

JANUARY 1969

# TAPE

RECORDING MAGAZINE

2<sup>1</sup>/<sub>2</sub>

## **RETURN to MUNICH**

**Routine Maintenance**

**AUDIO  
AND THE TAX MAN**

**TEST BENCH  
MUSIC REVIEWS  
NEW PRODUCTS  
Etc., Etc.**

*Second class postage paid at  
New York Post Office, N.Y.*





TD-PCS 7027  
Sgt. Pepper's Lonely Hearts Club Band - The Beatles



TD-SCX 6193  
Seekers Seen In Green. The Seekers



TD-SW 1675  
Nat King Cole Sings - The George Shearing Quintet Plays



TD-SCX 6267  
The Black And White Minstrel's Sing The Irving Berlin Song Book



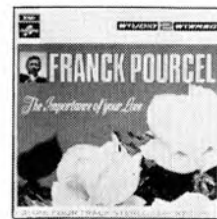
TD-TWO 230  
Blue Acker - Mr. Acker Bilk



TD-TWO 216  
Holiday For Strings - David Rose And His Orchestra



TD-TWO 218  
Hawaiian Nights - Basil Henriques & The Waikiki Islanders



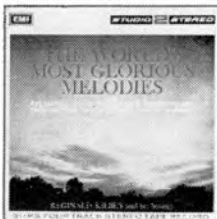
TD-TWO 222  
The Importance of Your Love - Frank Pourcel And His Orchestra



TD-TWO 219  
Magic Fountains - Manuel and The Music Of The Mountains



TD-TWO 180  
Viennese Prom Concert - The Hallé Orchestra



TD-TWO 181  
The World's Most Glorious Melodies - Reginald Kilbey

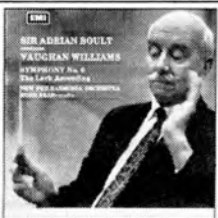


TD-TWO 220  
Legend Of The Glass Mountain - Ron Goodwin

# NOW... FROM **EMI** STEREO <sup>3 3/4</sup> i.p.s. 4 Track Tapes



TD-ASD 2318  
Concerto No. 20 & 23 (Mozart) - Daniel Barenboim



TD-ASD 2329  
Symphony No. 6 (Vaughan Williams) - The New Philharmonia Orchestra



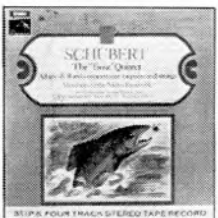
TD-ASD 2361  
Agustin Anievas - Concerto No. 2 (Rachmaninov)



TD-ASD 2331  
Jacqueline Du Pre - Concertos (Haydn & Boccherini)



TD-ASD 2285  
Concerto In D Major, (Beethoven) - Yehudi Menuhin



TD-ASD 2323  
Members Of The Melos Ensemble - "Trout" Quintet (Schubert)



TD-ASD 2272  
The Hallé Orchestra cond. "Finlandia" (Sibelius) etc.



TD-ASD 2301  
The Planets (Holst) - The New Philharmonia Orchestra  
Sir Adrian Boult cond.


E.M.I. Records (The Gramophone Co. Ltd.) E.M.I. House, 20 Manchester Square, London W1A 1ES



# The missing Link that puts stereo tape into your Hi-Fi system!

This superb tape unit completes *your* system. You already have a power amplifier and a pair of speakers! Now add the Akai 3000D. The Akai 3000D has: ● three heads — erase, record and playback ● frequency response 30 to 22,000 Hz  $\pm 3$  db at  $7\frac{1}{2}$  ips. ● Signal to noise ratio: better than 50 db. ● first class tape transport. ● two speeds  $3\frac{3}{4}$  and  $7\frac{1}{2}$  ips. ● Headphone monitoring (or listening) when the unit is used away from your system. Everything you've ever wanted—ever needed in a stereo tape unit .

**AKAI**

 **PULLIN**  
PHOTOGRAPHIC

(A Company within the Rank Organisation)

To: PULLIN PHOTOGRAPHIC DEPT. TRM 4  
11 Aintree Road, Perivale, Middx.

Please send me details of the 3000D.

NAME .....

ADDRESS .....

# now... **fabulous** FREE OFFERS

with superb

## AKAI

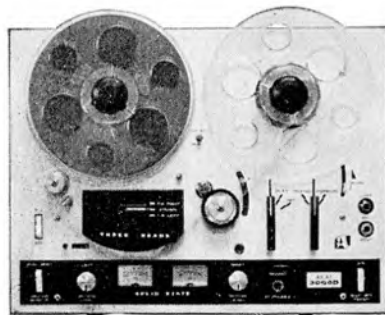
Tape Recorders  
from  
**R.E.W**

All available on Interest-Free Terms, one third cash price deposit, balance over 12 months.



**FREE!** SPECIAL OFFER with each machine —FREE ACCESSORY KIT (value £12 18s.) PLUS FREE pair of Stereo Headphones, value £6 10s.0d.!

**AKAI 1710W Stereo Tape Recorder (left).** The Shield Type Head for High S/N Ratio. 4-track stereo/monaural recording and playback. 3-speeds 1½, 3¾ and 7½ ips (15 ips optional). Automatic shut off. Pause lever. Tape cleaner. Tape shifter in fast forward/rewind operation. 4 hours maximum stereo recording capacity with a 1,200 feet tape. DIN jack. Stereo headphone jack. 3-digit index counter with reset button VU meters. Finely oil-finished wooden cabinet £109.



**FREE!**

SPECIAL OFFER with every deck FREE pair of Stereo Headphones listed at £6 10s. PLUS FREE COVER—PLUS TWO FREE MICRO-PHONES listed at 6 gns.!

**AKAI 3000D 4-Track Stereo Tape Deck (above)** High Quality Three Heads System. 4-track stereo/monaural recording and playback. For playback, the 3000D requires external power amplifier and speakers. 2-speeds (3¾ and 7½ ips). Three heads (Erase, recording and playback heads). All silicon transistor pre-amplifier. Automatic shut off. Pause lever. Tape cleaner. DIN jack. Stereo headphone jack. 3-digit index counter with reset button. VU meters. Beautifully grained wooden cabinet. £99 10s.

Also the following superb Akai machines at opportunity prices—

**X355 CROSSFIELD HEAD RECORDER**, our price £270 (List £331). Few left only.

**1800 8 TRACK CARTRIDGE/REEL TO REEL STEREO RECORDER** £158.

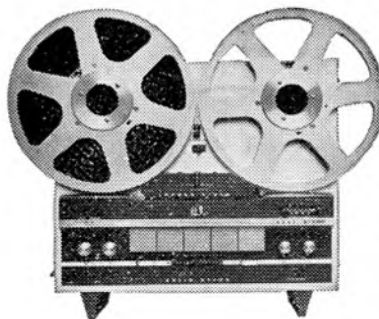
**X1800 S.D. CROSS FIELD HEAD 8 TRACK CARTRIDGE/REEL TO REEL STEREO RECORDER** £201.

**X150D CROSSFIELD HEAD HI FI TAPE UNIT**, our price £106 (List £130).

**XV PORTABLE AC/DC CROSSFIELD HEAD STEREO RECORDER** £180.

**FREE!** SENSATIONAL OFFER to every purchaser of the M9, a FREE pair of Wharfedale Super Lynton Speakers currently valued at no less than £41 4s.0d.!

**AKAI M9 High Fidelity Stereo Tape Recorder (right)** Crossfield Head. All Silicon Transistor Amplifier. 4-track stereo/monaural recording and playback. 3 speeds (1½, 3¾ and 7½ ips) plus 15 ips with 15 ips adaptor kit. Hysteresis synchronous 2-speed motor. Wide Crossfield frequency response. All silicon transistor amplifier. Sound on sound. Automatic shut off. Automatic stop. Recording mode switch. Bass switch. VU meters. Finely oil-finished wooden cabinet or vinyl leather wooden cabinet. £195.



**AKAI X-300—(List price £263 18 3.)  
OUR PRICE ONLY 179 gns.**

**AKAI X-300.** 10½" Reel Studio Type Stereo Tape Recorder (left) (No Belts . . . Direct Driven Capstan). Crossfield Head. Solid State Amplifier. 4-track stereo/monaural recording and playback. 2 speeds 3¾, 7½ (and 15 ips optional). 4 heads (erase, recording, playback/monitor plus bias heads). 3 outer rotor motors (Hysteresis synchronous 2-speed motor for direct driven capstan, two torque motors for fast forward and rewind). 50 watts solid state amplifier. Sound over sound Automatic stop, Automatic shut off. Specially 90 kc Biased for recording of FM multiplex.

**rew R·E·W (EARLSFIELD) LTD. ★ LEADERS IN MAIL ORDER HI-FI**

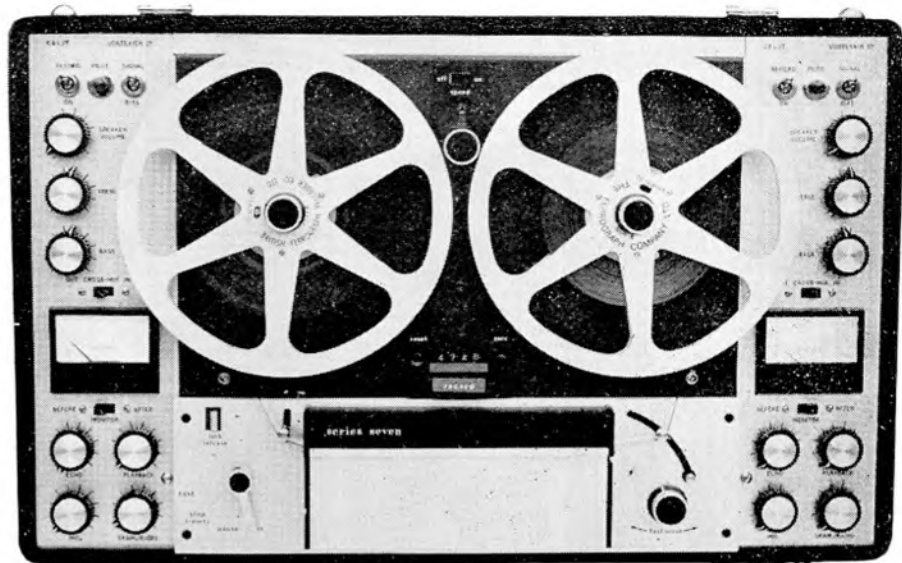
● HEADQUARTER SHOWROOMS AND MAIL ORDER:

DEPT. TRM, 266-8 UPPER TOOTING ROAD, LONDON, S.W.17 Tel: 01-672 4471/2 & 9175

● WEST END SHOWROOMS: 146 CHARING CROSS ROAD, LONDON, W.C.2. Tel.: 01-836 3365 (opposite Astoria Cinema)

# VORTEXION

The CBL/7T solid state Tape Recorder uses 8 low noise Field Effects Transistors on its twin channel Mic. P.U. and Playback inputs to give low intermodulation distortion, and the 10 watts sine wave 15 watt speech and music amplifiers each have less than 0.05% harmonic distortion and less than 0.1% intermodulation distortion at 10 watts output. "Before and After" monitoring on phones and by internal or external speakers is catered for, and separate power amplifier volume controls allow the speakers to be independently controlled from the headphones. 30/50 ohms balanced line Microphone and P.U. inputs can be mixed with the other channel via a crossmix and an echo control.



All the facilities of the valve model C.B.L. are provided plus a few extras. . . . The series 7 deck has variable speed wind in either direction, solenoid operation, provision for an external switch for remote run or voice operated accessory, and still lower wow and flutter figures. Mono versions also available.

Speeds  $1\frac{1}{8}/3\frac{3}{4}/7\frac{1}{2}$  i.p.s. or  $3\frac{3}{4}/7\frac{1}{2}/15$  i.p.s.

Weight 52 lb.

Dimensions  $13\frac{1}{2} \times 22 \times 9\frac{1}{4}$ "

**ELECTRONIC MIXERS.** Various types of mixers available. 3-channel with accuracy within 1 db Peak Programme Meter. 4-6-8-10 and 12-way mixers. Twin 2-3-4 and 5 channel stereo. Tropicalised controls. Built-in screened supplies. Balanced line mic. input. Outputs: 0.5v at 20 K or alternative 1 m W at 600 ohms, balanced, unbalanced or floating.

**200 WATT AMPLIFIER.** Can deliver its full audio power at any frequency in the range of 30 c/s—20 Kc/s  $\pm 1$  db. Less than 0.2% distortion at 1 Kc/s. Can be used to drive mechanical devices for which power is over 120 watt on continuous sine wave. Input 1 m W 600 ohms. Output 100-120 v or 200-240 v. Additional matching transformers for other impedances are available.

**30/50 WATT AMPLIFIER.** With 4 mixed inputs, and bass and treble tone controls. Can deliver 50 watts of speech and music or over 30 watts on continuous sine wave. Main amplifier has a response of 30 c/s—20 Kc/s  $\pm 1$ db. 0.15% distortion. Outputs 4, 7.5, 15 ohms and 100 volt line. Models are available with two, three or four mixed inputs for low impedance balanced line microphones, pick-up or guitar.

**CP50 AMPLIFIER.** An all silicon transistor 50 watt amplifier for mains and 12 volt battery operation, charging its own battery and automatically going to battery if mains fail. Protected inputs, and overload and short circuit protected outputs for 8 ohms—15 ohms and 100 volt line. Bass and treble controls fitted. Models available with 1 gram and 2 low mic. inputs. 1 gram and 3 low mic. inputs or 4 low mic. inputs.

**100 WATT ALL SILICON AMPLIFIER.** A high quality amplifier with 8 ohms—15 ohms and 100 volt line output for A.C. Mains. Protection is given for short and open circuit output over driving and over temperature. Input 0.4 v on 100K ohms.

**20/30 WATT MIXER AMPLIFIER.** High fidelity all silicon model with F.E.T. input stages to reduce intermodulation distortion to a fraction of normal transistor input circuits. The response is level 20 to 20,000 cps within 2 db and over 30 times damping factor. At 20 watts output there is less than 0.2% intermodulation even over the microphone stage at full gain with the treble and bass controls set level. Standard model 1-low mic. balanced input and Hi Z gram.

**VORTEXION LIMITED, 257-263 The Broadway, Wimbledon, London, S.W.19**

Telephone: 01-542 2814 & 01-542 6242/3/4

Telegrams: "Vortexion London S.W.19"

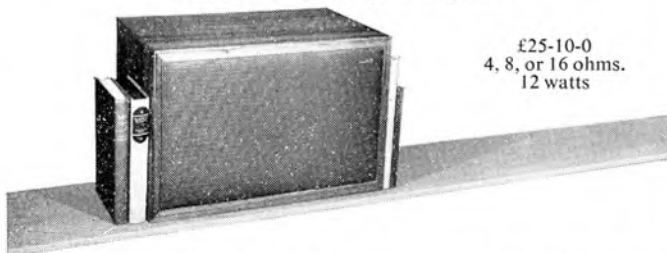
*Why is Juliet  
left on  
the shelf?*



She's good looking, a lovely speaker, wonderful company, petite and beautifully proportioned . . . but with vital statistics of 16"-10"-9" she obviously is intended to spend her life on the shelf.

Born to blush almost unseen, but certainly not unheard, for Juliet is another of the remarkable Jordan-Watts loudspeakers that have added so much to the pleasure of High Fidelity listening —and subtracted so much from the size of loudspeaker enclosures.

Judged by *any* standard, the sound quality is superb.



£25-10-0  
4, 8, or 16 ohms.  
12 watts

Manufactured by:  
JORDAN WATTS LTD.,  
Benlow Works,  
Silverdale Road,  
Hayes Middlesex.

Distributors:  
BOOSEY & HAWKES  
(SALES) LTD.,  
Deansbrook Road,  
Edgware, Middlesex.

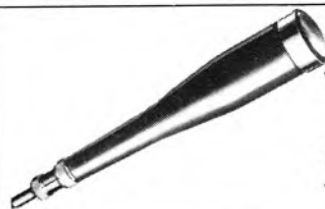
World Exports:  
K. H. WILLIMAN  
& CO. LTD.,  
Blackford House,  
Sutton, Surrey.

**JORDAN WATTS**

*The voice of high fidelity*

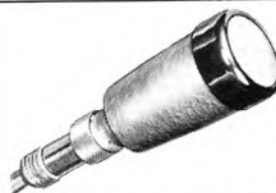
# Microphones

for every purpose



**The DP4**

Designed for general use  
—P.A., tape recording etc.



**The DP6**

Small in size, large in performance. As a lavalier type and for panel mounting on control units etc.



**The GC/1 Cardioid**

For stage and church work, P.A. use, lecture halls etc., where acoustic feedback is a serious problem.



**The GR/1 and GR/2 Ribbon**

Ideal for studio and similar uses, when a high standard of fidelity is essential. Easily replaceable ribbon assembly.

## Other models and a full range of stands, reflectors, windshields and accessories available

All microphones are manufactured in a special section of our works, under strictly controlled conditions with stringent test and inspection at every stage.

Each and every microphone is individually tested both aurally and on Bruel & Kjoer visual and graphic recording test equipment for conformity to a prescribed performance.

**Gramplan** SOUND EQUIPMENT

*Integrity that you hear*

Send for leaflet giving full details

**GRAMPIAN REPRODUCERS LTD.,**

Hanworth Trading Estate, Feltham, Middlesex. 01-894-9141

(M18)

JACW/X/18

## SAVE ON SANYO!



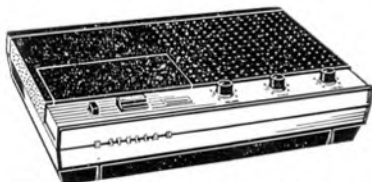
MODEL MR-929  
ALL TRANSISTOR  
STEREO/MONO  
TAPE RECORDER

List price OUR **79** GNS. Carr. and Ins. 25/-  
£95.10.0 PRICE

A new tape recorder that offers unlimited versatility  
● Full frequency 4-track stereo and mono recording and playback ● Frequency response 20-19,000 Hz at 7½ i.p.s. ● Superb Sound with Sound system ● Rich undistorted sound from twin detachable speakers ● Takes 7" reels ● 7½ i.p.s. and 3¼" i.p.s. ● 2 V.U. meters. Separate tone and volume controls for each channel. Complete with two high quality dynamic microphones, reel of tape, empty spool, two recording leads, splicing tape and two reel caps.

**LIMITED NUMBER ONLY**

## SAVE ON STELLA!



STELLA CASSETTE RECORDER MODEL ST. 9112  
AC/DC MAINS AND BATTERY PORTABLE

LIST PRICE OUR **29½** GNS. P. & P.  
£42.8.8 PRICE

Features include Automatic record level volume control. Separate tone and volume controls with large upward facing loudspeaker giving high quality reproduction. Outlet socket for extension loudspeaker and connection to Hi-Fi amplifier. Ideal for home or outdoor use. Operates from AC 200/240v. or six U11 batteries. Complete with dynamic microphone, remote control switch, demonstration cassette, cassette holder rack, recording lead, instruction book and makers guarantee.



THE LARGEST SHOWROOMS IN GREAT BRITAIN  
DEVOTED EXCLUSIVELY TO TAPE RECORDERS &  
TAPE RECORDING EQUIPMENT

## SAVE ON A.K.G.!

AKG DYNAMIC  
STEREO  
HEADPHONES  
MODEL K50

Enjoy the thrill of stereo with these superb headphones. Elegant and lightweight with crystal clear reproduction. Frequency response 20-20,000 Hz. Available in either 75 ohm or 400 ohm impedance. Brand New. List Price £8.5.0 OUR PRICE £5.19.6. P. & P. 7/6. (Ear muffs optional extra 9/- pair post free with headphones.)



