

TAPE

RECORDING
AND HI-FI MAGAZINE



THE NEW SPECTONE

THE TAPE RECORDER
THAT HAS REALLY
GOT SOMETHING!

1 6 1

At last you can have what you've
always wanted—a luxury instrument
at an economy price.

- ★ Three speeds
- ★ Twin track operation
- ★ Full mixing facilities
- ★ Automatic tape position indicator
- ★ Pause control
- ★ Can be used as amplifier for radio, gram and microphone
- ★ Facility for extension speakers
- ★ Unique tape storage facilities
- ★ Accidental erasure prevention device
- ★ Handsome two-tone case and a host of other essential features

Price **49** GNS.

Specto
LIMITED

Backed by an unsurpassed after-sales service, the Spectone 161 is the finest recorder on the market today. Write for illustrated folder or ask your dealer for a demonstration.

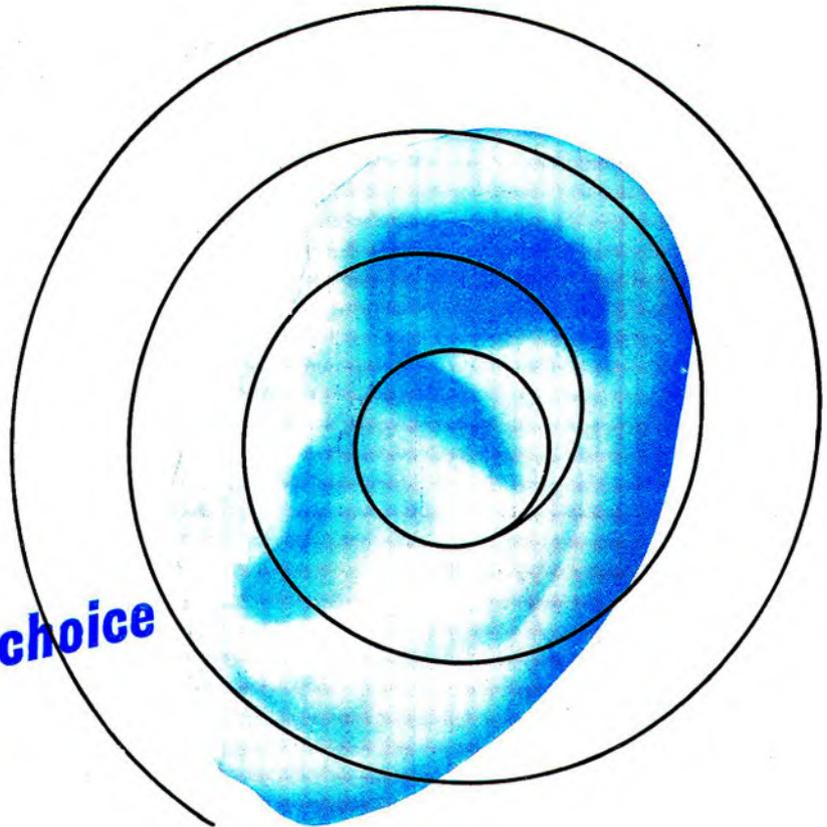
VALE ROAD · WINDSOR · BERKS
Tel: Windsor 1241

BRITAIN'S LEADING PUBLICATION IN THIS FIELD

2/-

JULY, 1959

the soundest choice



BASF Magnetic Recording Tape

BASF tape records all varieties of sound and reproduces them faithfully ... on all types of recorder ... at all speeds.

Its excellent mechanical and electro-acoustical properties make it possible to register the whole range of frequencies obtainable by any modern recorder.

BASF Magnetic Recording Tape is available in four specifications.

You should be able to obtain them from your usual supplier.

If he cannot satisfy you, please write to the sole U.K. distributors below.

BASF Standard Tape

For general purpose use

BASF Long Play Tape

For recording complete performances

BASF Double Play Tape

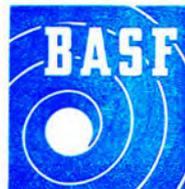
Giving 100% more playing time than standard tape

BASF Editing Sound Tape

Specially developed for synchronising sound to film

You get the best from

F. A. HUGHES & CO. LIMITED



4 STANHOPE GATE LONDON W1
HYDE PARK 6080



Journey through music

Few music-loving people experience the real collector's joy as easily and pleasantly as does a Grundig owner.

With a Grundig Tape Recorder there are rich rewards to be discovered among the musical by-ways. Glazunov is an example: a fine composer whose works are more often performed than recorded.

Yet few music lovers hearing, say, Glazunov's orchestral fantasia, "The Forest", could help but be enchanted and not wish to hear more. And there *is* more: eight symphonies, a piano concerto, a very beautiful violin concerto and numerous other works.

The music of Glazunov was greatly enjoyed in this country at the end of the last century. It may well be that you would enjoy much of it now. But how can you find out?

With a Grundig you can record it, live with it and then judge.

If you decide against including it in your collection the decision costs you nothing. You simply record another work over it *on the same tape* and continue to explore.

Get the best out of Music....get a



GRUNDIG (Great Britain) LTD.

Advertising & Showrooms : 39/41 NEW OXFORD STREET, LONDON, W.C.1.

Trade enquiries to : NEWLANDS PARK, SYDENHAM, LONDON, S.E.26.

