manufacturing systems comprises Toolex Alpha MD100 Injection Moulding Machine. With the cycle time of less than 6b seconds and 98% availability, the MD100 is the fastest most productive CD manufacturing machine of its size in the world. The mould weighs only 15 Kilos and can be changed manually in a few minutes. Changing the stamper takes less than 2 minutes from stopping the previous production run to the first accepted disc of the next. A perfect pressing is then obtained after only 3 or 4 rejects.

The MD100 is combined with equipment of other wellknown suppliers. The systems are ideal for small series and are fully equipped to handle optical media such as CD-ROM and CK-I, for which a rapidly expanding market is forecast during the 90s.

For further details contact :

**Jan Gerdau**

Toolex Alpha, Box 1176,

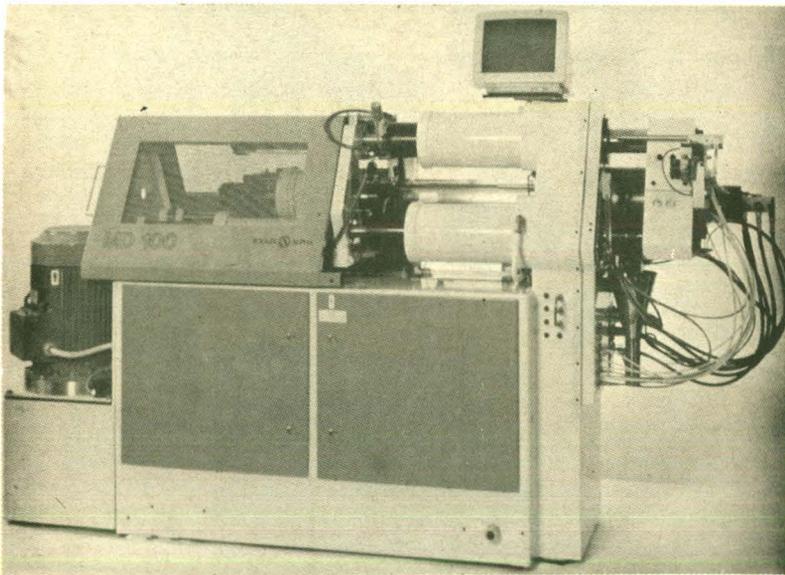
172 24 Sundby berg,

Sweden.

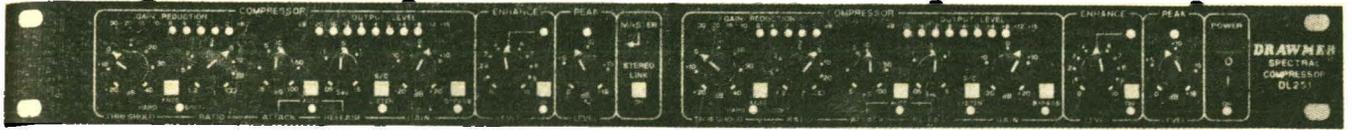
Telephone : +46 8 28 90 30

Telex : 13378 ALPHA S

Telefax : +46 8 28 95 32



## DRAWMER DL 251 Spectral Compressor



It is well known that compression, in its basic form, tends to remove high frequencies from any material with a wide bandwidth. This is because material usually has less energy at high frequencies than it does at low frequencies and since single band compressors are not frequency conscious, the 'highs' are attenuated together with the 'lows'. Using a slow attack time improves matters to some extent, but signals containing many harmonics (eg: vocals, strings and brass) or dynamic signals with a powerful 'leading edge' (eg: piano, kick and snare drum) tend to lose clarity which often requires further audio processing. It is a fact that many engineers who would like to use a compressor in a particular application, avoid doing so because they feel that the 'sound loses something'.

The DL251 'Spectral Compressor', incorporates a variable 'Dy-

namic Spectral Enhancement' (D.S.E.) section which eliminates the problems associated with full band compressors by restoring the high frequency energy lost during the full band compression process. This enhancement circuitry is extremely effective where compression and limiting are employed for broadcast transmission, or across complete mixes in a stereo mixdown situation Dynamic Spectral Enhancement' Has many creative applications when recording individual components at the multi-track stage, particularly on such programme as acoustic guitar, piano, brass and vocals.

For further details please contact : PACE

## AKG Blue Line Modular Microphone System

AKG Blue Line is the name of a new modular condenser microphone system that provides maximum flexibility and ease of use for professional recording and live sound applications.

One preamplifier, eight different microphone capsules, and a range of dedicated accessories provide the right microphone for every situation instantly. These include rugged construction; ease of use through bayonet connected plug-in capsules; back electret transducers; low impedance capsule termination; and minimum self-noise. An extension cord even allows the capsules to be used away from the preamplifier.

The output stage is a transformerless SMD design that contains a switchable bass cut filter and 10 dB preattenuation pad.

The eight capsules are :-

CK 91 Cardioid Microphone Capsule.

CK 92 Omnidirectional Microphone Capsule.

CK 93 Hypercardioid Microphone Capsule.

CK 94 Figure-of-Eight Microphone Capsule.

CK 97-0 Miniature Omnidirectional Microphone Capsule.

CK 97-C Miniature Cardioid Microphone Capsule.

CK 97-CVR Miniature Cardioid Microphone Capsule with Integrated Gooseneck.

CK 98 Short Shotgun Microphone Capsule.

Plus, all the other accessories are also available.

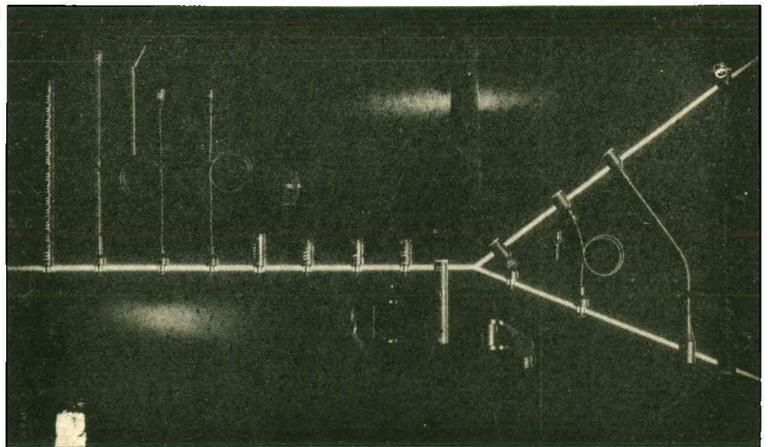
For further details please contact :

Mr. N. Viswanathan

Marketing Manager, AKG Acoustics (India) Ltd.,  
Hindustan Times House, 7th Floor, 18/20 K.G. Marg,  
New Delhi- 110001.

TEL : 331 4332 (Direct) 331 4328

Fax : 011-331-6839.



## VERSADYNE's economical 1000 Series

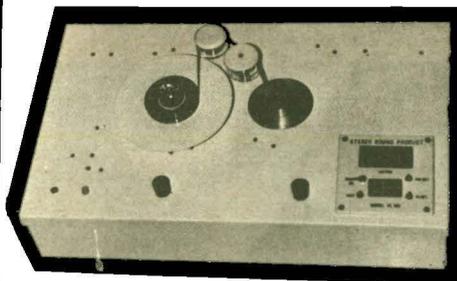
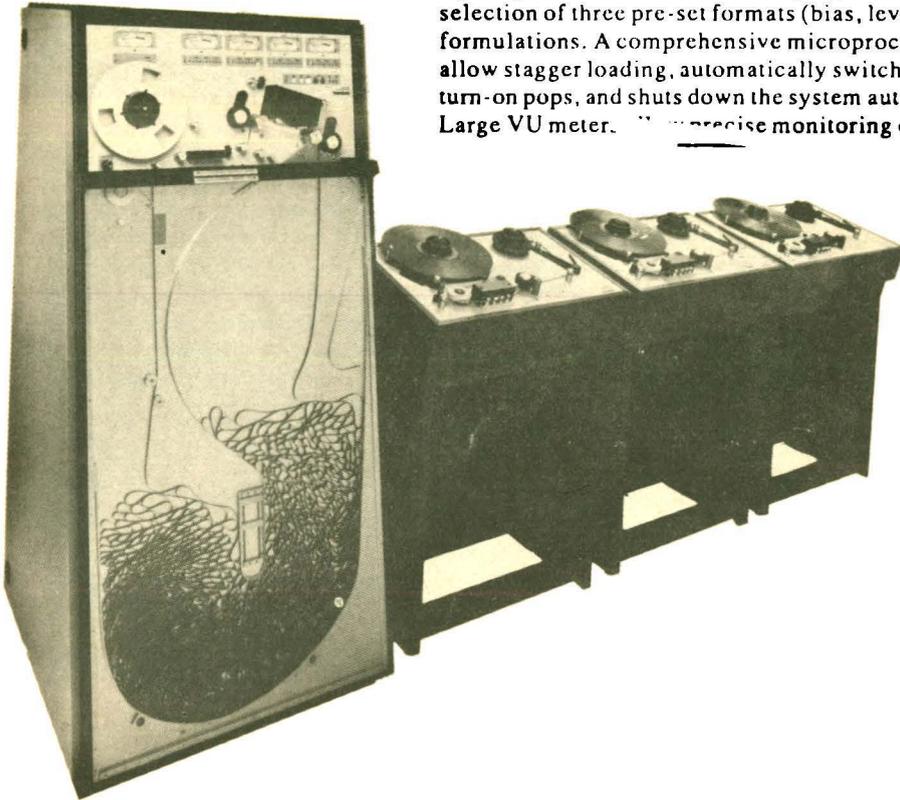
A 1000 Series system may be ordered for use with 1/2" or 1/4" masters, and duplication ratios are selectable at 32:1 or 64:1. The master unit features dual capstan drive, motorized tape wiper, Saki ferrite heads on a plug-in assembly, 30-watt bias supply, and single-switch selection of three pre-set formats (bias, level, equalization) for different speeds and tape formulations. A comprehensive microprocessor controller times the start-up of slaves to allow stagger loading, automatically switches on cue tone with precise timing to eliminate turn-on pops, and shuts down the system automatically when the last slave runs out of tape. Large VU meter. **For precise monitoring of system bias and record levels.**

The large-capacity loop bin holds over 2000 feet of tape, and the exclusive Agitape conveyor system extends the life of the master tape up to five times compared to conventional bins.

Compact and rugged, the 1000 Series slave is equipped with motorized tape wiper, Saki ferrite heads on quick-change head assembly, electronic servo control on both reel motors, packer arm, and 12.5" pancake capability. To facilitate quick calibration, bias and record level adjustments are easily accessible under the head cover. An optional pedestal converts the slaves to floor-standing models.

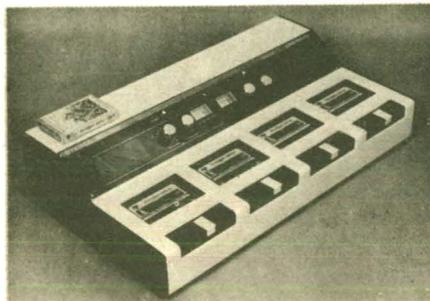
For details contact Bob Kratt

Versadyne International, 504-D  
Vandell Way, Campbell, CA 95008;  
Telephone (408) 379-0900 Fax (4-8)  
379-0902.



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- Audio loader fully Auto Stop.
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- A video Automatic loader.
- Video Cassettes eraser.
- Video pancake eraser for slitler.
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- Video tape cleaner.
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**GOLDEN MAGNETICS** B-601, Som Vihar, R.K. Puram, New Delhi-110022. Fax: 11-6872944.  
15/1 Gurgaon Road P.O. Maruti, Gurgaon, Haryana. Fax : 91-11-6872944, Tel : 011-5563275.

# CARE & HANDLING of Magnetic Tape

**F**or all the sophisticated technology and electronics that contribute to producing a magnetic recording, the entire process ultimately depends on magnetic tape.

That's why it's important to exercise proper care when handling and storing magnetic tape in both open-reel and cassette configurations.

Following the do's and don'ts will prevent damage to tape and cassette mechanisms and maximize their life expectancy. This means you won't lose your expensive tape productions or wear out costly recording equipment.

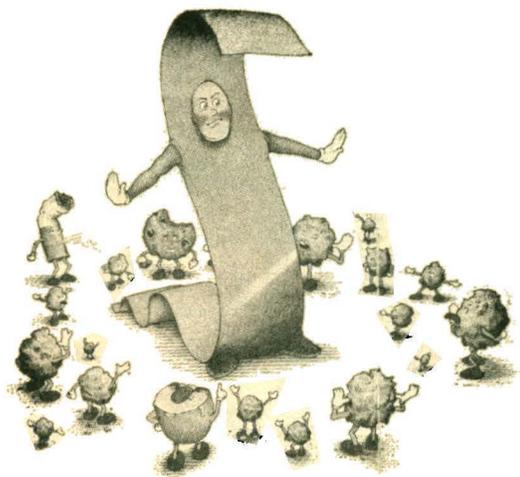
## DIRT

Always store tape in a dust-proof container when not in use. This protects the tape from dust particles, which can cause dropouts.

Never touch the tape surface or tape pack. Even touching the back of the tape can transfer dirt to the adjacent layer. If touching the tape cannot be avoided, use lint-free gloves.

Avoid smoking or eating in the tape area. Smoke and food particles can contaminate the tape and ashes can cause damage.

Loose tape ends should not trail on or near the floor. Always use approved hold-down



tabs or reel bands, even when the tape is in its container.

Clean the entire tape path after each pass, if possible, using a lint-free cloth and an approved solvent. Clean the path at least every 8 hours.

## PHYSICAL DAMAGE

Handle tape reels only by the hub. Never squeeze the flanges. Bent flanges should be replaced to avoid tape edge damage.

Rewind poorly packed tapes.

Trim damaged tape ends to avoid depositing debris on the tape transport and recording heads.

Never stack tapes on top of one another. Store tapes vertically so they will be supported by the hub.

Don't put tapes on top of equipment. This interferes with the equipment's cooling system and also exposes the tape to heat and dust.

## ENVIRONMENT

The ideal operating and short-term storage environment should be 68°F (20°C) and 45% relative humidity.

The ideal long-term storage environment should be 65°F (18°C) and 40% relative humidity.

For best archival storage, rewind tapes every 1 to 5 years to relieve stresses in the pack. (Refer to "Rewind Frequency Chart" in the Addendum.)

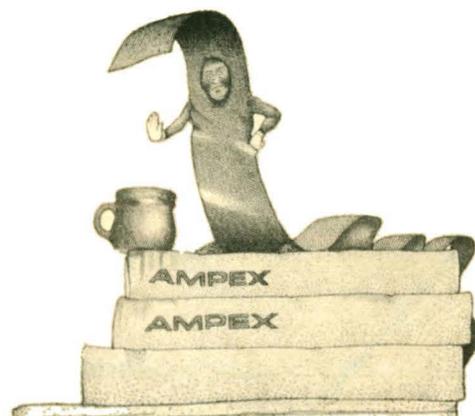
Allow a minimum of eight hours for tapes to condition themselves when brought from a different environment.

Never expose tapes to direct sun, hot vehicles, etc.

Always store and use tape in the cleanest environment possible away from magnetic fields.

### Do

1. Do store tapes in dust proof container or on transport.
2. Do trim damaged tape ends.
3. Do clean tape path of machine as often as possible.
4. Do rewind poorly packed tapes.
5. Do store and use tape in a comfortable, controlled environment.
6. Do allow tape to acclimate itself to a new tape room environment before using.



### Don't

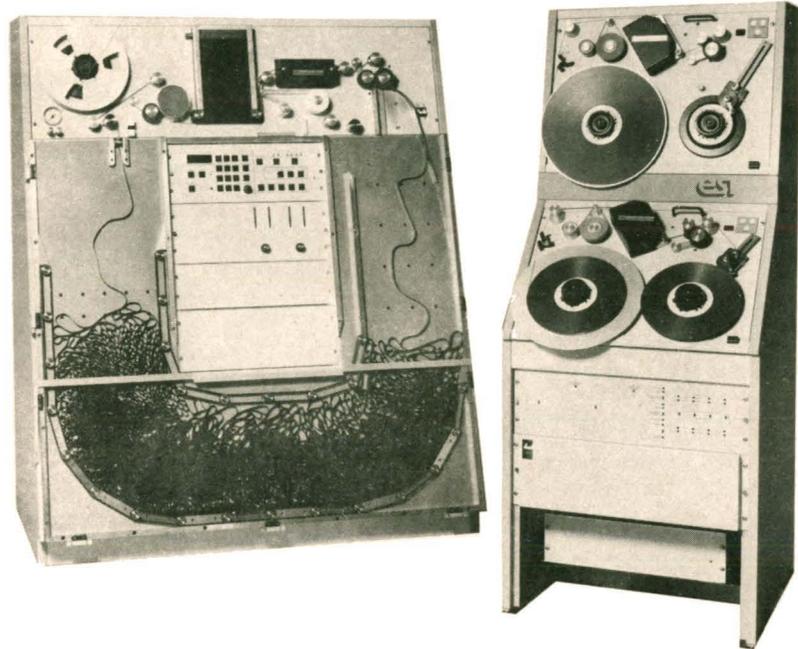
1. Don't use top of equipments as work area.
2. Don't let tape get close to floor.
3. Don't smoke or eat in tape room.
4. Don't handle reels by the flanges.
5. Don't stack tape reels horizontally.
6. Don't touch tape surface or tape pack without lint-free gloves.

Courtesy - Ampex Recording Media Corporation

---

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COST EFFECTIVE



- ▼ Dual slaves
- ▼ Highest quality music at up to 80:1
- ▼ Large capacity loop bin — powered for gentle tape handling
- ▼ Microprocessor control
- ▼ Dolby HX Pro
- ▼ Diagnostics and test programs
- ▼ Brushless DC capstan servo motor



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 Symposium Venue : Chavan Centre Auditorium, Near Mantralaya, Bombay  
 Exhibition & Symposium Dates : 16th to 18th October, 1992

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Alternatively, you can attend the conference for a cost of Rs. 190/- only for all the THREE DAYS. The DELEGATE BADGE for the Symposium is valid for the Free Entrance to the Exhibition on all the days.

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2. **SONY's Hyper HAD CCD Technology** by Mr. Ryusuke Ijiri, SONY Corporation, Japan.
3. **DVEator: Bridging the Gap Between digital special effects and 3D modelling** by Mr. Ajay Chopra, Pinnacle Systems, Inc., USA.
4. **The use of the computer in music scheduling** by Dr. Andrew Economos, RCS, USA.
5. **A Television system for the Barcelona Olympic games** by Mr. John Buckley, Nexus International Consultancy, UK.
6. **Fiberoptic inter-facility links for satellite broadcasting ground stations using high speed microwave lasers and photodiodes** by Mr. Larry Stark, Mr. G. Grimes, Mr. C. Gee, ORTEL Corporation, USA.
7. **Dolby SR in Audio recording and post production** by Mr. Tony Spath, Dolby Laboratories Inc., UK.
8. **Cinema sound and the emergence of the Dolby Stereo Standard** by Mr. Tony Spath, Dolby Laboratories Inc., UK.
9. **Testing Broadcast Audio program channels in under a second** by Mr. Wayne Jones, Audio Precision Inc., USA.
10. **The use of a 2D Paint and Animation Graphics System in a high level Broadcast network** by Mr. Stephane Thibault, Getris Images, France.
11. **Setting new standards in noise (Video) analysis** by Mr. H.D. Gregorek, Rohde & Schwarz, Germany.
12. **DDO Broadcast and DDO Post production (Direct to disk optical)** by Philippe Gossin, Cine Media Technologies, Switzerland.
13. **Latest Advances in Film & Video Tape cleaning and Evaluating** by John Hughes, RTI UK Limited.

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Fill in the registration form for attending the Symposium and send in with your fees to the organisers today. Please note there are very limited seats for the conference and the registration will be done on first come, first served basis.

# BROADCAST INDIA '92

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Please Note that the Broadcast India '92 Exhibition & Symposium is open for people connected with this trade only.



## REGISTRATION FORM

✓ TICK AS APPLICABLE

Yes, I am interested in visiting the Exhibition. Please send me my Free Entrance Badge.