UP TO 25% OFF

AKG DYNAMIC STEREO  
MICROPHONE  
MODEL D66

Ideal for amateur stereo recording. Unique construction, can be used as single stereo or mono mike or taken apart for wide spacious stereo effect. Two complete cardioid systems complete with two attractive tripod stands and leads fitted with DIN plugs. Ideal for use with a large range of stereo recorders. Brand New. List price £12.15.0 OUR PRICE £9.19.6. P. & P. 10/-



## MAIL ORDER DEPARTMENT!

FOR EXPRESS SERVICE SEND YOUR ORDERS TO

THE TAPE RECORDER CENTRE, LIMITED  
MAIL ORDER DEPT. TRM/JA  
MAGNATAPE HOUSE,  
191/193, PLASHET ROAD, UPTON PARK,  
LONDON, E.13  
GIRO ACCOUNT NO. 58-271-0006

### LOW-PRICE 'PLUS-3' MAINS UNIT FOR TRANSISTOR RECORDERS.

Provides three separate switched output voltages 6v, 7½v, and 9v. DC. Attractive case with indicator light mains lead, output socket, plug and lead. Size 4¼ x 3¼ x 2½in. \$7/6 P. & P. 2/6  
Extra lead with DIN plug for Cassette Recorders 7/6.

### MAINS UNIT FOR FI-CORD 202A TAPE RECORDER

Enables this popular battery recorder to be operated from AC 230/240v. Wonderful value £4.15.0 P. & P. 2/6.

### FANTASTIC VALUE!

#### PHILIPS TYPE C60-C90 CASSETTES

Supplied in attractive library box. For use with all makes of cassette recorders.

C60—60 min. playing time OUR PRICE 9/11 each  
C90—90 mins. playing time OUR PRICE 14/6 each  
Post and Packing 2/6.

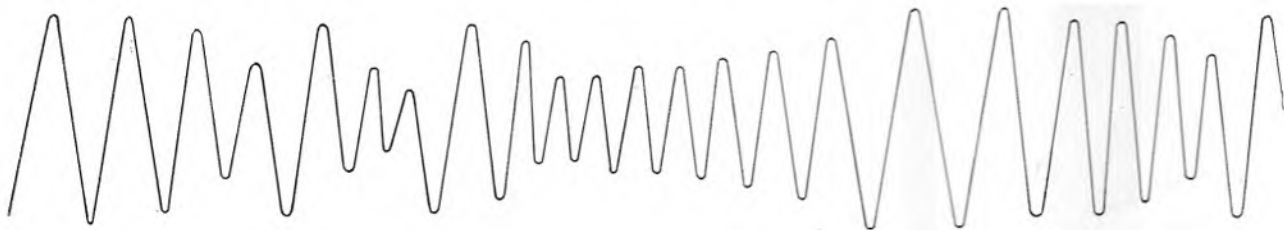
# THE TAPE RECORDER CENTRE



82 HIGH HOLBORN, LONDON, W.C.1. TELEPHONE: CHAncery 7401/8354

82 HIGH HOLBORN, W.C.1. Tel. 01-242 7401 • 242/4 PENTONVILLE RD., N.1. Tel. 01-837 8200 • 36 LEWISHAM HIGH ST., S.E.13. Tel. 01-852 2399  
228 BISHOPSGATE, E.C.2. Tel. 01-247 2609 • 360 KILBURN HIGH RD., N.W.4. Tel. 01-624 1656 • 87/100 ILFORD LANE, ILFORD. Tel. 01-478 2291

# HOW TO CATCH A SOUND WAVE



Our "Series Four" microphones will catch anything without damage or distortion. No need to use transformers, each microphone is multi-impedance and will work into 25 Ohms, 200 Ohms, 600 Ohms and 50K Ohms. Imagine how useful that is when you change recorders.

These four microphones have been produced to extract the last drop of performance from your recorder or P.A. System. Combining Lustraphone dependability with superb performance and exciting styling. These instruments will give you pride of ownership for years to come.

4.20 Dynamic Omidirectional 4.30 Dynamic Cardioid  
4.40 Studio Ribbon 4.50 Professional Miniature Ribbon  
See the "Series Four" Microphones at leading Hi-Fi dealers – or write direct to LUSTRAPHONE LTD for free illustrated literature giving full description and specification. A comprehensive "Selection and Instruction" pamphlet is also available free on request.



## Lustraphone

THE FOREMOST NAME IN MICROPHONES

Lustraphone Limited,  
Regents Park Road, London N.W.1 01-722 8844

## FRANCIS OF STREATHAM

GOOD SELECTION OF USED, GUARANTEED MODELS

### MAINS RECORDERS

**AMPEX 753** professional Stereo Deck and Pre-amp. Transistorised. 3 speed. 91 4 Track. (Mics. extra.) a special from Francis. gns.

Ampex 800 Series Stereo  
Ampex 1100 Stereo  
Ampex 2100 Stereo  
\*Akai 1800 dual purpose 8-track stereo cartridge and reel-to-reel Recorder  
\*Akai 1710W Stereo  
\*Akai 3000D Stereo  
\*Akai 910 Mono  
\*Akai M9 Stereo  
\*Akai 355 Stereo  
\*Brenell Mk.5/M Series III M.  
\*Brenell Mk.5 Series III Mono  
Ferguson 3226 Mono  
Ferguson 3224 Mono  
Ferguson 3232 Stereo 4 Tr.  
\*Ferroglyph Mono 713  
\*Ferroglyph Stereo 702/4  
\*Ferroglyph Stereo 722/4  
Fidelity Studio 2 or 4 Tr. M.  
Fidelity Braemar 2/4 Tr. M.  
\*Grundig TK245DL S/M pre-amp  
\*Grundig TK340DL Stereo  
Grundig TK140DL 4 Tr. M 3 1/2  
Grundig TK120DL 2 Tr. M 3 1/2  
Grundig TK145DL Auto 4 Tr. M  
Philips Cassette 3312 Stereo  
Philips 3575 St. 3 sp. 4 Track  
Philips 4307 4 Tr. Single Sp. M.  
Philips 4404 4 Tr. 2 sp. Mono  
Philips 4407 4 Tr. 3 sp. Stereo  
\*Philips 4408 Pro. 3 sp. 4 tr. St.

\*Revox 77 Stereo Transistor  
Sanyo 929 4 Tr. 2 sp. St.  
\*Sanyo 999 3 sp. 4 Tr. St. (Speakers extra)  
\*Sanyo 800 3 sp. 4 Tr. St. PA Deck  
\*Sony 355 Deck/Stereo pre-amp  
\*Sony 255 Deck/Stereo pre-amp  
\*Sony TC230W  
\*Tandberg Ser. 6X St. PA & DK  
\*Tandberg 15 3 sp. 2/4 T/Mono  
\*Tandberg Ser. 12 St. 3 sp. 2/4 T  
\*Tandberg 915 Mono 3 sp. 2/4 T  
Telefunken 200 Mono  
\*Telefunken 204 St. 4 Tr. 2 sp.  
Telefunken 203 Ser. 50 M2/4 Tr.  
Telefunken 201 Mono 4 Tr.  
Truvox 50 Series M 3 sp.  
Truvox R102 or R104 Mono  
\*Truvox PD102 or PD104 St.  
Ultra 6212 Mono 4 Tr. 3 sp.  
\*Vortexion WVA/7 3 sp. 2 Tr. M  
\*Vortexion WVB73 3 sp. 2 Tr. M  
\*Vortexion CBL 7 sp. 2 Tr. St.  
\*Wyndor Vanguard 3 sp 4 Tr. M

### BATTERY MODELS

Philips EL3302 Cassette  
Sharp 504 Batt/Mains 2 Tr. 2 sp. M.  
Stella 463 Cassette  
Sharp RD704 2 sp. 2 Tr. M.  
Sharp 505 Batt/Mains M.  
National 4 Tr. 2 sp. Mono B/M  
National Cassette Batt/Mains  
Telefunken 300 2 Tr. Mono  
Telefunken 302 4 Tr. 2 sp. M.  
Uher 4000L 4 Tr. 2 sp. Mono  
\*Uher 4200/4400 2 sp. St.  
\*Microphones extra

## FOR A FAIR DEAL AND HONEST SERVICE

- ★ Minimum Deposit and no Interest or Service Charges on H.P. up to 18 months.
- ★ Free Service during Guarantee Period.
- ★ Generous Part Exchange Terms.

### SPECIAL TAPE OFFER

Brand new Shamrock Tape. Top quality. Guaranteed.  
2,400' 7" spool Polyester ... 25/-  
1,800' 7" ... 21/-  
1,200' 7" or 5 1/2" or 5" ... 15/-  
900' 5" ... 12/6  
600' 5" ... 10/-  
P/P 1/6 per reel. Orders for £3 or more sent post free.

### ● MICROPHONES, ETC.

Hammond Condenser M100; Gram- pian Reflector; Gramplan DP/4 Dynamic; Reslo Ribbon; AKG D.19C; Eagle Mixer; Hammond 5-way Mixer; Philips Pre-amp

Microphones by ACOS, TELEFUNKEN, BEYER, SENNHEISER, FILM INDUSTRIES, also STANDS, BOOMS, etc.

Headphones by A.K.G., AMPEX, AKAI, NIKKO, PHILIPS, SANSUI.

### MAINS POWER PACKS

Philips, Stella  
Telefunken 300 with cell  
Uher 4000, with cell  
PRE-RECORDED TAPES & CASSETTES by Columbia, H.M.V. and E.M.I. Bib and E.M.I. splicers. Matching transformers. Defluxers, etc., etc.

### ● Musicassettes

### HI-FI DEPT.

● **AMPLIFIERS**  
Quad . Rogers . Arena . Philips  
Goodman . Nikko . Leak  
Armstrong . Tripletone  
Tandberg . Sansui . Sanyo  
ARO English . Audio Linear

● **TUNERS**  
Quad . Rogers . Leak . Arm-  
strong . Tripletone . Arena  
Philips . Nikko . Goodman  
Huldra

● **LOUDSPEAKERS**  
Quad . Rogers . Kef . Wharf-  
dale . Goodman . Tannoy  
Lowther . Leak . Celestion  
Tandberg . Arena

● **MOTORS, PICKUPS**  
Garrard incl. . Sonotone  
SP.25 401, etc. . SME  
Goldring . BSR  
Connoisseur . Pickering  
Thorens . Audio Tec  
Shure . Neat  
Empire . Acos

All types of Diamond and Sapphire styli, stereo and mono. Microlifts, Garrard, Goldring and Acos Pressure Gauges. Disc Preener, Acos Dust Bug. Cabinets by Clearview

169-173 STREATHAM HIGH ROAD, LONDON, S.W.16

Between St. Leonard's Church and Streatham Station

01-769 0466: 01-769 0192

Please note this is our only address ● Free parking Prentis Road, 2 mins. away

OPEN ALL DAY SATURDAY—EARLY CLOSING WEDNESDAY



# Sanyo puts you in the world class



Introducing: new handsome MR 801.  
tape deck/recorder.

- 4 tracks ● 3 speeds
- Sound with sound

<b>Tape speeds</b>	192 min at 3- $\frac{3}{4}$ ips (stereo 7" 35 $\mu$ tape)	3- $\frac{3}{4}$ ips 30-13,000 c/s
7- $\frac{1}{2}$ ips (19 cm/sec)	384 min at 1- $\frac{7}{8}$ ips (stereo 7" 35 $\mu$ tape)	1- $\frac{7}{8}$ ips 30-8,000 c/s
3-ips (9.5 cm/sec)		
1- $\frac{1}{2}$ ips (4.8 cm/sec)		
<b>Wow and flutter</b>	<b>Input impedance</b>	<b>Weight</b>
7- $\frac{1}{2}$ ips: 0.15% R.M.S.	Microphone 50K ohm	18 lbs. (8.6 kg)
3-ips: 0.20% R.M.S.	Line in 200K ohm	<b>Accessories</b>
1- $\frac{1}{2}$ ips: 0.30% R.M.S.	<b>Output impedance</b>	Empty reel 7"
<b>Recording time</b>	Line out 2K ohm	Patch cord x 2
96 min at 7- $\frac{1}{2}$ ips	Headphone 8 ohm or 10K ohm	Reel stopper x 2
(stereo 7" 35 $\mu$ tape)	<b>Frequency response</b>	Splicing tape
	7- $\frac{1}{2}$ ips 20-20,000 c/s	Dust cover
	( $\pm$ 3db 30-15,000 c/s)	<b>Recommended retail price £78</b>

# SANYO

RELIABILITY IS BUILT IN

See Sanyo at any authorised dealer. For further information write to: J. W. Cowley, Sales Manager, Electronic Equipment Division, Marubeni-Iida Co. Ltd., 164 Clapham Park Road, London, S.W.4.

**Philips Pro'12  
lets you hear  
what you've  
been missing**



The range and presence of a church organ or the swirl of a brush on a drum, are virtually impossible to reproduce on an ordinary Hi-Fi tape recorder. With Philips Pro'12 it's easy of course. But then, the Pro'12 is far from ordinary. It's a professional recorder, with all the operational facilities required for studio work, yet it fits into your room (and your budget).

It features: • Twin-track stereo, twin-track mono and dual-track mono operation on 6.25 mm (1/4 in) wide tape (standard version). • Extra quarter-track stereo (special version). • Tape speeds of 9.5 and 19 cm/s (3 3/4 and 7 1/2 in/s). • Unique "constant load" tape transport. • Microphone, diode and line inputs for each channel. • Facilities for mixing input signals of both channels. • Multiplay, sound on sound and echo effect. • Fade in and out and dubbing facilities. • Cueing and pause keys. • Line and monitoring outputs for each channel. • Monitoring with stereo headset or built-in loudspeaker, before or after tape. • VU-control of either channel. • End-of-tape switch. • Remote control connection. • Horizontal or vertical operation.



To learn more about this outstanding new tape recorder write for our 12 page Pro'12 brochure.

*Electro-acoustics Division of Philips Industries,  
N.V. Philips' Gloeilampenfabrieken,  
Eindhoven, the Netherlands*

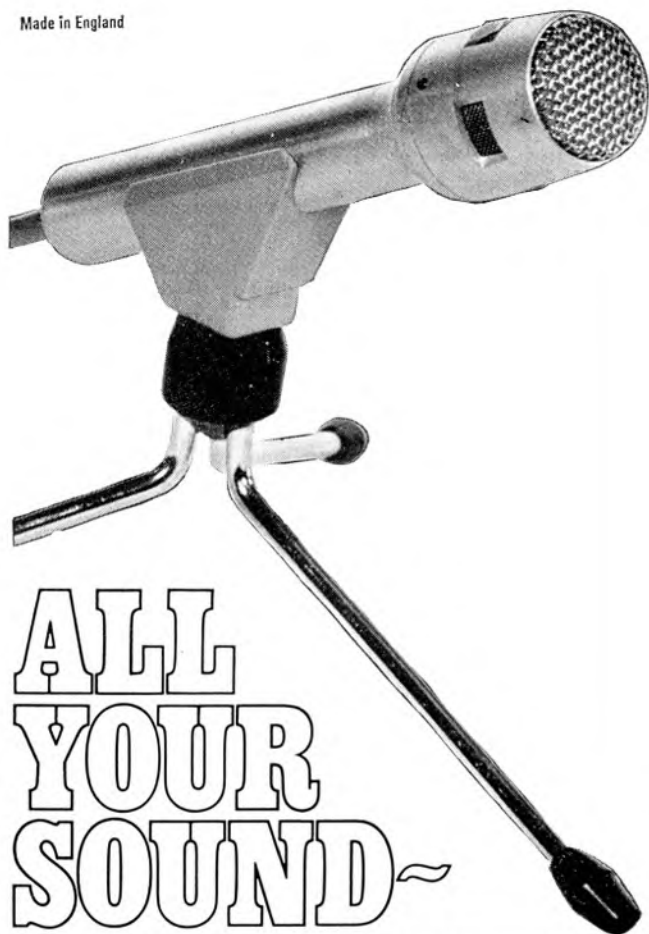


AND

*Philips Electrical Limited, Electro Acoustics Division,  
Century House, Shaftesbury Avenue,  
London, W.C.2, England.*

**PHILIPS**

Made in England



**ALL  
YOUR  
SOUND~**

**With the NEW  
LM 300 from  
London  
Microphone**

Latest release in the range of LM Microphones is the most sophisticated design yet. The robust, metal construction with its good back-to-front discrimination is ideal for speech reinforcement systems and recordings.

Recommended retail price from £12 including built-in cable and quick release stand adaptor, depending on impedances. For details of the LM300 and other superb microphones in the LM range, please ring or write to:

**London Microphone Company Ltd**  
182-4 Campden Hill Road, London W.8. Telephone:  
01-727 0711 (24 hour answering service) Telex: 23894

**TAPE**  
RECORDING  
MAGAZINE

Incorporating TAPE RECORDING & HI-FI MAGAZINE  
and STEREO SOUND MAGAZINE

Vol. 13 No. 1 January 1969

IN THIS ISSUE

Tape trends and tape talk	12
Douglas Brown	
<b>THE TAX MAN COMETH—AGAIN</b>	13
<i>The Editor</i>	
Home Studio—	
<b>ROUTINE MAINTENANCE</b>	15
John Borwick	
<b>RETURN TO MUNICH</b>	18
F. C. Judd	
<b>Cross Talk</b>	20
by Audios	
<b>Test Bench—LUXOR MP613</b>	22
<b>NATURE NOTES</b>	25
Richard Margoschis	
<b>Music on Tape—7½ ips Stereo</b>	26
<b>3¾ ips Stereo</b>	26
<b>Musicassettes</b>	27
<b>New Products</b>	28
<b>Accessory Review—BIB SPLICER</b>	30
<b>Advertisement Inquiries Service</b>	33

**FRONT COVER:** On his way to Munich our author, Fred Judd, stops to record the sound of a "Tourist Guide" close by the Graslei and the ancient harbour of Ghent. His machine is the Uher 4000 Report L to which is coupled a Sennheiser MD421 microphone. In his article on page 18 of this issue, "Return to Munich," Mr. Judd describes a visit to the Uher factory as well as his experience of two years' use of this versatile tape recorder.

"TAPE Recording Magazine" is published on the third Wednesday in the month, by Print and Press Services Ltd., from Prestige House, 14, 18 Holborn, London, E.C.1.

"TAPE Recording Magazine" is available by a postal subscription of 25s. per annum (U.S.A. and Australia \$3.75) including postage, or it can be obtained at newsagents, bookstalls and radio and music dealers. In the event of difficulty, write to the Publishers at Prestige House, 14, 18, Holborn, London, E.C.1.

Back numbers, if still in print, are available, at 2s. 6d. per copy.

Address all communications

**PRESTIGE HOUSE,  
14, 18 HOLBORN, LONDON, E.C.1**

**EDITORIAL**

01-242 4742

**ADVERTISING**

01-242 4851

Publisher,  
**R. DOUGLAS BROWN**

Editor,  
**DENYS G. KILLICK**

Advertisement Manager, **VIVIANNE GOODING**

# Tape trends and tape talk

By Douglas Brown

WHEN the International and the British recording contests were first established they had special classes for "technical experiment" tapes. The organisers presumably hoped that, at the best, they would "discover" amateur composers able to produce worthwhile electronic music; at the worst, they would encourage recording enthusiasts to experiment to discover all the potentialities of the medium.

The essential characteristic of most tapes submitted over the years in the technical experiment class was that they resulted from elaborate editing processes, from variations in recording speeds, sometimes from such gimmickry as re-recording tapes played backwards.

Some of the results were worth-while, many were interesting. Speaking for myself, I found the overall achievement disappointing.

Now the organisers of the international contest have decided to abandon the "technical experiment" class. The argument is that the techniques used by those who entered in this class are not only now commonplace, but so essential to creative recording that they should feature in most tapes, for whatever category submitted. Although the "technical experiment" class disappears, the International will still award a special prize to the tape (in whatever class entered) which displays greatest skill in using the available techniques of recording.