(Electronics Division, Gas Purification & Chemical Co. Limited)

GS 152

NEW *free catalogue*

NOW 72 PAGES

To make sure you choose the right Tape Recorder or Hi-Fi Equipment, YOU MUST SEE the new Comprehensive Review from the Tape Recorder Centre. The most complete Catalogue ever published: 72 illustrated pages. Free of charge. Full details of hundreds of Tape Recorders, Accessories and Hi-Fi Equipment from all leading manufacturers.

All Orders Over £30 on No-Interest Terms.

TAPE RECORDERS

Grundig
Elizabethan
Ferrograph
Vortexion
Walter
Brenell
Reflectograph
Simon
Tandberg
Harting
Telefunken
Philips
Spectone
Verdik
Veritone
Stuzzi-Magnette
Ficord
Truvox
Baird
Magnafon
Kurland
Reps
Revox
Wyndson
Regentone
Perth-Saja
Elektron
Minivox

HI-FI EQUIPMENT MICROPHONES, SPEAKERS, ETC.

Leak
Quad
Rogers
Armstrong
Dulci
Jason
Pamphonic
Avantic
W. B. Stentorian
Pilot
Collaro
Elpico
Decca
Pye
Philips
Wright & Weaire
G.E.C.
Dynatron
Goodmans
C.Q.
Wharfedale
Elac
B.J.
Garrard
Connoisseur
Goldring

T.S.L.
Stirling Tuners
Acos
Lustraphone
Elpico-Geloso
Simon-Cadenza
Reslo
Record Housing
Linear
Tannoy
Ortofon
R.C.A.
Lowther
Film Industries
Audiomaster

TAPE
Emitape
Scotch Boy
BASF
Grundig
Telefunken
Agfa
Elpico
Soundrite
Gevaert
Philips

All Accessories, Tape, etc., by return of post. All makes in stock.

Choose with confidence from the leading Specialists in the country



THE TAPE RECORDER CENTRE

Centre

For free catalogue send this coupon to: Sypha Sound Sales Ltd., Dept. T, 75, Grand Parade, Harringay, London, N.4. (Tel.: STA 1146.)

Name.....
Address.....

Catal.

+ ADD IT UP FOR YOURSELF



COMPLETE WITH
CRYSTAL MICROPHONE
AND 1,200ft OF EMITAPE

49 guineas

= The WyndSOR "Viscount"

WYNDSOR RECORDING COMPANY LTD., WyndSOR Works, Bellevue Road, Friern Barnet, London, N.11
Telephone: ENTerprise 2226/7

Telegrams: Wyndreco

- + first class electronic design giving brilliant reproduction
- + attractive styling in coffee and cream with gold-coloured fittings
- + detachable 10" × 6" elliptical speaker
- + three speeds—15", 7½" and 3¾" per second
- + frequency response of 50 to 12,000 cps ± 3 db at 7½ ips
- + push button track change
- + 7" spools
- + high and low sensitivity input sockets
- + independent high-impedance output socket (to C.C.I.R. Standards)
- + tone control
- + independent gain control for monitoring
- + luminous target recording level indicator
- + digital tape-position locator
- + facility for using solely as an amplifier
- + pause control
- + strong carrying case covered in P.V.C. leathercloth
- + twelve months' guarantee

AND NOW!

To anyone who purchases a Recorder from us, of either our own make or any other make that we stock, we offer a fantastic range of free accessories, the value of which can be anything up to £10 10s. There is no catch in this offer and this applies to both cash and easy term purchases. We are sure that you will wish to take advantage of this and at the bottom of this page there is a small form which, if you send to us we will immediately let you have our brochures and details of this wonderful offer by return. Amongst the many accessories which you are able to obtain free of charge, are such things as Pre-Recorded Tapes, Microphones, Floor Stands, Extension Speaker Units, Splicing Kits, Spare Tapes, Telephone Adaptors, Earphones, etc., etc.

Such has been the response to our last advertisement that at present we have a short waiting list for our Bromley 59 and also the Bromley De-Luxe. However, we should be able to avoid excessive delay with those of you who have yet to place your orders. The response to these two Recorders has been so overwhelming that we have had to re-organise to meet the demand. From the many letters reaching us from our customers who have purchased either one of these two machines we know that they have reached not only ours, but also their expectations. The same wonderful offer applies to both of these two machines and thus once more gives the most attractive purchase that you can obtain in the Country!

THE TAPE RECORDER SERVICE CO.

43 NAPIER ROAD · BROMLEY · KENT · RAVENSBORNE 6119

Please send without obligation on my part, details of your Bromley recorders and Soundcraft speaker enclosures.

I am interested in purchasing.....outright.....easy terms.....

Name

Address

.....



recapture
it with a
WALTER 505

High Fidelity tape recorder

The Walter 505 gives you an orchestra in your hand—all the extra features you've been hoping for, and it's light enough to be *really* portable into the bargain. You'll be as thrilled with its superb quality as with its handsome modern styling. It has the new Walter Mark II Deck;

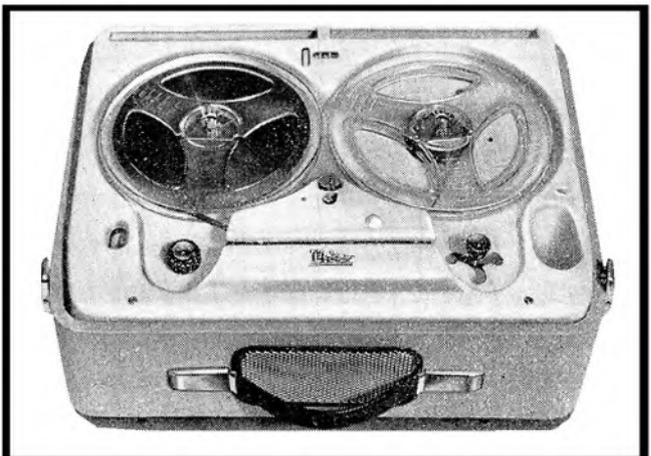
2 speeds, 2 speakers, 2 inputs, 2 outputs. **57 gns.**

Write now for free folders describing the 505 and the other Walter models.