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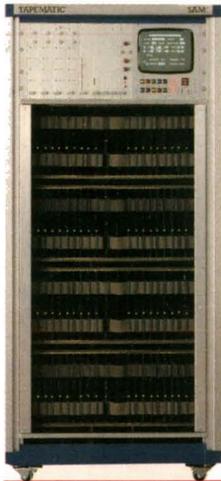
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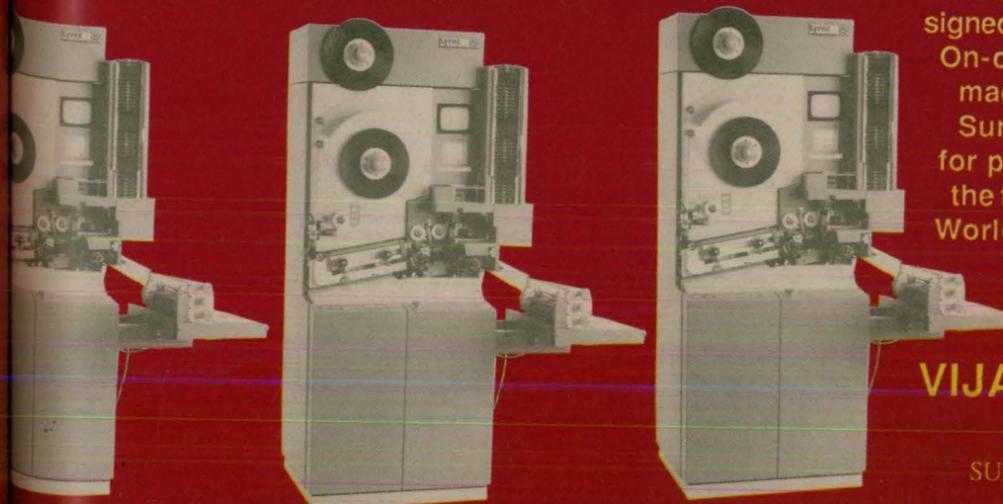
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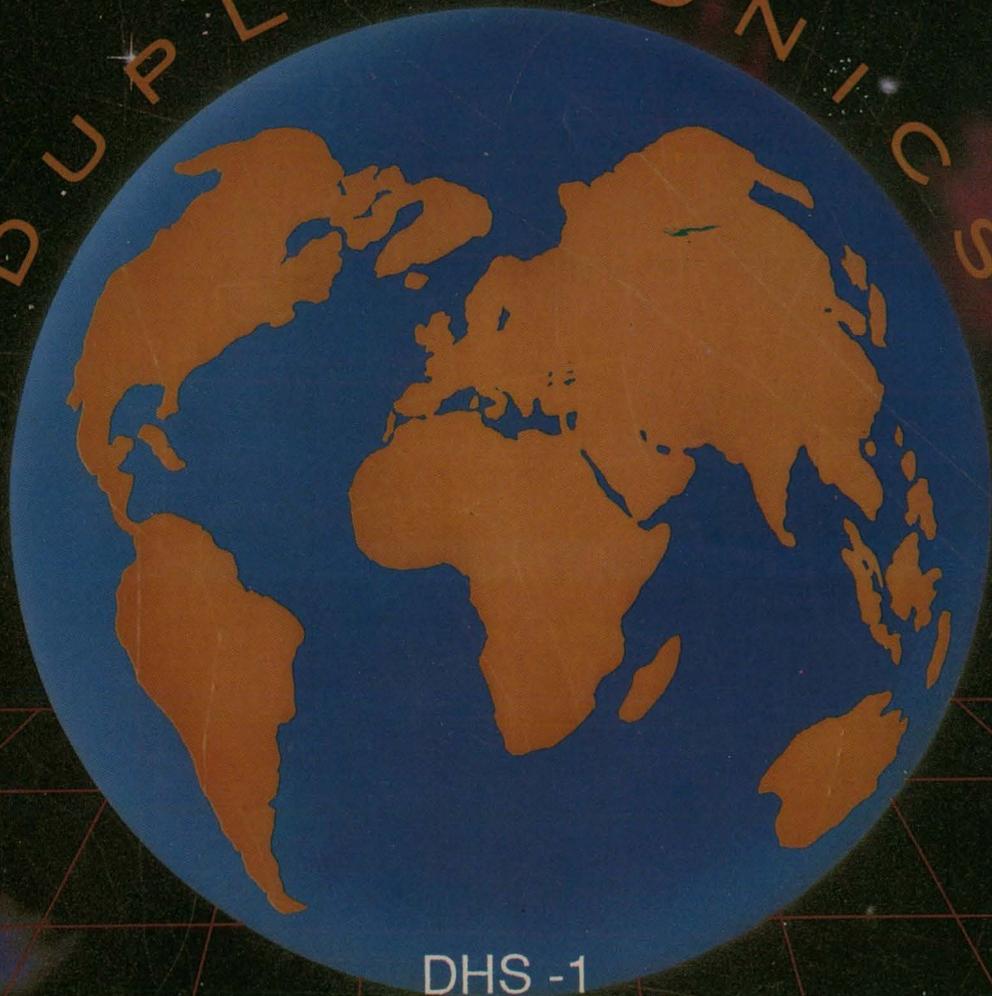
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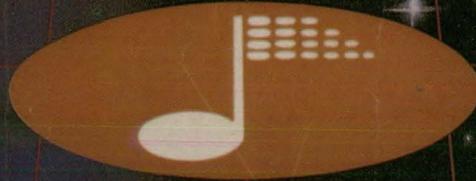
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## IMPROVING CASSETTE QUALITY

This series of articles by **John Fisher** has tackled all aspects of cassette quality Right from the raw materials, where the tape and C-O were discussed to duplicating where the Azimuth, Bias, and extended frequency response were discussed.

In this last serial the following are discussed.

The loopbin Master

Optimising the loopbin Master

Copy Master

Print-through and kiss print

Digital loopbins

Aural Quality monitoring levels

Our only hope is that our readers in typical Indian style; without knowing anything, should not consider that, either because they are operating a loop bin, or because they have access to such an article, they need not read thoroughly this useful and knowledgeable discussion. I fear since most loop bins are recording, the operators already have convinced themselves they know everything.

I am performing my *Dharma* by disseminating information and knowledge, at a great cost, but the right attitude by the industrywala is important. So, please read thoroughly and benefit.

### 4.0 MASTER TAPES

#### 4.1 The loop-bin master

When the duplicated cassette has been improved, the next weakest link in the chain may be the duplicating loop-bin master. 1-inch masters are now often recorded at 3.75 ips to achieve high duplicating ratios, either because the loop bin cannot handle the high speeds necessary for 7.5ips loop masters at these ratios, or because the life of a 7.5ips loopmaster is reduced by the repeated sudden acceleration to running speed.

These 3.75ips masters can have high frequency saturation levels poorer than those of ferric cassettes. If HX Pro and chromium dioxide or 'chrome position' (cobalt-modified ferric) tape is used in cassettes to improve the quality, this limitation on the quality of the master becomes particularly acute. The HF output deteriorates after a few thousand passes of the loop, due to wear and stress.

##### 4.1.1 Chrome tapes for loop masters

BASF has introduced special chromium dioxide mastering tapes for use in loop bins, which

are particularly beneficial for 3.75ips use in offering low noise and low print, coupled with improved output of high frequencies at high levels. The low surface resistance of chromium dioxide can also disperse electrostatic charges on the tape, giving improved running in the bin, less drop-out to attraction of debris, and improved head/tape contact.

#### 4.1.2 HX Pro

By using HX Pro in making the duplicating master, the Maximum Output Level (MOL) for a master recorded at 3.75ips can be improved by several dB at high audio frequencies.

A similar improvement in stereo image to that achieved in the cassette itself by use of HX Pro can also be realised by its use in recording the loop-bin master. It is essential to use a high-performance tape with a good high-frequency output and a chrome tape may be beneficial even with the use of HX Pro on the mastering recorder (see above).

#### 4.1.3 Improvements to mastering machines

Companies such as Lyrec, Otari and Studer are now using new heads, guidance and electronics for mastering, to improve the low-speed performance including phase response.

Taken together, better mastering recorders, better tape and HX Pro can effect a startling improvement in the duplicating master, enabling excellent results to be obtained at 64:1, 80:1 and even 96:1.

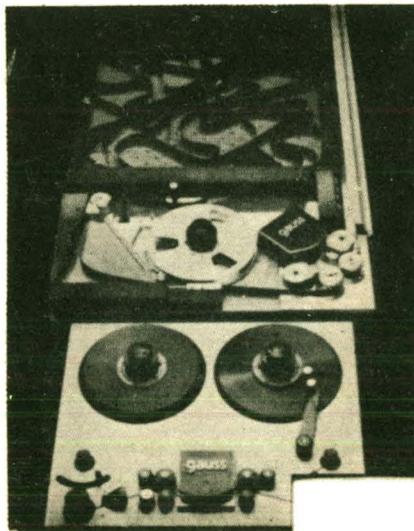
#### 4.2 Optimising the loop master

In order to optimise the overall noise, frequency response and distortion from the duplicated tape, it is important that the levels and spectrum recorded on an analogue loop-bin master master are matched to the performance of the tape on to which the recording is duplicated. Otherwise part of the potential performance of one or the other will not be realised and the overall performance may be less than optimum.

It is highly desirable that a tailor-made loop-bin master be made specifically for cassette duplication, by someone who knows the limitations of the duplicating tape to be used-preferably the duplication rather than an outside studio.

To achieve the highest possible quality, duplicators need have access to an early generation of source material. Even on re-issue material, this should not be a copy that was compressed and equalised for vinyl disc cutting, which will be inappropriate for cassette duplication. Nor should it be an Nth generation copy of the original recording.

The loop-bin master should be recorded from early generation material, if necessary modified to avoid any audible high frequency tape saturation in the duplicated product. Such modification to the signal must be carried out before noise reduction encoding for the loop-bin master: the tape used for the master should not be used to provide soft limiting, otherwise the complementary operation of the noise reduction



Guass Loop - bin

## IMPROVING CASSETTE QUALITY

processing will be spoiled. This requires skilled and artistic control, and is as important as the preparation of a good cutting master for vinyl discs.

### 4.3 Copy masters

With all this care in recording the loop-bin master, it is clearly essential to have one or more identical back-up masters in case of accident. These are often made simultaneously with the original loop-bin master, using a DAT or 1630 digital recorder. The copy can also be used in checking for deterioration in the quality of the loop mater.

Recordable CDs are currently being proposed as a format for mastering for CD pressing plants and could similarly find application as convenient masters for cassette duplication in the future, with the advantage of compactness, ease of distribution and apparent robustness.

Alternatively, for those anxious about the longevity of individual digital formats and the stability of digital masters, a 15ips analogue copy may be made in parallel with the original loop-bin master, using Dolby Spectral Recording (SR)<sup>10</sup> to provide a 'transparent generation' from which identically tailored copy loop-bin masters can later be generated. A fixed transfer level must be used, so that the reference level on the original is identical with that on the copies. This may also be very convenient in achieving similar quality in countries where digital masters and equipment are not yet common.

### 4.4 Print-through and kiss-print

Printing between adjacent layers of tape can spoil master tapes, loop-bin masters and the duplicated cassettes themselves.

All three can be improved by appropriate choice of tape and recording level, though in general there is a three-way trade-off between noise, print and maximum recording level. Some low-noise ferric tapes print badly, some chrome types are better than others.

To keep print to a minimum, master recordings should be stored end-out, since rewinding before use helps reduce the print level. It is good practice to avoid high temperatures, humidity and magnetic fields wherever tapes are stored. The same applies to loop bin masters if these are stored on hubs or spools after use. Duplicated cassettes should likewise be stored away from high temperatures and magnetic fields, though

obviously storing tail-out is impossible!

If the loop-bin master is left in the bin when not in use, there may be printing between touching faces of the tape—otherwise known as kiss print. This can give rise to discrete prints, without the fixed temporal relationship to the printing signal that is associated with conventional print-through. Since the bin is likely to be warm after a prolonged period of use, this may accelerate the printing process, which can happen even if the tape is left in during a lunch break. The answer is to rewind the loop-bin masters when they are not actually running, and store them in a cool place.

Unfortunately, a lesser degree of kiss-printing can also occur while the tape is running

through the bin; but because the tape is constantly moving, the print is smudged and 'kissing' on exactly the same spot each time is unlikely to occur. The result is more a gradual build-up of noise than the discrete printing that occurs with the tape stationary in the bin.

With all forms of print, prevention is better than cure—choice of magnetic tape, careful handling and storage. Once a recording has significant levels of print on it, there is little that can be done to reduce it other than repeated winding, which may help a little. One technique which has been tried successfully, but which is potentially dangerous, is 'skimming'—the use of a controlled, very low level erase or bias current to remove the printed signal without erasing all the high frequencies in the original recording!<sup>11</sup> Unfortunately it is impossible to 'skim' a copy made from a tape containing print.

### 4.5 Digital loop bins

A recent development has been the introduction of digital loop bins. These either use massive amounts of random access, solid-state memory to store the digitised audio data from a digital master tape, or store it on large, military-grade hard disk drives. The stored data can be read out rapidly, allowing high-speed duplication. The high duplication ratios (currently up to 128:1) mean that very high data rates are involved.

Where digital 'bins' are used, some HF limitations in the loop master are sidestepped, though pre-emphasis may limit the HF headroom. When preparing the digital master for loading, it will still be necessary to take account of HF saturation in the duplicating tape used.

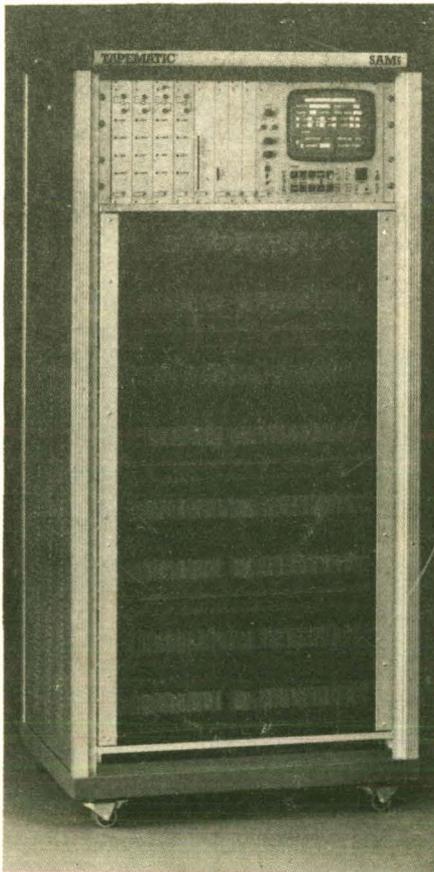
Initially master tapes could only be played into the digital 'bin' in real time, but higher transfer rates are now possible with both storage systems. The potentially transparent nature of the digital storage offers considerable promise for the future in improving the quality of duplicating 'masters' potentially, they avoid problems of noise, phase fluctuation, flutter and in particular the gradual degradation of the master with repeated running.

## 5.0 MONITORING

### 5.1 Aural quality monitoring

In addition monitoring using peak-reading meters and spectrum analysers, careful aural quality assessment is usually carried out at each stage, under studio quality listening conditions. Head phone monitoring in a duplicating room environment is inadequate.

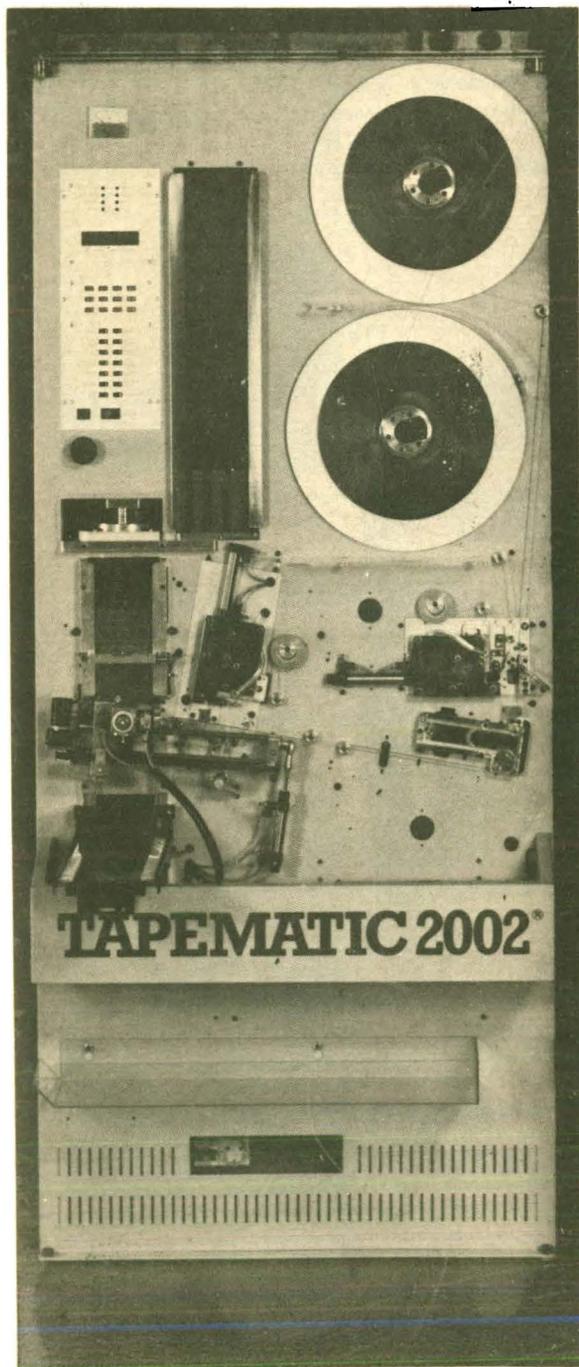
To ensure that the only differences between the original tape and the loop bin master are intentional, they should be compared using a good loudspeaker/amplifier system. Noise reduction decoders as well as encoders are required for quality monitoring during preparation of the loop master, and for A/B comparison between the loop master and the DAT or 1630 original; this is the most satisfactory way of ensuring that the loop-bin master is free from audible high-frequency saturation effects.



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chosen to suit the tape used for the loop master and the duplicating stock (see Extended frequency response and Quality monitoring, above).

Once a loop bin master has been recorded and encoded with Dolby noise reduction, the level at which this is transferred to the slaves must remain fixed, so that Dolby Level flux on the master always produces the correct Dolby Level flux on the pre-recorded cassette

loopbin master tape would be required, with the signal level increased prior to NR encoding.

### 5.2.3 Dolby level (master tape)

There is no fixed relation between Dolby Level on the 1/4-inch master tapes used to generate the 1/2-inch or 1-inch loop bin master and the Dolby Level on the loop master.

The former is a level chosen by the originating studio for Dolby SR or A-type en-

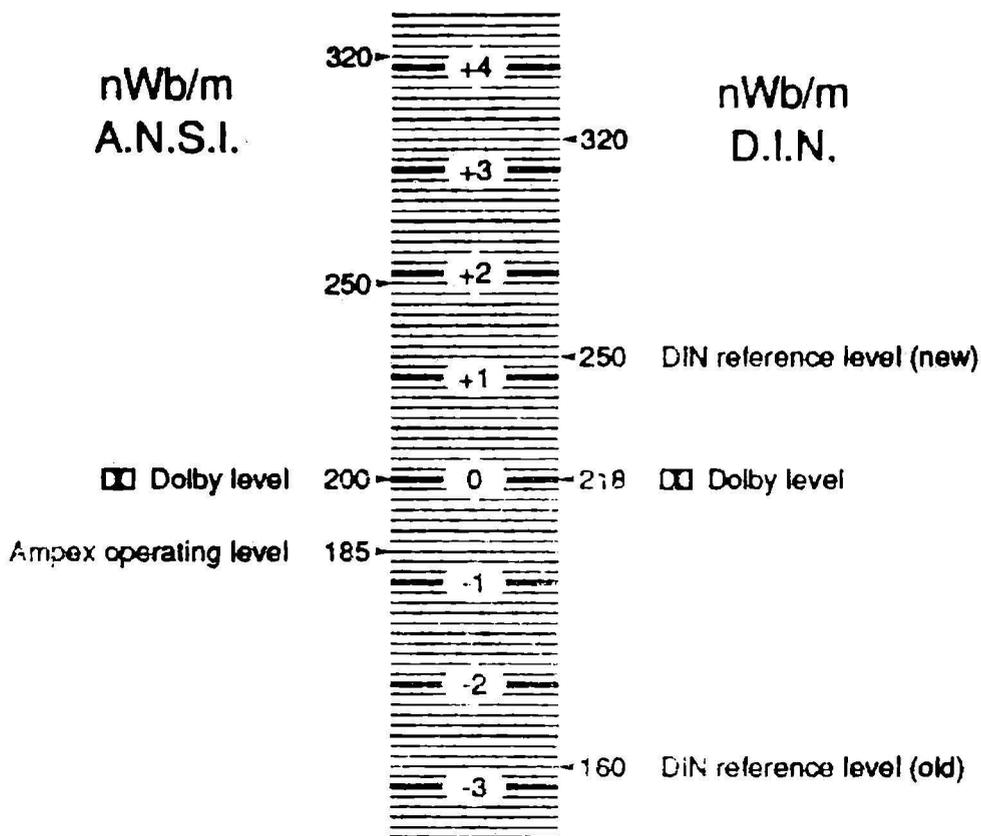
coding in making the loop bin master and the consumer's processor used to decode the cassette recording.

There is no precise relationship between these two Dolby Levels, and the ratio may vary from record to record. It is the task of the skilled mastering engineer to transfer the signal from one to the other so as to achieve the best overall results.

### 6.0 THE DOLBY TRADEMARKS

Over the years, the name Dolby and the company's trademarks have become associated with quality, which helps sell equipment and programme material on which the trademarks are licensed to appear. Dolby Laboratories helps its licensees to achieve good results from its technology, both in manufacturing consumer hardware and in duplicating cassettes.

In order to protect the quality standards associated with the use of the Dolby name and trademarks, there are some constraints on their use. For instance, the purchase of a Dolby encoder by a duplicating company does not in



### Relation between loop - bin master flux level and cassette Dolby level

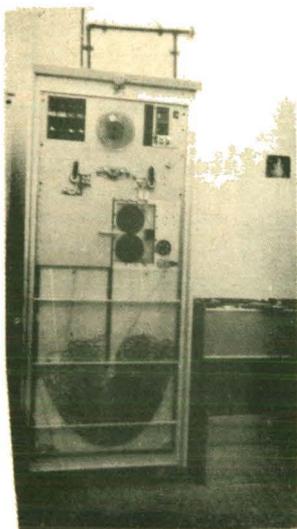
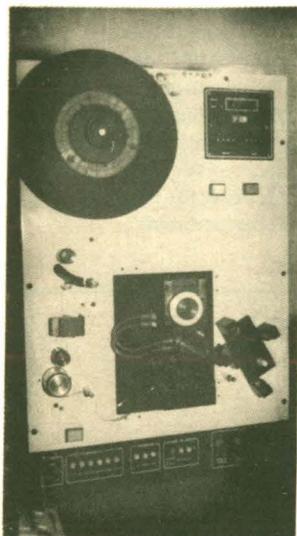
Even if it is found that the level on the cassette tape could have been increased without distortion or saturation effects, the attenuator setting on the loopbin master playback machine must not be changed, as this would affect the Dolby Level as recorded on cassette : a new

coding of master tapes ; its purpose is to ensure correct operation of the SR or A-type decoder used in replaying that tape. The latter is chosen by the duplicator, usually as an in-house standard, and serves to ensure the correct working relationship between the encode processor used

itself grant the right to use one of the widely-recognised Dolby trademarks on material that has been duplicated using Dolby technology.