Whether the organisers of the British Contest will choose to follow the example of the International Committee remains to be seen.

\* \* \*

OTHER CHANGES have been made in the International Contest. It was decided, for example, that the old music category presented problems for the jury. How could they mark entries for "idea" and "production"—which are two of the factors entering into judgment of all tapes in a contest? So, in future International Contests, the music class will be restricted to recordings of new compositions, or to recordings which in some way, are of a remarkable, unique or rare quality.

In future the International Contest will have seven classes, as follow: A. Radio plays and sketches of not more than ten minutes; B. Reportage, interviews, etc., necessarily involving spoken narrative (eight minutes); C. Music, with the qualification set out above (five minutes); D. "Sound hunting"—a category which will replace the former "actuality" class and will cater for two-minute recordings of "sounds from nature"—animals, voices, and so on; E. "Tape correspondence"—a new class to cater for a growing

hobby—competitors will have to submit extracts not exceeding eight minutes from a tape letter and the extracts must include at least one other person besides the competitor himself; F. Schools section (ten minutes)—as before; G. "Special subject" to be announced—as before.

\* \* \*

THERE WERE many interesting discussions in the course of working out the new rules. Should there be special provision in future for recordings made exclusively with cassette machines? The answer: No—but obviously the new "Sound hunting" class is the natural outlet for enthusiasts who have only this type of equipment. Is it sensible any longer to divide the contest into monophonic and stereophonic parts, in the sense of having a Grand Prix Mono and a Grand Prix Stereo? The answer: Yes—for the present.

Is there now sufficient interest to justify a new section of the contest linking sound recording with colour slide projection? Several countries have experimented with such sections in their own national contests; results have varied. The Belgians, I am told, have developed remarkable skill in this field and have produced really exciting sound-and-picture programmes, which are in no sense substitutes for sound films, but an entirely different art form.

I have seen a few interesting attempts by club members in this country, but the idea has not caught on very quickly. If you do want to try your hand at it, get details of the South Devon Tape Recording Club's Tape/Slide Competition from Mr. A. S. Heather, 53 Kings Ash Road, Paignton, Devon.

There are no restrictions on subject matter, entries must not exceed ten minutes, individuals or groups living anywhere in Britain may compete. Closing date is January 22, 1969.

\* \* \*

TAPE HAS WON through at Westminster. After a limited experiment, during which only the morning sessions of the House of Commons were taped, the MP's Services Committee has now given permission for all Commons proceedings to be taped and then transcribed by girl typists to compile the Hansard report.

\* \* \*

ON BEHALF of all members of the staff of *TAPE Recording Magazine*, I extend seasonal greetings to all readers and good wishes for the New Year in which they may find more exciting recording than ever before. In lieu of a Christmas card, we have donated an advertisement to Shelter in this issue.

IT is no part of my job to comment on the political wisdom of the recent financial measures taken by the government. This is not the forum to discuss whether the steps taken are right or wrong, whether they have been taken too late or too soon or whether alternative solutions should have been applied. The only thing that concerns me is the effect on the consumer of increases in purchase tax and the restrictions placed on importing manufactured goods.

Let us look at purchase tax changes. In fact these are not so serious as they might appear to be at first glance. The rate of tax has been increased by 10 per cent. As the existing tax rate on tape recorders was 33½ per cent this now becomes 36½ per cent. The effect is *not* to add 10 per cent to retail prices—a machine costing £100 will *not* be increased to £110—the actual extra cost to the customer will be somewhere between thirty and forty *shillings*. Such a sum is not likely to cause too many sleepless nights.

The situation is rather different with music on tape. Here the tax rate was originally 50 per cent and so is now increased to 55 per cent. The net result is, for example, to put up the price of a Musicassette from 54s. 6d. to 55s. 11d. As we have mentioned on many occasions the cost of music on tape was already high in comparison with disc and this further niggling increase is likely to be strenuously resisted by the trade. There will be strong pressure exerted to see if it cannot be absorbed somewhere down the line before the goods are passed to the consumer.

In any case the effect of purchase tax is not immediate. Existing stocks in the shops will carry the old rate of tax. We shall have to wait and see what prices go up, but at least we have the consolation of knowing that any increases can only be relatively small.

The new decree compelling importers of foreign manufactured goods to deposit cash to half the value of each consignment with H.M. Customs and Excise for a period of six months is quite another matter. It does not directly affect prices at all, although a co-incidental result might well be to force surviving importers to put their prices up. The declared intention of this regulation is to make importing more difficult so as to switch consumers from foreign to British made commodities. Will it work in the audio industry?

An almost crippling obligation is now placed on the importer. The amount of money—and it *must* be in liquid cash—that he has to deposit is equal to half of the value of six months' total transactions. This could alternatively be expressed as a sum equal to 25 per cent of his annual turnover. Since business is a

# THE TAX MAN COMETH AGAIN!

The Editor

continuous operation the money will not be returned until after the regulation is withdrawn and during that time it will earn no interest at all.

Any business is based on the fundamental principle of the return (profit or interest) that can be earned by the capital invested. Importers now require substantially more capital and as the extra money will earn them nothing they can only maintain their profit ratio by increasing prices. And those who can't find the cash will have to stop importing. There is, of course, another possibility. The exporting firm abroad may well make some financial concessions to help to get their products into the UK, a growing market they have no wish to lose.

To see just what this means to the private enthusiast one has only to glance through the advertising pages of this magazine. How many products are imported and how many are of British manufacture? Look in dealers' windows and see how much imported equipment is on display. These are the goods that have caused the government grave concern.

But why were they there in the first place? For two reasons. Firstly to meet a demand—these are the products the public want to buy—and secondly because the British audio industry has been unable to supply the home market with sufficient of the right goods at the right prices at the right time.

If the situation is bad in audio it is many times worse in the photographic trade. There's not a single top grade camera in the popular size film formats made in this country. In this field enthusiasts depend exclusively on imported products. At least in audio we do have a genuine industry of our own, but if it is going to meet future demand for both exports and home consumption there will have to be some very bold rethinking.

My own enquiries around the audio importers has not revealed any suicidal despondency. To the contrary, every firm I have spoken to expresses sympathy for its competitors whilst believing it can just about weather the storm itself. This I accept; very few, if any, famous names of imported goods will vanish from the scene. But where they will be hit is in possible future expansion. Doubling an importer's turnover means doubling his cash deposit. In most cases it couldn't be done.

It is my forecast that the next few years will bring an unprecedented demand for audio equipment; it will be what the economists love to call a "major growth area." It is this *increased demand* that will have to be met by British manufacturers because the foreign goods will not be arriving in sufficient quantity to meet it.

One of the most elementary rules of business is that in consumer products a virile export trade can only be built up on the foundation of a strong home market. The strength of that home market is now assured for British manufacturers. If they grasp the initiative firmly we should see our export figures going up—and up—and up. But to do it they will have to think on the scale of the large foreign corporations rather than in terms of the traditional small British family business. Government support for such ventures is at least as important as measures to inhibit imports.

But there is another side to the coin. At present the situation in Germany is the reverse of our own. With a massive surplus in their balance of payments the West German government is *encouraging* imports and *discouraging* exports. The sole purpose of our own drastic squeeze is to convert our present trading deficit into a surplus. After being "in the red" for so many years it is perhaps difficult for us to imagine a situation where the pound sterling is under-valued in relation to other currencies. But it is well within the bounds of possibility in a few years time. And if that does happen we shall then find ourselves faced with exactly the same problems as the Germans are having to contend with today. With a swift "about-turn" we should have to think about aiding our importers instead of restricting them.

So the present situation of advantage in which the British manufacturer now finds himself might well be temporary, just as the embarrassment of importers is also likely to be temporary. It is essential that the British audio industry takes fullest advantage by consolidating its position now. Delay would be fatal.

We are living in tough times, but it would be a mistake to confuse irritation with catastrophe. Neither the small tax increases nor the burdens imposed on importers spell disaster—to the contrary—they could foreshadow a new era of prosperity.

# Ferrograph Series 7 - the simple recorder with thirty recording facilities

The Ferrograph Series 7 Tape Recorder is many instruments in one: If you just want to record without going into technicalities, it is the *simplest* instrument, handled by setting one or two basic controls. If, however, you need a recorder for hard, professional work, the Ferrograph will do it for you 24 hours a day, year in year out (that's why important communications centres specify it). If you need your recorder to produce the most complex effects, the Ferrograph recorder gives you a greater range of facilities than any other.

Available in Mono, and in Stereo with and without end amplifiers, embodying a unique range of recording facilities, including:

- All silicon solid-state electronics with FET input stages and wide input overload margins.
- Vertical or horizontal operation.
- Unit construction: The 3 individual units i.e. tape deck, power unit and amplifier complex are mounted on a single frame easily removable from cabinet for service or installation in other cabinets or racks.
- 3 motors (no belts). 3 tape speeds.
- Variable speed spooling control for easy indexing and editing.
- Electrical deck operation allowing pre-setting for time-switch starting without need for machine to be previously powered.
- Provision for instantaneous stop/start by electrical remote control.
- Single lever-knob deck operation with pause position.
- Independent press-to-record button for safety and to permit click-free recording and insertions.
- 8½" reel capacity.
- Endless loop cassette facility.
- Internal loud speakers (2)—1 each channel on stereo, 2 phased on mono.
- 4 digit, one-press re-set, gear-driven index counter.
- 2 inputs per channel with independent mixing (ability to mix 4 inputs into one channel on stereo machine).
- Signal level meter for each channel operative on playback as well as record.
- Tape/original switching through to output stages.
- Re-record facility on stereo models for multi-play, echo effects etc, without external connections.
- Meters switchable to read 100 kHz bias and erase supply with accessible preset adjustment.
- Three outputs per channel i.e. (1) line out—level response. (2) line out—after tone controls. (3) power output—8-15 ohms.



- Power output 10W per channel.
- Independent tone controls giving full lift and cut to both bass and treble each channel.
- Retractable carrying handle permitting carrying by one or two persons.

U.K. Retail prices from £150 incl. P.T.

See and hear Ferrograph Series 7 recorders at your local Ferrograph stockist, or post coupon for details and address of nearest Ferrograph specialist (or ring 01-589 4485)



## FERROGRAPH

To the Ferrograph Co Ltd, Mercury House, 195 Knightsbridge, London SW7  
Please send me FREE brochure on Ferrograph Series 7 Tape Recorders  Please  
OR send me the new Ferrograph Manual, for which I enclose £1  tick

NAME .....

ADDRESS .....

TRG

# ROUTINE MAINTENANCE

I HAVE used the word "routine" in my title this month for two distinct reasons. First, I think that checking the performance of all equipment in the home studio should be a matter of regular, methodical routine. Second, I shall be saying nothing about repair and service work in general—in other words, I intend to deal mainly with everyday maintenance in its prevention rather than cure aspects.

Recording gear is in fact amazingly robust. The electronic components will normally go on year after year without trouble. If a valve or transistor gives up the ghost, it will usually be immediately apparent and location and replacement of the offender should be straightforward. Sometimes, though, the performance deteriorates so gradually that the ear is unable to detect it. Only routine checking will reveal the fault in time to prevent recordings being spoilt.

On the mechanical side, this is even more true. Instrument checks on head alignment, cleanliness and demagnetisation are imperative as, also, are checks on running speeds etc.

Clearly these tasks will be made easier if the right test equipment is available but most home studios will not justify heavy expenditure on instruments which will only be used, say, once a month. Therefore, let us make a list of the essential jobs and gear.

## Job 1: Head cleaning

The mirror-like finish on the face of all tape heads must be preserved. Any accumulation of oxide dust will prevent intimate tape/head contact and soon ruin the record and replay response—particularly at high frequencies.

Several inexpensive head cleaning kits are available and they are definitely to be recommended in preference to *ad hoc* scrubbing with a wet matchstick. The Bib Tape Head Maintenance Kit, price 16s. 6d. contains everything you need for the job—cleaning fluid, applicators and swab-sticks. Or you may prefer the system of running a dampened cleaning tape across the heads. This is the principle of the Metrosound Klenszape outfit, price 16s 5d. which includes cleaning fluid, two 3-inch spools and cleaning tape. Provided you use this regularly, so that no hardened deposits exist on the heads, it has the advantages of speed and simplicity.

## Job 2: Head demagnetising

Another bogey to be guarded against is spurious magnetisation of the tape heads—which will add annoying background noise to tapes. The solution is to apply an alternating magnetic field which you slowly fade down until the heads are left in a completely demagnetised state.

Suitable head degaussers include the Wearite (Ferrograph) Defluxer, price £3 and the WAL D-Mag, price £2 10s. These have a built-in on/off switch and you produce the required diminishing magnetic field by slowly moving the demagnetiser away from the heads and delay switching off until the unit is some two or three feet distant. I have known professional engineers use a tape bulk eraser for head demagnetising but this is a bit like using a sledge-hammer to crack peanuts and the extra-strong magnetic field must of course be kept well clear of valuable recorded tapes.

## Job 3: Head alignment

I am not a great believer in frequent tinkering with the vertical (azimuth) and horizontal alignment of tape heads. The

TABLE I—TEST TAPES

Type	Speed (ips)	Frequency Range (Hz)	Alignment Frequency (Hz)	Equalisation (microseconds)	Other Material	Price
Ampex 31334-01	3½	—	—	200	—	£8
Ampex 31321-01	7½	—	—	50	—	£8
BASF Tape 9	3½	—	—	120	—	£11
BASF Tape 19	7½	—	—	100	—	£11
EMI SRT 14	3½	40–6,000	6,000	120	Wow & flutter	£10
EMI SRT 18	7½	30–16,000	10,000	70	Wow & flutter strobe	£11 10s.
EMI TBT 1A	7½	40–12,000	—	100	—	£4
EMI TBT 2	3½	40–8,000	—	120	—	£4
Tutchings No. 1	7½	40–10,000	7,500	70	—	£1 10s.
Tutchings No. 2	3½	40–7,000	5,000	140	—	£1 10s.
Tutchings No. 3	7½	40–10,000 (white noise)	—	70	—	£1 10s.
Tutchings No. 5	Any	—	Full range (white noise)	—	Track 3 blank	£1 10s.

setting is critical, of course, but it is not likely to shift during normal working and, once set, may safely be left alone. The only tool needed to make the adjustments to one or both of the spring-loaded bolts securing the head plate is a small screwdriver (preferably a demagnetised one) and so one may be tempted to do it more often than is really necessary.

The time to consider re-alignment of the replay head is when a preliminary frequency response test (discussed below) indicates that treble output is below par. Then a test tape carrying a band of some fairly high frequency tone should be run on the machine (having first carried out

TABLE 2  
TAPE REPLAY EQUALISATION STANDARDS

Tape Speed (ips)	DIN/CCIR (time constants in microseconds)	NAB	Old CCIR
3½	140	90	200
7½	70	50	100
15	35	50	—
1½*	280	90	—

\* Non-standard

Please turn to page 17

# A Grundig never tells a lie.

Most of the better tape recorders are expensive.

Some very expensive.

But when you come to think about it, stereo and other gadgets aside, all they really have to offer is the truth.

Record your son's violin playing and you get it back.



With the Grundig TK 247, you get this ultimate truth of reproduction for much less money.

You get full solid state stereo, four tracks, twin speeds, plus twin recording and playback amplifiers.

You get facilities for multiple-synchronous recordings, monitoring via headphones and remote control.

It's fully transistorised with an output of 2 x 4 watts through 4 speakers.

It has a built-in mixer control, illuminated VU input meters and auto tape-stop.

And looks pretty good in its graphite and silver steel case.

The reproduction quality of the Grundig TK247 is among the best in the world, no matter what you record or at what level.

At £130-18-9 we can't make your son a better violinist.

We can only offer the truth.

**GRUNDIG**

For people who listen.

Grundig (Great Britain) Ltd. London, SE26



**ROUTINE MAINTENANCE** From page 15 Jobs 1 and 2 as necessary). Then, still before welding that lethal screwdriver, rock the head slightly from side to side by applying the pressure to the mounting plate on either side of the gap. If this movement decreases the level of signal, then the head azimuth is correct and needs no adjustment.

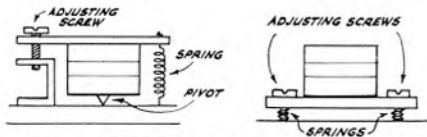


Fig. 1. Two different types of adjustment provided for making azimuth alignment corrections. The setting is altered by "rocking" the head, but owners should make quite sure that adjustment is really needed before attempting it

If alignment is required, and you will need to monitor the output level by meter—not just by ear. The method is to adjust the screw setting by tiny amounts until level is maximum. In fact, there are several maxima so that care is needed to locate the true one. These maxima are a function of the recorded wavelength and choosing a frequency of about 8,000 Hz at 7½ ips or 5,000 at 3¾ ips gives the best indication.

All the major tape manufacturers market suitable test tapes containing alignment tones as well as the usual frequency run (see Table 1 and Job 4, below).

The Tutchings Electronics Ltd. Tape No. 5 is a handy test tape of white noise which is recorded full track but with Track 3 blank. Even without an output level meter, this gives clear indication of correct azimuth (sharpest hissing sound) and correct vertical setting (maximum signal when Track 3 is just *not* being scanned).

For domestic recorders, where a common head is used for both record and replay, the above alignment procedure is sufficient. For machines with separate record heads, the procedure will only have ensured that the replay head gap is truly vertical. A similar alignment of the record head will be necessary, feeding in high frequency tone and checking for maximum signal as reproduced by the already aligned replay head.

#### Job 4: Frequency response

We have now come to a job which really does need test gear. The simple

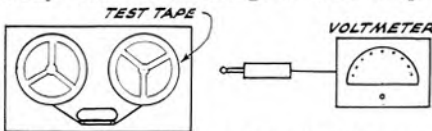


Fig. 2. A simple 1 to 10 volt AC voltmeter together with a test tape is all that is needed for head alignment. The meter can be plugged into the loudspeaker socket

set-up of Fig. 2, in which any old AC voltmeter is hooked across the loudspeaker terminals, is adequate for head alignment, for example. Then we need only a comparative indication of peak signal.

But, to produce meaningful frequency response measurements, requires a voltmeter with high input impedance (to minimise the loading effect) and flat response over the frequency range under test. A valve or transistor millivoltmeter is best, preferably with a scale calibrated in decibels as well as voltage. If the whole replay chain to the loudspeaker terminals is to be checked, the loudspeaker should be replaced with an equivalent high wattage, low inductance resistor as shown in Fig. 3. If checking to a low level or line output, again it is best to measure across an appropriate load resistor.

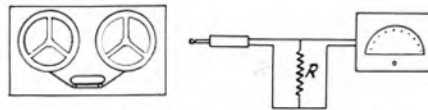


Fig. 3. When testing replay frequency response a valve or transistor millivoltmeter is required, together with a load resistor R to match the recorder output impedance

Table 1 lists some of the professional and domestic test tapes available. The price gulf is explained by the high precision of the professional tapes and the extra material provided. EMI SRT 18, for example, comes on a 7-inch spool in a mild steel can to minimise the effect of stray magnetic fields. It contains a band of 3,000 Hz tone with inherent wow and flutter below 0.08 per cent, for use with an external wow and flutter meter, a band of stroboscope leader tape for speed checking and a 1,000 Hz reference level tone as well as the usual alignment tone and calibrated frequency run.

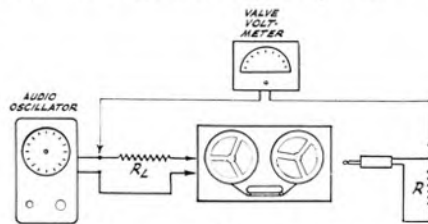


Fig. 4. For record/replay frequency response testing an audio oscillator is required, fed via a suitable source impedance, RL. The valve voltmeter can be replugged to check both ingoing and output signal levels.