WALTER 303 DE LUXE, with the 2 speed Walter Mark II Deck and many other attractive features. **42 gns.**

WALTER 101—a full-size tape recorder with a first class performance. **29 gns.**

All models complete with microphone, tape, radio/gram recording lead, instruction manual and 12 months guarantee.



WALTER INSTRUMENTS LIMITED · MORDEN · SURREY · TELEPHONE: DERwent 4421



•••• PAYMENTS REDUCED! the **FINEST TAPE RECORDERS** on **INTEREST FREE TERMS** ••••

Write, Phone or Call to-day. You can buy by post with perfect confidence

I know how difficult it is to choose the Tape Recorder. That is why more and more people come to the Royal Opera Arcade, because my advice, personal attention and help are freely given. Full demonstrations at any time, and you can always examine and hear the latest and most interesting machines. Remember—I am here to help you. **LAURENCE DICKINSON**

Leaflets gladly sent if you are unable to call.

MODEL	Cash Gns.	Deposit £ s. d.	12 Monthly £ s. d.
PHILIPS EL3527	39	4 19 0	3 0 0
ELIZABETHAN ESCORT	45	6 5 0	3 8 4
SAJA STANDARD	45	6 5 0	3 8 4
VERDIK S1	45	6 5 0	3 8 4
ELEKTRON	47½	6 17 6	3 10 0
WYNDSOR VISCOUNT	49	6 19 0	3 14 2
SPECTONE 161 (Ex Tape)	49	6 19 0	3 14 2
GRUNDIG TK20	52	7 0 0	3 19 4
DULCI-HARTING DECK* (with pre-amp)	55	7 5 0	4 3 4
ELPICO	55	7 5 0	4 3 4
TELEFUNKEN 75 (with mike)	55	7 5 0	4 3 4
SAJA EXPORT	56	7 6 0	4 5 10
BRENELL 3 STAR	58	7 10 0	4 9 0
VERITONE PORTABLE	58	7 10 0	4 9 0
TRUVOX R2	59	7 19 0	4 10 0
GRUNDIG TK25	62	8 2 0	4 15 0
TELEFUNKEN DECK*	63	8 3 0	4 16 8
PHILIPS 8108	63	8 3 0	4 16 8
ELIZABETHAN ESSEX*	65	8 5 0	5 0 0
VERITONE VENUS*	66	8 9 0	5 2 6
BRENELL Mk V (with Mike)	69	8 11 0	5 5 6
STUZZI MAGNETTE	69	8 11 0	5 5 6
GRUNDIG TK30*	72	9 12 0	5 10 0
TELEFUNKEN 85*	75	9 15 0	5 15 0
HARTING HM5*	82	10 12 0	6 5 8
GRUNDIG TK35*	82	10 12 0	6 5 8
SABAFON AUTOMATIC*	89	13 9 0	6 13 4
SIMON*	95	14 15 0	7 1 8
TANDBERG STEREO* (4-track)	124	20 4 0	9 3 4

Complete with tape and microphone, except those marked *, which are less microphone.

DAILY DEMONSTRATIONS OF



- Telefunken Deck with Preamp.
- Dulci Deck with Preamp.
- Tandberg 4-track Stereo Recorder.
- The Veritone Portable, Superimposition while listening to the original recording.
- C.Q. Speakers.
- Full demonstrations of all popular models.

We are also agents for Jason and Dulci Equipment

Dickinsons of Pall Mall Ltd.

11 Royal Opera Arcade, Pall Mall, S.W.1. TRA. 2881

The Royal Opera Arcade lies behind Her Majesty's Theatre in the Haymarket (one minute from Piccadilly Circus or Trafalgar Square)

M O T E K K9 Tape Deck

LIST 21 gns.

STAR STRUCK WITH MOTEK

The Motek deck has interstellar grace. Its Star features form a brilliant constellation which is bound to attract. Motek is five stars high. Stellations: Push Button Operation, Counter, Safety Erase Button, Pause Control, Three Speeds.