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A check on potential high frequency saturation problems in the cassette tape itself may be carried out using a 3-head cassette recorder in parallel with the recorder used to prepare the loop-bin master; for this, some of the duplicating tape stock is loaded into production C-Os, with bias and equalisation adjusted for a flat response and so that the MOL/frequency char-

coded off-tape output of the mastering recorder and the source tape, and provides an additional check to verify material which might be prone to NR mistracking problems caused by HF saturation.

In the past, this real-time duplicated cassette has sometimes been used as a convenient reference

which to compare duplicated material sampled from the production line; such comparisons are carried out in QC listening rooms and supplement routine spectrum analysis checks, made using bursts of test tones recorded at the end of the material.

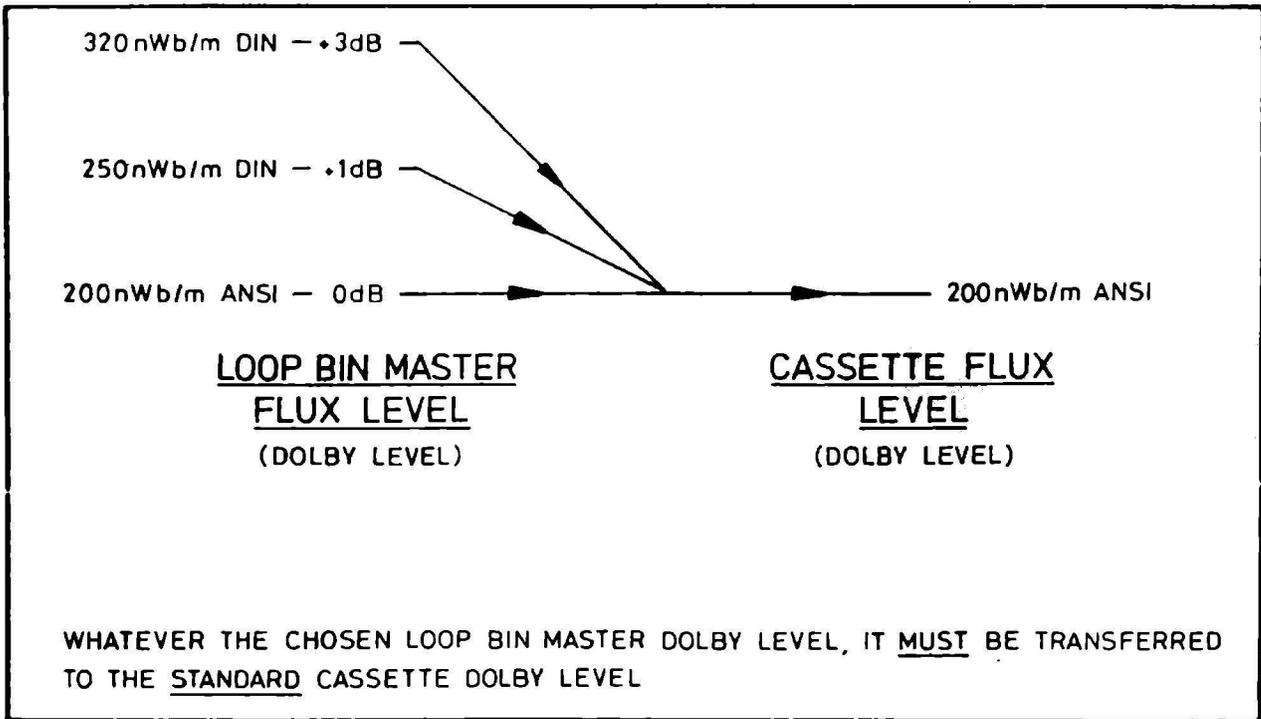
**5.2 Levels**

All the Dolby noise reduction systems use complementary encoding and decoding. Because the replay level prior to decoding cannot be adjusted on domestic equipment, it is important that levels on all professionally duplicated material are correctly set on record (encode), so that exactly the correct decoding is applied on replay.

**5.2.1 Dolby level (cassettes)**

A reference magnetic flux level (200n Wb/m ANSI) is employed for software. (fig 8) Dolby Level reference test tapes at this level are available for replay channel calibration and this level corresponds to a reference level within the replay processor circuit.

On record, a test signal reading Dolby Level in the encode processor must be recorded at a level on the duplicated tape which gives the correct replay level on the calibrated replay processor. This establishes complementary record/play



**Dolby level on Cassette : comparison of ANSI and DIN measurement.**

acteristic is similar to that obtained with the duplication system. If HX Pro is used on the duplicator slave, it should be used on the cassette machine if it is NOT used on the slave, it should NOT be used on the cassette recorder.

The replay output from the cassette recorder may be compared directly with the de-

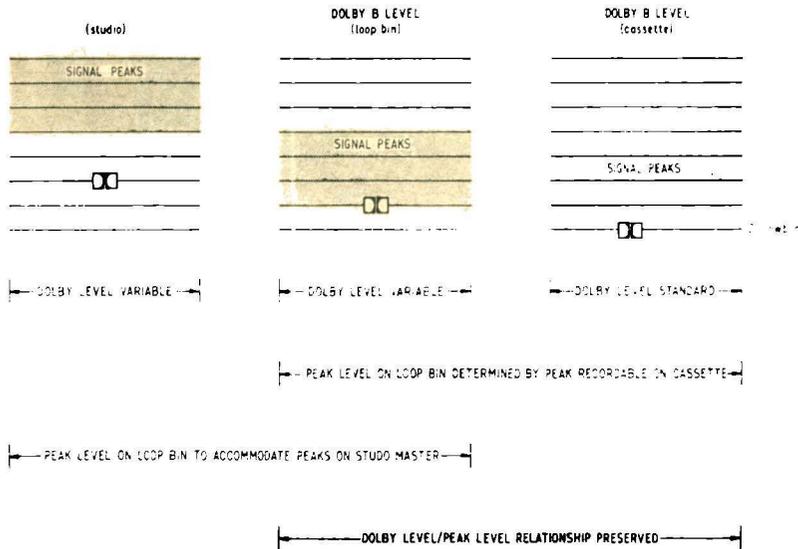
for QC purposes; checked samples have also been taken from the first batch duplicated, when the system has just been set up correctly, and used to assess subsequent copies. Neither practice is now common among major duplicators in Europe and the USA, who tend to use DAT copies of the master as a reference against

processing.

**5.2.2 Dolby level (loop master)**

While Dolby Level on cassette software is standardised, the magnetic flux level on the loop bin master chosen to correspond to software Dolby Level does not have to be 200n Wb/m ANSI; it can be any sensible flux level,

## IMPROVING CASSETTE QUALITY



### Dolby level on master, loop and cassette.

royalties and constitutes an agreement on quality between the owner of the rights in the music or other programme material (usually the record company) and Dolby Laboratories Licensing Corporation. Sample cassettes are tested for audio quality and correct use of the trademark where necessary, Dolby Laboratories assists the duplicators involved to achieve reasonable duplicating standards.

Once a trademark licence has been issued, it can cover all the record company's labels. Dolby Laboratories does not license duplicators as such, as they are effectively subcontractors for the record company and do not own the rights to the music. Details of the licence and the use of the Dolby logo are available on request from Dolby Laboratories.

#### 7.0 SUMMARY

When Dolby B-type noise reduction, Dolby IIX Pro and good tape stock are used together on a Compact Cassette, with due care in the choice of material and in duplicating, the resulting audio quality can be excellent.

A vast market already exists for B-type encoded cassettes, which can also offer very high quality. The hundreds of millions of existing cassette machines (with and without Dolby B-type NR) have the potential to reproduce B-type cassettes satisfactorily. The cassette market is one which can be entered quickly, with minimum outlay, and still represents a much larger potential market than that for rival prod-

ucts.

Only a modest investment is required to install IIX Pro for tape duplication. Dolby B encoding for the loop bin master costs very little. This basic equipment, some wide dynamic range material and due care in setting up the master recorder and slaves is all that is needed to start producing premium quality cassettes that can compete effectively with any other medium in both quality and cost.

Acknowledgment : This paper is based on various articles by the author which were first published in One to One magazine.

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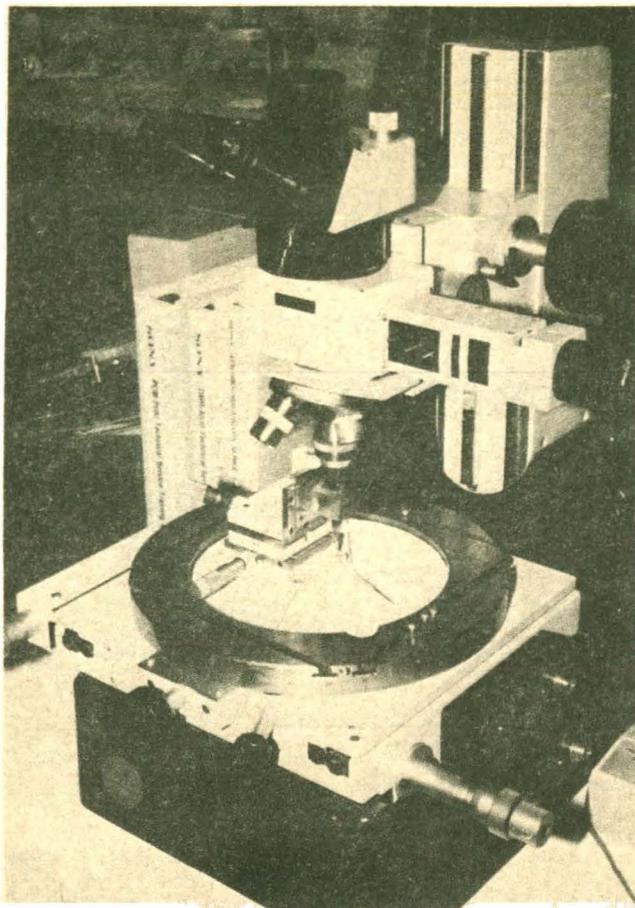
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## Multitrack head maintenance

TAKING A



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## HEAD TRIP

you have, your record and playback heads are virtually certain to be made of some type of laminated, high permeability metal. The most common metals used in head manufacturing are Mu Metal, Permalloy and now amorphous metals (amorphous materials are actually more complex than "metal" implies, but for now we'll let it go at that). Some materials are softer and some harder, but they all will wear pretty much the same way, although not necessarily at the same rate!

The exception is your erase head, which is likely to be made of ferrite, so we will deal with it separately. For now, we will focus on progressive wear of metal heads.

## HEAD WEAR: CONTRIBUTING FACTORS

The primary factors determining amount of head wear are, total hours in service and tape speed, which together give total tape passage over the heads. Tape tension also contributes, because higher tension will increase the rate of wear. Tape path cleanliness can also be a factor, because grit and grunge caught between tape and heads will not only degrade immediate performance but also increase the rate of wear.

The abrasiveness of tape is a factor, though there seems to be little significant difference between tape types. Finally, ambient temperature and humidity may also play a role; extremes of temperature and humidity do affect the tape, and there is some evidence, albeit inconclusive, that climate factors may influence head wear as well.

In most well maintained studios, total hours in use will be the primary factor in determining the degree of head wear. The length of time heads can stay in service before reconditioning or replacement becomes necessary will vary,

*Head relapping is yet to achieve full credibility in India. Today in cassette impuricators are getting heads relapped, but not so the studios. In India Envoy Marketing has pioneered head relapping and is providing state-of-the-art service. This article is intended to provide much needed information on the subject.*

By John R. French

Because mixing to digital mercilessly reveals the slightest anomalies on a multitrack master, proper maintenance of analog multitrack heads is essential to ensure a flawless ADD recording. Why do tape heads require periodic maintenance and eventually wear out? Let's take a stroll and ponder the problem.

We'll start at what should be a familiar location: the New York Hilton. We'll walk down Sixth, past Rockefeller Center, cross 42nd Street with a wary glance towards Times Square, past Bryant Park before puffing away down

Fifth Avenue toward Greenwich Village, past 20th Street, and ...STOP! We've covered about 1.7 miles. That's how much tape passes over the heads of your multitrack in one hour of continuous operation at 30ips. Magnetic recording tape is mildly abrasive and eventually your heads will wear to the point where no amount of tweaking will keep your machine performing to full spec.

How long you can go until you reach that point, and what to do when you get there, will be discussed shortly. But first, let's take a look at those heads and see what they're made of. No matter what make or model multitrack recorder

Despite the forecasts of all digital proponents, analog multitrack recording is alive and well.

but our experience shows considerable degradation of performance on 16- or 24-track 2-inch heads at between 1,800 to 3,000 hours of use, or around 18 to 24 months of operation in a busy studio. Some of the newer amorphous metal heads introduced in the past few years exhibit longer wear characteristics, but not enough of them arrive for refurbishing at JRF for us to

accurately predict the amount of increased longevity.

## NORMAL WEAR PATTERN

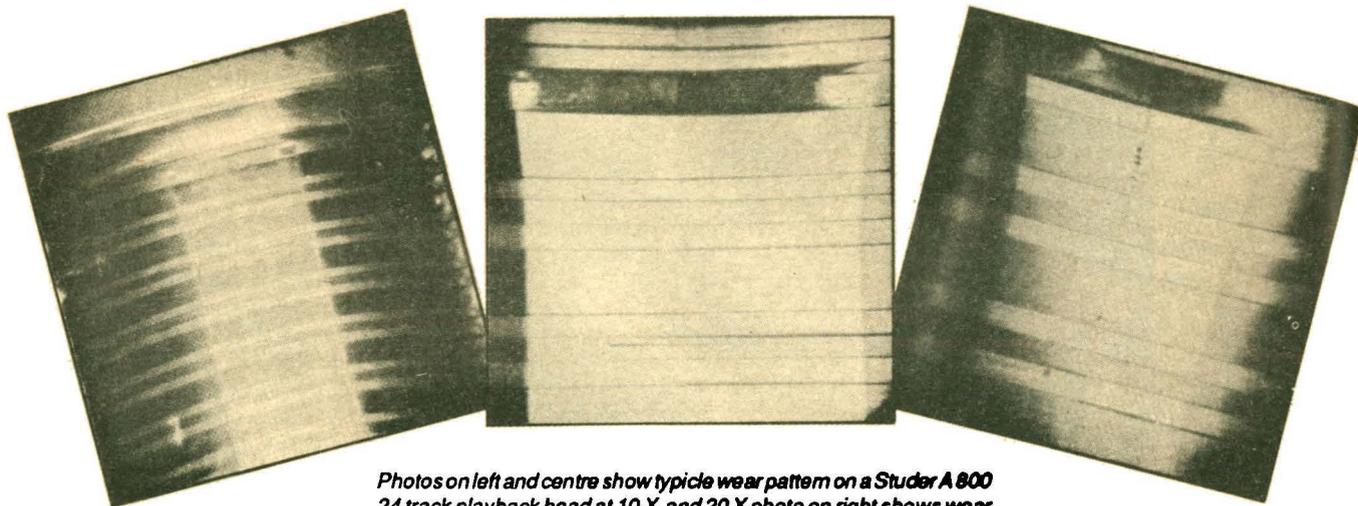
Assuming the tape path and head assembly have been properly aligned, the wear pattern on the heads will resemble the left diagram on page. The pattern will be rectangular, and centered over the gap. The flaring at the top and bottom of the head is common, and is usually present on all heads. This results from the curling effect of tape under tension, which tends to wear the heads slightly deeper at the edges.

much more useable head material during reconditioning, thereby reducing the overall life of the head. Proper alignment of all tape path components on the headblock is an exacting procedure, and should be performed only by a qualified technician. Precision realignment is essential any time heads are reconditioned or replaced.

Assuming your tape path is properly aligned, there are several things you can do to extend the life of your heads and minimize reconditioning costs. First, keep your tape path as clean as

Different tape? Different use of the machine? Sometimes something as simple as flipping a tape over can eliminate heads as the source of trouble. If you have instability on track 1 and it moves to track 16 after flipping the tape, then your problem is likely with the tape and not with the heads.

On the other hand, if somebody calls and says, "This has slowly been getting worse for weeks, and today I decided I just couldn't stand it anymore", then I tell them to pull the headblock and send it in.



*Photos on left and centre show typical wear pattern on a Studer A 800 24 track playback head at 10 X and 20 X photo on right shows wear breaking through gap on tracks 1, 2 and 3 of a Studer A 80 24 track*

Most newer heads have edge relief slots machined into the surface of the head at the edge of the tape path. These slots prevent the formation of a "lip", or abrupt surface anomaly, at the edge of the head wear pattern. When the edge of the tape bumps against this lip, due to slight variations in tape slitting or jitter in the tape path, severe edge track instability results. Edge relief slots solve this problem by preventing formation of an abrupt edge. Picture the surface of the heads as bowling lane, with the edge relief slots as the gutters; the tape is just slightly wider than the lane, with the edges over the gutters. Edge relief slots help keep the normal wear pattern uniform, and considerably delay the onset of edge track instability.

Nearly all new heads have edge relief slots, but many older heads being reconditioned do not have them. We usually recommend these slots be machined as part of reconditioning (at a charge of \$30 to \$45), if there is sufficient gap depth remaining to warrant it.

## ABNORMAL WEAR PATTERNS

Tape recorders are complex mechanical systems, and often problems will arise which, if left uncorrected, cause abnormal head wear. Abnormal wear patterns (see figures) caused by tape path misalignment can prove costly, since correcting them usually requires removal of

possible. Second, keep your tape tension within recommended spec. Sometimes there is a temptation cure immediate problems by increasing tape tension, but this will only deal the inevitable while increasing the rate of head wear.

During the course of normal wear, the performance of a head will vary as material is removed and the geometry of the contour changes. Up to a point, you can compensate for this change in your electronic alignment. But, when wear gets to a certain point, maintaining optimum performance on all track becomes impossible. What then?

## ISOLATING THE PROBLEM

The first thing you want to do is make sure the problem really is caused by worn heads. All too often we get call at JRF from panicked studio owners who are convinced their heads are shot when really they have nothing more than a minor problem with their tape or tape path.

As a general rule of thumb, a tape head will not develop a major problem overnight. When somebody calls and says, "I came in this morning and suddenly my tracks are bouncing all over the place and I need to have somebody look at my heads", we generally try to steer them in another direction. If everything was fine yesterday, we try to find out what is different today?

It is a good idea to regularly monitor the condition of your heads throughout the wear cycle, and the best way to do this is with a standard alignment tape. (This may seem ridiculously obvious, but you'd be surprised how many studios do not have alignment tapes for all speeds and formats). If you don't have an alignment tape, and are dead set against buying at least one, then record tones at 10kHz and 16kHz when your heads are new or freshly reconditioned, and keep it as a continuing reference.

Every so often, put the tape on and check the stability of your levels. This is often the best way to monitor head condition, because many recorders do not have hour meters, and sometimes owners of machines with hour meters are lax in their record keeping.

## FIRST SIGNS OF TROUBLE

On multitrack recorders, the first sign of trouble is usually edge track instability. Levels will start to bounce on the first and last tracks, gradually getting worse, and then moving in to the second and next to-last tracks. At what point reconditioning becomes necessary is somewhat subjective, since some customers will tolerate much more instability than others. Most of our customers find something needs to be done when their heads have worn between 2.5 and 3

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thousandths of an inch.

In the case of extreme wear, or with abnormal wear patterns, other problems may develop: dropouts, loss of high frequency response, midrange bump, increased distortion, increased noise, unstable tape path, tracking error, oxide buildup or shedding, or insufficient erasure.

The latter two problems are often associated with the erase head. Most erase heads are made of ferrite, and exhibit completely different wear characteristics. Unlike metal heads, worm ferrite heads will show no obvious wear pattern or change in contour. On close inspection, however, longitudinal of the surface will show up as a matte or dull finish in the tape contact area. This surface breakdown results in pitting and microscopic chipping along the edges of the ferrite track, shields, ceramic filler, and the epoxy that holds the surface together.

Because erase heads have long gap lengths (0.005" x 2 gaps minimum), an erase head will almost always continue to meet erase specification despite serious gap deterioration. Although ferrite erase heads suffering surface breakdown are often a major source of oxide shedding problems.

Does any of this sound familiar? If your multitrack has been in average to heavy use for more than two years, there is a good chance that worn heads are degrading your machine's performance. If you bought your machine new, you almost certainly do not need new heads, because unacceptable performance occurs well

**In most well - maintained studios, total hours in use will be the primary factor in determining the degree of head wear.**

before 50% of total tip depth has been worn away. It may be time for reconditioning, which normally costs only a fraction of the price of a new head.

## THE RECONDITIONING PROCESS

It's a good idea to call the head refurbishing company before you remove your heads from your recorder. The company's technician will take some time to discuss your specific problem. Isolating the probable cause before you spend time and money sending in your head assembly. It is important, if at all possible, to send the entire headblock assembly to the refurbishing company, so that precise tape path alignment can be performed after the heads are reconditioned. The following description of our procedures at JRF Magnetic Sciences outlines services you should expect from any quality head reconditioning company.