To check the record and replay response, it is necessary to add an audio oscillator to the set-up. This is shown in Fig. 4. The oscillator will need to have low distortion content, say below 0.5 per cent if distortion measurements are planned, but need not be particularly constant in output level since, as the diagram shows, it is possible to use the

millivoltmeter across the input to ensure correct level during recording. It is most important, however, to include a load resistor RL equivalent to the rated source impedance of the input socket being used. Another important point to remember is that the input level used must be well below (say—20dB) that which produces maximum modulation level on the tape (and recording level indicator). This is because the boost applied by the equalisation circuitry can easily produce overload conditions and invalidate the readings.

Of course one should choose a test tape with the right equalisation standard (usually quoted as a time constant in microseconds) for the machine being tested. Table 2 shows some standards which may be met.

#### Job 5: Tape speed

There is generally little one can do about the running speed of a tape recorder but it is reassuring at least to be able to check that the speed is reasonably correct. Striped tape, usually yellow and black, is available for speed checking by the stroboscopic effect—correct running speed means that the pattern appears stationary when viewed in AC lighting. Alternatively you can use a stroboscopic wheel, held against the tape. Metro-sound market a suitable stroboscope, price 15s. 2d. and indeed their complete Tape Recorder Maintenance Kit, price £2 3s. 8d. is worth considering. It contains the stroboscope, the Klenzetape outfit already mentioned and—most useful, since faulty running may indicate the need for oil or grease—a lubricating outfit.

#### Job 6: Wow and flutter

Short-term speed fluctuations (wow and flutter) must be guarded against but require a special type of meter to measure them. Flutter meters used to be very expensive items but can now be obtained at something around £100. Indeed a very reasonably priced unit is available—the WHM Model III, price about £60.

But we are now reaching the specialised types of tests which are perhaps outside my range of "routine maintenance". Like the accurate calibration of level meters, bias settings and distortion measurement. If you are equipped to do the tests then you don't need me to tell you about them.

The jobs I have covered should be regularly gone through in every home studio. With all your recording gear well looked after and lined up, the quality of your recordings will be enhanced—and the chances of equipment failure are very remote indeed.

Next month I shall conclude this series of articles by suggesting ways to reach a wider audience with your recordings.



Fig. 1. A favourite subject for recording enthusiasts, one of the many mechanical organs to be found in Belgium and Holland. The recorder is the Uher 4000 Report L and the microphone is a Sennheiser MD421.



Fig. 2. Every Uher tape recorder is subjected to extensive final testing. Here the frequency response is pen-graphed by B. & K. response testing equipment.

R  
E  
T  
U  
R  
N  
T  
O  
M  
U  
N  
I  
C  
H

BY F. C. JUDD

*In Muenchen steht ein Hofbraehaus,  
Eins—Zwei—Gsuffa,  
Da Laeuft so manches faesschen aus,  
Eins—Zwei—Gsuffa!*  
(from original old German)

“IN Munich you’ll find the Hofbrauhaus”—begins a little song that has made the name of this Bavarian beer hall famous throughout the World. Just a short while ago I recorded the voices of the “Münchenern” in a roof-raising delivery of “Eins-Zwei-Gsuffa” to the accompaniment of the brass band and the clink of stone beer mugs. Two years previously my Uher 4,000 Report L had recorded this same cheery song as well as the many “Sounds of Munich,” the concerts in the Platzl opposite the Hofbrauhaus, the famous Rathaus Glockenspiel with its display of colourful figures, the double Munich trams in their bright blue livery and the brass band parades on Sunday morning. To date this same Uher 4,000 has recorded without fault during more than 10,000 miles of travel in almost every country in Europe—in ships and trams, in planes, trains and cars and in the high Alps of lower Bavaria, on the canals of Holland and the Fjords of Norway and in the streets and night spots of Paris and London.

**Uherwerke—Munich**

This was the end of two years of field trials which few portable recorders could have withstood. It was time also to visit the rebuilt Uher factory just outside Munich. This had been timed a few weeks ahead of the official opening planned for November, for it was in this same month in 1954 that the first Uher tape recorder was produced.

The Uherwerke was at that time on the point of being dissolved, but the General Manager of the firm, Baron Wolfgang von Horstein, decided that the instrument making know-how of the firm and its engineers might be better exploited in the manufacture of tape recorders. Their first domestic machine, the Uher 95, subsequently appeared at the Dusseldorf radio show, and incidentally I reviewed this model when it first appeared in this country. In 1961 a new branch of the factory was opened in Buchbach in Upper Bavaria and in the same year their first portable, the Uher 4000 Report S, made its appearance at the Berlin Radio Show. This I also reviewed in this country shortly after. To-day there are three versions of this unique portable: the 4000 Report L (mono half-track) the 4200 Report Stereo (half-track) and the 4400 Report Stereo (quarter-track). A fourth, designed specifically for professional use, is the 1000 Report Pilot which is a full-track mono portable with provision for film lip sync. Incidentally your Editor

# RETURN TO MUNICH

## CITY OF TAPE RECORDING AND BEER

Denys Killick was among the first to use a 4200 Report Stereo model.

### The Uher Interchangeable Head System

But what is the latest from Uher? Well it seems they have now produced a tape recorder which has everything except, as one of their senior engineers pointed out, a house to go with it. This is the Uher Royal de luxe stereo, a domestic hi-fi recorder with some very desirable features. It is the first domestic tape recorder with a completely interchangeable head system allowing a direct changeover from half-track to quarter-track or *vice versa*. It is indeed a tape recording enthusiasts dream, not only for its top quality performance but because of the many unique facilities it incorporates.

Half-track or quarter-track operation by the interchangeable heads *without* the necessity of realigning azimuth—twin 10 watt output stages—off tape monitoring in mono or stereo—electronic speed control resulting in a wow and flutter performance of better than 0.1 per cent—four tape speeds—a built-in pulse system for slide projection—mixing for microphone and two high level channels and track to track recording. It operates standing, upright or laid flat, and you can even hang it on the wall! This recorder is already available in the UK along with the rest of the Uher models and with the help of the re-organised and rebuilt factory in Munich there is a less expensive version of this fabulous Royal Stereo on the way, as well as many other new developments in tape recording.

### Quality—the Uher Watchword

Extensive research goes on the whole time in the Uher laboratories, not only in new tape recorder development but in “quality control.” The Uher system of quality checking is such that if some fault out of the ordinary occurs in a production run then the whole lot is stopped until the cause of the fault has been cleared. Before it can be released from the factory each tape recorder, no matter what model,

must perform most rigidly to its specification and moreover pass a special “user test” during which the machine must operate correctly in every conceivable way in which it can be used by its eventual owner. It goes without saying that few recorders are ever rejected for faults and few come back for service. I can only sum up my visit to Uherwerke by saying in all sincerity that here I have seen engineering at its best.

### The Trials of a Uher 4000 Report L

My all too brief report on Uher, its tape recorders and its factory would not be complete without some mention of two years’ extensive use of the 4000 Report L, not forgetting just how valuable a portable is for recording the sounds of travel and the highlights of the places one travels to. Many recording enthusiasts have said to me “*how do you manage to get such interesting recordings? I’ve taken my portable around but never seem to get anything worthwhile.*”

First it is important to know exactly just when and where sounds will occur. It is quite useless wandering around in the hope that something interesting will happen. London’s most famous sound, Big Ben, will not strike the full hour of twelve if you arrive one hour late at one o’clock. The Rathaus Glockenspiel in Munich operates only at 11 a.m. each morning, the Dutch and Belgian mechanical organs which can be found in large roadside cafes are usually playing only when the customers come in in the evening. The German beer halls with their “Oompah” music and lively singing only get going around ten p.m. Cable cars to tops of the Alps, the tourist boats on the canals of Amsterdam and the waterways of Brugge run at scheduled times.

So the answer is planning; a good working itinerary is not difficult to prepare if you get hold of all the travel brochures concerned with places you’d like to visit. Tourist offices can be of tremendous help in providing street maps and details concerning the times and whereabouts of in-

teresting things to record. Most of them I have found are well aware of the needs, not only of photographers and cinefilm enthusiasts, but also of tape recordists.

But to return to the Uher 4000 Report L and its trials and travels. Perhaps the most important aspect of this machine is the rechargeable accumulator and the charging unit which operates on all mains voltages from 150 to 240 V. Fully charged the accumulator does permit quite long recording times as well as frequent playbacks. Nothing is more annoying than to find flat batteries at the moment of recording something which may not be possible to do a second time.

Perhaps the second most important feature of the Uher 4000 is the arrangement of its controls. They are nicely situated for ease and speed of operation and this, together with its compactness, makes the Uher 4000 very popular with professional radio reporters all over the world. Thirdly, its recording quality is of a very high standard and many of the recordings I have made with it have been used for radio and film sound tracks etc. Last but not least the Uher 4000 is tough. Mine has suffered incredible knocks and rough usage in temperatures ranging from sub-zero cold to tropical heat, but never once has it failed and this is another reason why it is so favoured by radio reporters.

Finally to return to the secret of success in outdoor and travel recording. As one of the characters in Alice in Wonderland rightly or wrongly misquoted—“*Look after the sense and the sounds will take care of themselves!*” And to conclude, here is a more or less literal interpretation of the Hofbrauhaus song:—

*In Munich you’ll find the Hofbrauhaus,  
Cheers, down the hatch,  
Where the beer is flowing from the  
barrels,  
Cheers, you’ll find no match.*

I would say the last line applies quite well to Uher tape recorders.

WHENEVER recording and hi-fi enthusiasts are gathered together one single topic of discussion is bound to crop up sooner or later. It's that old hardy annual of whether pre-recorded music is better on tape or disc and *vice versa*.

Now we have got used to the imposition of a cruel purchase tax on music on tape it's an appropriate time to reassess the situation. I have some very firmly fixed personal opinions on this issue. In spite of owning some costly and sophisticated disc reproducing equipment I always feel happier when using tape. But this a purely personal opinion—others with similar interests and equipment might very well hold a directly contrary view. However logically or at whatever length we might argue the pros and cons of the two media I incline very much towards the final conclusion that tape is the best medium for the man who prefers to use tape and disc is superior for those who are happiest with it. Unfortunately that typically British compromise is singularly unhelpful to all those who are either coming into audio for the first time or who have still not yet made up their minds which medium they really prefer.

The main factors involved are those of cost, quality, permanence, ease of use and choice of repertoire. If the only consideration were to be cost then there would appear to be an overwhelming argument in favour of the gramophone. There is nothing on tape to touch the excellent value for money offered in some of the popular low-cost disc labels. Even when we look at the top priced 33½ long playing record we find that the identical programme on tape will always cost more. Even if tape prices come down they are unlikely to seriously compete with disc in terms of cost.

The argument about quality is not nearly so clear cut. All gramophone records start their life as tape recordings and therefore the uninitiated might think that music on tape should always be better just because it does not involve any change in medium. Actually under ideal conditions the transfer from tape to disc involves only very small quality losses. The same remarks apply equally well to tape, but because the high speed multiple copying process is a much more tricky operation than the mere mechanical pressing of gramophone records the risks of losses are greater. In disc and tape we can quote examples of both brilliant and poor quality work. It is a fact that stereo separation on tape is very much better than on disc; against this the signal-to-noise ratio on disc *can* be better than tape (provided surface noise is kept to a minimum).

But the question of quality is linked to that of permanence. When we talk about

# CROSS TALK

## *By Audios*

the "permanence" of a recording we mean the retention of factory fresh quality. Here tape scores heavily against disc. The dangers with tape are of stretching (which rarely happens with modern tape transport systems), of partial quality loss due to the influence of a permanent magnetic flux (a risk that can be entirely eliminated by the occasional use of a defluxer) or lastly the danger of accidental erasure (something that has never occurred to me in my life in spite of the very large library of pre-recorded tapes that I both own and use regularly).

With gramophone records the immediate danger is of sustaining permanent and progressive quality loss through the action of the stylus in the record groove. The only way to avoid this disaster is to use "high fidelity" quality equipment and to ensure that the stylus itself is always in good condition. Quite apart from this fate (which in the end probably overtakes 99 per cent of all gramophone records) there are all sorts of other horrors to worry about, such as dust which produces unwanted noise and can even permanently affect audio quality, scratches which reproduce for ever as irritating clicks and even troubles due to the presence of grease marks from the fingers. By comparison tape can claim overwhelming superiority in the permanence stakes.

Ease of use is entirely a matter of personal opinion. I find it easier to thread a tape than to fiddle about with a tone arm. And people who claim that the easiest thing in the world to use is the automatic record player must remember that there are to my knowledge only two makes of automatic disc reproducers that will not permanently damage the records they play. On this count give me tape every time.

When we come to choice of repertoire the cards are stacked heavily in favour of the gramophone record. Choice in this medium is so vast it will be decades before tape even begins to catch up. But then disc had such a long start. Fortunately with many new names appearing in the tape world the situation is now better than it was, but choice is still strictly limited by comparison to disc.

So there are the arguments. When I spend money I prefer to think of it as investment rather than expenditure; for this reason I buy tape rather than disc because I am investing in maximum permanence. This is supposed to be a typically British point of view—to acquire a somewhat more expensive product in the hope that it will out-last and out-wear cheaper alternatives. Of course it will be a bitter blow if some new and as yet undeveloped sound reproducing system were to be adopted in the foreseeable future. Tucked away in a cupboard I have a large collection of 78 rpm gramophone records, all of which are now rendered obsolete. I suppose if in the year 2000 we are all using laser beam reproducers then my magnetic tapes would be considered as equally obsolete. But I rather think that I shall be a quaint old period figure still using obsolescent techniques and looking as much out of place at that distant date as grandfather would today with an Edison phonograph. But at least I shall still have the same audio quality as I have now—the trouble is by that time I probably shan't be able to hear it!

\* \* \*

WHY is the New Year always regarded as the one and only time for making fatuous resolutions about future conduct that we all know will be broken just as soon as they are conceived? I suppose there must be a deep seated feeling in all of us that the "newness" of the year about to start endows it with some magic property that will support the frailty of our best intentions. As year succeeds year I look upon the whole beastly business with increasing revulsion. The psychiatrists would probably tell me that this is simply a reflection of my own opinion of myself which owes its origin to my complete inability to adhere to any resolution—New Year resolutions least of all. Which is a very depressing thought indeed.

\* \* \*

AN appeal for help from a Mr. Ian Horsbrugh of No. 5 Claremont Road, Twickenham, Middlesex. This gentleman has been commissioned by the BBC to prepare a radio programme to mark the tenth anniversary of the death of Gerard Hoffnung next September.

So if any reader has in his possession by any good fortune recordings of material by Gerard Hoffnung—other than that readily available on commercial record of course—will he please contact Mr. Horsbrugh at the above address and let him have full details. Hoffnung was a remarkable character; a man of great personal ability coupled with an outsize sense of humour. If any readers have qualms about copyright complications in respect of recordings of Hoffnung broadcasts they might have, they will be pleased to know that the BBC have agreed to waive their copyright claims. A situation of which I am sure Gerard Hoffnung would have made a great deal!

# Brief case for the Telefunken M 302

We're not going to give you a load of verbage about the marvellous features of the M 302.

It's a portable. Light. Compact. Handy, and easy to use.

Words can't do justice to the sound quality. How can words explain what only ears appreciate.

There's just one factor we should like you to note. The M 302 has a frequency response of 40-14,000 c/s.

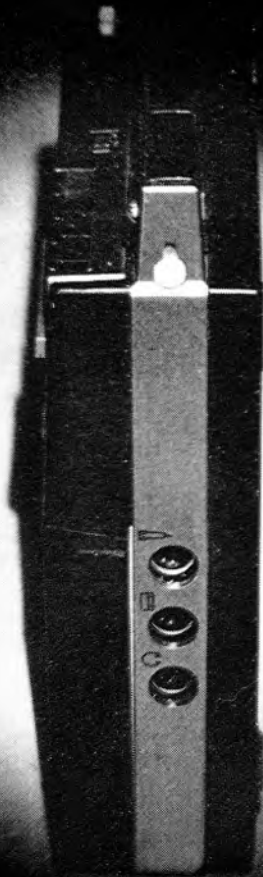
That's something many big mains models would be happy to claim.

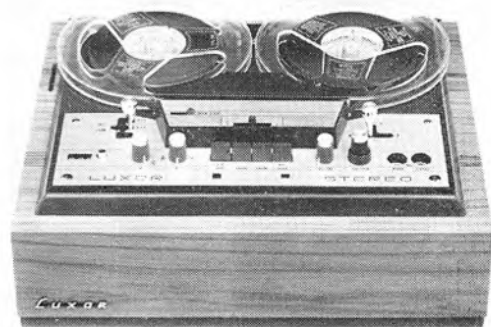
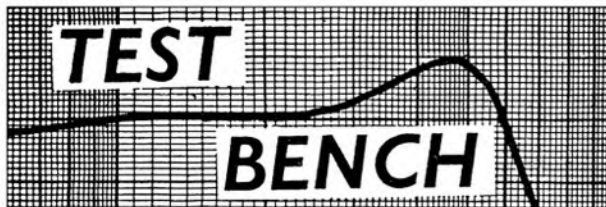
So, if you're looking for a portable, make sure you hear the M 302.

It's another splendid example of Telefunken's philosophy, dedication to faithful reproduction.

See your dealer. Or write for full specification.

AEG/Telefunken  
27 Chancery Lane  
London WC2.





# LUXOR MP 613

INVESTIGATED BY R. HIRST AND D. KILLICK

## MANUFACTURER'S SPECIFICATION

### Luxor MP613

Mains: 110/130/150/220/240/260 Volt, 50 Hz.

Drive: Capstan.

Heads: One erase and one record/playback. Four-track stereo.

Bias and Erase Frequency: 90 kHz.

Tape Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$  and  $1\frac{7}{8}$  ips.

Max. Spool Diameter: 7 in.

Rewind Time: Approx. 3 minutes 10 seconds for 1,800 ft. tape.

Frequency Response: At  $7\frac{1}{2}$  ips 50 to 19,000 Hz, at  $3\frac{3}{4}$  ips 50 to 12,000 Hz and at  $1\frac{7}{8}$  ips 80 to 6,000 Hz., all  $\pm 4$  dB.

Signal to Noise Ratio: 50 dB, weighted.

Wow and Flutter: 0.1 per cent at  $7\frac{1}{2}$  ips, 0.2 per cent at  $3\frac{3}{4}$  ips and 0.35 per cent at  $1\frac{7}{8}$  ips.

Inputs (sensitivity): Radio 2 x 30mV at 1 MOhm, Phone 2 x 100mV at 1.5 MOhm, Microphone 2 x 5mV at 70 kOhm.

Outputs: Monitor/Ext. Amp., 500 mV at 10 kOhm. External Speakers 2 x 2 Watts Stereo or 4 Watts Mono.

Position Counter: 3-digit.

Controls: External speaker switch, three-position tone pre-set, balance and volume.

Dimensions: 14.6 in. x 11.6 in. x 6.1 in.

Weight: Approx. 28.9 lbs.

Price: £101 8s. 8d. including purchase tax at  $36\frac{2}{3}$  per cent.

Distributors: Highgate Acoustics Ltd., 84 Bolsover Street, London, W.1.