KEEP YOUR TAPES ON MOTEK

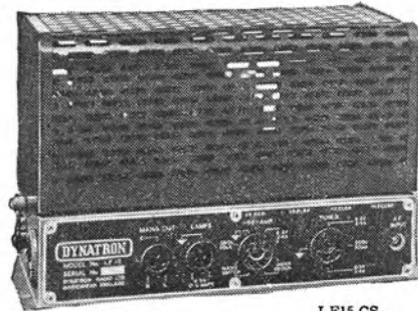
Details on request. *Patents Pending.*

MODERN TECHNIQUES
WEDMORE STREET LONDON N.19 Tel: ARChway 3114

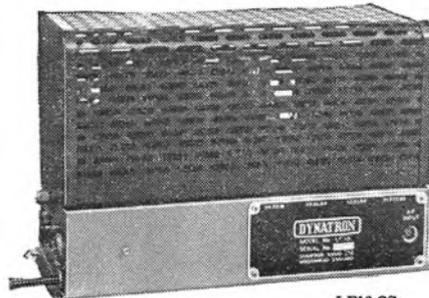
STEREO

— FOR PEOPLE WHO MUST HAVE THE BEST

DYNATRON have nearly 30 years experience in building the best possible equipment for reproducing sound. Their leadership is based on three things. Advanced design. Scrupulous attention to detail. And the narrowest tolerances in the industry. This last point is especially important to Stereo enthusiasts. For it ensures that matching units really do match. Without this, stereo fidelity is impossible. Dynatron is never cheapest: it is always best!



LF15.CS.

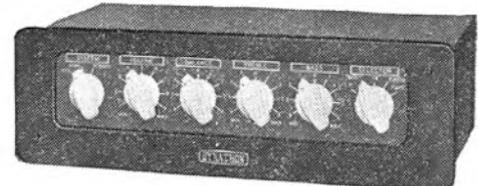


LF16.CS.

LF15.CS. POWER AMPLIFIER £20.5.0. 4-valve push-pull LF Amplifier, with auxiliary power supply for tuners, etc. 10 watts undistorted output. F.R. 15-30,000 c/s flat within 0.5 db. Neg. Feedback 20db. Hum & Noise 80db. below 10 watts. 1 volt R.M.S. input for full output.

LF16.CS. POWER AMPLIFIER £17.10.0. Specially designed as second channel amplifier in stereophonic systems. Specification identical to LF15 but auxiliary power outputs omitted. Mains output socket for gramophone or tape deck motors.

TC16.CS. PRE-AMPLIFIER £27. This very high performance unit comprises identical twin pre-amplifiers with a comprehensive control system. Duplicated inputs for magnetic or ceramic pick-ups, Radio and tape deck. Two output sockets for recording purposes. Pick-up equalisation by selective negative feedback. Frequency response 60-15000 c/s within ± 1.0 db.



TC16.CS.

STEREOPHONIC
OR MONOPHONIC

DYNATRON

BUILD
TO
LABORATORY
STANDARDS

COUPON

Will you please send me a copy of the **DYNATRON** 'High Fidelity Audio Equipment' brochure.

NAME _____

ADDRESS _____

DYNATRON RADIO LIMITED, St. Peter's Road, Furze Platt, Maidenhead, Berks. Telephone: Maidenhead 5151/2

presenting the
PRINCESS

* * * * *



Another Elizabethan triumph—the new Princess—the most outstanding recorder of the present day. Three speeds and true-to-life reproduction. Four hours' playing. Most versatile features including mixing, super-imposition and listening while recording. Attractive two-tone cabinet, small and light. Simple push-button controls. Altogether, top for performance, top for looks, and TOP for value at its remarkably low price.

To be top of the poll—present the Princess.

39 gns

**Ready to use,
 Complete with microphone,
 tape, etc.**

Elizabethan

EAP	For full details post this coupon to-day.	TRG
	E.A.P. (Tape Recorders) Ltd., Bridge Close, Oldchurch Road, Romford, Essex	
Name		
Address		
BLOCK LETTERS PLEASE		

TAPE RECORDS SUPPLEMENT

THE CLASSICS

by **Edward
Greenfield**

(recorded music critic of
the *Manchester Guardian*)



DURING the war, when the monthly issues of records were tiny, I remember one of the things that used to tantalise me was the knowledge that Beecham had made an American recording of Sibelius's Seventh and last symphony. Each month I used to run quickly through the diminutive list of classical records issued, only to be disappointed. In the end that recording by Beecham, with the New York Philharmonic, never was issued in this country. I discovered very much later that the recording was particularly harsh and ungrateful, and that, perhaps, explains E.M.I.'s reluctance to issue it.

We have had to wait very much longer—an intolerable time, had I known it during my war-time impatience—for our greatest conductor to record Sibelius's greatest symphony. The wait, needless to say, has been worth while. The recording, which appeared first on a monaural disc, sounds even richer on a stereo tape. This symphony in one movement—Henry Wood refused to accept it as a symphony at all—receives an entirely personal performance from Beecham, yet one which is so exact and so sympathetic with Sibelius's aims that one feels that this is how it was intended to be heard all along.

In spite of Henry Wood's strictures this work, lasting little more than twenty minutes, is truly a symphony. Sibelius has cunningly, within an extended sonata form, woven the different moods of a four-movement work. So the exposition of the material takes on the function of a first movement, the development the function of a slow movement, the charming scherzo complete in itself provides a lighter-hearted episode before the final and most imaginative recapitulation.

As a school-boy I once wrote a string quartet which shamelessly cribbed this lay-out almost to the bar; but my shame is limited, for no less a composer than the American, Samuel Barber, did the same thing in his First Symphony (very much less clumsily than I did, I might say) and I

(Continued on page 12)

TSL High Fidelity Newsletter No. 5.

HIGH FIDELITY FOR EVERYONE

WE ARE PARTICULARLY PROUD TO ANNOUNCE THE INTRODUCTION OF THE ELEKTRON HIGH FIDELITY TAPE RECORDER EMG9/2

Fitted with super High Fidelity Sound Heads. Designed and built to Professional broadcasting standards at a rational price.