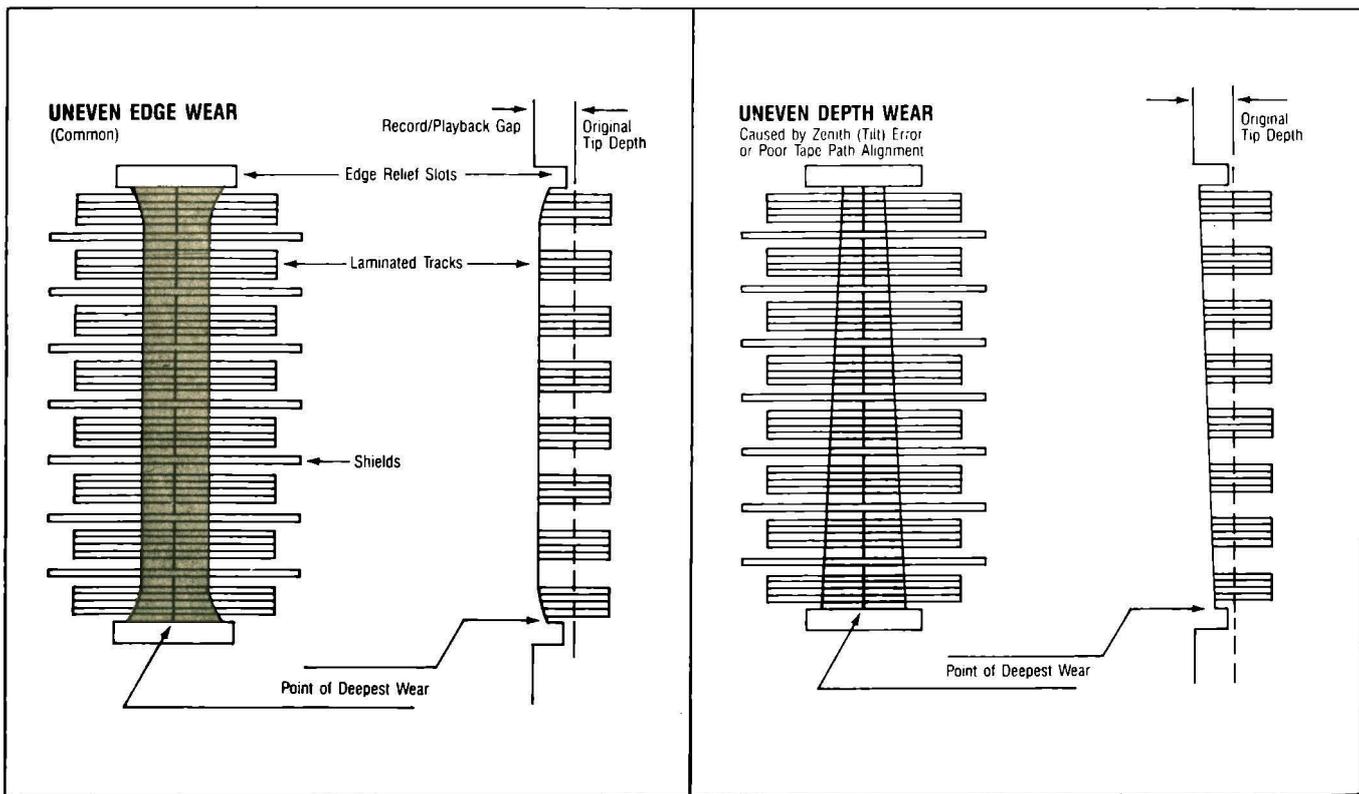
Upon arrival, each headblock assembly undergoes an initial inspection and testing procedure before the heads are removed. First,

each head is visually inspected under a microscope (up to 600 power) to determine condition of the gap, core, laminations and ferrite material. Scratches, dents, voids, erosion, pitting, or unusual wear phenomena are noted. Visual inspection at this stage also helps establish a rough estimate of remaining head life.

The heads they receive through electrical testing. Inductance is measured at 1kHz, using a digital LCD bridge. Because the inductance of a magnetic head drops predictably as it wears, by comparing the head under test to wear-out specifications on file for the exact head type, it is possible to estimate remaining head life with fair accuracy, even when actual tip depth measurement are not possible. This test also reveals open or shorted coils, shallow tip depths, sprung gaps, and cracked or damaged cores prior to dismount from the head assembly. Readings are in millihenrys, and each track is measured and documented separately.

The LCD bridge is also used to perform the dc resistance test. This is simply a continuity reading, measured in Ohms, across each track. This test will detect poor solder connections, shorts, or internal wire breaks.

All of the above tests along with an overall inspection of the head assembly, are performed before removal of the heads. At this point, the customer is often contacted to discuss options and anticipated costs. If the customer decides to go ahead with reconditioning, the heads are then removed from the headblock assembly.



Graphic demonstration of multitrack head wear. Left: Normal wear on a properly centered head. Right: Wear pattern showing incorrect zenith alignments, where top of head is tilted away from tape.

Many heads are manufactured with a machined in reference mark for measuring tip depth; once these heads are out of the shield housings, the remaining tip depth can be measured with precision, allowing a reliable estimate of remaining life. Before relapping begins, precision contour tracings are established on optical measuring equipment.

The heads are then recontoured to exacting tolerances using lapping films appropriate for the head material. Relapping is the precise and careful removal of material from the ramp (angled) area and radius area. The process continues down to, but does not exceed, the deepest point of head wear. At JRF, ferrite erase head are then polished using a proprietary diamond vapor spray. Following this, the heads are again carefully inspected before remounting in the headcock assembly.

## HEAD ASSEMBLY ALIGNMENT

The head assembly is set aside for at least an hour to allow stress relief of components before optical alignment. This is an extremely exacting visual and electrical/ digital measurement process which references industry standard specifications for tape widths, track placement locations, and specific tolerances adhered to by the original manufacturers. At JRF, the procedure includes :

1. Cleaning of the entire head assembly.
2. Rotation of all fixed guides and posts.
3. Cleaning of flutter idlers and roller guides.
4. Cleaning and oiling of all lifters, gates and mechanisms.
5. Correcting and aligning tape height references.
6. Setting all tape path components for correct azimuth and zenith.
7. Aligning heads for track placement (within  $+ 0.0005''$ ).
8. Aligning head stacks for azimuth and zenith (within  $+ 0.0005''$ ).
9. Setting the wrap on each head stack for gap centering on tape contact area (within  $+ 0.002''$ ).
10. A complete quality control re-check of all above items.

## FINAL INSPECTION AND QC

Final gap inspection places special emphasis on gap sharpness, laminations, polish consistency, contour consistency and overall surface conditions.

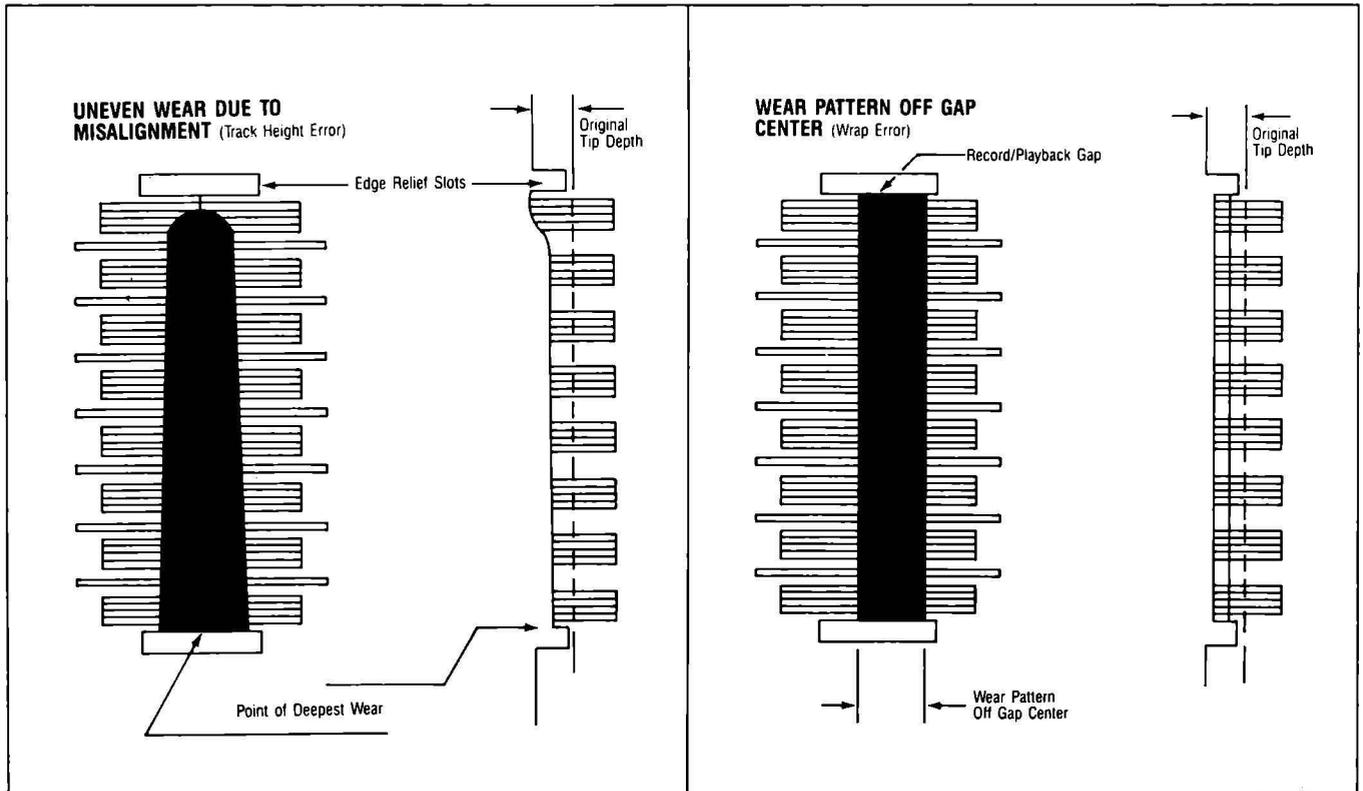
The final inductance test will show a slight drop from the initial test, reflecting the amount of material removed in the relapping process. After all tests are completed, the head assembly is given a final cleaning and protective cover is applied. Complete documentation is shipped back to the customer with the assembly, and all data is kept on file at JRF for future reference.

## RECONDITIONING COSTS

As of this writing, the cost for the above services varies from about \$300 for a 1/2-inch 8-track assembly to about \$450 for a 2-inch 24 track head can cost as much as \$6,000, the savings realized from refurbishing can be substantial.

When are heads too far gone for reconditioning? Again, the answer to this question depends to some extent on circumstances and the customer's particular financial situation. Almost all heads can benefit from reconditioning at least once, and most two or three times. But when tip depth gets down to what we term "marginal", we consult with the customer carefully before proceeding. If heads are on the "hairy edge" of wearing through, but the studio simply cannot afford new heads, we may reluctantly go ahead and relap, though in such case we cannot guarantee remaining head life. This scenario requires an unbelievable amount of added care (not to mention stress) because the parting words from the customer are usually, "Oh God, please don't let it go through!"

In most cases, however, the studio will not want to deal with the process again in the short term, and will elect to replace the heads. Also, in rare instances, a financially strapped customer will elect to live with the marginal head performance a little bit longer, so we will return the assembly as-is.



**Left :** Incorrect tape head height and zenith alignment.

**Right :** Incorrect head wrap alignment, causing increased sensitivity to dropouts.

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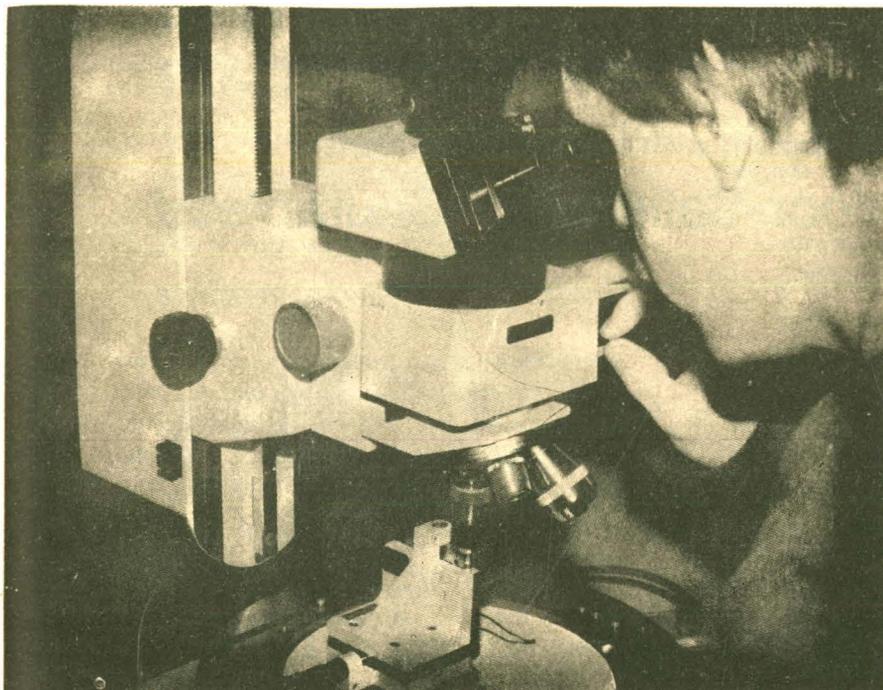
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Individual heads are inspected for gap, lamination and ferrite material condition, as well as surface finish, all fully documented.

Individual head are inspected for gap, lamination and ferrite material condition, as well as surface finish, all fully documented.

Interestingly, the performance characteristics of a properly reconditioned playback head will actually improve as it wears. As the tip becomes shallower, the head becomes more efficient. The best performing playback head in

the world is one that is just on the edge of going through the gap. So if your playback head has a good surface, it's okay to keep using it right until it wears through.

Record head are a different case, since they become very inefficient as they approach the end of their working life. The signal is applied and the flux is trying to bridge the gap, but with

only a sliver of tip depth remaining, the pole tip can saturate very quickly. This leads to increased distortion, biasing problems, and, because you are driving the heads harder, increased adjacent channel crosstalk.

#### REINSTALLING YOUR HEADBLOCK

The reinstallation of a properly refurbished and optically aligned head assembly usually requires no more than minor tweaking of azimuth for optimum phase response, along with the standard electronic calibration procedure. Tape tension should be checked and reduced to the minimum acceptable OEM specified setting.

When you put in a new or relapped head, you can usually peak the output by playing with the tape wrap. This is a dangerous practice, and is not recommended. Making such adjustments will start developing an abnormal wear pattern based on the temporary peak, whereas after a few days, if you had left it alone, you would have had a nice, even pattern centered on the gap. Leave the wrap alone unless you are absolutely sure of what you are doing.

#### ADD : ALIVE AND WELL

The combination of analog tracking and digital mastering, particularly at the project studio level, had kept business booming here at JRF. Because, when you end up on digital, you absolutely have to start out with analog heads that are "up to snuff".

The author would like to thank Bruce Borgerson of Tech/ Write Communications for his assistance in preparing this article.

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every thing works towards success. It is at this point that the studio is central and pivotal to the whole exercise. The realization of the new ideas finally takes place at the studio. The dependability of Western Outdoor is for real. This is an achievement, consistently, for the last 25 years. Kudos to all involved.

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The style and sensitivity of Daman Sood, Recording Director of WOA, are today legendary and it is said that he is one of those rare few who knows how to extract the best from the best. WOA's Digital Studio, Studio A, has been designed painstakingly by him, and every piece of equipment from the microphones to the mixing console has been handpicked to complement each other perfectly. Having completed an Advanced Recording Course in the U.K., WOA's Recording Director makes an annual pilgrimage to the electronic nerve centres of the world to keep abreast of the ever expanding world of sound technology. With Daman devoting himself rather hedonistically to Digital Recording, the mantle of Chief Recordist in charge of AV tracks, jingles and commercials has fallen on the accommodating shoulders of Avinash Oak. Daman Sood and Avinash Oak are graduates from FTII, and both are gold medalist from the same institute.



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OTARI MX-5050 1/2" (HALF INCH)  
8 CHANNEL RECORDER/REPRODUCER.  
STUDER 807 QUARTER INCH ANALOGUE  
STEREO MASTER RECORDER.  
REVOX PR-99 STEREO QUARTER INCH  
RECORDER.

**MAIN MONITOR**

TANNOYS 15"

**MONITOR AMPLIFIER**

QUAD 520f POWER AMP. WITH  
QUAD 44 PRE-AMPLIFIER.  
TANNOY DTM-8 NEAR FIELD MONITORS  
OR  
JBL CONTROL ONE WHICH IS DRIVEN BY

QUAD 405 POWER AMP WITH  
QUAD 33 PRE-AMPLIFIER.

**SYNCHRONISER**

ADAM SMITH ZETA-THREE WITH REMOTE  
OTHER

SONY 5850 U-MATIC RECORDER.  
NAKAMICHI ZX-9 CASSETTE DECK.

**ANALOGUE RECORD-  
ING STUDIO-B****MIXING CONSOLE**

TAC BULLET 10/4/2  
SOUND CRAFT 8/4/2  
OTARI MX-5050 RECORDERS 1/2" -  
TWO NOS.  
REVOXC-270 1/4" STEREO  
RECORDERS - TWO NOS.

**MICROPHONES**

Neuman U-47  
MILAB LSR - 2000  
AKG - 414 E-B.

**DIGITAL EFFECTS**

YAMAHA R 1000 DIGITAL REVER-  
BERATION  
URSA MAJOR - 626. STAR GATE.

**EFFECTS PROCESSOR :**

DBX -160 COMPRESSOR, LIMITER,  
NOISE GATE UNIT.  
APHEX COMPELLOR.  
VALLEY PEOPLE 610 COMPRESSOR,  
LIMITER, NOISE GATE

**MAIN MONITORS**

TANNOY 12' STUDIO QUALITY  
SPEAKERS.

**MONITOR AMPLIFIER**

QUAD 520f with  
QUAD 44 PRE-AMPLIFIER

**SYNCHRONISER.**

AUDIO - KINETICS. Q LOCK 3.10.

**OTHER**

MARANZ CASSETTE DECK  
SONY CD PLAYER  
SONY Umatic Recorder 5850.

# STUDIOS

## COMPUTERGRAPHICS

Clients can now generate highly realistic images through the creative manipulation of the product, pack and space. Not limited to any post-production format it can output to Betacam, High Band and Low Band and offers any form of output from 35mm film to video to slides and negatives. Today the Department offers the ultimate combination of 3D modelling, full colour paint, animation and special effects, multimattting and complete image manipulation in true 3-D space.

## VIDEOGRAPHICS

WOA is today the only audio and video facilities house in India and perhaps the East to offer producers the tripod of editing suites - Betacam, High

Band and Low Band.

The Betacam Suite is a versatile, computerised editing system, internationally accepted for broadcast quality and several WOA productions are screened in the international communications arena.

The success of WOA's Videographics Division is owned in great measure to the presence of the Ampex Digital Optics, the 3-D Special Effects device that has set the standard for the industry - internationally. Flips, tumbles, rotations, perspective moves, zooms or combinations of these - everything and more is now possible. And clients can freeze, mosaic, solarize, posterize and even polarize images.

## AUDIO VISUALS

From the simplest single screen production to the most sophisticated multiple screen show, WOA is capable of handling it all.

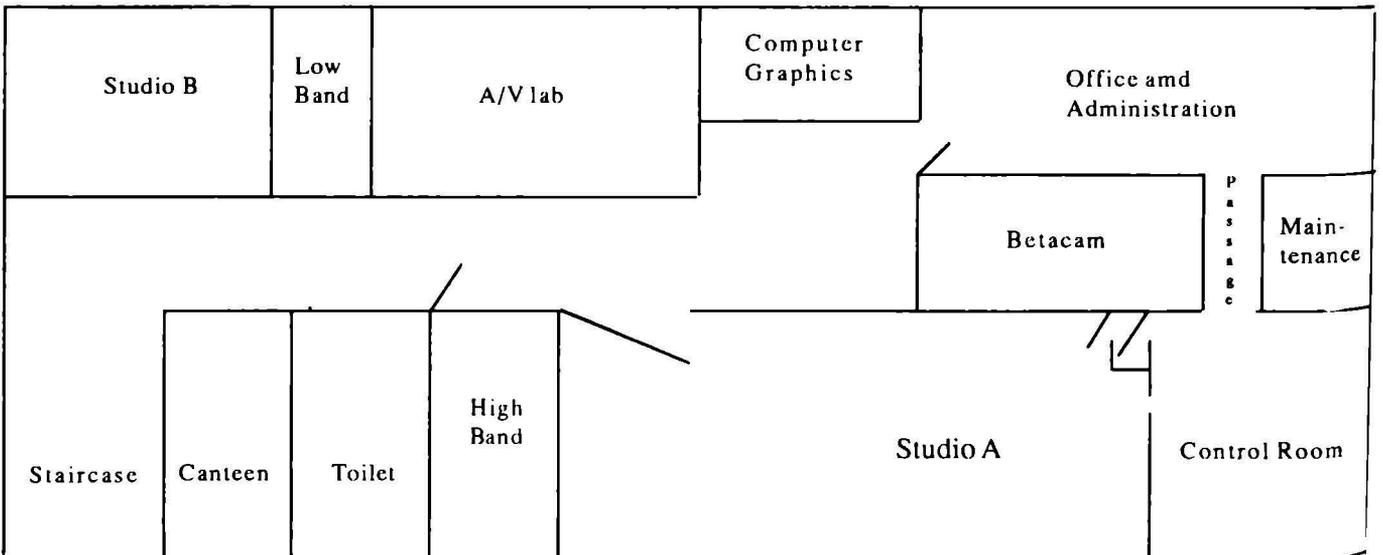
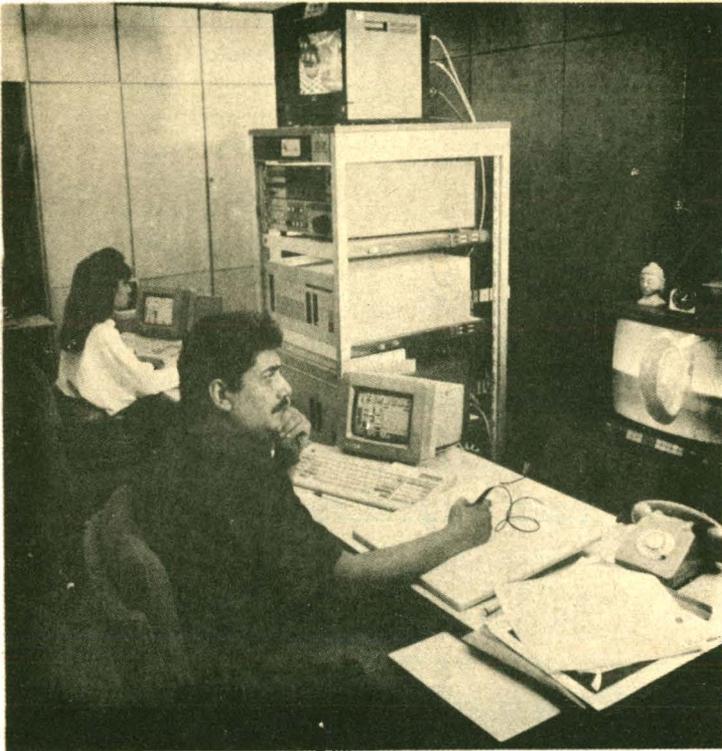
## TV Studio

Because of WOA's filial affiliation with Nanavati Hospital the company has recently supervised the design and construction of a state-of-the-art underground auditorium to hold medical conferences, workshops and seminars. Producers can now avail of the facilities of this unique studio for the shooting of TV programmes.