## LUXOR MP613 TEST CHART

Frequency Hz	Overall Response dB		Playback Only dB	Signal/Noise Ratio dB	Distortion	Crosstalk dB
	$7\frac{1}{2}$ i.p.s.	$3\frac{3}{4}$ i.p.s.	$7\frac{1}{2}$ i.p.s.			
40	-4.0	-6.0	-5.0	49	3.8%	48
50	-1.0	-3.2	-2.5			
60	0	-2.0	-1.0			
100	+1.5	-0.5	+0.5			
250	0	+1.0	-0.5			
500	-0.5	-1.0	-0.5			
1000	0	0	0			
2000	+0.5	+1.0	0			
4000	+1.0	+1.0	+0.5			
6000	+1.0	+1.8	+1.0			
8000	+1.5	+2.5	+1.5			
10000	+2.0	0	+1.5			
12000	+2.5	-4.0	+2.0			
14000	+3.5		+3.0			
16000	0		-1.0			
18000	-5.0		-4.0			
Wow and Flutter	0.19%	0.28%				

NOTES.—The Overall Response figures relate to record and playback. Playback Only relates to the reproduction of a 70 microsecond test tape at  $7\frac{1}{2}$  i.p.s. (C.C.I.R.) but see text for further information.

For Signal-to-Noise Ratio the tape was recorded at peak level and then the input signal was removed from the record amplifier. By reference to the signal level recorded and the resultant tape noise, the noise voltage was read off, with the tape still in motion. Distortion is quoted against a 1,000 Hz signal recorded at the correct maximum level as indicated by the manufacturers and the figure is an R.M.S. value.

Wow and Flutter is also R.M.S., the test frequency being 3,000 Hz. Test equipment used includes: Bruel and Kjaer Signal Generator, B & K Frequency Analyser Type 2107, B & K Level Recorder Type 2305, Marconi Distortion Factor Analyser and Gaumont-Kaylee Wow and Flutter Meter.

IT would probably be fair comment to state that the name of Luxor is not one of the first that the reader is likely to think of in connection with recording equipment. We were, therefore, particularly interested to have the opportunity to examine a machine carrying a less universally popular brand name to see what value for money one might expect from such equipment, and we would like to thank the distributors, Highgate Acoustics Ltd., for their co-operation.

Basically the Luxor MP613 is a mains four-track stereo record/playback equipment, complete up to and including a final audio output stage but without internal speakers. As will be seen later in the re-

view it would be more correct to regard it as primarily a deck and pre-amp plus a pair of small amplifiers as a "convenience extra." Three speeds are provided,  $7\frac{1}{2}$ ,  $3\frac{3}{4}$  and  $1\frac{7}{8}$  ips. It is a two-head deck, using an erase and a single combined record/playback head.

It is important to note that for our laboratory tests all readings were taken at the "line out" socket. The frequency response tables show results not greatly at variance with the manufacturer's claims, although the fairly steep fall-off above 14,000 Hz at  $7\frac{1}{2}$  ips indicates the upper response limit. As one might expect a similar situation is revealed above 10,000 Hz at  $3\frac{3}{4}$  ips. Over the important mid-

upper region, however, the curve is gently ascendant without any unpleasant peaks.

As so often happens in these reviews we must mention that the equipment did not include any recommendation as to the brand of tape for which bias had been set and so we used the make supplied with the review sample, International. We cannot emphasise too strongly the fact that laboratory findings always express the relationship between the machine under test and the tape on which the test was carried out—a different tape would be likely to give different results. These differences would, however, not be great with most of the popular brands now available on the domestic market.

When we come to signal-to-noise ratio there is a definite advantage in measuring on low noise tape, and some manufacturers state that their specification figures depend on this method. Our figure of 49 dB was obtained on the International tape and has therefore not been inflated by the use of special tape. Since the use of low noise tape gives an advantage of some two or three dB this would give a reading of around 51 or 52 dB which can be regarded as wholly acceptable for "high fidelity" reproduction and at the same time is commensurate with the purchase price of the equipment.

Distortion at 3.8 per cent is a little on the high side. As we have mentioned before "under 3 per cent" could be taken as a standard for top quality tape recorders, although some very much higher priced machines still refer to "under 5 per cent." It is, therefore, difficult to be too critical of this result.

Crosstalk at 48 dB is wholly acceptable, but things are not quite so good in the speed stability department. Wow and flutter of 0.19 per cent at  $7\frac{1}{2}$  ips and 0.28 per cent at  $3\frac{3}{4}$  ips is well outside specification and we do feel that the claimed figures are optimistic. It is possible, of course, that we were just unlucky with our review sample. Mechanical irregularities are often peculiar to individual machines and might occur on only one or two machines taken from a production run. This is, however, no consolation for the purchaser who happens by chance to get one. To be fair we must add that the measured figures from this machine would have been regarded as excellent a year or two ago, but nowadays a good quality domestic machine should give well under 0.2 per cent RMS wow and flutter at  $7\frac{1}{2}$  ips. At 0.19 per cent the Luxor is perilously close to the border.

So much for our technical investigation, which, up to this point, has treated the equipment as a deck and pre-amp only. We will return to laboratory findings when we discuss the audio output stage. But now we pass on to user tests and firstly we must comment on the smart appearance and design. Mounted in a hardwood plinth and provided with a substantial tinted plastic dust cover it is very smart indeed. Overall size has been reduced to a minimum, and in fact 7-inch spools slightly overhang the deck. This problem is neatly overcome by providing a pair of cut-outs in the cover so that it can close even when spools of that size are in place. A plated strut gives support in the half-open position.

Tape transport is operated by a "joy-stick" type lever to the right of the sound channel, giving Fastwind in either direction and Run. Speed change is by a similarly styled lever to the left which

is moved rather like a motor car gear change to engage any one of the three speeds together with a Mains/Off position. Four rotary knobs on the deck plate are for: Speaker On/Off (two position), Tone (three position), Volume (continuously variable) and Balance (a double control also continuously variable). A row of four push keys give input selection for Microphone, Gram and Radio with the fourth key setting the Record mode. Track selection is by a small lever mounted in the permanent front head cover assembly giving positions for tracks 1/4 (mono) 3/2 (mono) and S for stereo. Another similar lever operates the pause control. Also on the deck is a three-digit counter, two record level indicators in the form of "electronic bars" and a pair of microphone sockets.

In a recessed panel at the rear we find the voltage selector, a pair of DIN speaker sockets and two 5-pin DIN sockets marked External Amplifier/Radio and Gram/Phono.

When power is applied by moving the speed change lever out of the Off position visual indication is provided by the illumination of the two record level indicators, coloured green. Unfortunately aural indication is also obvious by mechanical noise. This takes the form of a low "chuntering" sound and it might well provide a solution to the wow and flutter figures. It may be that other models would have less noise and would show improved speed stability. We found the noise level on our machine to be disturbing; perhaps the distributors would take up this point with the Swedish makers.

The printed instruction booklet is in Swedish and so was incomprehensible to us. However duplicated sheets of English instructions are also available and so we worked from these. Some confusion was immediately apparent because they specifically instruct on how to play back via the internal speaker. In fact the equipment does not include an internal speaker at all and the speaker switch has two (not three) positions which give simply Speaker On and Speaker Off *at the outlets to external speaker only*. It is believed that other Luxor models *did* include an internal speaker and apparently the written instruction has not been brought up to date. A certain amount of time was wasted by your reviewers in looking for a speaker that wasn't there...! A purchaser would be hopelessly confused.

Having clarified that little problem we started listening tests by reproducing four-track stereo recordings of known quality by feeding from the line out socket (External Amplifier/Radio) to a top grade main amplifier and pair of full range speakers. It was noted that this outlet bypasses the tone control but is influenced

by the setting of both the Volume and Balance controls. This latter is most unusual since instead of giving fractional adjustment on either side it really operates as a pair of subsidiary volume controls capable of fading either channel to zero. Consequently the correct first setting is for both halves of this dual control to be rotated to their maximum clockwise position; from there balance is achieved by retarding the level on whichever channel is too prominent. When the Balance control knobs are turned back to their maximum anti-clockwise setting output will be zero whatever the position of the Volume control. We found later that the same situation occurs when in the record mode.

Apart from the distraction of mechanical noise listening quality was good and up to the standard one expects from this price range. Stereo recordings made on the machine from radio and master tapes were also very acceptable and it was noted that  $3\frac{3}{4}$  ips recordings from VHF radio reveal little—if any—quality losses. When in the Record mode the Balance control performs a most useful additional function by offering a means of adjusting sensitivity. Matching problems usually occur when too high a signal is applied to a recorder input, resulting in distortion. Usually the method employed to overcome this is to use a connecting lead incorporating an attenuator network. With the Luxor one merely adjusts level at the Balance control.

For our final investigation we considered the usefulness and efficiency of the outlets to external speakers. Claimed power is 2 x 2 watts; the reference to 4 watts mono is misleading since at no time can the power from both amplifiers be fed to a single speaker by switching. However, this is a genuine 2 watts RMS, not an inflated Music Power figure. Speakers used were a pair of Luxor KH 820s, and we will comment on these later.\*

We described this audio output as a "convenience extra" for two reasons. Firstly with a power of only 2 watts—albeit a genuine 2 watts—the amplifier can hardly expect to be taken very seriously, and secondly we soon discovered that the tonal control offered by the three-position switch on the deck plate is both rudimentary and inaccurate. It is in fact a top boost and cut with a central position marked "N" for normal. At this "normal" setting there is actually up to 6 dB cut at 10,000 Hz. Bearing in mind the rising response shown in our frequency response chart it means that there is an effective loss of some 3 or 4 dB at that frequency at the speaker. Unfortunately this cannot be compensated for as in the boost position the response

\* The review of the Luxor KH 820 speakers will be published shortly.

is pushed up by around 9 dB at 10,000 Hz. All of which means that from the high fidelity point of view the final output stages must be regarded as having strictly limited usefulness.

If, however, we consider the recorder as being primarily a deck and preamp (as we stated at the beginning) then this is not such a disadvantage. It would normally be used in conjunction with an existing amplifier and speaker set-up, and the owner would have the benefit of two spare channels of audio signal which could be most useful where ultimate fidelity was not the final consideration. A small extension speaker in a bedroom or kitchen is a typical example.

One or two other points were noted before we concluded our tests. When recording, either mono or stereo, it is not possible to monitor the signal through external speakers, but a monitoring signal is available for phones at the line out socket. When working mono playback is parallel to both speaker channels. There is no built-in mixing facility in the accepted sense of the word; it is possible to feed more than one signal in by depressing two selector keys together but there will then be no independent control of levels. This facility does permit composite recordings to be made by feeding a single (mono) programme on to one track and, say, a

microphone signal to the other when in the stereo condition.

The Luxor MP 613 is not an easy machine to summarise. At no stretch of the imagination can it be called inexpensive, so we have to relate performance to price. Comparing this with the results obtained from other deck and pre-amp units of about the same cost shows that the Luxor does not do quite so well as some others technically. As compensation we do have output stages which are not included in the other machines. Since construction appears to be robust we can recommend the MP 613 for applications where this extra facility would be a definite advantage, and also for use where the design and styling particularly appeal. We can see no reason why the equipment should not give long and useful service and bring much pleasure to the owner—provided that mechanical noise is eliminated!

### PURCHASE TAX CHANGES

Owing to changes in rates of purchase tax announced shortly before going to press some of the prices quoted in both editorial and advertisements are subject to amendment. Please refer to page 13 for detailed information on tax changes and their implications.

## REWARD

### THEFT OF TAPE RECORDS

ONE of the strangest thefts ever took place during the night of November 21-22, in London. Thieves broke into the Redvers Road, London, warehouse of Messrs. Teletape Ltd. and stole pre-recorded tapes to the value of some £14,000 to £15,000. Amongst them were more than 1,000 Ampex tapes, the sole remaining bulk stock of DGG (Deutsche Grammophon Gesellschaft) tape records in this country.

The market for music on tape is highly specialised and the thieves can only get rid of their haul by either offering them in bulk to dealers or by trying to sell in small quantities to individual private enthusiasts. We therefore ask retailers and members of the public to take special note of anyone offering pre-recorded tapes under suspicious circumstances, and to particularly look out for Ampex DGG recordings—easily recognised by the brilliant yellow label bearing the title on the edge of the box. Also printed on this yellow spine are the words: Deutsche Grammophon Gesellschaft. These should not be confused with the recent new Philips issue of Ampex manufactured tapes which do not have the yellow label or the DGG inscription.

A reward of up to ten per cent of the value of the goods is being offered and information should be passed at once to either the informant's nearest police station or to the owners, Messrs. Teletape Ltd., 11 Redvers Road, London, N.22.



# ONE WAY TO SATISFACTION

4-TRACK	Deposit	12 Monthly	Cash
STEREO MONO	£ s. d.	£ s. d.	Price
Philips EL3312	16 19 10	4 3 4	66 19 10
Ferguson 3232	22 18 3	5 14 7	91 13 0
Sony TC200	23 15 0	5 18 9	95 0 0
Sanyo MR929	24 0 0	6 0 0	96 0 0
Philips EL3555	25 19 4	6 5 8	101 19 4
Aiwa TP1012	26 0 0	6 8 2	102 18 0
Akai 1710W	27 17 3	6 16 8	109 17 3
Sanyo MR939	28 0 0	6 16 8	110 0 0
Sony TC260	29 5 0	7 5 0	116 5 0
Tandberg 12/21/41	31 10 0	7 17 6	126 0 0
Philips EL4408	33 16 8	8 6 8	133 16 8
Telefunken 204 'E'	34 12 5	8 10 0	136 12 5
Beocord 2000K	39 10 0	9 13 4	155 10 0
Beocord 2000T	40 10 0	10 2 6	162 0 0
Sony TC530	41 10 0	10 6 3	165 5 0
Ferrograph 722.4	46 15 0	11 10 5	185 0 0
Akai M9	49 3 5	12 3 4	195 3 6

STEREO TAPE UNITS	Deposit	12 Monthly	Cash
	£ s. d.	£ s. d.	Price
Sanyo MR-801	20 0 0	4 13 4	78 0 0
Sony TC250A	20 11 0	4 18 4	79 10 0
Akai 3000D	26 11 4	6 11 8	105 11 4
Sony TC350	27 5 0	6 16 3	109 0 0
Beocord 1500	31 10 0	7 11 8	122 10 0
Tandberg 62.64X	36 18 0	9 0 0	144 18 0
Ferrograph 702.704 40	6 8 10	0 0 0	160 6 8

4-TRACK MONAURAL	Deposit	12 Monthly	Cash
	£ s. d.	£ s. d.	Price
Fidelity Studio	11 5 9	2 16 6	45 3 0
Philips EL4305	11 17 9	2 16 8	45 17 9
Ferguson 3226	11 10 0	2 16 8	45 10 0
Grundig TK140	11 14 6	2 18 4	46 14 6
Telefunken 201	11 18 9	2 19 7	47 13 9

#### 4-TRACK MONAURAL (contd.)

	Deposit	12 Monthly	Cash
	£ s. d.	Payments	Price
	£ s. d.	£ s. d.	£ s. d.
Ferguson 3228	11 19 0	3 0 2	47 19 0
Philips EL4306	14 1 8	3 10 0	56 1 8
Ferguson 3230	14 13 0	3 13 0	58 11 0
Ferguson 3216	16 19 0	4 0 0	64 19 0
REPS M10	18 18 0	4 14 6	75 12 0
Truvox R54	18 18 3	4 14 11	75 17 3
Wyndorf Vanguard	18 18 0	4 14 6	75 12 0
Tandberg 1526	20 19 0	5 3 4	82 19 0
Truvox R204	31 14 2	7 15 0	124 14 2

#### MAINS TWIN TRACK

Fidelity Playtime	7 18 6	1 16 8	29 18 6
Ferguson 3224	8 6 0	2 1 4	33 2 0
Grundig TK120	9 17 6	2 9 2	39 7 6
Philips EL3310	10 5 10	2 11 5	41 2 10
Tandberg 1521	18 19 6	4 10 0	72 19 6
Truvox R52	18 17 3	4 15 0	75 17 3
Beocord 1100	24 10 0	6 2 6	93 0 0
Brenell Mk. V/3 Std.	26 17 9	6 10 0	104 17 9
Brenell MkV/3 Mtr.	28 0 2	7 0 0	112 0 2
Truvox R202	31 14 2	7 15 0	124 14 2
Brenell V/3/M	32 16 8	8 5 0	131 16 8
Ferrograph 713	33 18 4	8 9 7	135 13 4
Ferrograph 713/H	36 16 8	8 16 8	141 16 8

INTEREST FREE H.P. TERMS. OPEN SATURDAY 6 p.m. FRIDAY 6-30 p.m. IF UNABLE TO CALL WRITE FOR BROCHURES. PART EXCHANGES. ALSO 18 and 24 MONTHLY TERMS

**BEOCORD**  
2000T De Luxe

Cash £162. Deposit £40 10s. 0d.  
12 monthly payments of £10 2s. 6d.  
Complete with 2 detachable loudspeakers in lid.

# THE RECORDER CO

(DEPT. T) 186-188 WEST END LANE, WEST HAMPSTEAD, LONDON, NW6  
Telephone: 01-794 4977





# NATURE NOTES FOR JANUARY

BY RICHARD MARGOSCHIS

MANY tape recorders will be in use over the festive season recapturing the sounds of the last twelve months. The spools will spin to and fro as the operator mutters—"I know it's here somewhere," and then—"Ah, it follows this." But does it? This is the sort of thing I hate to see because it is quite unnecessary.

I make no excuse for adding to much that has been written on the subject because I think that there are special problems with Natural History recordings. If the recordings are simply added to the filing spool as they are made and indexed under a reference number imagine what would happen if you wished to replay all your recordings of, say, the blackbird; you might be able to find them easily but you would have to juggle with several spools to play them all. On the other hand it is uneconomical, especially in the early stages, to use one spool per species.

The first requirement, therefore, is that all recordings of any one species should be filed one after the other. This reasoning can be taken one step further because, in bird life particularly, we have a number of related species; finches, tits and warblers are examples. By means of a suitable system of reference numbers they can be kept in their respective groups, and such a system can be provided by following, entry by entry, a pocket guide book to birds such as the one I mentioned last month; the appropriate number being used only when a recording of the species to which it relates is obtained.

I do not believe in indexing against a position counter, my system works whatever machine is used to replay after filing; it depends on the use of leader tape of two colours, yellow and red. A yellow leader indicates nothing but the species which follows it and the first part of the reference number. It will be followed immediately by a red leader which carries the second part of the reference and full details of the recording which follows. When a second recording of the species is to be filed it is spliced in position following the first, its own red leaders separating it from the end of the first one.

All my library is stored on 7 inch spools, but any size suits the system, each box carries a number and an adhesive label giving the species numbers carried on the spool, perhaps, say nos. 120-150. As spools become full new ones are added at the end of the system and recordings moved down to spread them evenly over the spools. This requires changing the species numbers on the box labels but it means that the original order is maintained.

Indexing can be done on any flexible system; a small loose leaf book is ideal, using one page per species arranged in alphabetical order and carrying details of each recording.

Now suppose I want to find a recording of the contact call of a Chaffinch. In the alphabetical index I find the reference number is 170 and the sixth recording has the call I want. Very quickly I find the appropriate box by reference to the labels and spool off until I come to a yellow leader carrying the number 170, the sixth red leader following this will mark the beginning of the required recording.


The system requires that only one track is used, but by the addition of leaders of a third colour it can be modified to index recordings dubbed on to track two.

If you are interested in making recordings of the fox now is the time to look around for signs of activity, especially if there is snow lying. Holes freshly dug out in sandy banks or on the edge of woods are good evidence, especially if you find the odd bone or carcass lying nearby. You should also find "scats" or droppings if the "earth" is inhabited. Once located, maintain as regular a watch as possible because it is in this vicinity that you are most likely to hear the animals shouting.

The dog is generally heard only in the mating season which ranges from early December to late February. The call is a sharp double or triple bark emitted at intervals as he prowls his territory, and if there is a vixen in the area her answering call might be heard. She is more vociferous and her vocabulary much greater, ranging from a bark, sometimes continuous, to a spine chilling scream.

From dusk to midnight is probably as good a time as any to hear these calls and because of their nature the only way to be sure of recording them is to keep the tape running all the time.