Saves 15s. in £ on cost of recording tape and gives better results.



Condensed Technical Specification

Tape Speed— $3\frac{3}{4}$ " per second
Frequency Response—30—16,000 kc/s
Wow and Flutter—Combined—better than .15 of 1 per cent
Playing Time—Three hours with double play tapes
Amplifier—Laboratory designed high fidelity amplifier
Signal to Noise Ratio—Greater than 53 dB unweighted
Motor—PAPST massive external rotor squirrel cage synchronous motor, fixed armature
Reel Size— $5\frac{3}{4}$ " maximum
Rewind Time—Less than two minutes
Recording Level Indicator—Uses latest type EM84 Magic Eye
Recording Tape Measurement—Precision digital counter
Monitoring Facilities at any required level
Sound Heads—Record/Replay and Erase .00016" gap. This microscopic gap guarantees response of 30 to 16,000 cps.
Speed Tolerance—Better than 0.75 per cent
Input Socket—Three position selector switch for (a) radio or (b) microphone or (c) Records
Outputs—Dual (a) low level 500 millivolts for feeding external amplifiers; (b) High level 3 watts undistorted
Valve line-up—1 × EF86, 1 × ECC83, 1 × EC92, 1 × EM84, 1 × EL84 plus point contact rectifier
Weight—17½ lbs.
Size—13" wide × 10½" deep × 6" high

SIX REASONS

why the Elektron is better than other Tape Recorders at anywhere near the price :

1. The single speed of $3\frac{3}{4}$ " gives even better reproduction than two or three-speed machines operating at $7\frac{1}{2}$ " or 15" per second.
2. This wide response range enables the ELEKTRON to record or playback up to four times longer than any other machine using $5\frac{3}{4}$ " reels.
3. Up to 15s. in the £ can be saved on the cost of recording tapes.
4. Lower wow and flutter than machines costing even three times the price.
5. Simplified foolproof mechanical construction.
6. The best German design available today.

PRICE **47½ GNS.**

Obtainable from all High-Class Hi-Fi, Music and Radio Dealers. Fully illustrated technical catalogue is available on request from:

TECHNICAL SUPPLIERS LIMITED

Hudson House, 63 Goldhawk Road, London W.12

Telephone: SHEpherds Bush 2581/4794

Telegrams—Home :
TEKNIKA, LONDON, W.12

Overseas :
TEKNIKA, LONDON

*The complete guide to
all aspects of*

Tape Recording as a Pastime

by DOUGLAS GARDNER
and IAN ARNISON

Here, in brilliantly concise form, is the book for which thousands of enthusiasts have waited—an authoritative, lucid, excitingly comprehensive guide to the whole field of tape recording for pleasure and business.

From a brief account of The Story of Tape, this remarkable book launches directly into How a Tape Recorder Works (a non-technical explanation), choosing a Tape Recorder, Tape and Hi-Fi, Stereophonic Reproduction (for the Layman), Recording from Radio, Music on Tape, Corresponding with Tape, Fun with a Tape Recorder, Tape in Education, Recording Techniques, Making Indoor Sound Programmes ('home studio' work and editing), Outdoor Programmes, Tape and Cine (synchronisation and background music), Other Uses of Tape Recorders (offices, church work, research, etc.), Tape and the Law (copyright in sound), Care and Maintenance of a Recorder (with simple running repairs), Care and Storage of Tape (quality, splicing, etc.), Glossary of Terms, Tape Time Table, etc., etc.

Illustrated with photos and diagrams

This is your book

15s. from any bookshop or, if in
difficulty 16s. post free from:

SOUVENIR PRESS

94 Charlotte Street, London, W.1

imagine that all composers of one-movement symphonies since 1926 (when Sibelius's Seventh was written) have felt the heavy tread of the Finnish composer behind them.

I say "heavy tread," but Beecham, as one might have expected, makes the tread less heavy than most. Karajan, for example, in his recording with the Philharmonia Orchestra, has exceptionally slow speeds throughout and underlines the monolithic unity of the work, austere and uncompromising.

That is not Beecham's way at all. Sibelius, who I feel too often is regarded as unbending and cold, in Beecham's hands becomes a warmer and even more vital composer. In this recording I personally would have preferred a bigger crescendo on the final chords when the relentless slow coda grinds to an exhilarating halt.

Beecham is here lacking a little in the true weight needed, but elsewhere what magic he brings—the richness of the great trombone motto theme when it first emerges from the mists, the wonderful passage in the coda when flute and bassoon two octaves apart produce a magical effect never heard in the orchestra before Sibelius conceived it; above all, Beecham's handling of the scherzo has a lift which few conductors bring. It is as though the composer suddenly felt himself released from the need for weighty symphonic argument and was intent on enjoying his Indian summer to the full.

On mono disc this recording was coupled on one twelve-inch with the tone-poem "The Oceanides" and the suite from Sibelius's incidental music to Maeterlinck's "Pelléas et Melisande." It is a pity that H.M.V. has not been able to manage the same coupling on stereo tape. As it is, the Seventh Symphony comes on a whole tape in the SBT category, and the "Pelléas et Melisande" Suite comes separately, filling another. "The Oceanides" for the moment seems to have been forgotten.