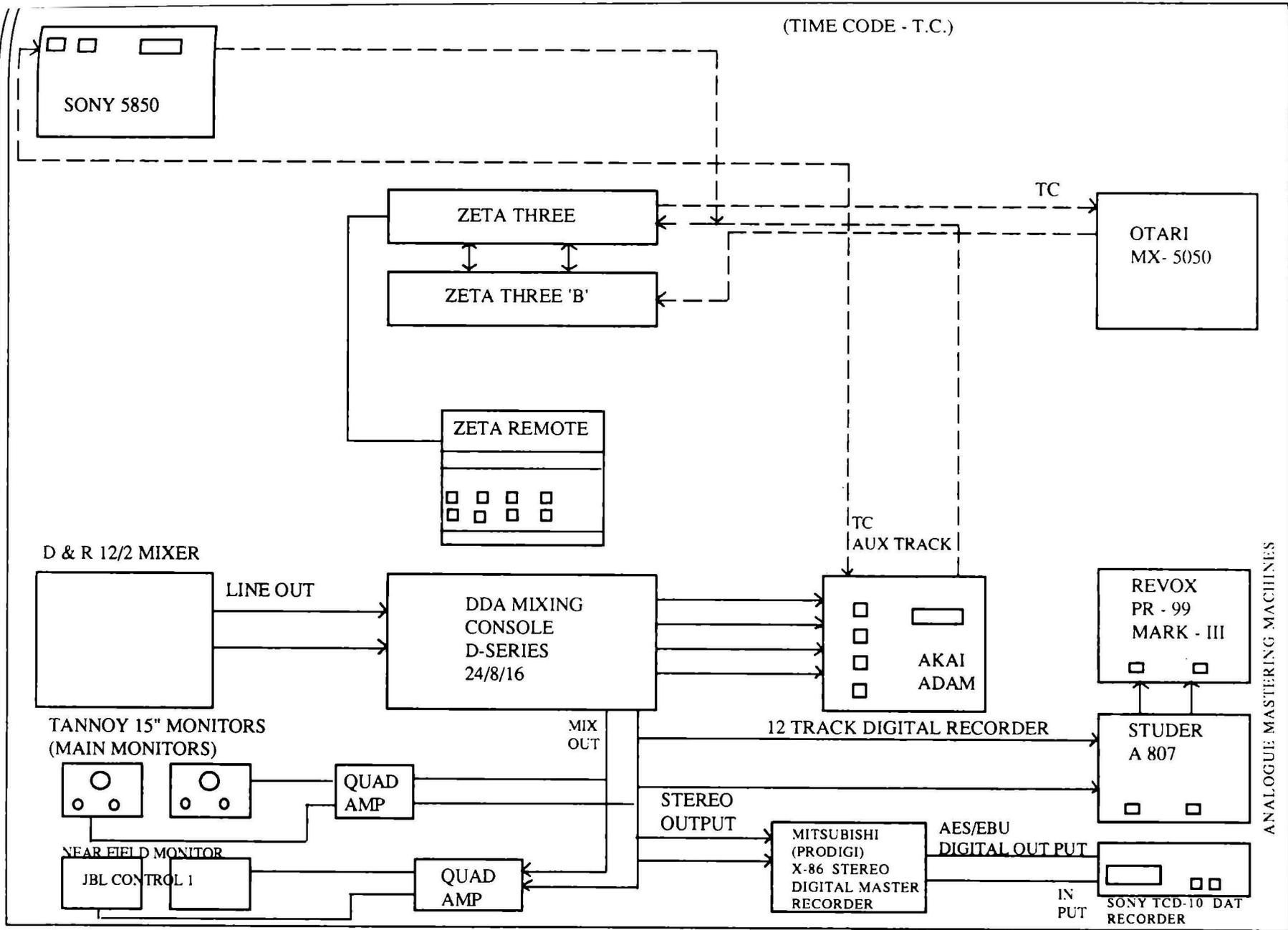
## TECHNICAL SUPPORT

At WOA every piece of equipment functions at peak efficiency. It is an aspect of the company inevitably taken for granted yet the Maintenance and Repair Department works hard for this achievement. A stable of instruments and more importantly a battery of engineers and mechanics work in unison to achieve this perfect running. WOA's satellite centres in Madras, Hyderabad, Mysore, Ooty and Pune are all armoured with the best possible maintenance equipment. For out of town shootings, equipment is accompanied by reliable field engineers who handle it for producers with enviable ease.

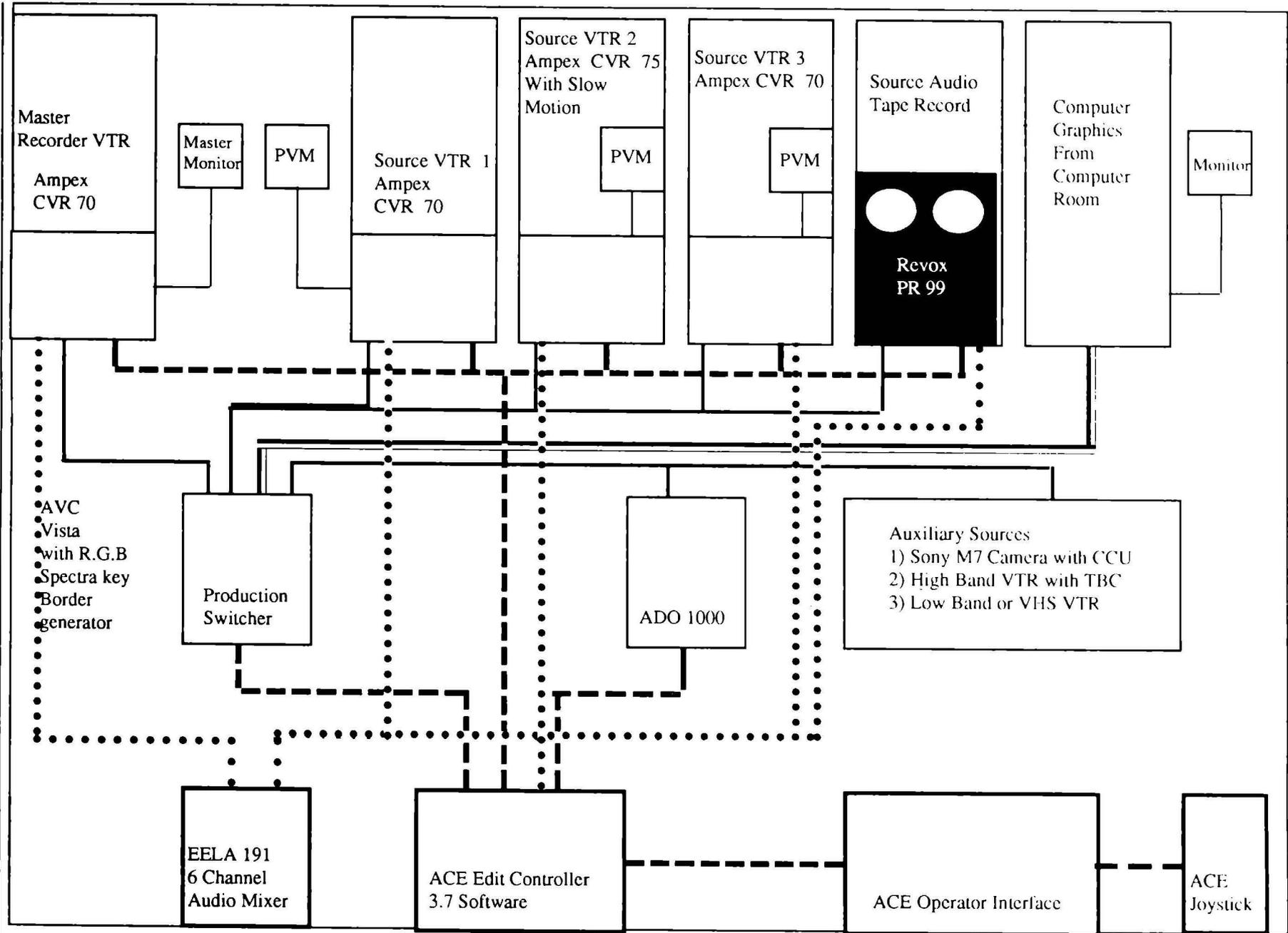
**Pankaj Khandpur and Seema Binaykia at work In the Computergraphics Division**



Western Outdoor Studio floor plan



Sound Recording Equipment Layout of Studio A

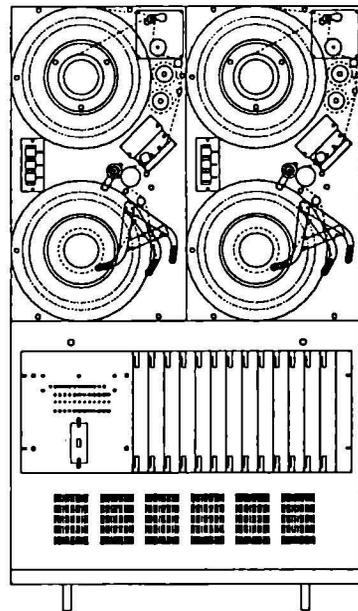
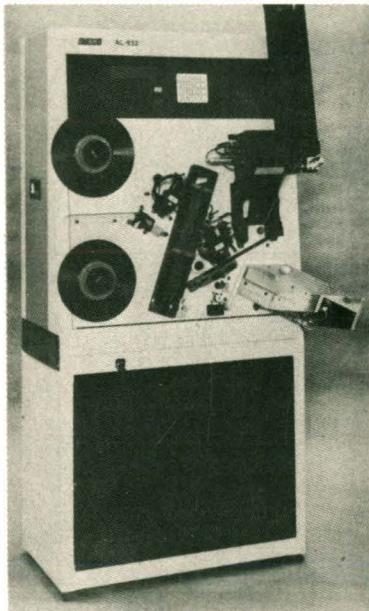


Post Production Editing Suite with BETA SP. Equipment Configuration

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### **Model AL-632 Fully Automatic Dual Supply Audio Cassette Loader**

#### **Features :**

- Dual supply design allows for uninterrupted production
- High speed design handles 400-425 C-60 cassettes per hour
- Proven reliability of new rotary splicer design provides consistent quality splices with minimal maintenance
- Handles blank or prerecorded pancakes
- Cue sensing circuit provides for cue detection at levels to -30 db
- Modular design for ease of maintenance
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### **DP-75 Slave Duplicator**

#### **Unique Features:**

- Vertically aligned tape deck and tape path with twin slave decks in one unit-less space is required.
- Four-system Bias selection-allows quick and easy setup.
- Four-system EQ selection-fast changeover for different tapes.
- Accepts up to 14" pancakes-produce more copies in less time.
- DC direct drive capstan motor with PLL servo for greatest speed accuracy with minimum wow and flutter.
- Supply reel tension servo (DC reel motor)
- Take-up reel Taper Tension Control (DC reel motor) and Pack Arm ensure uniform packing.
- Dolby HX Pro. Increases high frequency dynamic headroom. (Only available with 64 times speed slave option.)

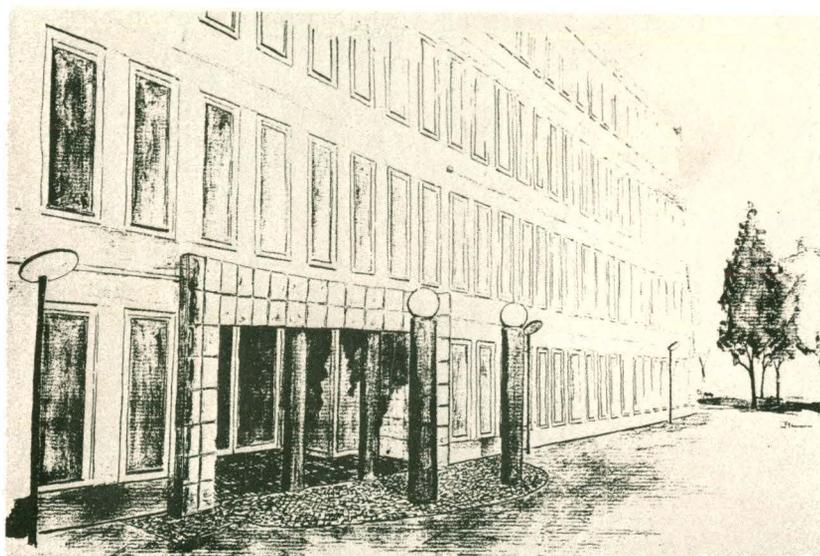
#### **Standard Features :**

- Tape Drive. PLL servo controlled DC direct drive capstan motor (two independent systems), with DC take-up and supply motors, tape cleaner and High Quality ferrite head for longer head life.
- Record Amp. Two four-channel systems with selectable four-position EQ and Bias.

# TEAM LYREC

# OF DENMARK

It was snowing very slightly while I came out of Copenhagen airport in the morning. Flemming Jensen, who had just parked his car was marching across to be in time to receive me. It was a Sunday. An exemplary sequence to throw light on the style of-team Lyrec.



The Lyrec headquarter

(when the streets are totally empty) I think is the best introduction, one shall get. Seeing Copenhagen, with all its old, really old, buildings, and yet streamlined, uncluttered, unpretentious, but solid, and in place, (as must have always been), I could easily see the Danish method and way. Personified in the Lyrec loopbin system, flat, streamlined, simple, everything in its place, and uncomplicated functioning, but totally efficient. That epitomises the Danish style.

I reckon the Kong Arthur hotel where I was put up, situated across the picturesque lakes was chosen and could not be chance that my room had a good view right through the adjacent buildings. Shri Flemming must have seen to it. Meticulous care to the legendary detail. Rest assured, in their dealings, buyers from India, would have experienced this.

The first day was a treat. There was a group of Swiss Radio engineers invited for a technical seminar, whose personal host was Johan Von Schoultz.

Incidentally, Switzerland the home of Studer have adopted the Lyrec spool tape recorders, the FRED and FRIDA. All of us were first taken to the Radio Denmark broadcasting house where the mind boggled with the display of millions of dollars of state-of-the-art equipment. The obsession with perfection. The sophisticated switching system and technical apparatus to broadcast simultaneously over both the Radio and on certain television channels was also shown us with great interest.

Flemming Jensen is the diehard marketing General who took up my challenge to exploit the untapped Indian market a couple of years ago. Since then, his innumerable trips into India, and participation at the first Broadcast India '91 exhibition has seen Lyrec create a blitzkrieg of sorts. By August 92 I estimate at least nine systems sold which going by loopbin sales standards, is something phenomenal.

To experience team Lyrec in action, to say the least, is overwhelming. A company is great for its products. But, The Company is never so, unless its people aren't. And, Lyrec is a great company. Both for its people and its products.

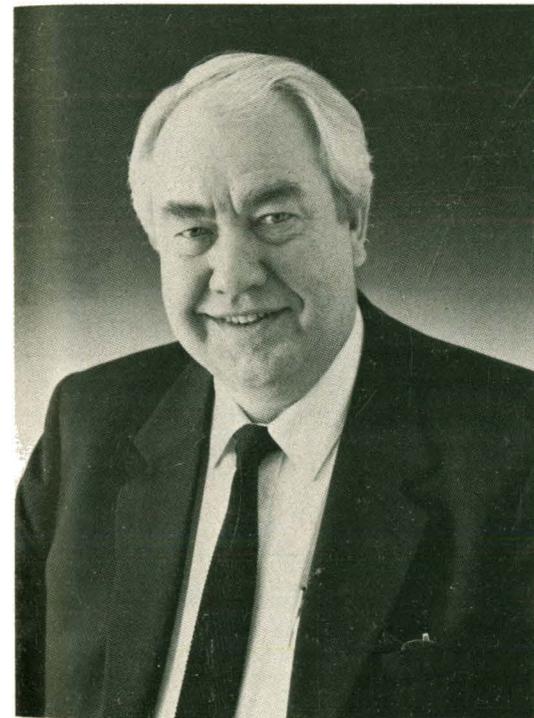
Driving into town in a new city (especially a European one) on a Sunday,

Afterwards, we were introduced to the lovely mermaid, the most photographed woman in the world. In Copenhagen this introduction is mandatory. The next introduction was to the raw pickled herring on black bread with onion paste and washed down with snaps, a relatively strong drink. The kind of food which if eaten regularly would make anybody strong. The Scandinavians are justifiably proud of being strong. But all their energies are directed toward sustaining the only absolutely clean, flawless, healthy and progressive society, nations and economies in the whole of the world. In an environment of this kind, the commitment to producing the best is only natural. From Denmark also the best microphones, Brüel & Kjaer originate. It is this kind of national sentiment that Lyrec has to aspire to.

After lunch, at the seaside restaurant quite out of town, we were lucky to be in time, back in the centre of Copenhagen to watch the change of guards at the Queen palace. It seems the English guards have borrowed their headgear from the Scandinavians, as also their language.

The next day was the visit to Mileparken, a suburb of Copenhagen, where Lyrec in its entirety is situated. The Lyrec unit at Mileparken is homogeneous entity of manufacturing facility and management offices. An indication of the reasons for a tightly knit team, always working in tandem.

The shop floor was shown to us by the Englishman of the company, Johann Von Schoultz, a Swede, with a justifiable air of pride. An extremely clean shop floor and well segregated areas, all open to each other demarcated only by the people themselves and their activity.



Orjan Svedberg, Managing Director, "Unique" acumen

The entire expanse, one large hall, where the loopbins are assembled in one area, and in another area the new DCC slaves, destined for Philips in the Netherlands, frontier technology's work, carried out with an unpretentious matter of fact manner. The twin slaves the FRED and FRIDA, all assembled in different areas, in the same hall. So much production without any noise. Being on a shop floor the silence was predominant. On my query Flemming explained: "All the talking is over before the production starts every component going into the productionline has been perfected. We prefer, as such, to source the components also from the most perfect manufacturers in the world. We have no restrictions to do this."

Yet the QC section is there, and sufficiently large, as every machine produced must go in and out of it

before despatch. The manufacturing section literally merges with the management offices. However, literally in the in-between seminar room we had a striking display of the technological depth of the technical staff. The Swiss group were to be taught how to take apart and put together the tape recorders. This was shown with elan and lucidity by different engineers, each representing his area of work, whether electronics, or mechanical, or materials, or design. I was impressed. Team Lyrec did have the depth along with the style.

Coming into the management offices, it is the amiable presence of Mr. Svedberg, which provides the reasons for the clockwork working nature of Lyrec. Unassuming and appreciative Mr. Svedberg has an encouraging style, which could enliven the worst cynic. The genuine entrepreneur in him has accepted the DCC challenge with more conviction and determination than even Philips, I dare say.

At the Vienna AES, where Lyrec has a special press conference, to show their DCC Slave, the Philips spokesman declared his grudging respect for "this man, who has been banging on our doors, until we were forced to open our doors wide. He has pushed us into getting the Lyrec slave to meet all our requirements and yet he will not rest."

Mr. Svedberg's acumen tells him to go for the unique. The Lyrec loop-bin was the first 80:1 perfected. The Lyrec vertical twin-slave concept, a novelty in introduction, is virtually

## IN DEPTH

In 1945 Lyrec, the Danish electronics company based at Lyngby, patented a system for the electro magnetic recording of sound. A simple system for the cutting of musical discs, it was to be the first application of the new technology by the Lyngby Recording Company, or Lyrec as it has become known throughout the world.