Space for the advertisement below has been donated to SHELTER by TAPE Recording Magazine. It has not the kind of sales message that usually appears in our pages. May we, however, endorse the appeal it makes by asking you to consider offering either help or money as a contribution towards the welfare of people who are forced to live in appalling conditions. These people need help and SHELTER needs our help to help them. By doing something about it we can demonstrate that this is truly the season of goodwill.



## The Streetwalker's apprentice

Linda is eleven.  
She walks the streets.  
She's out half the night.  
And if you could see  
her home, you'd know why.  
Her Mum, dad, three brothers  
and two sisters all share one rotten room.  
Linda's sick of it. She gets little sleep  
and no privacy. So she hangs about the  
back streets. A trainee delinquent, like so  
many child victims of bad housing.  
Overcrowding is one kind of homelessness,  
SHELTER—the National Campaign for the  
Homeless—is working to rescue families  
like Linda's to help provide decent homes  
at economic rents, To fight every kind of  
homelessness. SHELTER is now rehousing  
two families a day. It's not enough.  
Please give more.

Think of the kids—give to **SHELTER**  
National Campaign for the Homeless  
Post to SHELTER, Dept TRM 86 Strand, London, W.C.2.

Please use my gift of £..... to help the homeless

NAME .....

ADDRESS .....

I would like to help in other ways too..... please tick

Photographer Penny Tweedie

## MUSIC ON TAPE

### 7½ ips STEREO

Equipment used for review tapes: Amplifiers—Quad valved and Wharfedale transistorised. Loudspeakers—Celestion and Jordan-Watts. Tape Recorders—Akai 3000 D and Tandberg 64X.

#### BACH'S GREATEST HITS. The Swingle Singers. Philips PTC 600097 4-track 7½ ips, stereo. 104s. 10d. including purchase tax.

Philips Records Limited are now distributing a new range of 7½ and 3¾ ips 4-track stereo tape records in this country. The Swingle Singers performing their well-known album of "Bach's Greatest Hits" is the first of this series we have had the pleasure of reviewing.

Let me admit right at the beginning that I like the Swingle Singers. I believe them to be consummate artists in their own right. They are proud of the fact that not a single note is added or subtracted from the original Bach score. The only adjustments are the use of bass and drums, and, of course, the changes in timing.

Top of the Bach hit parade are: *Fugue in D minor* (from *The Art of the Fugue*), *Prelude for Organ Choral No. 1*, *Aria* (from *The Suite in D Major*), *Prelude in F Major* (from the *Well Tempered Clavier 2nd Book*), *Bourree* (from *The English Suite No. 2*), *Fugue in C minor* (from *The Well Tempered Clavier 1st Book*), *Fugue in D Major* (from *The Well Tempered Clavier 1st Book*), *Prelude No. 9* (from the *Well Tempered Clavier 2nd Book*), *Sinfonia* (from *The Partita No. 2*), *Prelude in C Major* (from the *Well Tempered Clavier 2nd Book*), *Canon*, *Invention in C Major*, and *Fugue in D Major* (from *The Well Tempered Clavier 2nd Book*).

Just in case any readers should have forgotten, the nationality of The Swingle Singers is French. But what they have done for this immortal music passes beyond artificial geographic frontiers. Bach is, perhaps the composer. What Ward Swingle has done is to give us all the opportunity to take a refreshingly new look at one of the timeless masters of musical composition. All too often fine classical works are devalued and degraded by popular arrangement. My own feeling is that in their jazz interpretations they have enhanced rather than detracted from the accomplishments of what some would call the world's greatest composer.

These Philips tape records are imported from the USA where they have been manufactured by Ampex. Needless to say, quality on this sample is superb. If I had to nominate a tape of the month it would be "Bach's Greatest Hits" by the Swingle Singers. Very strongly recommended.

#### CONCERTO UNDER THE STARS. The Hollywood Bowl Symphony Orchestra conducted by Carmen Dragon with Leonard Pennario piano. Capitol ZP 8326. 7½ ips, 4-track stereo. 101s. 10d. including purchase tax.

The name of Carmen Dragon has been associated with that of the Hollywood Bowl

Orchestra for a long time. For some reason the publisher always likes to give us the impression that just as the "Bowl" is a highly sophisticated amphitheatre so the recordings are also imbued with that subtle attribute of ultimate high fidelity. It is a point that is open to debate, in my humble opinion. Certainly these records do have a characteristic and recognisable sound quality—the contentious question is whether or not that quality bears any relationship to high fidelity.

The present album has the characteristic Hollywood Bowl sound. I find it difficult to describe. An innate heaviness coupled with an incongruous over-brilliance. Perhaps in total it represents the American conception of high fidelity. I suspect that a judgment as to whether the effect is pleasant or unpleasant is entirely a matter of personal opinion on the part of the listener, and as such will be conditioned by the quality of his listening equipment.

The present album gives us: *Swedish Rhapsody* (Wildman), *Prelude in C sharp Minor* (Rachmaninoff), *Cornish Rhapsody* (Bath), *Liebesträume* (Liszt), *Warsaw Concerto* (Addinsell), *Adagio from Moonlight Sonata* (Beethoven), *Scherzo from Concerto Symphonique* (Litolff).

The Beethoven, Rachmaninoff and Liszt are offered as Carmen Dragon orchestral settings—arrangements which, as one might guess, are replete with an over-emphasis of the romanticism with which these compositions are popularly associated. If some find the mixture too sugary others will doubtless give it their unqualified approbation. All too often in these reviews I find myself saying that a particular collection is fine if it happens to be what the listener actually wants. That is precisely true of this album. With the already mentioned reservation on recorded quality and the observation of the emotional character of the music there is little more to be said. It only remains for me to suggest that with dimmed lights and suitable company of the opposite sex one should take maximum advantage of the situation that Carmen Dragon obligingly creates for us.

#### MY FAVOURITE CHOPIN. Van Cliburn. RCA Victor FTC 2091 4-track stereo 7½ ips. 85s. excluding purchase tax (pretax import).

In his sleeve notes the soloist reminds us that Chopin had a "reverential worship for art." Since the composer was not the only man to pretend to such aspiration I must mention at the beginning of this review that I have heard better recordings of the solo piano in terms of technical quality than we are offered here in this R.C.A. Victor album. The tape is not loaded as fully as I would have liked and bringing up the level at the amplifier produces some rather obtrusive hiss noise. This state of affairs can only be partially corrected by use of the treble control because instrumental tone quickly begins to suffer if the hand applying it is a little too heavy in its action.

So once we admit that this album is by no means outstanding as an example of the craft of the recording engineer we can put that fact behind us and sit down to enjoy some of the most popular music in the Chopin repertoire. The album comprises *Polonaise No. 6 in A Flat Op. 53* (Heroic), *Nocturne No. 17 in B Op. 62, No. 1*, *Fantaisie in F Minor Op. 49*, *Etude No. 23 in A Minor Op. 25 No. 11* (Winter Wind),

*Etude No. 3 in E Op. 10 No. 3*, *Ballade No. 3 in A Flat Op. 47*, *Waltz No. 7 in C sharp Minor Op. 64 No. 2*, and *Scherzo No. 3 in C sharp Minor Op. 39*.

Chopin brings to the piano an indescribable "something". It was an instrument he loved and to his compositions he brought all that mystic quality that we summarise in the single three-letter word "art". And as art in its most refined form the works of Chopin never really pall. Perhaps that is one of the tests of great composition. To be able to listen again and again yet still find one's interest undiminished. If that should be accepted as a criterion of judgment then it is completely fulfilled in this collection.

It's a pity the recorded quality is not just that bit better. I suspect that the master for this album was probably recorded quite a few years ago. Nowadays we have all of us come to expect such a universally high technical standard that we are perhaps a little spoilt. I would suggest that the Van Cliburn album offers outstanding value for money in spite of its drawbacks.

### 3¾ ips STEREO

#### LEGEND OF THE GLASS MOUNTAIN. Ron Goodwin and his Orchestra. EMI Columbia TD-TWO 220, 3¾ ips, 4-track stereo. 41s. including purchase tax.

E.M.I. are now producing a completely new range of British-made 3¾ ips 4-track stereo tapes. Packed in their new style transparent plastic containers with illustrated sleeve inserts and wound on to 4 in. or 5 in. spools they represent a new departure for this company.

In the past I have been very outspoken in my reviews against the policy of issuing pre-recorded tapes at the speed of 3¾ ips. The reason I campaigned so strongly in favour of the higher speed was because it seemed to me to be a great pity to have to endure the quality losses associated with the slower tape speed merely because the publisher could then produce a record at slightly lower cost owing to the saving in virgin tape. So what result have E.M.I. been able to achieve in these new issues?

Let me be the first to admit that recorded quality is good. Surprisingly good. Background noise is almost entirely absent and frequency response appeared to extend up to around 10,000 Hz—in other words is as good as we can anticipate from our best VHF radio transmissions. Having said that one can only logically assume that had the recordings been put out at 7½ ips they must have been that much better . . . ! The key to this question, of course, is whether or not the public are prepared to pay a few shillings extra for what I agree would be only a marginal increase in quality. Apparently E.M.I. have decided in their wisdom that the answer is "No". Perhaps they are right. At all events the 3¾ ips stereo tapes are here and it is hoped that we will be able to review them regularly in our music section.

This very first tape under the title "Legend of the Glass Mountain" performed by Ron Goodwin and his orchestra is just about the nearest thing to an odds-on favourite that I have ever seen issued from any record publishing house. On side one we have *Theme from Legend of The Glass*

*Mountain, Dream of Olwen* (Theme from *While I Live*), *Intermezzo from Escape to Happiness*, *Theme from Way to the Stars and Warsaw Concerto* (film *Dangerous Moonlight*). On side two we find *Spitfire Prelude and Fugue* (from *First of the Few*), *Theme from Limelight*, *Tara Theme* (film *Gone with the Wind*), *Rhapsody on a Theme by Paganini* (film *Story of Three Loves*), *Theme from Moulin Rouge* and *Cornish Rhapsody* (film *Love Story*).

Given good performance and good recording this issue should sell in its thousands. Believe me, the recording and performance leave little to be desired. E.M.I. are to be congratulated on the high standard of quality they have been able to achieve in this new series of stereo recordings.

**VIENNESE PROM CONCERT.** The Hallé Orchestra conducted by Sir John Barbirolli. EMI Columbia TD-TWO 180 3½ ips, 4-track stereo. 41s. including purchase tax.

For some reason this month's collection of review tapes is heavy with nostalgia. The "Viennese Prom Concert" by the Hallé Orchestra is certainly no exception.

But are the immortal tunes included in this album any the worse for that? The only real complaint is that here we have yet another recording of pieces that have already been recorded so many times that one can scarcely credit that any enthusiast lacks them in his library. However, at least we can assert with confidence that this is the first time these works have been issued as an E.M.I. 3½ ips 4-track stereo tape record.

The programme includes: *On the Beautiful Blue Danube*, *Thunder and Lightning—Polka*, *Overture "The Gypsy Baron," Perpetuum Mobile*, and *Champagne Polka*, all compositions by Johann Strauss 2nd, together with the *Radetzky March* (Johann Strauss 1st) *Gold and Silver—Waltz* (Lehar) and "Waltzes from *Der Rosenkavalier*" (Richard Strauss).

Let me be truthful and admit that I had my tongue in my cheek when I was being cynical about the issue of yet another version of these evergreen favourites. It is all too easy to forget that new generations will acquire this record with the same eagerness as their fathers did before them. The only difference is they will have the advantage of the excellent recorded quality of the tape medium together with the integrity and vivacity of the Barbirolli interpretation.

Another tape record to recommend.

**HOLIDAY FOR STRINGS.** David Rose and his Orchestra. EMI Columbia TD-TWO 216 3½ ips, 4-track stereo. 41s. including purchase tax.

It is almost as if this album had been issued by E.M.I. to refute my own pleas that the faster speed of 7½ ips should be maintained for good quality stereo recordings. In fact the quality on this tape at 3½ ips is stunning.

Dave Rose gives us on side one: *Holiday for Strings*, *The Stripper*, *Waltz of the Bubbles*, *Four-Twenty a.m.*, *California Melodies*, and *Like Young*, together with an equally lively repertoire on side two: *Dance of the Spanish Onion*, *Taco Holiday*, *The Tiny Ballerina* (who could only dance in the Key of C), *Rose of Bel-Air*, *Gay Spirits* and *The Wigwam*.

With uninhibited verve the Dave Rose Orchestra trips lightly from number to

number as the recording reveals subtle orchestral textures. One point well worth emphasising is the fact that stereo separation in the 4-track tapes is so much better than could be achieved on disc; this fact alone may well spell the magic word success for people in the tape business despite government discouragement. It really is an experience to listen to the brilliant spread of stereo sound achieved when this album is reproduced through a pair of properly positioned quality speakers. With realistic presence and exceptionally low background noise the listener is treated to really worthwhile enjoyment. Strongly recommended.

## MUSICASSETTE

### REVIEWS

**ARTHUR TRACY** sings *Romantic Favourites*. Sentry SS933. 50s. including purchase tax (old rate).

When the sleeve notes refer to Arthur Tracy as the "fabulous" Street Singer they are justified in using the word in its literal sense. The romantic image of Tracy is indeed a fable—but through this Sentry Musicassette it is miraculously recreated for our enjoyment.

The Street Singer's ballads include *Yours is My Heart Alone*, *I Bring a Song*, *Vilia*, *Play Fiddle Play*, *Beautiful Love*, *If I Love Again*, *Marta*, *Because*, *Full Moon and Empty Arms*, *Jeannine I Dream Of Lilac Time*, *Love is a Many Splendid Thing* and *September Song*. By today's standards "square" rather than "fab," and yet still I insist fabulous.

Like the bouquet of a vintage wine this music is proudly dated. Derived from some very elderly recordings it is bursting with the flavour of the sounds of my own childhood. And through it all shines the reincarnation of a truly great voice.

In the days of the Street Singer there was no electronic gimmickery to bolster the performer. He survived by the power of his lungs and his own technical ability. Arthur Tracy did not just survive—he conquered all who heard him.

This nostalgic voice from the past is a delightful reminder of the artistry of not-so-very-long-ago and as such offers complete relief from the more objectionable sounds of today. A must for all those who, like myself, are not ashamed to admit to being romantic squares at heart.

**VILLA-LOBOS** CONDUCTS **VILLA-LOBOS**. *Chorus No. 6 Rias Symphony Orchestra*. Sentry SS934. 50s. including purchase tax (old rate).

This is an appropriate time to be listening to the music of one of the most famous musician-composers from Brazil. During the recent Royal visit we were all impressed by the affinity this South American nation has for us in our North European island. Nowhere is this rapport more clearly demonstrated than in the music of Heitor Villa-Lobos.

Basing most of his music on the inspiration of the primitive folk music of his native Brazilian jungles, the composer provides a unique link between the untamed forest

Prices quoted in reviews of music tapes are, where possible, at the new rate of tax—55 per cent. Readers are reminded that some dealers may well have stocks at the previous rate of 50 per cent, and in a small number of cases tapes without any tax at all might still be found.

and the sophistication of the western metropolis.

This recording of one of his major works, *Chorus No. 6*, clearly demonstrates its non-western origins. Conceived on the grand scale it is a composition that deserves to have a regular place in our concert repertoire. My own first reaction on listening to it was a feeling of sadness that we in the West should remain so obstinately insular. However this situation is rapidly changing with the increasing interest in Oriental music and it is profoundly to be hoped that at least an equal interest will be given to the music of other cultures. There is no better starting place than a serious study of the Villa-Lobos *Chorus No. 6*.

Recording on this Sentry Musicassette is up to the usual high standard with a particularly low level of background noise. Recommended to those who feel the need to seriously study something a little out of the ordinary.

**THE CORRIES.** *Kishmul's Galley*. Fontana CFF 5004. 55s. 11d. including purchase tax.

Roy Williamson and Ronnie Browne are nothing if not versatile and imaginative. With an uninhibited collection of instruments, including English guitar, fiddle, zither guitar, Northumbrian pipes, boraan, banjo, whistle, flute, concertina and many others—not forgetting two matchboxes—they bring to their work a refreshing originality which forces one to look at the folk idiom in a completely new light.

I can have nothing but praise for every aspect of this album. Recording is superb, and as for the artistes—well, they are themselves, and long may they remain so. Throughout the whole of the material there is interwoven the genuine Celtic charm, in spite of the fact that the title number, *Kishmul's Galley*, has an obvious Eastern derivation.

The items include: *Twa corbies*, *Roving journeyman*, *Lewis bridal song*, *Doran's favourite*, *Cruel brother*, *Gallus bloke*, *Highland lament*, *Kishmul's Galley*, *Night Visitor's song*, *The Spanish shawl*, *Toon o' Kelso*, *October song* and *The shamrock and the thistle*.

To every song the Corries bring their own experimental interpretation; in fact each is a complete experiment in itself. And how well they all succeed! A gem of an album, not to be missed on any account.

*Sentry and R.C.A. Victor are distributed by Transatlantic Music Tapes Ltd., of 36, High Street, Salisbury, Wiltshire. Philips and Fontana are distributed by Philips Records Ltd., of Stanhope House, Stanhope Place, London, W.2. Capitol are distributed by E.M.I. Records Ltd., Imported Division, of Blythe Road, Hayes, Middlesex, and are only obtainable from E.M.I. Specialist Dealers.*

*E.M.I. Columbia are distributed by E.M.I. Records Ltd., 20, Manchester Square, London, W.1.*

**YOUR LOCAL DEALER**  
**LONDON**

**Masseys Centre of Sound**  
West London's HI-FI Tape Recorder Specialist  
—Demonstration Room with Comparator  
APPOINTED FERROGRAPH DEALER  
**AT**  
**CHISWICK, W.4**  
Accessories, All Kinds—Servicing—Pre-Recorded  
Tapes Mono/Stereo  
121-123 High Road—10 a.m.—7 p.m.  
◀ **TEL: CHI 2082** ▶  
(not closed for lunch)

**LONDON**  
**TAPE RECORDER HI-FI CENTRE**  
**(SHEEN) LTD.**  
HI-FI EQUIPMENT  
TAPE RECORDERS  
ACCESSORIES  
SERVICE  
3 & 4 STATION PARADE, CLOSED WEDNESDAYS  
SHEEN LANE, SHEEN, 01-876 0985  
LONDON, S.W.14 Opposite Mortlake Station S.R.

**Lee Electronics**  
**THE TAPE RECORDER & HI-FI AUDIO SPECIALISTS**  
400 EDGWARE RD., LONDON, W.2 (PAD 5521)  
London's leading Stockists of High-Fidelity and Audio Equipment. Many bargains in new and reconditioned equipment.  
SEND FOR FREE LISTS OF RECORDING TAPES, RECORDERS, AMPLIFIERS, ETC.  
APPOINTED B. & O. AGENTS

**THE SOUTH**

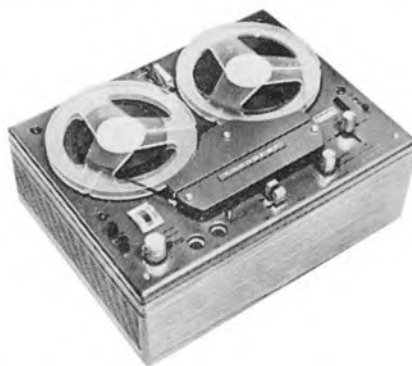
**THE SOUTH WEST**  
**TOM MOLLAND LTD.**  
Invite you to visit their well-equipped Demonstration Theatre and compare all the leading makes of Hi-Fi and Tape Equipment at  
**110 CORNWALL ST., PLYMOUTH**  
Telephone 69285  
**Immediate delivery to ALL Areas**

**NEW PRODUCTS**

**TANDBERG INTRODUCE SERIES 12X**

ANOTHER new arrival from the Tandberg stable is the Series 12X, a complete stereo tape recorder utilising a separate head for applying the bias current to the rear of the tape.