The "Pelléas et Melisande" music is given an equally inspired performance. It is not a work of Sibelius that I had ever felt specially noteworthy before I heard Beecham's performance. It dates from fairly early in Sibelius's career, 1905, the period between the Second and Third Symphonies, when he wrote the violin concerto and the symphonic fantasia "Pohjola's Daughter." Only the first item in the suite, "At the Castle Gate," written as an introduction to the play, has Sibelius's customary weight (it symbolises the strength of the old castle), but the rest is far above the level of Sibelius's trivial occasional pieces. The very economy of orchestration reveals more than anything the quality of imagination behind them.

It is difficult nowadays to think of the subject of "Pelléas et Melisande" in any other terms but those of Debussy's masterly opera. I do not know whether Sibelius before he wrote his incidental music had heard Debussy's controversial opera, but if he had it shows his true individuality in matching Maeterlinck's fantasy and mood-painting with a felicity equal to Debussy's but with very different results.

Sibelius: Symphony No. 7 in C. Royal Philharmonic Orchestra conducted by Sir Thomas Beecham. SBT1252.

Sibelius: "Pelléas et Melisande." Royal Philharmonic Orchestra conducted by Sir Thomas Beecham. SBT1255.

E.M.I. Records Ltd., 8-11, Great Castle Street, London, W. 1.

BEAT AND OFF-BEAT



by Don Wedge
(of "New Musical Express")

SO Michael Holliday's idol is Bing Crosby! The British singer has trekked 6,000 miles to meet the Old Groaner. Such an attempt is bound to invite comparison between the two. Because Holliday *does* sing rather like Crosby.

I have been delving into the archives again to find what are, I think, the only tape records by these stalwarts—"Bing Sings Whilst Bregman Swings" (H.M.V. HTD 817) and Holliday's "Hi!" (Columbia, CDT 867). Both are monaural and were issued by E.M.I. some time ago.

There is a vocal similarity, but on these records, at least, there is a very clear difference of approach—Holliday relaxed, informal and serious, and Crosby relaxed, informal and lighthearted.

Someone once said that no matter how slushy the lyric Bing was singing, he always managed to keep a chuckle in his voice. He didn't really mean this "moon in June" stuff and was only kidding.

Crosby must have waxed more records than any other singer, made hundreds of broadcasts—if not thousands, and starred in dozens of films. That chuckle has been present in almost every song. "Silent Night," one of his best-selling records, is a notable exception, and there have been others. But he would never have kept his large following had it not been for his easy approach to everything he did.

Crosby's career has spanned almost thirty years. Many have threatened to take his crown, yet none have quite done so. He remains a king among entertainers. In recent years he has taken life more easily.

A few weeks ago he wrote to his British fan club about the reduction in his recorded output. "It's futile to spend time on making records which just lay on the shelves," he said.

"I've had a long career recording, and I'm very grateful for all the good things that have happened to me, so it's easy for you to appreciate, I'm sure, that I'm not despondent about the apathy which exists."

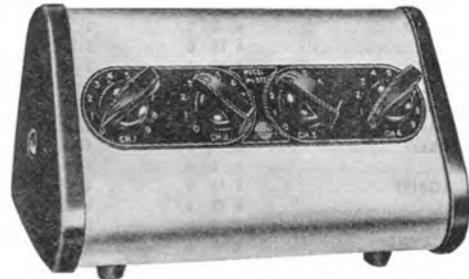
The Bing-Bregman teaming is quite enough to prove his contention wrong. There is plenty of life, and little deterioration, in what he often fondly calls his "pipes." Even if it is more fashionable to regard Frank Sinatra and Ella Fitzgerald as the leaders in the field today, the demand for Crosby's voice will never cease.

Although the "Sings-Swings" record was made two

(Continued on page 14)



FOUR CHANNEL TRANSISTORISED MIXER UNIT



MODEL MU577

FOR USE WITH ALL RECORDERS

- ★ COMPLETELY HUM FREE
 - ★ POWERED BY MINIATURE CELL WITH 1,000 HRS. LIFE
 - ★ SIZE 9" x 4½"
- £22 0 0**

Two high and two low impedance INPUT channels are provided with high impedance output to recorder or amplifier. Alternative impedance arrangements available to order. Frequency response is substantially flat from 50 to 14,000 c/s. An internal miniature mercury cell with a working life of approx. 1,000 hrs. is used to power the unit, so that it is free from hum and other mains-borne interference. Designed and made by LUSTRAPHONE, whose many years of leadership in the manufacture of microphones ensure that Model MU577 is the ideal mixer unit for all recording requirements.

Details of Model MU577 and LUSTRAPHONE MICROPHONES on request
LUSTRAPHONE LTD ST. GEORGE'S WORKS,
Phone: PRImrose 8844 REGENTS PARK ROAD, LONDON, N.W.1

OUR BUSINESS—NO COMPROMISE

QUALITY ONLY

● WALLACE HEATON'S
LARGEST CITY STOCKISTS
of the FINEST TAPE RECORDERS



● We are specialists in the latest HI-FI and Stereo development. Also 8 mm. SOUND HOME MOVIES.

★ Write for fully illustrated catalogue showing all the latest equipment in HI-FI, STEREO AND TAPE RECORDING. Gladly sent on request, enclosing 6d. postage. Despatch during June.

CITY SALE & EXCHANGE LTD.

RADIO & PHOTOGRAPHIC SPECIALISTS

93-94 FLEET STREET,
LONDON, E.C.4 Telephone: FLEet St. 9391/2

THE RECORDER Co. (dept. T.)