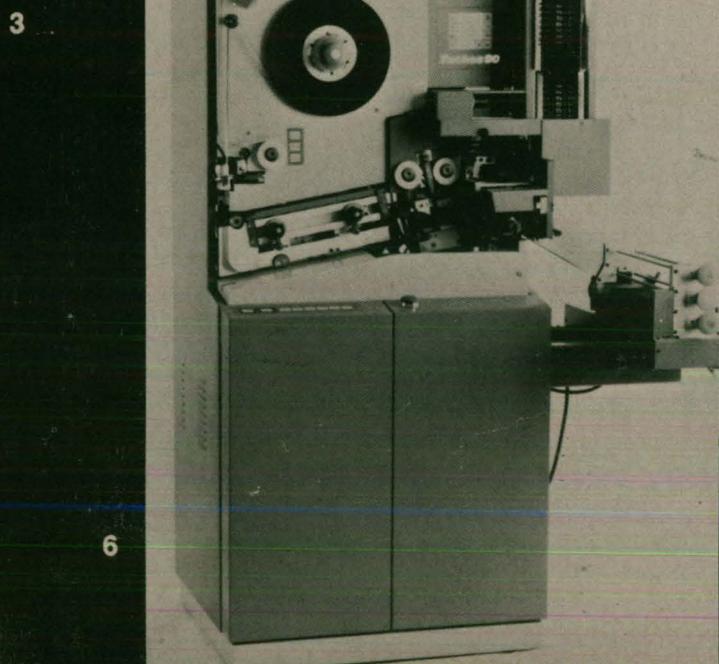
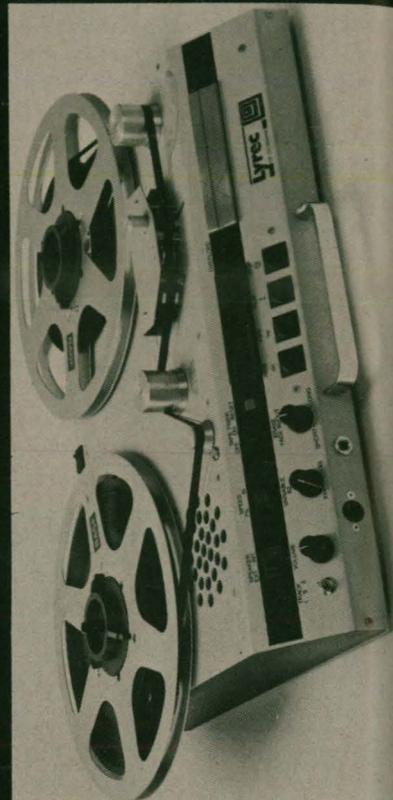
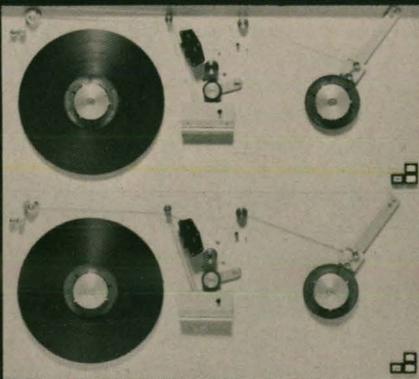
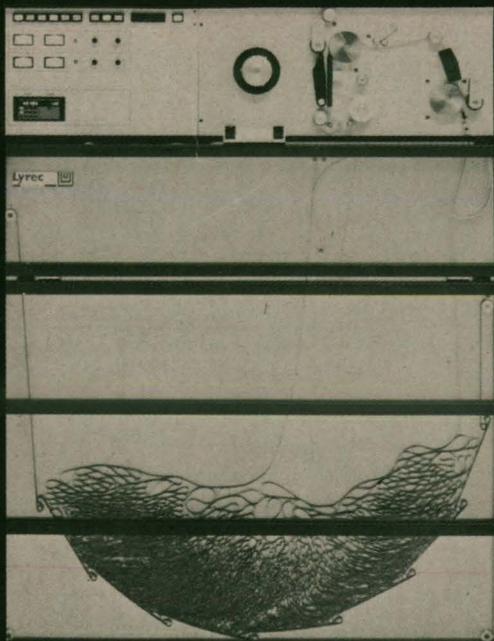
Since then Lyrec has built equipment around a simple philosophy: to provide the very latest technology in its most proven and reliable form, using precision mechanical components. The company is well established in the professional magnetic tape industry and sells its equipment worldwide in the major areas of high speed tape duplication, master recorders, quality control equipment as well as a FRED and FRIDA Lyrec offers a complete duplication line, with equipment for mastering, duplicating and quality control.

The Lyrec master Loop Bin P-4400 and Lyrec Twin Slave include record MkII amplifiers, Dolby HX Pro Diver MkII and crystal controlled PLL capstan motor control. The Master Loop-Bin P-4400 uses the latest micro processor technology to control all functions, achieves high duplication ratios and improved overall sound quality. It now accommodates an extremely high speed ratio of 100:1 running as 33/4 i.p.s. recorded master as 375 i.p.s. with superior sound quality.

Also in Lyrec's duplication line, the company's twin slave unit has two independent tape transport systems powered by direct drive DC motors. An improved packer arm.

On the uptake eliminates any tension or air bubble problems from the finished pancake. Virgin tape is thoroughly cleaned using the same Lyrec tape cleaning systems as the master unit.

1. New Generation loopbin Master P-4400, operating at tape speeds up to 480 IPS. Full microprocessor controlled tape transport without the compressed air and vacuum system.
2. P-2500 twin slave of modular design.



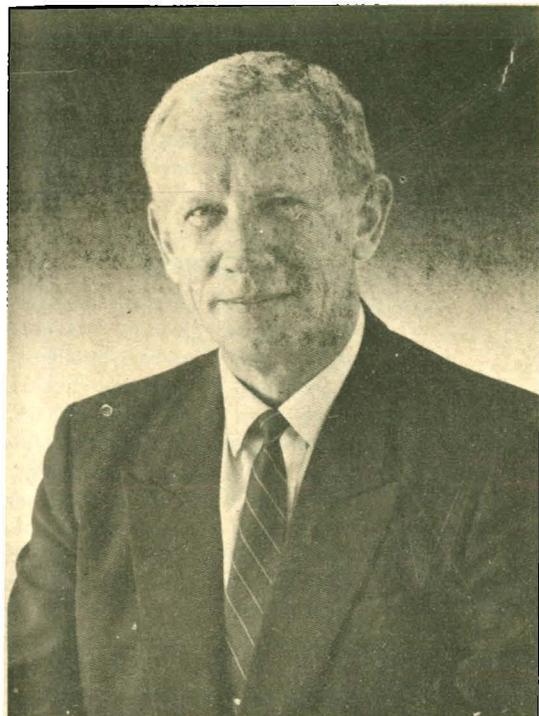
3. Quality control playback machine for cassette tapes, TR55-QC. Bi-directional tape transport.
4. A completely self-contained and portable FRee Editor, FR for the quarter inch tape format.
5. New compact general tape recorder FRIDA.
6. The TACHOS 90 C0 Loader.

a standard in its class. The spool records too have a speciality, the editing facilities, as also their portability.

I guess it must be this acumen responsible for the special interest shown for the philosophy behind Shiva in the Nataraj pose, I introduced to him. "The dance of objectivity", I explained to him. "I somehow like the concept" he said a few days later.

After our exhilarating week at Vienna, where T series dropped in casually to place an order for a complete Lyrec system, I was not too surprised to arrive in Bombay from London, after a week, to meet Flemming, and Svedberg on his first visit to India.

Lyrec now is assured of a prominent presence in the Indian scene.



Flemming Jensen, the marketing 'General'

## IN DEPTH

Following an agreement with Philips, Eindhoven, Lyrec has the rights to develop and manufacture equipment for the Digital Compact Cassette (DCC). Lyrec recently exhibited its range of DCC equip-

ment, including the Lyrec DCC slave specially designed for DCC cassette production and the Lyrec TR55 DCC QC deck for pancake testing. Lyrec's newly developed Kronos 5 was recently exhibited for the first time, as was special version of Kronos 5 for DCC. Lyrec also unveiled the Tachos 90, the fastest cassette loader presently available, as the first dual format loader for CC and DCC.

Lyrec DCC products for pilot plants will initially be available only through Philips. Further production units of the Lyrec DCC slave decks will, in future, be handled by Lyrec's normal worldwide distribution network.

The Lyrec FRee-Editor (FRED), the portable broadcast quality editor, and FRIDA, Lyrec's broadcast standard portable tape recorder, continue to be popular. The FRIDA is available in a standard version with timecode and with a special DC power pack (24 volt battery operate) for mobile recordings as well as in a system with a "Theatron" mixer for theatre applications.

All Lyrec equipment offers the professional user a high degree of "repeatability" so that updates and production improvements can be added with the minimum of down time, fuss or cost.

Lyrec is committed to the technology of audio information storage and retrieval through a range of professional standard equipment. All Lyrec equipment is designed to be easy to operate and maintain. Precision engineering components are chosen for their quality and availability. After sales support is provided locally through authorised Lyrec distributors, whose factory trained technical staff are on continuous standby with a complete range of spares. Lyrec's commitment to the customer and the product is reflected in the company's machine shop where craftsmen can

produce a one-off replacement for any part of the Lyrec equipment range, past or present.

Today Lyrec of Denmark manufactures the entire range of professional equipment from modern premises close to Copenhagen. The factory also houses a comprehensive parts store to service the needs of customers and the production line, as well as the research and development, quality control and administration departments.

The close knit workforce is ideally placed to provide both the manufacturing volume and attention to individual customer needs, to offer flexibility without compromise in quality. Lyrec products are state of the art whilst still remaining serviceable enough.

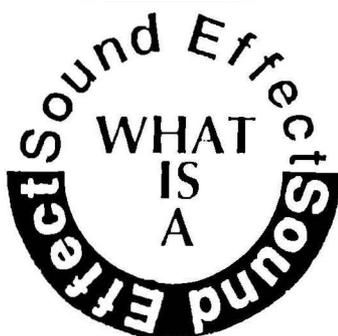
For repairs to be done on site, Lyrec's technicians can retrofit any modification of existing machines. The company can therefore supply the customer with international standard equipment at a competitive price with the backing of factory spare parts and a personalised service.

Lyrec's research and development department keeps the company in the forefront of technological advancements and ensures that Lyrec machines remain leaders in analogue audio recording technology. Applications of new equipment are considered very carefully before they go into production since Lyrec is concerned to measure the cost of all advancements against the real benefits to the final quality or any Lyrec machine.

In 1991 Lyrec acquired the Italian company Robotecnica, a well established audio company which shared Lyrec's interest in the field of audio cassette equipment and the growing need for a systems approach in this media market. The acquisition of Robotecnica allows the two companies to supply a turn-key facility from master making through duplication and quality control, to the final loading of the cassette shell.

**The Lyrec installations so far in India are at :** The Master Recording Co., Madras., Kapco International Ltd, Perwanoo, Rajes Art Printers, Bombay, Super Cassettes Industries Ltd., T-Series, New Delhi and soon to be installed in a complete system at Vijayeta Audion World Ltd. Bombay.

To support its marketing and service activities in India, Lyrec has established a technical service centre in Singapore and this newly established Lyrec Singapore Pte Ltd is carrying stock of equipment and parts and has also made arrangement with a resident service engineer in Bombay- Mr. Peter Pinto.

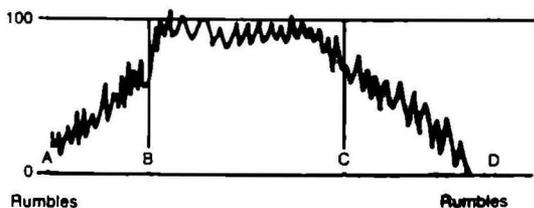


*In the earlier part of this article Robert L. Mott discussed Pitch, Timbre, Harmonics, Loudness, and Attack. The discussing on utilizing Attack is continued mid-sentence in this second part. Sustain, Decay, Speed and Rhythm are also discussed. Those working for the earlier article may write to Playback for a free zerox copy.*

## What is a Sound Effect ? . . . . .

frightening than soft sounds, and sudden loud sounds are the most frightening of all. If you are doing a scene about a woman alone in a house on a stormy night and you want to show how terrified she is of the

den and getting herself a book to read. However, in reaching high overhead to a shelf, her hand accidentally knocks over a crystal figurine. As the anguished woman makes a frantic grab to catch it, it falls to the



**Figure: The entire thunderclap sound lasts from point A to point D, a time span of approximately 5 seconds. By starting the sound at point A, you have warned the audience of the impending thunderclap, and they are prepared for the sound. Because they have already heard the rumbling portion of the sound, the louder, more definitive part of the thunder is somewhat less effective.**

situation, one way to accomplish this is by using loud claps of thunder. For maximum effect, edit any sounds prior to the peak level of the thunder. Although the sound hasn't been increased on the meter, it will seemingly be louder because of the suddenness of the attack (see Figure)

Unfortunately, perhaps the favourite time for directors to use thunder in films and television is when they show a shot of the window. Because lightning always precedes thunder, the suddenness of the sound is somewhat ameliorated by the flash of lightning. Therefore, to have this loud, sudden crash of thunder make an impact on the audience, we must add the element of surprise.

Suppose the woman decides to try to forget the storm by going to the

marble floor and smashes. Only instead of hearing the familiar crash of glass, the audience hears a loud, sudden clap of thunder in its place.

This technique of using one sound to simulate a totally different sound can be extremely effective. However, in order for it to have the proper results, the audience must be surprised. If, for instance, we had used a thunder sound that had a slight rumbling prior to reaching its peak level, there would have been no correlation between that thunder sound and the fast attack of crashing glass.

### SUSTAIN

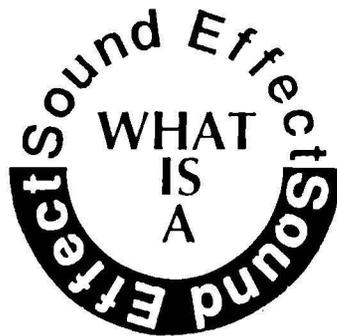
Once a sound has reached its peak, the length of time that the sound will sustain is dependent upon the energy from the source vibrations. Once the source sound stops, the sound will begin to decay.

Manipulating the sustain time of a sound is yet another way of either modifying a sound or creating a totally new one.

### Utilizing Sustain

One of the most important considerations given to a sound effect is its ability to be controlled. If, for instance, you are doing a film that takes place in New York City and you record the most realistic traffic sounds at 42nd Street and Broadway, what good are they if every time your actors speak, their lines are drowned out by realistic New York sirens? The answer for unmanageable sounds that must be heard in the background for any length of time is to loop the sounds. A loop of sounds effects is a continuously running sound of something that can be stopped and started at any time without any noticeable change in the loudness level of the sound.

If, for instance, after you've taped your traffic sounds and you find that they are too "busy" (too many things going on at once), what you must do is find a portion of the tape where there are no extraneous sounds other than the ambient roar of the traffic. By editing out the sound portion that sustains the type of sound you want and placing it on some type of cart machine (National Association of Broadcasters [NAB] or MacKenzie), you have an endless loop of sustained sounds without any other identifying changes such as attack, decay, or unwanted sounds such as sirens. If, however, you want to add sirens and horns, you have the control of those sounds on other carts, tapes, or film, and you can insert them where they won't interfere



## What is a Sound Effect ? . . . . .

with your dialogue.

In the event you don't have a cart machine at your disposal, you must resort to the more time-consuming task of editing out all the unwanted sounds. Although a short length of tape can be spliced into a loop and played on a reel-to-reel tape machine, unless the tape is identical to content and loudness level, a loop of tape this short presents problems.

Suppose, for instance, we have

will be very little decay time, and more than likely what little there is will tail off quickly, giving the gunshot sound an unnatural popping quality.

The end of a sound is often referred to as the "tail" of a sound, and conversely, the beginning of a sound is its "head".

Whenever you are editing a sound, you must allow enough room at the tail for a natural fade. The fade

stance, the shot has a "tight" sound (little or no reverberation with very little decay), we know that it was fired in a small enclosed area with a great deal of absorbency. If the shot has a long decay coupled with an echo, we know that the shot was fired outdoors and its decay was most influenced by the resistance encountered by the air's molecular movement.

This knowledge is important when trying to simulate sounds. If,

One second of audio tape traveling at a speed of 7½ IPS

**Figure: One second of audio tape travelling at a speed of 7-1/2 IPS**

the sound of an elevator starting, running, and stopping, all within 25 seconds, but the script calls for a scene to be played in an elevator that runs for 60 seconds. Again we edit the sustain portion and make it into a loop. However, because the running or sustained section of the sound is under 10 seconds, you must exercise tremendous care in editing, for unless the sound is without glitches (sudden bursts of level changes), a loop of sound this short will magnify these mistakes with a regularity that will soon become distracting--if not maddening--to the listener.

### DECAY

The decrease in amplitude when a vibrating force has been removed is called decay. The actual time it takes for a sound to diminish to silence is the decay time. How gradual this sound decays is its rate of decay. If, for instance, you fire a pistol in a studio or a room that is extremely sound absorbent, there

may be extremely fast, but unless you are clipping a sound for a particular effect, there should be a fade.

This is no particular problem for a synthesizer, because it is done electronically. But what happens if you cut off the ending of an effect that is on tape? One method is to make another copy of the sound and this time, just prior to where the sound is clipped, fade the sound out fast. This will give you a sound with the proper fade on your second tape that, if need be, can be edited back onto the original tape.

### Utilizing Decay

Although the decay of a sound is most influenced by the removal of its source, the resistance a sound encounters as it travels through the air also plays an important part in the rate of its decay. In the case of our gunshot, simply listening to the length of time it takes for the shot to decay tells us a great deal about where the shot was fired. If, for in-

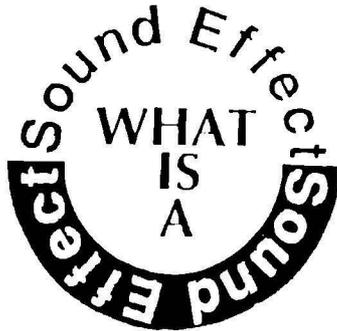
stance, you have the sound of a shot that was fired indoors and you want to use it for a scene that takes place outdoors, by adding reverberation to the sound and "goosing" (quickly increasing the volume level) the attack of the gunshot momentarily, and by then dozing a long slow fade, you have effectively created a sound most identified with an unconfined area.

### SPEED

The measurable velocity of a sound determines its speed. By increasing or decreasing the speed of a sound, you can not only change the properties of one particular sound, but you have within your power to



**Figure: This is the letter "R" edited from the word READY at a tape speed of 15 IPS.**



## What is a Sound Effect ? . . . . .

change the sound of an African waterfall into that of the detonation of the atom bomb!

### Utilizing Speed

Audio tapes normally record and play back sounds at speed of 7-1/2 inches per sound (IPS) or 15 IPS. If you record a sound at 7-1/2 IPS and play it back at 15 IPS, the information you recorded will be twice as fast as the recorded speed. If, for instance, you record an explosion at 7-1/2 IPS, it will sound like a gunshot when it is played back at 15 IPS. Conversely, if you record a gunshot at 15 IPS and play it back at 7-1/2 IPS, it will sound like an explosion.

To better understand this, if you were to play a tape of a 500-Hz tone that was recorded 7-1/2 IPS, and you played it back at 7-1/2 IPS, it would still sound like a 500-Hz tone. However, if you played this tape back at 15 IPS, the frequency of the tone would double and the tone's pitch would be perceived as higher. If you record a voice at 7-1/2 IPS and play it back at 15, the sound of the voice will not only be faster but higher, and it will resemble that of the cartoon chipmunk characters. (See Figure)

As you can see in Figures, the letter

"R", when recorded at a speed of 15 IPS, is exactly twice the length of the letter "R" recorded at 7- 1/2. Although these two tape speeds serve



**Figure: This is the letter "R" edited from the word READY at a tape speed of 7-1/2 IPS.**

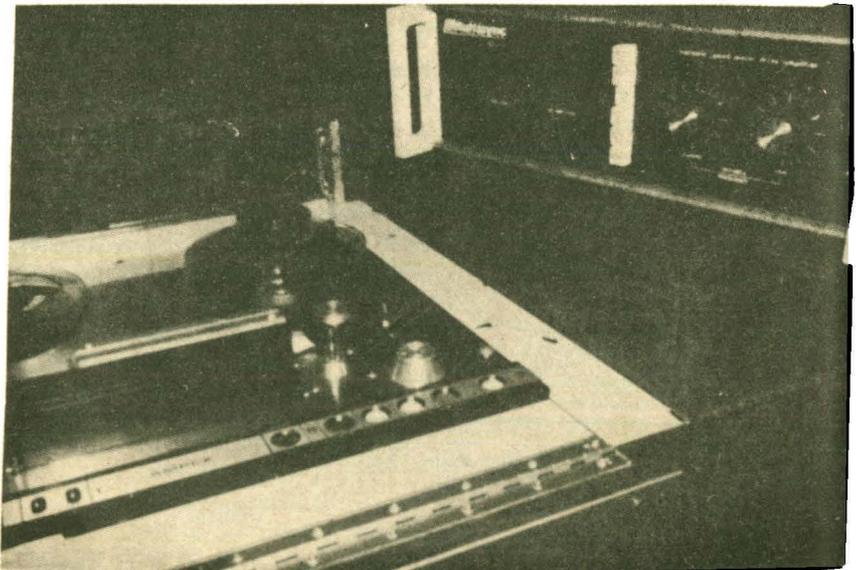
music and dialogue well, sound effects needs a tape machine that is capable of playing a wide range of speeds. A piece of equipment with this capability is called a variable

speed oscillator (VSO).