Like its predecessor, the Series 12, the new 12X is a complete stereo record/playback system based on the well known Tandberg deck. However the distributors claim that by using the new bias head frequency response figures are quite exceptional at all tape speeds.



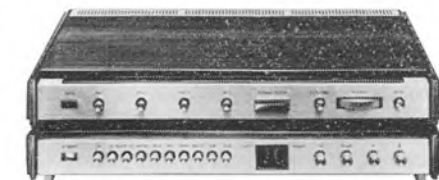
Two ten-watt amplifiers, each with its independent volume control, offer the possibility of using the 12X as the heart of a complete quality music reproducing system. Facilities include both sound on sound and multiple track synchronised recordings. The electronics are completely transistorised and inputs are provided for magnetic pick-ups. Available in either half-track or four-track versions the three speeds are 7½, 3½ and 1½ ips. Signal-to-noise ratio is given at 58 dB for the four-track version and 60 dB half-track (both measured according to DIN standards). Bass and treble controls are provided and two moving coil meters replace the "magic eye" type of indicator provided on earlier Tandberg models. Suitable for either vertical or horizontal operation the price is 134 guineas.

Elstone Electronics Limited, Hereford House, North Court, off Vicar Lane, Leeds, 2.

**PRESTIGE AUDIO FROM ARENA**

THE Danish firm of Hede Nielsen is perhaps not so familiar in this country as the trade name of the audio products manufactured by them. For many years now Arena equipment has been highly regarded as offering excellent value for money within its price range.

But now this firm is offering through its distributors, Highgate Acoustics Limited, a new prestige unit at the upper end of the price bracket. Designated T 9000 it is described as being the result of an intensive research programme conducted along unconventional lines. The T 9000 is said to be the first Danish tuner/amplifier with an output of 2 x 75 watts.

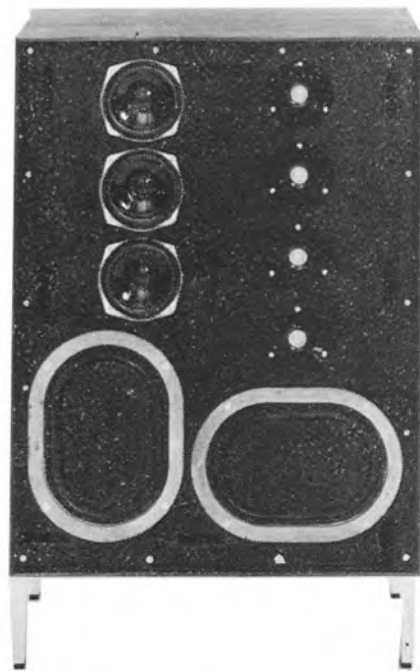


Constructed on the modular principle throughout, the pre-amplifier has facilities for four inputs for magnetic or crystal pickups and microphone and any combination of these can be fitted in the four input channels. Press buttons are provided for radio, tape, microphone, record player, two auxiliaries, rumble and scratch filters as well as loudspeaker high/low output switch. Connections are through both DIN and phono sockets.

The tuner section comprises a combined multiplex FM/AM receiver using silicon diode tuning on both FM and AM bands. Automatic stereo switching is incorporated as well as inter-station muting.

Dimensions of the unit are 6 in. high x 20½ in. wide x 12 in. deep and the weight is 44 lb. Retail price is 275 gns.

As the manufacturers claim that there are very few loudspeaker systems capable of taking the 75 watts RMS output Arena have produced the HT 25. This is a completely new dynamic system made up of ten loudspeaker units together with a highly developed filter type crossover network intended to eliminate inter-modulation distortion. It includes the British KEF units which have been specially developed by Mr. Raymond E. Cooke of KEF.



The HT 25 unit is built into a floor standing cabinet with legs and the design and finish are up to the usual high standard of all Arena equipment. Price is 125 guineas.

As an alternative to the HT 25 Arena have designed the HT 26 with a power handling capacity of 50 watts RMS. Using a slightly narrower cabinet the transducers comprise one bass unit, one mid-range and two treble units with crossover networks. Nominal impedance for both loudspeakers is 8 ohms and the price of the HT 26 is 49 guineas.

Highgate Acoustics Limited, 184/188 Great Portland Street, London, W.1.

## HANIMEX TO IMPORT TOSHIBA EQUIPMENT

A COMPREHENSIVE range of some thirty or more products from the Japanese manufacturer Toshiba is about to be marketed by the well known photographic firm of Hanimex (UK) Limited.

Toshiba is a giant corporation in every sense of the word and has a vast interest in a wide diversity of products ranging from heavy engineering to electronics. The equipment about to be imported includes low-cost transistorised portable radios, some ingeniously designed gramophone reproducers, both cartridge and cassette record/playback units and also high grade tape recorders, tuner/amplifiers and transcription units.



As an example the Toshiba model GT-840 S is a four track solid state stereo tape recorder operating at 3½ and 7½ ips with a claimed frequency response of from 70-16,000 Hertz at 7½ ips and 70-12,000 Hertz at 3½ ips. Audio output is said to be 5 watts, level indication is by two VU meters and at a recommended retail price of 99 guineas the accessories include two dynamic microphones two reels, input/output cords, splicing tape instruction manual and separate detachable speakers.

Hanimex (UK) Limited, Hanimex House, 15/24 Great Dover Street, London, S.E.1.

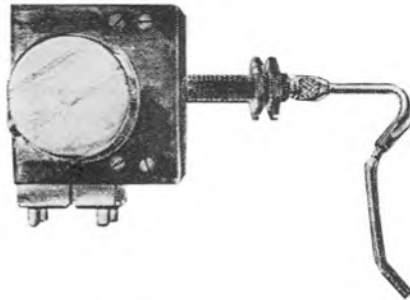
## ADVANCED DESIGN FROM DECCA

TWO new products are announced by Decca who claim that both incorporate features not hitherto available.

The first of these is the Decca International pick-up arm which incorporates many design innovations including magnetic bias compensation, an inverted jewelled uni-pivot, optional lateral and vertical damping and a magnetic floating action which causes the pick-up to literally float on a cushion of magnetism so that it is almost completely isolated from the motor board. The arm can



be balanced both laterally and vertically by means of an isolated offset counterweight. A lightweight head shell for use with the majority of high quality heads is supplied with each arm and the price of the Decca International pick-up arm is 25 guineas inclusive of purchase tax.



The other new product is the Deccolift, an electrically operated lifting and lowering device which the manufacturer believes to be the first and only invention of its kind in the world. Recommended retail price is 8 guineas inclusive of purchase tax and the Deccolift can be operated either by a switch on the motor board or remotely by means of a switch which is supplied with the product.

Decca Special Products, Ingate Place, Queensdown Road, London S.W.8.

## HEADSETS BY FAMOUS FIRM

AS specialists in acoustics the British firm of Amplivox are pleased to announce the introduction of their new Astrolite high fidelity headphone.

This moving coil instrument is part of a new range which in total covers a wide range of technical, communications and domestic listening headphones. Prices depend upon model, but quoting a typical example the



high fidelity stereo headset (200 ohm phones wired for stereo) is offered at a recommended retail price of approximately £8 5s. The quoted frequency range is 50-15,000 Hertz and it is claimed that 0.1 mW of power will produce a comfortable listening level of 90 dB. The low frequency response can be reduced by using alternative ventilated ear cushions. The exclusive distribution rights for all retail markets in the UK have been granted to Messrs. Daystrom Limited of Gloucester.

Amplivox Limited, Beresford Avenue, Wembley Middlesex.



Factory Fresh, Superb Quality. Leaders, Trailers and Stop Foils on all sizes 5" and above. We supply many local authorities and professional recording studios. May we supply you? P. & P. 2/6 per order. S.A.E. Full Lists.

### FULLY GUARANTEED

Size Base	Standard	P.V.C.	Long
3"	150'	2/6	225' 3/3
4"	300'	4/3	450' 5/6
5"	600'	8/9	900' 10/3
5½"	900'	10/6	1200' 12/6
7"	1200'	12/6	1800' 17/9

Size Base	Double POLYESTER		Triple
	3"	4"	
3"	300'	4/6	600' 9/3
4"	600'	8/6	900' 13/3
5"	1200'	15/9	1800' 23/6
5½"	1800'	19/9	2400' 29/9
7"	2400'	22/6	3600' 39/9

LEDA TAPES (T), 30 BAKER ST., LONDON, W.1

Phone: 01-226 7004

## MUSICASSETTES

- LIBRARY SERVICE
- PART-EXCHANGE
- MACHINES
- LANGUAGE COURSES

Send 2/6 P.O. or stamps for 60 page catalogue (refunded first order).

## THE MUSICASSETTE SUPPLY COMPANY

13 Angel Street, Worcester

For Jiffy-fast Postal Service

## SUBSCRIBE TO TRM

and receive your monthly copy by post for 1 whole year (12 issues). Send 25s. (U.S.A. \$3.75) by postal order or cheque today.

**25/-**  
U.S.A.  
\$3.75

To: TAPE RECORDING MAGAZINE, Prestige House, 14-18 Holborn, London, E.C.1

Name.....

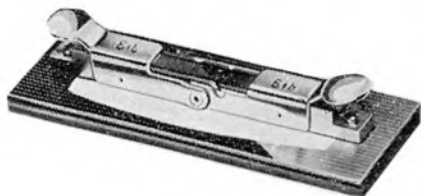
Address.....

.....

.....

## ACCESSORY REVIEW BIB SPLICER

**BIB RECORDING TAPE SPLICER**  
manufactured by Multicore Solders  
Ltd., Hemel Hempstead, Herts., price  
19s. 6d.



The Bib Tape Splicer has been with us for years—more years than I care to remember. Was it ten years ago that I came across the very first review of this useful little accessory? Perhaps it was twelve or even more. Whenever it was this handy little tool has been used with ever increasing popularity by enthusiasts everywhere in the years between.

Now the manufacturers are offering an

improved version mounted on a base-board which incorporates a new non-scratch, non-slip base. The tool itself can be easily detached from the base by undoing a couple of screws if it is to be mounted on a tape deck.

There are of course a number of appliances available on the market to aid tape splicing. The basic function of any splicer is firstly to hold the tape firmly in place and secondly to provide a guide for a cutting edge. The Bib Splicer fulfils these requirements by means of a pair of hinged arms bearing panels of gripping material on their undersides. Tape is merely laid along the length of the tool and when the arms are brought down it is gripped as firmly as if it were in a vice. An important feature of the Bib Splicer is the fact that the positive grip is not affected by the thickness of the tape; in other words double or triple-play tape will be held as firmly as the more substantial standard-play (although I always recommend enthusiasts to use standard-play whenever editing is envisaged simply to facilitate ease of handling).

Two guide slots are provided, one at an angle of 90° and the other at 45°. Included in the package with the splicer is a single edged tape cutter with protective plastic cover to the spine (an ordinary

single edged type razor-blade will suffice equally well) and the method of use is to grip the tape on the block and then to draw the blade carefully through one of the two guide slots.

For joining tapes the two cut edges are brought together to form a butt joint at the centre of the tool and are then firmly held in place by lowering the arms. The user may then apply either quarter-inch wide splicing tape over the joint parallel with the block—a method that obviates trimming — or half-inch wide tape can be laid diagonally across the joint. When the latter method is adopted trimming is made easier by the provision of additional guide grooves along the length of the tool.

The whole art of editing is a skill that is acquired by practice. The more one does the easier it becomes and the more one gets used to the particular tool one is using. There are so many advantages in the Bib Splicer, including its very positive tape grip, small size and possibility of simple fixing to a deck, that it makes sense to use it from the start. A splicing tool and a reel of splicing tape are two of the cheapest things that any recordist can acquire and yet with them he can open the door to the widest possible range of creative activity. **D.G.K.**

Bishopsgate  
Institute

# CITY

## TAPE RECORDER CENTRE

BISHOPSGATE

Liverpool Street Station

**228 BISHOPSGATE  
LONDON, E.C.2.**

Tel. 01-247 2609

Opposite Liverpool Street Station

Hours of Business:

MONDAY TO FRIDAY

9 a.m. to 6 p.m.

Closed all day Saturday

**OPEN  
SUNDAY**

10 a.m. to 2 p.m.

Part of the Nusound Organisation

At the City Tape Recorder Centre you can see one of the finest selections of tape recorders on display in London. Every leading make and model from Akai to Vortexion.

### NOW IN STOCK —

The very latest B. & O. 2000 DE LUXE with 4-track stereo record and replay facilities.

We also have a limited number of B. & O. 2000 2-track Table Models at our Special Price of £145.

We are easy to get to being almost opposite Liverpool St. Station (see diagram above) and remember we are the only tape recorder specialists in Gt. Britain open on Sunday!

Do your weekly rush shopping on Saturday with your wife and visit us on Sunday at your leisure!

- **GENEROUS PART EXCHANGES**
- **FREE AFTER SALES SERVICING**
- **UNBEATABLE SPECIAL OFFERS**
- **EXPERT STAFF EXPERT ADVICE**

**WE OPERATE A PERSONAL EXPERT SCHEME—  
SAVING UP TO 20% ON LIST PRICE**



Our manager Bob Hookings is a keen tape recording enthusiast. Bang & Olufsen's are his speciality, having used B. & O. equipment for several years his knowledge of this wonderful range is second to none. He is able to give personal callers his expert advice (please avoid telephoning) not only on B. & O. but on any other recorder suitable to your individual requirements and pocket.

**WHEN IN THE CITY — CALL IN AT THE CITY!**

**THE BANG & OLUFSEN SPECIALISTS**



# NEW *Musicassettes*



**SENTRY**

**PRE-RECORDED**

4 TRACK *Compact Cassette*

PLAYABLE IN ALL MONO AND STEREO CASSETTE RECORDERS

Imported from the U.S.A.

Recommended Retail Price **50/-**

(Including Purchase Tax)

## LOOK AT THIS LIST OF GREAT ARTISTS AND GREAT MUSIC

- ★ DAVID AND IGOR OISTRAKH playing Brahms Double Concerto for Violins and Orchestra and Bach's Concerto for two Violins and Orchestra with the Orchestra of Radio Moscow conducted by Kiril Konradshin. **SS 935**
- ★ SVIATOSLAV RICHTER playing Mozart's Piano Concerto No. 20 in D Minor K.466. **SS 936**
- ★ ALFRED BRENDEL playing Beethoven's Emperor Concerto on **SS 905** and Liszt', Piano Con certo's Nos. 1 and 2 on **SS 924**.
- ★ SIMON BARERE playing a long list of favourites composed by Chopin and Liszt. **SS 938**
- ★ THE RED ARMY CHORUS IN CONCERT, this wonderful choir in a never to be forgotten performance in unbelievable quality for a cassette. **SS 939**
- ★ Vocal HIGHLIGHTS from AIDA **SS 943**, HIGHLIGHTS from 'La Boheme.' **SS 942** Highlights from Cavalleria Rusticana **SS 941** and many more, all by the Soloists and Chorus of the Milan Opera Company.
- ★ Vocal HIGHLIGHTS from 'Mikado' **SS 948**, Vocal HIGHLIGHTS from 'Pirates of Penzance' **SS 949**, both performed wonderfully by The Savoyards.
- ★ THE VOICE OF JOHN McCORMACK, wonderful re-recordings of this favourite of all Ballad singers. Exciting recreations of this fabulous voice. **SS 931**
- ★ The VOICE OF FRITZ WUNDERLICH, the greatest of all Viennese tenors in a beautiful programme of music from Operettas loved the world over. **SS 932**
- ★ THE TOMMY DORSEY STORY **SS 701**; GUADALAJARA BRASS playing all the Mexican style favourites, 'Whipped Cream,' 'A Taste of Honey' and all the others on **SS 715**, **SS 716**, **SS 717** and **SS 714**.
- ★ The Wizardry of AL HIRT with Pete Fountain as Guest Star **SS 601**; LATIN GREATS AT CARNEGIE HALL with Sergio Mendez and Jao Gilberto. **SS 5007**

**44 NUMBERS IN THE 1<sup>ST</sup> RELEASE**  
(MANY MORE TO COME)

Superb Quality – Fully Guaranteed

**READ THE REVIEWS IN THIS MAGAZINE**

IF YOUR DEALER DOES NOT STOCK SENTRY

**POST THIS COUPON TO DAY**

*My dealer does not stock SENTRY Musicassettes. I am sending his name and address with this coupon. In the meantime please send me your full list of Cassette releases and details of all new releases as they become available.*

To **TRANSATLANTIC MUSIC TAPES (Distributors) Ltd.**,  
36 HIGH STREET, SALISBURY, WILTS.

NAME.....

ADDRESS .....

**YOUR LOCAL DEALER**

**THE NORTH**

CHESHIRE

**CHARLESWORTH'S**  
OF CREWE LTD.

Tape Recorder  
and Hi-Fi Specialists

Head Office: 14 Hightown, Crewe. Tel. 3327  
**Hi-Fi CENTRE: 28 HIGHTOWN, CREWE.**  
Technical Division: 19 Ludford St., Crewe.

**CUSSINS & LIGHT LTD.**

YORK'S LEADING RADIO TV & ELECTRICAL STORE

Visit our First Floor  
TAPE RECORDER CENTRE

LARGEST RANGE OF RECORDERS & ACCESSORIES IN THE NORTH

**KING'S SQ. YORK**



**TAPE RECORDER CENTRE (HALIFAX)**

stock all the best  
Tape Recorders, Hi-Fi Equipment  
Tape, Pre-Recorded Tape, etc.

**REVOX**  
specialist

30 King Cross Street, Halifax  
Phone 66832

**FULL SOUND STEREO PRE-RECORDED TAPES (and Discs)**

OF THE  
**WORLD'S MIGHTIEST THEATRE ORGANS**

Tapes are:—  
**7½ ips 4-TRACK STEREO**

Full details from:—  
**CONCERT RECORDING**

P.O. BOX No. 2  
**ROTHWELL, KETTERING, NORTHANTS**

# CLASSIFIED ADVERTISEMENTS

## FOR SALE

**BLACKBURN** has Lancashire's leading Hi-Fidelity/Tape Recorder stockists and Electronic Engineers at **HOLDINGS AUDIO CENTRE, MINCKING LANE/DARWIN STREET, BLACKBURN** (Tel 59595).

**MINIFLUX** 4-Track stereophonic/monophonic record / playback heads. List Price 6 gns.—Special Offer **55/- each**. MINIFLUX 4-Track stereophonic/monophonic Ferrite Erase Heads. List Price £3 10s.— Special Offer **32/6 each**, or supplied together (one of each) at **£3 17s. 6d.** SKN4 1/2-Track stereophonic record/play heads for Transistor Circuits **55/- each**. Also 1/2-Track and full-track monophonic Ferrite Erase Heads complete with technical specifications. SAE for details. **LEE ELECTRONICS, 400 Edgware Rd., Paddington 5521.**

Goodmans Magnum K Loudspeaker—retail £40 2s.—our price 31 gns. Send SAE for quotations stating requirements for any Hi-Fi equipment. C.B.A. (Dept. TRM), 188, Queens Road, Watford, Herts. or Ring WA2 20917.

## REPAIRS

SERVICE and professional independent evaluation of "quality" equipment. Normally 3-day turn-round. On-site service by appointment. HF ENGINEERING, 3, Willowbank, Sunbury-on-Thames, Middlesex. Telephone 83232 (24 hr. service).

OUR MODERN SERVICE DEPARTMENT equipped with the latest test equipment including a wow and flutter meter and multiplex Stereo Signal Generator is able to repair Hi-Fi and Tape Recording Equipment to manufacturer's standard. **TELESONIC LTD., 92, Tottenham Court Road, London, W.1. 01-656 8177.**

## WANTED

GOOD QUALITY TAPE RECORDERS PURCHASED FOR CASH. TELEPHONE 01-472 2185.