188 West End Lane, West Hampstead
London, N.W.6. Telephone: SW1 4977

INTEREST FREE TERMS

Model	Deposit		12 Monthly Payments		Cash Price Gns.
	£	s. d.	£	s. d.	
Sound 333.....	2	16 0	2	0 10	26
EAP Bandbox.....	3	1 0	2	5 8	29
Philips EL3527.....	4	2 0	3	1 5	39
Escort.....	4	15 0	3	10 10	45
Sound 444.....	4	15 0	3	10 10	45
Viscount.....	5	3 0	3	17 2	49
Grundig TK20.....	5	12 0	4	1 8	52
Telefunken 75/15.....	5	18 0	4	8 2	56
Brenell 3-Star.....	6	4 0	4	11 2	58
Fi-Cord.....	6	4 0	4	12 11	59
Philips AG8108.....	6	11 0	4	17 7	62
Sound 555.....	6	17 0	5	2 4	65
Grundig TK25.....	7	3 0	5	7 1	68
Stuzzi Magnette.....	7	5 0	5	8 8	69
Brenell Mark V.....	7	5 0	5	8 8	69
Essex.....	7	18 0	5	18 1	75
Grundig TK30.....	8	4 0	6	2 10	78
Telefunken 85KL.....	8	14 0	6	10 9	83
Harting HMS.....	9	3 0	6	17 0	87
Grundig TK35.....	9	5 0	6	18 7	88
Simon SP/4.....	10	10 0	7	17 6	100
Reflectograph 500.....	10	18 0	8	3 10	104
Tandberg 4-Track Stereo.....	13	4 0	10	3 9	129

INCLUSIVE OF MICROPHONE, TAPE, MAKER'S GUARANTEE

- ★ We are mail-order specialists—free catalogues and full information on request.
- ★ Free Insurance Policy covering your payments in the event of sickness, accident or unemployment, etc.
- ★ Open all day Saturday. Fridays until 6-30 p.m.

WAL GAIN TRANSISTOR PRE-AMP

"After trying this little device with my moving coil pick-ups I would never again dream of using a pick-up input transformer... the WAL Gain improved the crispness to a notable degree... So far I have only tried it out with Ortofon, Expert, and Garrard moving coil pick-ups... Price £5. Size 3½" plus Phono Plugs by 2½" sq."

Moreover there is no hum pick-up, magnetic or otherwise and the background noise is negligible... I can imagine, too that it will prove useful for the input to the playback amplifier of some tape recorders."

Percy Wilson, M.A.,
The Gramophone,
June 1958 issue.

"A WAL professional tape eraser which wipes both tracks perfectly clean in a space of half-a-minute... it is a real godsend."

Percy Wilson, M.A.
The Gramophone,
August 1958 issue.

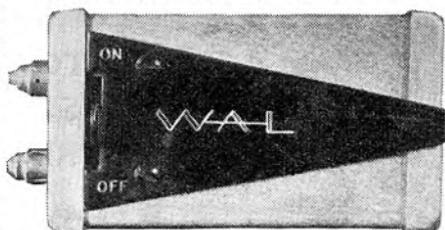
An Ideal Instrument for professional recording engineers for cleaning message reels, office tapes, tapes used as background music for cine films, etc.

Price: £7 18s. 6d.
Size: 6½" × 4½" × 3½"



Ask your dealer for a WAL

Wellington Acoustic Laboratories Ltd., Farnham, Surrey, England
Phones 6461 and 4961



THE WAL
TAPE
ERASER

(Continued from page 13)

years ago, he has done enough since to show that his voice is far from ready to gather dust on a shelf.

The surprise about this album is that Bing had never previously recorded any of the dozen songs chosen. This is even more incredible as they are all very well-known.

Four are by Rodgers and Hart, including "Have You Met Miss Jones," one of the greatest of songs. Lorenz Hart's short love story of a formal meeting that led to an implied happy matrimony is of classic simplicity, a mood matched by Richard Rodgers' tune. Crosby performs it with a breezy conviction that reaches greatness.

This conviction is again noticeable in "The Song Is You," a clever Jerome Kern-Oscar Hammerstein number which gives Bing an easy opportunity to demonstrate the lighthearted approach.

"Cheek to Cheek," "Heat Wave," "I've Got Five Dollars" and "Jeepers Creepers" are among the other songs Bing sings.

The man who swings meanwhile, is Buddy Bregman, a very talented American arranger whose idea it was to combine Crosby with a modern swing band—something else unusual. Generally, he has been backed by strings or Dixieland groups.

In this new setting—very much like Sinatra's "Come Fly With Me" without Billy May's ornamentations—Crosby loses something of his tenderness. Instead he concentrates on a dramatic reading, but the result is only a little more serious than usual.

* * *

Michael Holliday's record "Hi!" presents him as a very serious fellow indeed. He includes "If I Can Help Somebody," "The Lonesome Road," "Just A Wearyin' For You" and "Shenandoah," which are not among the lightest of songs.

He manages a gayer mood in Cole Porter's "All Of You" and Ivor Novello's "We'll Gather Lilacs." What does impress about him is the wide range of songs he tackles—from spirituals to light opera.