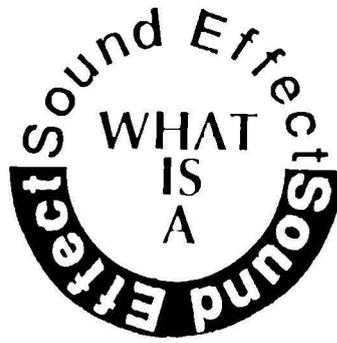
### Variable Speed Oscillators

Working in conjunction with the reel-to-reel tape machine is the VSO. This piece of equipment is used to change the speed of the recorder's motor.

Most pieces of equipment have motors that operate on a standard 60-Hz power line. However, it is sometimes desirable to operate equipment at other than standard speeds. This is the function of the VSO. It substitutes this normal 60-Hz frequency with a variable fre-



**Figure: A portable variable speed oscillator (VSO) attached to a tape machine. Most modern machines have the VSO built into the circuit. The VSO has another function that is extremely helpful in making difficult tape edits. By taking sounds or music and showing them down with the VSO, it is often possible to hear spaces in modulation that will allow you to get in with a clear edit.**



## What is a Sound Effect ? . . . . .

quency that is capable of controlling the speed of the motors in smooth increments, much as a dimmer on a light switch (See Figure).

### RHYTHM

Rhythm is most often identified with music. In that context it is also associated with such terms as meter, cadence, and tempo. Therefore, rather than confuse the issue, for our purposes we will define rhythm as a recurring sound that alternates between strong and weak elements. Although there is a slight difference between rhythm, cadence, and tempo, the three will be grouped together under the one heading of

rhythm, and distinctions will be made where necessary.

### Utilizing Rhythm

In this highly complicated and subjective business of reproducing existing sounds and creating new ones, you will very often have to implement all the components that we have discussed in order to create the desired effect. Sometimes, however, one component will be so dominant that simply emphasizing that part of the sound will be sufficient.

For many years, the manual effect for marching feet was a group of wooden pegs suspended by wires

in a wooden frame (See figure).

By properly simulating the cadence of marching feet, this sound effect was extremely believable. Of course, a group of wooden pegs would hardly suggest the precise sound of a large group of people marching in order. Rather, the rhythm supplied by the artist made this effect successful. If the rhythmic cadence were ignored, the wooden pegs would sound exactly like wooden pegs being drummed mechanically on a wooden surface.

## Silver Beats at the heart of Creativity:



At the heart of Silver Beats is Shriman Sadhna Batra, and Narayan Agarwal, who team up to create meaningful albums in Classical, Semi Classical Bhajans, Regional Lok Geet and for meaningful films.

We wish the Indian heritage to endure and create, healthy music at very high levels of creativity

Silver Beats has to its credit four powerfull albums. That of Bhimsen Joshi, Anup Jalota, Harl Om Sharan and a Vandana to Maheshwari Agrasen, feating Anup Jalota, Manhar Udhas, Vishwajeet and fresh talent In Neelima Nilaya and Leshram Mema of Manipur. Ajit Kaddade and Manju Bhatla will soon feature in a bhajan album.



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Telex : 11-73705 GEWL IN Cable: SHIPGEAR.

# Pro Audio & Light Asia Exhibition

Pro Audio exhibition will be held each year in the second week of July in Singapore. Next year, the exhibition will be held at the World Trade Centre in July 7 to 9.

"This year's exhibition drew nearly 4,350 visitors from 35 countries and the exhibition was nearly 41% larger in terms of size and number of exhibitors as compared with '91 event," informs Allan Suen, of Business & Industrial Trade Fairs Ltd.

Indian companies who would like to represent internationally reputed pro audio companies can personally meet the manufacturers at this exhibition. Most exhibitors show a very keen interest in the Indian market and are aware of the potential, and are looking for representatives with a suitable background in the professional audio field.

PACE and Orange Pale were two Indian companies present. Both Joe Gonsalves and David Santwan met with potential principal.

Products of interest exhibited were by the following Singapore distributors from whom almost all pro audio products is available.

Hawk Trading Co. Pte. Ltd.  
605, Macpherson Road,  
#01-15 Citimac Industrial Complex,  
Singapore 1336  
Tel : (65) 287 0011  
Fax : (65) 288 5805

Adtronics Power & Sound Pte. Ltd..  
111 North Bridge Road,  
#03-07 Peninsula Plaza,  
Singapore 0617  
Tel : (65) 338 4188/338 0811  
Fax : (65) 338 6128

Music Plaza Pte Ltd  
80A, Annery Lane  
Singapore 1334  
Tel : (65) 747 4374  
Fax : (65) 745 0150

Electronics & Engineering Pte Ltd  
271 Outram Road  
Singapore 0316  
Tel : (65) 223 5873  
Fax : (65) 225 3709

Mahajak Development Co.  
Bangkok,  
Thailand  
Tel : (66 2) 256 0000  
Fax : (66 2) 253 1736

MR Team  
25/13 Soi Pattanasamakky 6 Chokechai 4  
Ladprao Rd Bangkok  
Bangkok 103 10,  
Thailand  
Tel : (66 2) 530 1077  
Fax : (66 2) 530 1077

Datron Thai Co Ltd  
2/F Chavanich Bldg  
38 Soi Salinimi, Sukhumvit 69  
Prakanong, Bangkok 10110  
Thailand  
Tel : (66) 2 392 0224  
Fax : (66) 2 381 2971

Studen-Revox (Far East) Ltd  
20th floor, Chai Wan Industrial City  
Phase II  
70, Wing Tai road,  
Chai Wan  
Hong Kong.

Electro Systems Pte Ltd  
118 Lorong Gelan No. 01-120  
Singapore 1483

Swee Lee Company  
03-23 Bras Basah Complex  
Singapore 0718  
Tel : (65) 336 7886/7052  
Fax : (65) 339 7035

Advanced Communications Equipment  
Co. Ltd.  
5/F Prosperity Centre  
77-81 Container Port Road Kwai Chung  
Hong Kong  
Tel : (852) 424 0387  
Fax : (852) 424 0788

Stage Professional Pte Ltd  
69 Boon Keng Road  
Stage Building  
(Junction of Bendemeer Road)  
Singapore 1233  
Tel : (65) 3381313

Light Sound Image  
2nd floor, E. Sum Wa Mansion  
1 Belchers Street  
Kennedy Town  
Hong Kong  
Tel : (852) 817 3821

Lingec Pte Ltd  
246 Macpherson Road  
07-04  
Singapore  
Tel : (65) 747 1951  
Fax : (65) 747 1971

Rank O'Connors  
O'Connor House  
98 Pasir Panjang Road  
Singapore 0511  
Tel : (65) 473 7944  
Fax : (65) 472 4508

Hwee Seng  
81 Genting Lane 02/03  
Everich Industrial Building  
Singapore 1334  
Tel : (65) 746 3355  
Fax : (65) 743 1704

Electro-Acoustics Systems Pte Ltd  
1302, Lor. 1, oa Payoh  
Hex 06-13, siond Hoe Ind. Bldg  
Singapore 1231  
Tel : (65) 259 6616  
Fax : (65) 259 5939

Electro-Systems Industries Pte Ltd  
(Allen & Heath Distributor)  
118 Lorang  
23 Geyland No.2-120  
Singapore 1438  
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Fax : (65) 742 8050

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**MAS**  
melars audio systems

**MAS** : Wide range of professional Broadcast grade speakers, (full range Electrostatic or conventional 2 way/3 way), pre-amplifiers, power amplifiers.

**TFT** INC

**TFT** : AM/FM Emergency Broadcast system, a full range of STUDIO to transmter links, AM/FM modulation meters/analysers.

 **HITACHI**

**Hitachi** : Professional video shooting, recording, production & post production systems, portable microwave links.

**DDA**

**DDA** : Broadcast grade analog/digital audio mixing consoles (8/16/24/48 channels)



**Webel Mediatronics Ltd** : Battery/Mains operated portable audio mixers, microphone pre-amplifiers, program/line amplifiers, REVERB UNITS, Power Supply Units.



**INTERNATIONAL**

**PKE** : Full complement of Broadcast automation system (IBM PC based)

*Authorised distributors for*

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## Dramatic increase in low-cost digital recording

Annual sales of random access digital audio recording and editing systems are still increasing, according to a recent study by independent consultants Sypha. Although all categories of systems are proving more popular, the most dramatic increase is in sales of low-cost stereo editors. Whilst a considerable number of different manufacturers are competing in this market, only two -- Digidesign with Sound Tools, and Akai with their DD1000 optical disk recorder -- account for the majority of the 7,000+ sales made to date.

According to Sypha, other indicators from a Review Of The Digital Audio Workstation Market (£125) suggest that the market for Rado / station automation is poised to expand considerably. Development of such systems is being led by French and US manufacturers, and there are now more such systems on the market than any other type of tapeless system. Another clear market trend is the growth in low-cost multi-channel systems. Although only a handful are currently available, sales look set to follow the pattern of low-cost stereo systems.

The Sypha survey details the worldwide sales performance for all categories of digital audio workstations since 1985, and also discusses major players and their market shares, their past failures, and looks ahead to future trends and the likely effects of new technology.

## Tascam hard disk recorder

Tascam yesterday revealed that it has a fully working hard disk recorder, the HDR-4000. The unit, which is not on public display, is capable of two channel recording and four channel playback with a 12.5 minute duration.

**Put  
Le catalyst on your  
mailing list!  
Send  
your new product news  
and information to  
Playback.  
it gets you moving**

# 93rd AES Oct. 1-4, '92



The 93rd AES Convention is being held at the Moscone Center, San Francisco.

The 93rd Convention Committee under the leadership of Leo de Gar Kulka has a technical programme

evolving that will allow the convention attendees to strike gold in audio engineering fields.

AES has four decades of service heralding the new scientific horizons of audio through society communications programs.

AES has been a continuous and dynamic force in fostering the dissemination and exchange of information of a technical nature and thereby, advancing the various facets of the audio craft into a cohesive and viable technology.

AES is playing a leadership role in the

development of international audio standards. AES is encouraging the expansion of educational programs in the audio engineering discipline.

AES is fostering an international membership base of professionals and specialists in audio.

AES brings out a journal 10 times a year publishing highly technical articles. In fact, it has become the audio reference and prestigious guide of technical development throughout the world.

AES has 2 conventions during one calendar year. The Europe convention is held sometime in March and the American convention is held sometime in October. In 1993, the 94th AES convention will be held in Berlin, Germany between March 16-19 at the ICC, the 95th AES convention will be held at New York Hilton Hotel, New York during October 31 to November 4, 1993 and the 96th AES convention will be held at RAI Center, Amsterdam, The Netherlands from Feb.27 to Mar.2, '94.

## Electro Sound Series 9000: Focuses Duplicating System in Special Markets

The tape duplicating market for cost-effective equality cassette systems and equipment continues to surge around the world, according to Jim Williams, president of Electro Sound.

As a result, Electro Sound is focusing its popular Series 9000 high-speed cassette duplicating system at customers in developing countries and where it is more prudent for duplicators to buy and operate cost-effective equipment.

In addition to penetrating an important cost-conscious market segment, Electro Sound is targeting its series 9000 to meet a growing demand for greater duplicating capacity in a smaller manufacturing area.

The multi-dimensional system features a dual-speed dual-slave system incorporated in one cabinet using a brushless DC servo controlled capstan drive system running at speeds up to 240 ips. Four switchable EQ's and bias presets are provided along with the availability of Dolby HX Pro.

The master reproducer provides a brushless DC servo controlled capstan drive system and a vacuum column servoed tension control system running at speeds up to 480 ips. There are four

switchable EQ circuits providing easy master tape and EQ change with a simple switch selection.

"We fully expect the Series 9000 system to make significant sales impact not only in the U.S. but in countries around the world, where it is more advantageous for customers to buy cost-effective equipment and expand their operation as their market grows," Jim Williams, president of Electro Sound, said.

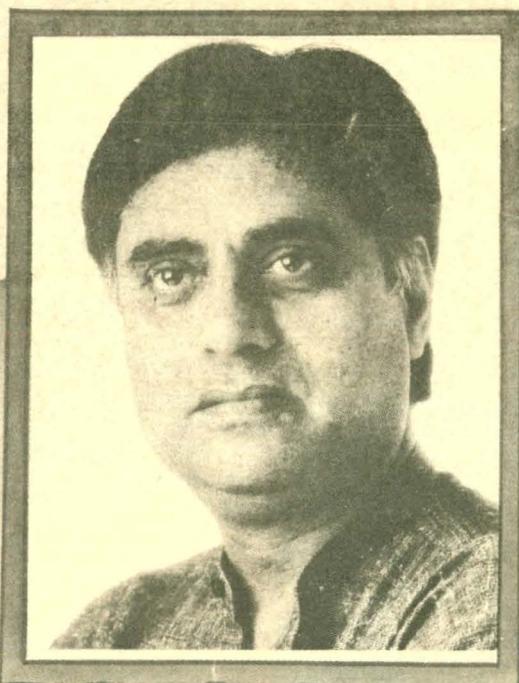
The series 9000 gives Electro Sound for the first time an opportunity of offering the broadest spectrum of performance-proven systems, from the highly-sophisticated state-of-the-art high end to the more cost-effective equipment.

The Series 9000 master reproducer and dual-slave transport system features new electronics, breakthroughs in functions and designs, and automatic componentry to make it an efficient and cost-effective duplicating system.

"The equipment introduces many innovative features but utilizes time-proven methods and concepts that expand on existing technology without sacrificing standards of performance and reliability," Williams added.

He, was Insearch of an inspiration in the wilderness.

Jagjit Singh's



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RAPPORT

## Lyrec's Resident Service Engineer

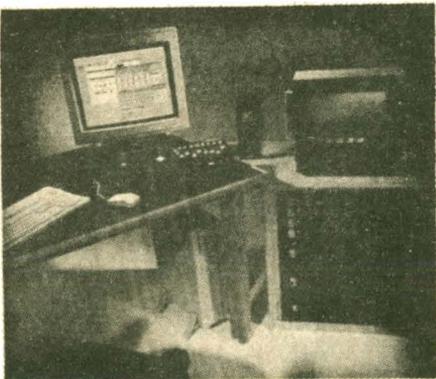
Peter Pinto of Bombay has been maintaining the loopbin unit of Rajes Art Printers since his appointment. "He has effectively seen to it the unit has been in operation 25 hours a day every single day" declared Flemming on his recent visit to India.

Peter Pinto is available at the following address:  
Peter A. Pinto  
Analog & Digital Electronics,  
North Bombay Society,  
D Building-Flat No.64, 3rd floor,  
Opposite Juhu Hotel,  
Juhu, Bombay 400 049  
Telephone No. : 6144080.

## Ava Audio reps. for digidesign

Amit Biswas of Ava Audio installing the first digidesign is all set to market the digital works station in India. He also represents Para-Di of Singapore and is offering APO-GEE filters and Audio Scope analysers. Please contact at :-

PB 6745, Khar, Bombay 400 052.  
Telephone : 6484997/6491699  
Fax : 649 1699



Digidesign Pro Tools

## Best AES Ever For Lyrec

Gopal Krishan, Gulshan's brother who oversees the production activity of Super cassettes, Sunil Wadhvani and Ved Channa of SCI visited the Lyrec stall and ordered a Lyrec loopbin system. Kanik Raj of Vanilla Ice, Dubai also visited the Lyrec stall and promised business.

According to Flemming Jensen, Lyrec's Sales Manager the Lyrec stand saw more visitors from all over the world than any previous AES and many new contacts were established. Lyrec's newly developed Kronos 5 was shown for the first time at AES. Flemming also reported to Playback on firm orders from East European buyers like Romania.

## Service Centre to be opened

# Otari appoints PACE as Rep.

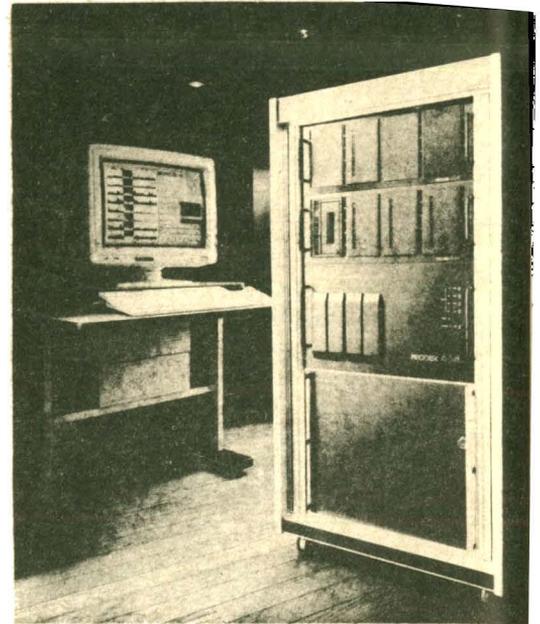
Otari has appointed an Indian representative. PACE headed by Joe Gonsalves and Nakul Kamte, is now, been exclusive representative for Otari liaising with Oshizawa at the Singapore office.

Joe Gonsalves spoke to Playback "I would like to see the ProDisk 464 enter India, as it is one of the most competent systems available. A lot of MX 80 series is a 2" 24 or 32 track high end multi channel mastering tape recorder. Joe feels the Indian market is also ripe for the MTR-100A.

The main thrust of PACE shall also be to retain the market share for Otari loopbin systems. "The competition has entered recently, however, I am confident once they have real-time experience Otari will be the permanent choice," declared Joe.

Service Centre One of the main tasks ahead is to set up a service centre adequately stocked with spares and sending an engineer for complete training with full knowledge. Joe Gonsalves remarked, "I dont believe in half-baked solutions". Also, in the loopbin duplication area, I think

the AI 362 double hub C-O loader and the DP-75 twin slave which is a 3 capstan affair vis-a-vis single capstan similar slaves of the competition, are going to be very popular in India."



Digital Disk Audio Recording & Editing System : Pro Disk - 464

## MMT buys Tape Automation

Tape Automation went into liquidation and MMT bought it over. Media Motion Technology/ Tape Automation have since launched the Delta Dual Pancake loader. Dave Smith of Tape Automation is now general manager of MMT.

## TDK, Japan and EMI, UK buy Electro Sound

Four Japanese companies including TDK, Tokyo have acquired Electro Sound duplicating equipment.

EMI went in for the ES 8000 operating at 80:1 system.

# Thailand Favours Electro Sound series 9000

Two companies in Thailand have acquired Electro Sound's popular new Series 9000 high-speed cassette duplicating systems. Krung Thai in Bangkok and Onpa Audio & Video in Bangkok both installed Series 9000 systems.

Sales of series 9000 duplicating systems have surged internationally since their recent introduction because the duplicators are cost-effective quality equipment providing greater duplicating capacity in smaller manufacturing areas, according to Jim Williams, president of electro Sound.

The multi-dimensional system features a dual-speed dual-slave system incorporated

in one cabinet using a brushless DC servo controlled capstan drive system running at speeds up to 240 ips. Four switchable EQs and bias presets are provided along with the availability of Dolby HX Pro.

The master reproducer of the Series 9000 provides a brushless DC servo controlled capstan drive system and a vacuum column servoed tension control system running at speeds up to 480 ips. There are four switchable EQ circuits providing easy master tape and EQ change with a simple switch selection.

Wandee of Datron Thai, is the exclusive agent who has generated these sales.

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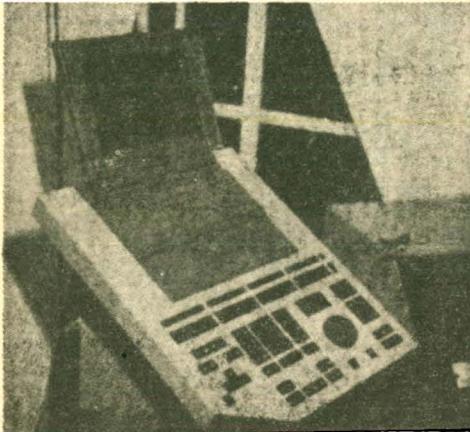


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## AKG sponsors 92nd AES in Vienna



**AKG's tapless multitrack**

AKG, the Austrian co., along with Siemens sponsored the AES/92nd convention. It presented the new blue line modular condenser microphone system. The AES is the most prestigious exhibition for audio engineering. Vienna is known as being an ideal crossroad for east European and west European trade. Anticipating good business from the newly liberated E. Europe the Vienna, the show was thought to be the most largest ambitious audio convention yet. Almost each and every small and big manufacturer is present. Over 275 exhibitors displayed their goods.

The main accent of AES convention are the papers presented by acknowledged and renowned engineers. Papers Chairman Werner Deutsch had scheduled 12 technical sessions, with many of them in two parts. Topics included were: Digital Signal Processing; Measurement Techniques and Instrumentation; Audio History, Preservation and Restoration; Music and Musical Instruments; Transducers; New Techniques in Transmission; Sound Reinforcement; Digital Recording and Reproduction; Architectural Acoustics; Psychoacoustics; Computer-Aided Audio Production; and Additional and Special Topics.

One noticed there was no crowding almost always the exhibitor had plenty of time to attend to the enquiries. Workshop Chairman Dietrich Schuller had arranged for a variety of seminar/workshops throughout the convention, with a strong roster of invited experts to conduct them. topics included were: New Audio Media; Recording; Tapelife; wireless Microphones.