## TAPE RECORDS

Every pre-recorded tape available in Britain is listed in the complete TELETAPE catalogue at 2s. post free. Vast selection of Mono and Stereo tapes. Send now for your copy by return to: Mail Order Dept., TELETAPE Ltd., 11, Redvers Road, London, N.22, or call at our Marble Arch or Shaftesbury Avenue Showrooms.

ABSOLUTELY EVERY AMERICAN 4 TRACK STEREO TAPE released in America can be obtained through our special postal service. For complete and up-to-date catalogue of all releases send only 4s. to: MUSIC U.S.A., 146a, Lower Baggot Street, Dublin 2, Ireland.

## TAPE DUBBING

TAPE DUBBING RAPID RECORDING SERVICE. LPs from your own tapes. Master discs and pressings. Demo Discs. Mobile Recordings. Multi-channel facilities for transfer to 8 and 16 mm film tracks. Sound effects library on discs. Brochure on request from: RAPID RECORDING SERVICE, 21, Bishops Close, London, E.17.

J. & B. RECORDINGS. Tape to Disc—latest high level disc cutting, all speeds. Mastering, pressings, studio, mobile. 14, Willows Avenue, Morden, Surrey. Telephone: 648 9952.

**JOHN HASSELL RECORDINGS. Tape-to-Disc Service** using latest high level disc-cutting system. Quality pressings made. Studio with Bechstein Grand Mobile unit. 21, Nassau Road, London, S.W.13. RIVerside 7150.

**YOUR TAPES to DISC**, 7 in. 45—18s., 10 in. LP—48s., 12 in. LP—55s. 4-day postal service. Top professional quality. SAE photo leaflet: **DEROY STUDIOS**, High Bank, Hawk St., Carnforth, Lancs.

**STUDIO FACILITIES GRAHAM CLARK RECORDS.** Tape to Disc—Pressings. Top quality yet lowest prices in country. 7" 45 from 12/6. Small studio available. S.A.E. LEAFLET. 23, THE GROVE, WALTON-ON-THAMES, Surrey. Tel: WT25627.

## TAPE EXCHANGES

FRIENDLY FOLK ASSOCIATION, Torquay (Est. 1943). Social introductions, Pen-friends, Book-lovers, Stamps, Photography, Tapesponding. Members 100 countries.

Tapespondents. Free Sound Magazines. FAR & WIDE RECORDING CLUB, Eccles, Maidstone. Details free. SAE please.

MAKE INTERESTING NEW FRIENDS. ALL AGES OVER 17. Send SAE for free details. VICTORY BUREAU, 34, Honeywell Road, London, S.W.11.

"H" ESPERANTO TAPEFRIENDS " HORLEY, Surrey, links the continent with one language.

Open up a fascinating new world... open up a "TAPE STATION"! 4d. stamp for particulars: **WORLDWIDE TAPETALK**, 35, The Gardens, Harrow.

## EDUCATIONAL

Tapespond with the COUNTRY OF YOUR CHOICE by means of ESPERANTO. Details of Correspondence Courses from British Esperanto Association (TR), 140 Holland Park Avenue, London, W.11.

## MISCELLANEOUS

ALWAYS BE CAREFUL (and money wise) before buying quality equipment. Send your requirement list to **AUDIO SUPPLY ASSOCIATION** for evaluation and quotation. See below . . . . .

HIGHEST CASH PRICES offered for good quality Tape Recorders and Hi-Fi. See our advert page 4 this issue. R.E.W., 266-8, Upper Tooting Road, London, S.W.17.

IF QUALITY MATTERS consult first our 70-page illustrated catalogue with technical specifications (5s. 6d.) and equipment housing guide (1s. 9d.). Members enjoy unbiased advisory service, preferential cash terms. Membership 7s. 6d. Our Associates also manufacture records from your own tapes, or record the Master at our studios (Steinway Grand). Bulk terms for choirs. (Excellent fund-raiser). Please specify requirements. **AUDIO SUPPLY ASSOCIATION**, 18, Blenheim Road, London, W.4. 995 1661.

Early flutter spoils the Recording. . . . A fact well known to many. Send 6d. in stamps for important information on how to deal with this and other problems connected with wow and flutter. Music Tapes, 36 High Street, Salisbury, Wilts.

# MAILWAY LOW COST TAPES and AUDIO BARGAINS

"Low Noise" tape in strong box with free index.

5" Mylar 600 ft.	12/9	5" Mylar 900 ft.	16/6
5 1/2" Mylar 850 ft.	16/6	5 1/2" Mylar 1200 ft.	21/9
7" Mylar 1200 ft.	21/-	7" Mylar 1800 ft.	28/6

"Economy" tape in strong box with leader and free index.

7" Mylar 2400 ft.	21/-	5" Mylar 1200 ft.	16/6
7" Mylar 1800 ft.	16/3	5" Mylar 900 ft.	11/3
7" Mylar 1200 ft.	11/6	5" Mylar 600 ft.	9/6
7" Acetate 1800 ft.	12/6	5" Acetate 900 ft.	8/6
7" Acetate 1200 ft.	10/-	5" Acetate 600 ft.	8/-

Special Offer! Sanyo Battery Operated Cassette Recorder Type 68, with microphone, shoulder strap, C60 cassette and accessory pouch. Remote control on mic. 18 gns.

## GARRARD UNITS

LAB80 Mk. II Mailway price	£25.10.0
AT60 Mk. II Mailway price	£14.0.0
SP25 Mk. II Mailway price	£12.10.0
A70 Mk. II Mailway price	£13.10.0
3000LM & 9TA Mailway price	£9.19.6
Mailway SP25 Plinth	45/-

Most makes of audio equipment and their spares supplied at very competitive prices. Send S.A.E. for quotes. Full repair service if reqd. Post and packing 2/- per order.

For our latest lists and brochures send 5d. stamp to

**"MAILWAY"**  
I, Icknield Street, Dunstable, Beds.

# INTERNATIONAL MAGNETIC RECORDING TAPE

FINEST QUALITY AMERICAN MADE TAPE AT BROCKLEYS  
FAMOUS LOW PRICES

Fully guaranteed in colour coded cello' sealed cartons

3 in. Message tape, 150 ft. 2/6	5 1/2 in. Long play, 1,200 ft. Mylar, 15/-
3 in. Message tape, 225 ft. 3/9	5 1/2 in. Double play, 1,800 ft. Mylar, 22/6
3 in. Message tape, 300 ft. 7/6	5 1/2 in. Triple play, 2,400 ft. Mylar, 45/-
3 1/2 in. Triple play, 600 ft. Mylar, 10/-	7 in. Standard play, 1,200 ft. Acetate, 12/6
5 in. Standard play, 600 ft. Acetate, 8/6	7 in. Standard play, 1,200 ft. Mylar, 12/6
5 in. Long play, 900 ft. Acetate, 10/-	7 in. Long play, 1,800 ft. Acetate, 15/-
5 in. Double play, 1,200 ft. Mylar, 15/-	7 in. Long play, 1,800 ft. Mylar, 19/6
5 1/2 in. Standard play, 900 ft. Acetate, 11/6	7 in. Double play, 2,400 ft. Mylar, 25/-
5 1/2 in. Long play, 1,200 ft. Acetate, 12/6	7 in. Triple play, 3,600 ft. Mylar, 50/-

Post 1/- per reel—4 reels and over Post FREE  
CLEAR PLASTIC SPOOLS: 3in. 1/6, 4in. 2/-, 5in. 2/-, 5 1/2in. 2/3, 7in. 12/6 Post 6d.

**BROCKLEY TRADING CO.** (Dept EM), 378 Harrow Rd., London, W.9. CUN 9530

# INDEX TO ADVERTISERS

	Page		Page
A.E.G. (Gt. Britain) Ltd. (Telefunken)	21	Mailway	32
Berean Tape Centre	33	Massey's Centre of Sound	28
Brockley Trading Co.	32	Tom Molland Ltd.	28
Charlesworth's of Crewe Ltd.	31	Mora Trading Co.	33
City Tape Recorder Centre	30	Musicassette Supply Co.	29
Concert Recording	31	NuSound	35
Cussins & Light Ltd.	31	Philips NR	10
Daystrom Ltd.	35	Philips Records Ltd.	Back cover
E.M.I. Records	2	Pullin Photographic (AKAI)	3
The Ferrograph Co. Ltd.	14	Recorder Co.	24
Francis of Streatham	8	R.E.W. (Earlsfield) Ltd.	4
Grampian Reproducers Ltd.	6	Shelter	25
Grundig (Gt. Britain) Ltd.	6	The Tape Recorder Centre Ltd.	7
Jordan Watts Ltd.	16	Tape Recorder Centre (Halifax)	31
Lee Electronics	28	Tape Recorder Hi-Fi Centre (Sheen) Ltd.	28
Leda Tapes	29	Tel Lee Radio	33
London Microphone Co.	11	Transatlantic Music Tapes (Distributors) Ltd.	31
Lustaphone Ltd.	8	Vortexion Ltd.	5
Marubeni-Iida Co. Ltd. (Sanyo)	9		



## WIMBLEDON'S TAPE RECORDER CENTRE

SKILLED TAPE RECORDER REPAIRS carried out by expert personnel of many years' experience backed by extensive test equipment—Wow and Flutter Meter, Audio Valve Voltmeter, Audio Generator, Oscilloscope, etc. with final test performance figures quoted if required. Ferrograph specialists.

Tape Recorder Centre **TEL-LEE-RADIO**  
220 The Broadway, Wimbledon, S.W.19. 01-542 4946

## PLEASE MAKE USE OF THE ADVERTISEMENT INQUIRIES COUPON BELOW

Complete details of products in which you are interested, fill in your name and address, fold and post. No stamp required when posted in U.K.

## The Berean Tape Service

(NON-DENOMINATIONAL)

Loan of over 1,000 reliable expositions of the Bible available on tape (3½ ips) for cost of postage only. For Bible Study groups or private meditation. Supporting literature also available. Details from: Miss R. Hammond (TRM), Burwood, Blofield, NORWICH, Norfolk. NOR 84Z.



To all TAPE Recordists: P.V.C. & Polyester Tapes  
**BUY BRITISH**  
YOU SAVE MONEY AND



SAVE THE POUND

"A STERLING IDEA"  
"... high quality and rapid service I have found in you ..."

N.F.H. of Canterbury.  
The playbacks are crystal clear and I am sure no better results could be obtained by other dearer brands on the market.

Yours sincerely,  
W.S., Hants.  
FREE Library case with £5 orders

New	3"	5"	5½"	7"
Standard Play each	150' 2/-	600' 5/6	850' 7/-	1200' 8/6
3 for	5/9	16/-	20/-	25/-
6 for	11/3	31/9	39/6	49/-
Long Play each	240' 3/-	900' 7/6	1200' 9/6	1800' 12/6
3 for	8/6	22/-	27/9	36/9
6 for	16/9	43/3	54/9	82/6
Double Play each	300' 4/3	1200' 11/-	1800' 15/-	2400' 19/9
3 for	12/3	32/3	44/-	58/3
6 for	24/6	63/9	87/-	115/3

**Mora Trading Co.** (T24) Postage 1/9 per order.  
Mora Works, Mora Road, N.W.2. Posted the same day.  
Money-back gtd.

# ADVERTISEMENT INQUIRIES SERVICE

I should like further information about  
Messrs ..... 's advertisement  
on page..... of TAPE Recording Magazine  
about..... (product)  
NAME.....  
ADDRESS .....

January 1969

*This is a special service for readers of "TAPE Recording Magazine." It enables you without cost to get fuller information about those products in which you are particularly interested. Fill in one coupon below for each inquiry, with your name and address in block capitals in each case. Then cut out the whole of this section, following the dotted line, fold as indicated overleaf and post to us.*

I should like further information about  
Messrs ..... 's advertisement  
on page..... of TAPE Recording Magazine  
about..... (product)  
NAME.....  
ADDRESS .....

January 1969

I should like further information about  
Messrs ..... 's advertisement  
on page..... of TAPE Recording Magazine  
about..... (product)  
NAME.....  
ADDRESS .....

January 1969

I should like further information about  
Messrs ..... 's advertisement  
on page..... of TAPE Recording Magazine  
about..... (product)  
NAME.....  
ADDRESS .....

January 1969

I should like further information about  
Messrs ..... 's advertisement  
on page..... of TAPE Recording Magazine  
about..... (product)  
NAME.....  
ADDRESS .....

January 1969

JAN FEB MAR APR  
 MAY JUN JULY  
 AUG SEPT OCT  
 NOV DEC

**DID YOU KNOW—**

- That **TAPE RECORDING MAGAZINE** was the First Publication of its kind in Europe.
- That it is still the Best Tape Recording Magazine.

- That it is the only Tape Recording Magazine staffed by Enthusiasts for Enthusiasts.
- That you can ensure receiving your regular monthly copy by handing your newsagent the coupon below.
- **THAT TAPE RECORDING MAGAZINE IS STILL ONLY 2/- MONTHLY.**

**TO MY NEWSAGENT**

I would like to be sure of receiving **TAPE Recording Magazine** regularly.  
 Please order it for me.

NAME .....

ADDRESS .....

.....

.....

*TAPE Recording Magazine is distributed by Trans-World Circulation Co.*

CUT ALONG DOTTED LINE

THIRD FOLD HERE

**TAPE RECORDING MAGAZINE,  
 PRESTIGE HOUSE,  
 14-18 HOLBORN,  
 LONDON, E.C.1**

THIRD FOLD HERE

BUSINESS REPLY FOLDER  
 Licence No. ND 922

POSTAGE  
 WILL BE  
 PAID BY  
 PRINT AND  
 PRESS  
 SERVICES  
 LIMITED

---

FIRST FOLD ALONG THIS LINE

FLAP A

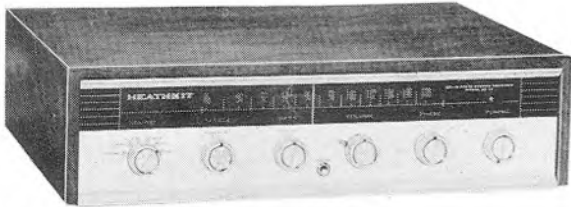
NO POSTAGE  
 STAMP  
 NECESSARY  
 IF POSTED  
 IN GREAT  
 BRITAIN OR  
 NORTHERN  
 IRELAND

SECOND FOLD HERE

FLAP B

Fold along lines as indicated and then tuck Flap A into Flap B

# HEATHKIT for RECEIVERS IN KIT OR READY-BUILT FORM



30 Watt Stereo FM Receiver, AR-14  
 Todays best value in the transistor stereo market.  
 Kit K/AR-14 (less cabinet) £54 pp 13/6  
 Ready built A/AR-14 (less cabinet) £76 11 7 pp 13/6



14 Watt Stereo FM Receiver AR-17  
 Low-cost stereo for the budget minded.  
 Kit K/AR-17 (less cabinet) £39 pp 10/6  
 Ready built A/AR-17 (less cabinet) £60 4 10 pp 10/6



7 Watt Mono FM Receiver AR-27  
 Low-cost Mono for the budget minded.  
 Kit K/AR-27 (less cabinet) £22.10 pp 10/6  
 Ready built A/AR-27 (less cabinet) £32 13 6 pp 10/6

AND, OF COURSE, HEATHKIT SPEAKER SYSTEMS



See what's **NEW**  
 in Hi-Fi · RADIO · TAPE  
 in the Latest Catalogue  
 . . . it's **FREE.**



To DAYSTROM LTD., Dept. T.1, Bristol Rd., Gloucester Telephone 29451

- Please send FREE Catalogue
- Further details of models.....

NAME .....

ADDRESS .....

Prices and specifications subject to change without prior notice.

# NuSound

THE FERROGRAPH SPECIALISTS

OFFICIALLY APPOINTED

# Ferrograph

STOCKISTS

We at Nusound have been associated with Ferrograph Tape Recorders for well over ten years and our proud boast is that no one knows Ferrograph better than we do! If you value honest advice, many years experience plus personal attention, join our many hundreds of regular customers and buy your Ferrograph from Nusound.

WE ARE AUTHORISED SUPPLIERS TO EDUCATIONAL AUTHORITIES, INDUSTRIAL CONCERNS, RECORDING COMPANIES, PROFESSIONAL MUSICIANS, ETC.

### NEW SERIES 7

This fabulous new Ferrograph range heralds a new era in tape recording—an entirely new design—all silicon solid state electronics with FET input stages—3 motors—3 tape speeds—8 1/2" reel capacity—vertical or horizontal operation—two internal speakers—10 watts output—plus many other unique features and facilities for which Ferrograph users have asked.

MONO & STEREO versions available priced from £153 to £201.



### ALL NEW MODELS STOCKED

plus a good selection of high quality, mint condition **Secondhand Ferrographs**. Part Exchanges welcome.

### FERROGRAPH ACCESSORIES

We stock all Ferrograph accessories including Microphones, De-fluxers, Tape spools, Splicers etc., together with spares for old and current models.

### FERROGRAPH TAPE

Always in stock. Supplied on Hublok grey anodised spools.  
 1,200 ft. on 7" reel £2.5.0  
 1,800 ft. on 7" reel £3.2.0  
 1,800 ft. on 8" reel £3.3.0  
 2,400 ft. on 8" reel £4.0.0  
 P. & P. 2/6 extra.

### FERROGRAPH SERVICING

The Nusound service technicians are fully experienced in servicing all Ferrograph models. Should your machine need servicing entrust it to the Nusound experts, you'll be delighted with the results. Officially appointed Ferrograph London area service agents.



Who better to talk Ferrograph than a Ferrograph enthusiast? Phil Moffat is just that — he will be delighted to give you his expert advice and technical assistance on all aspects of Ferrograph recorders and tape recording.

# NuSound

THE FERROGRAPH SPECIALISTS

242/4, PENTONVILLE ROAD, LONDON, N.1.  
 (200 YDS. KINGS X STATION) TELEPHONE: 01-837 8200 (HALF DAY THURSDAY)

# start the New Year right with these Musicassettes



For catalogue please write to:  
**MUSICASSETTE DEPARTMENT**  
**PHILIPS RECORDS LIMITED**  
**STANHOPE HOUSE**  
**STANHOPE PLACE**  
**LONDON, W.2**

- 1 PACO PEÑA**  
THE INCREDIBLE PACO PEÑA  
CFP 4032
- 2 THE LARRY PAGE ORCHESTRA**  
FROM LARRY WITH LOVE  
CPO 10003
- 3 THE AYNLEY DUNBAR**  
RETALIATION  
C-0917 E
- 4 JOHNNY CASH**  
JOHNNY CASH AT FOLSOM PRISON  
40-63308
- 5 RAVI SHANKAR**  
PORTRAIT OF GENIUS  
C-0775
- 6 O. C. SMITH**  
HICKORY HOLLER REVISITED  
40-63362

- JERRY LEE LEWIS**  
MEMPHIS BEAT  
CPP 1071
- HARPERS BIZARRE**  
ANYTHING GOES  
CWP 554
- ORIGINAL MOTION PICTURE**  
SOUNDTRACK  
'FINIAN'S RAINBOW'  
CWP 555
- SIMON AND GARFUNKEL**  
BOOKENDS  
40-63101
- BEETHOVEN**  
SYMPHONY No. 5  
London Symphony Orchestra  
*Antal Dorati*  
CPC 0049

- TELEMANN**  
SUITE IN A CONCERTO FOR  
VIOLA CONCERTO FOR THREE  
VIOLINS  
*I Musici*  
CPC 0050
- JOHANN STRAUSS, JNR.**  
SIX WALTZES  
Vienna Symphony Orchestra  
*Wolfgang Sawallisch*  
CPC 0051
- SCHUBERT**  
SYMPHONIES Nos. 1 & 2  
Dresden State Orchestra  
*Wolfgang Sawallisch*  
CPC 0052