## Exhibition & Seminars

- AES**  
San Francisco  
Oct. 1-4, '92.
- Broadcast India**  
Bombay  
Oct. 14-18, '92.
- Interbee**  
Tokyo  
Nov. 10-12,, '92.
- Middle East Broadcast**  
Jan 18-21, '93
- 23rd ITA nnuual Seminar**  
Arizona, USA  
Mar. 10-14, '93.
- NAB**  
Las Vegas  
April 19-22, '93.
- Montreux TV**  
Montreux  
Jun. 8-10, '93
- Broadcast**  
Hong Kong  
July 8-10, '93

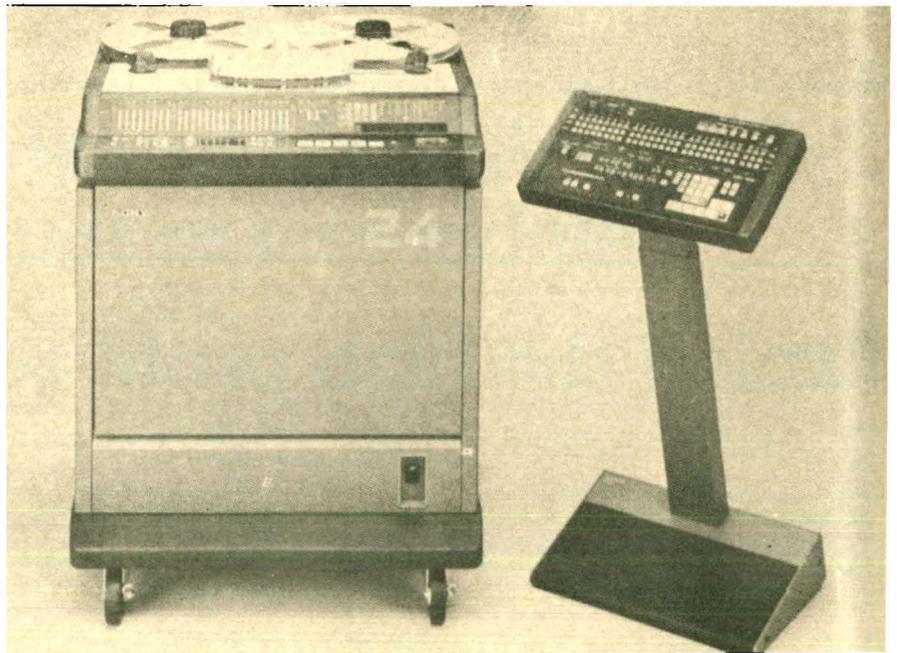
## Sony Dashes the price barrier

Sony is launching a new era of affordable digital multi-track recording. With the introduction of the PCM-3324S, a high performance 24 track DASH recorder is now - for the first time - available at the same price as a mid-range to high-end analogue multi-track machine. Sony celebrated the sale of 1000th Dash, the PCM - 3348 DASH.

Ten Years of DASH  
1982 : Sony launches PCM-3324 at AES, Los Angeles.  
1984 : Studer shows two-channel DASH prototype at AES, Paris.  
Sony demonstrates two channel DASH prototype at IBC, Brighton.  
1985 : Studer launches D820-X two-channel DASH recorder at AES, Hamburg  
1986 : Studer & Sony demonstrate two-channel DASH compatibility at AES, Montreux.  
Sony introduces PCM-3402 switchable 'Twin DASH' recorder at IBC, Brighton.  
1988 : Sony introduces PCM-3324A at APRS, London.  
Sony launches PCM-3348 48 track recorder at AES, New York

Tascam introduces DA-800-24 24 track recorder at the same show.  
1991 : Studer shows D820-24 24 track

recorder at AES, Paris  
1992 : Son launches PCM-3324S at AES, Vienna.



**Sony PCM-3324S - 24 track 1/2" digital taperecorder**

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## Soundtracs for Broadcast Asia '92 East Agents

To ensure that the market demands are serviced correctly and that the increasing customer base is satisfied Soundtracs has appointed new distributors as under:

In Malaysia, Singapore, Indonesia & Brunei :

Swee Lee Co  
Block 231 Bain St. 03-23  
Bras Basah Complex  
Singapore 0718  
Tel: 3367886  
Fax: 3397035  
Director : Peter Song.

In Hong Kong, Acao and China:

Winbo Technology Limited  
Unit 50, 13/F. Blk. F  
Wah Lok Ind. Centre  
37-41 Shan Mei St.  
Fotan  
NT, Hong Kong.  
Tel: 6049382  
FAX: 6044325  
Director : P.C. Ma

### Free ARX Application Notes

ARX is making available a low charge application notes on their DI-6s, Sixgate and afterburner compressor Limiter. Whilst these notes are primarily intended for ARX products they offer technical information of a nature that is equally applicable to other products of a similar nature.

Simply write to the following address:

ARX Systems  
5 Koek Rd 16-03  
Cuppaga Plaza  
Singapore 0922

## Singapore Exhibitions attract Indians



8723 with trade visitors with 359 exhibitors

Broadcast Asia '92 held in June 2-5 and Pro Audio & Light Asia '92 held in July 8-9 in Singapore were both well attended by the Indian music industry and video industry. Singapore being easily accessible both time-wise and cost-wise, it is possible for professionals whether in Bombay, Delhi, Calcutta or Madras to attend.

Broadcast Asia '92 concentrates on video equipment and broadcasting equipments.

\* In video, Ampex showed the ADO500 digital effects system.

\* Rank O'Connor showed the Ursa Telecine, JVC colour cameras, S-VHS editing system.

AVS Broadcast displayed its newly launched Integra. It is a combined digital mixer & DVE.

Panasonic displayed its MII VTR which were used in the 1988 Seoul Olympics.

Abekax demonstrated its mixed format suite, where the fully integrated A34 Solo,

the A72 Digital Character Generator (with Tamil Typefaces) and the 3D A511 Digital Effects System.

Studer EdiTech displayed its Dyaxis II Digital Audio Production System. It provides audio engineers with real-time multitrack capabilities, real-

time crossfades in all editing and recording modes and real-time digital mixing and signal processing power.

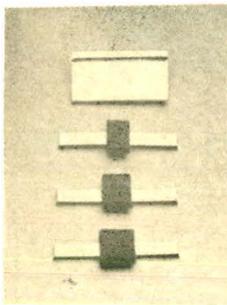
Thomson Digital Image (TDI) will be introducing IPR™ Interactive Photorealistic Rendering, which can make photorealistic rendering changes in seconds, instead of minutes.

New England Digital offered the Synclavier series of digital audio systems, PostPro line of recorders/editors, the PostPro SD (combining sound design and disk recording in one system) and the new PostPro DSP Option.

Other countries also participated in the Broadcast Asia '92 viz UK with exhibits from Dynatec, Queded, DDA, SSL, NEVE, Trident and Zonal; and

USA 3M Alpha Acoustics, Aphex, Apogee, Audio Logic, CRL, Electro-Voice, Grass Valley, Lexicon, Pinnacle, Shure, Studer Gotham and many others.

## Hong Kong company targets India



Nancy Lam and Danny Ho from the marketing team of Benelux visited India in the first week of September. Nancy Lam first realised the potential demand for their products from a complimentary issue of Playback. Taking it up from there Nancy was surprised to do business immediately on arriving in Bombay. Jet Speed Audio has already placed an order for Benelux high quality pressure pads. Delhi, Calcutta and Madras were also on their itinerary.

## Versadyne Survey Discounts DCC

The greatest consensus was on pricing. DCC record/play decks must be widely available for below US \$ 300. This aspect is still not clear.

Only 12 per cent of duplicators thought DCC would be better for the catalogue. And over 50 per cent thought that less than 10 per cent of this catalogue would sell better on DCC. Only 10 per cent were willing to invest US \$ 100,000 maximum, which is not enough to enter the DCC market.

## Yashmin Hashmi's Tapeless directory

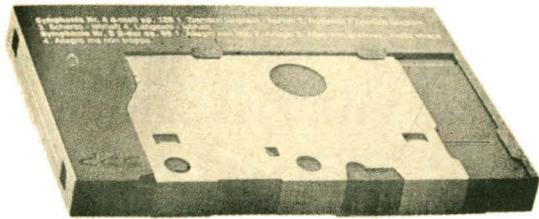
Presently most of the, big names, like Otari, AKG, Studer, AMS, DAR, Digidesign, Akai, are offering disk based tapeless systems. The tapeless directory is a guide book put together by Yashmin and Stella. Their firm Sypha is a publisher. Such a guide is imperative, as unlike with spool taperecorders, minimal investment are required to offer tapeless systems based on PC and Software. In fact there will be hundreds. Yashmin guide book provides knowledgeable inside. Very essential to buy the product. You may write to Sypha 216a Gipsy Road, London SE27 9RB. Tel : 081 761 1042 Fax : 081 761 8279 for a copy of this issue.

Sony's mini disk Vs. DCC

# Battle Royale

The mini disk as well as DCC are to be launched by end '92. Philips has played smart, as the DCC involves many players like the D-O suppliers, the D-O component suppliers, the tape suppliers etc.

Philips has farmed out licences across the world. Electro Sound, Gauss, Lyrec, Tapematic, ATB, Benelux and many more established companies involved in music industry for hardware and materials, all stand to benefit and gain from DCC. They get a new product to manufacture and sell. So hundred per cent they back it. Alternatively, the Sony mini-disk involves mastering equipment which they will supply and the CD



Further, the Sony mini disk is about to debut. These players will be available cheap. The mini disc itself might succeed the 5 inch compact disc worldwide.

Only if we presume that the listener has an emotional or sexual fixation about magnetic tape, only then can we expect that to enjoy digital quality, the listener will buy a DCC cassette. When he can presently enjoy digital quality on compact disc, why should he buy a DCC cassette which requires him to purchase another piece of expensive equipment? Whether this new piece of DCC equipment can play analogue compact cassette has no meaning. The prospective buyers already owns dirt-cheap analogue cassettes.

Or is the DCC aimed solely for piracy. That is, to record compact discs on to cassettes with equal quality? Here too the failure is guaranteed as a blank DCC cassette will be costlier than a CD, or definitely so, a personally recorded one after investments in a recording deck and the trouble to record is taken into consideration.

Other fiascos possible are with respect to tape which is like a video tape. Perfect quality video tape is very expensive and difficult to make.

Then the complicated D-O. As if the single pressure pad in a conventional cassette was not enough of a troublemaker the DCC has a highly complicated pressure pad. All this will make the flawless functioning of the cassette very erratic and to ensure quality very difficult and expensive.

manufacturers will mostly up-grade to press the new mini disk, a 3" disk giving 74 minutes of music. The DCC alternately promises digital quality on tape for the home.

India itself is at a crucial stage with not a single disc plant operating in the country. The future could be anything. But optical media is the future for CDI and Laser discs for movies in which area India is very strong. Plus the optical media has a vast scope and use. India will therefore soon enter the optical disc/Laser/compact disc technology.

## 19-bit digital EQ from Yamaha

The DEQ5 is Yamaha's new rackmount digital equaliser, which can be operated either as a dual channel third-octave type or a 6-band parametric. It can also provide 1.3 seconds of delay. A dynamic range in excess of 100dB is ensured by the use of 19-bit delta-sigma A/D converters, and the output stage employs 20-bit conversion. Analogue inputs and outputs are all on XLRs, electronically balanced, and there are also AES/EBU and Yamaha YY2 digital connections. 40 memories can be used to store user EQ settings. No muting of the signal occurs when a memory is recalled -- instead the DEQ5 changes the EQ curve one frequency band at a time, and program changes are completed in around one second. A timecode reader is incorporated, allowing the DEQ5 to change memories at specific timecode locations.

A 1U expansion unit, the DEQ5E, is also available, which offers the same features of the DEQ5 without the front panel programming and controls -- programming is performed via a master DEQ5.

Also new are the Q1131, a single channel 31-band pro graphic EQ, and the D2040 Digital Channel Divider, a high performance 2-in/8-out digital crossover for tour or permanently installed sound reinforcement applications.

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## NEVE AND AMS bought by Siemens

Siemens audio and video systems group president Hans Haider said yesterday that Siemens subsidiaries Neve and AMS would merge within "three quarters of a year". The change would take effect once the earnout package applying to AMS directors Stuart Nevison and Mark Crabtree reached fruition.

Haider said that he did not know the name of the new company but the brand names Neve and AMS would be retained, along with product names such as AudioFile.

## Music Today discussing with Walt Disney

Music Today is definitely going to enhance its role in the music industry. Deepak Shourie, chief of Music Today was willing to agree the Walt Disney catalogue was available to them but a final agreement was not reached. In India, today as well as in other media Music Today has been advertising for A & R personnels with experience in the international music area.

Peter Maher of Walt Disney based in

Bombay also informed Playback that the business launch of Walt Disney in India will be sometime in January. "HMV has given a very attractive proposal to music. They have planned to create a division for Disney."

The Bombay office will also oversee Walt Disney's operation in Pakistan.

Video is open as yet. Walt Disney has a fabulous video catalogue.

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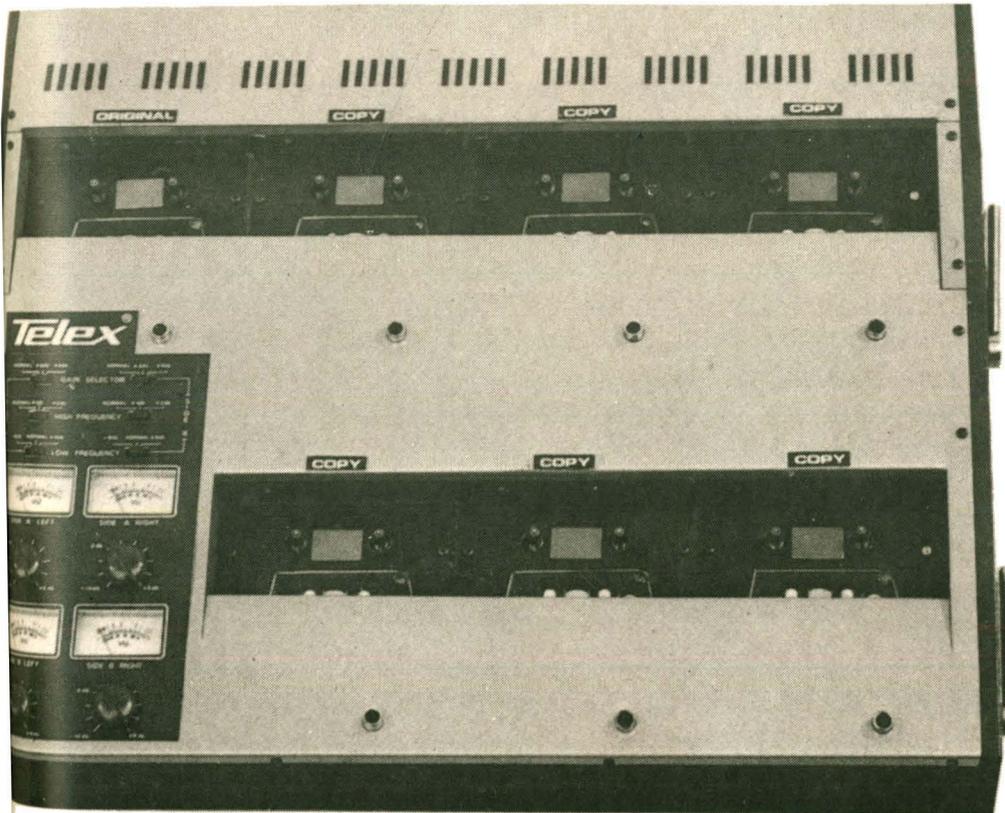
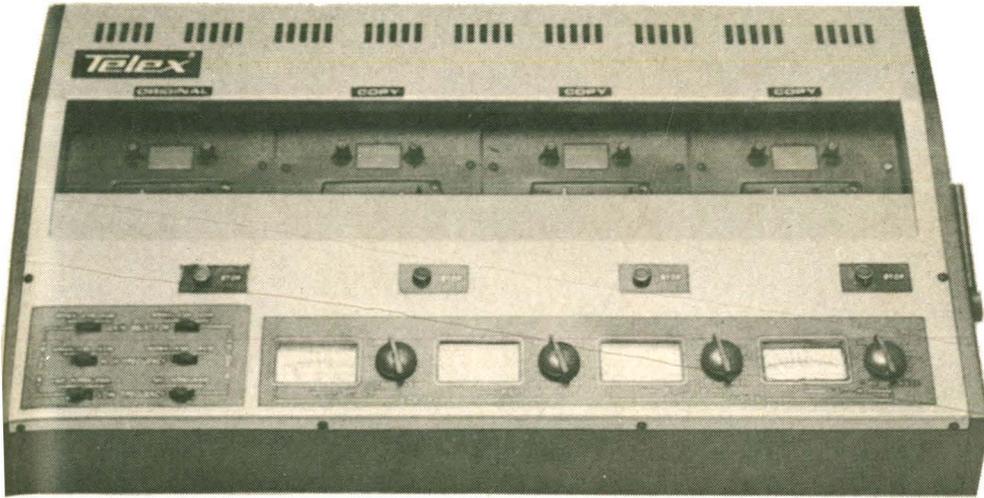
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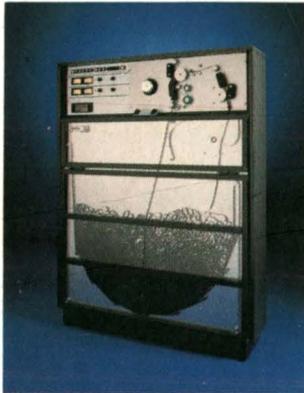
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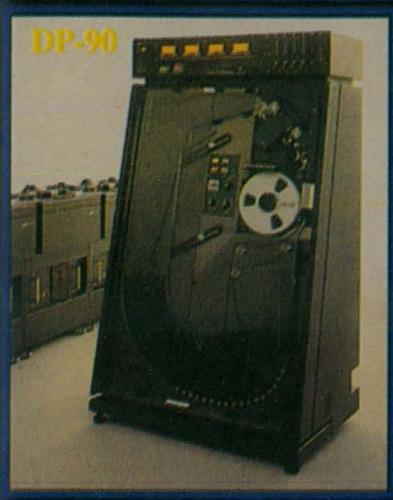
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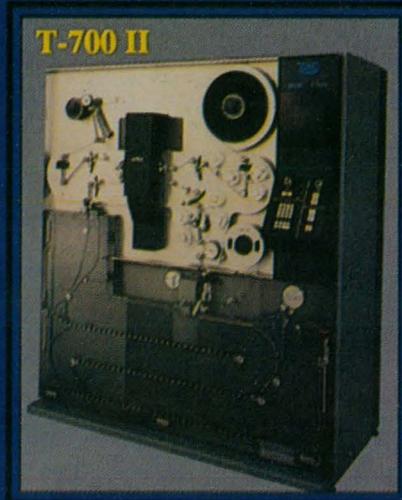
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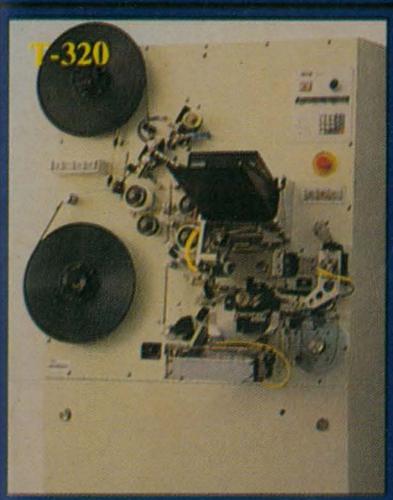
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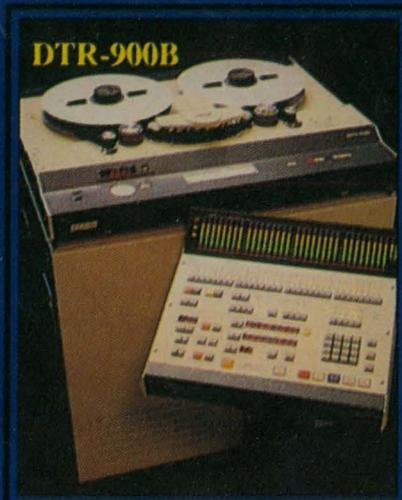
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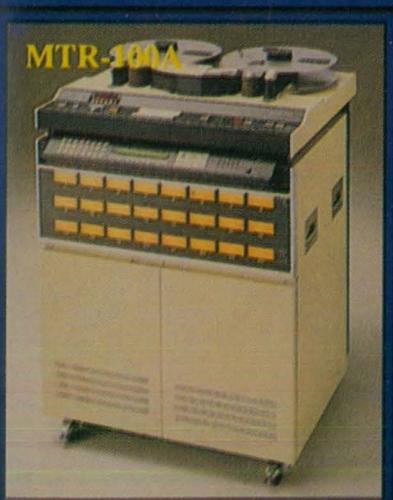
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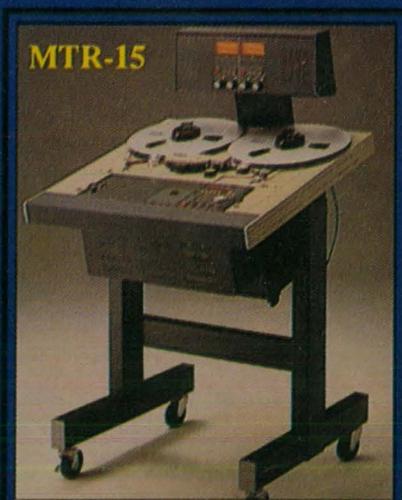
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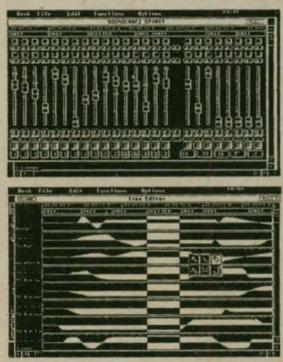
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