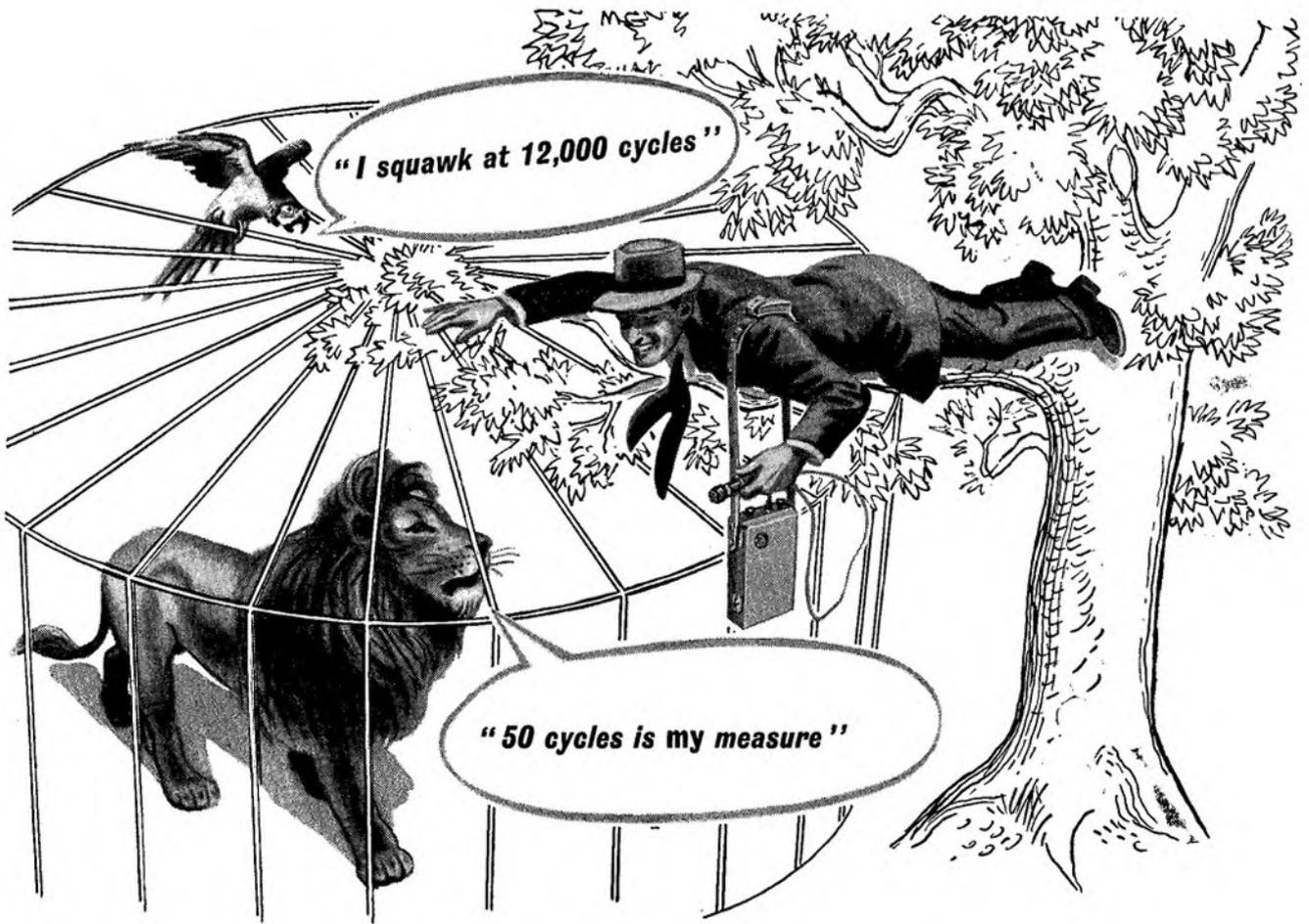
This is not mood music. "Hi!" is a varied programme that gives Holliday the chance he has in his television series to present a collection of songs that entertain.

Without doubt he is one of Britain's best singers. Though he enjoys the large rewards of being successful in show business, he is retiring and publicity shy—something which allows his abilities to become rather clouded.

His American visit, complete with the Crosby publicity, reminds us of the vocal similarity. These two records don't emphasise this—rather the reverse.

Nevertheless there is a common tone about both. Consider details and there are many differences. Both have warmth and project an intimacy that is essential to any recording artist. They share a common touch that leads many a man to think he can swing as well—at least in the bath!

Mike, though probably Bing's superior as a singer, has not quite developed his idol's vocal sparkle. Perhaps he is wise not to try. There will never be another Bing Crosby.



They both record perfectly on the new

FI-CORD hi-fi

Portable Tape Recorder

THE NEW high fidelity portable tape recorder (weighs only 4½ lb) which records with standard tapes at standard speeds—7½ and 1½ i.p.s.—and adds living sound to cine. Frequency response: 50—12,000 c.p.s. ±3 db. Measures 9½" x 5" x 2¾". Rechargeable batteries, separate automatic charger included. Integral monitoring speaker. Fully transistorised.



59 gns. complete with microphone, tape, batteries and charger

Full details from

FI-CORD LTD · 40A Dover Street · London · W1

Telephone: HYDe Park 3448

See **FI-CORD** in action at the **AUDIO FAIR**
 Russell Hotel, London, W.C.1
 April 2nd—5th. STAND No. 22
 ... and visit the **FI-CORD**
 Demonstration Room No. 361





NEW FROM TELEFUNKEN!

An exciting new model at a popular price!

The 'Telefunken'

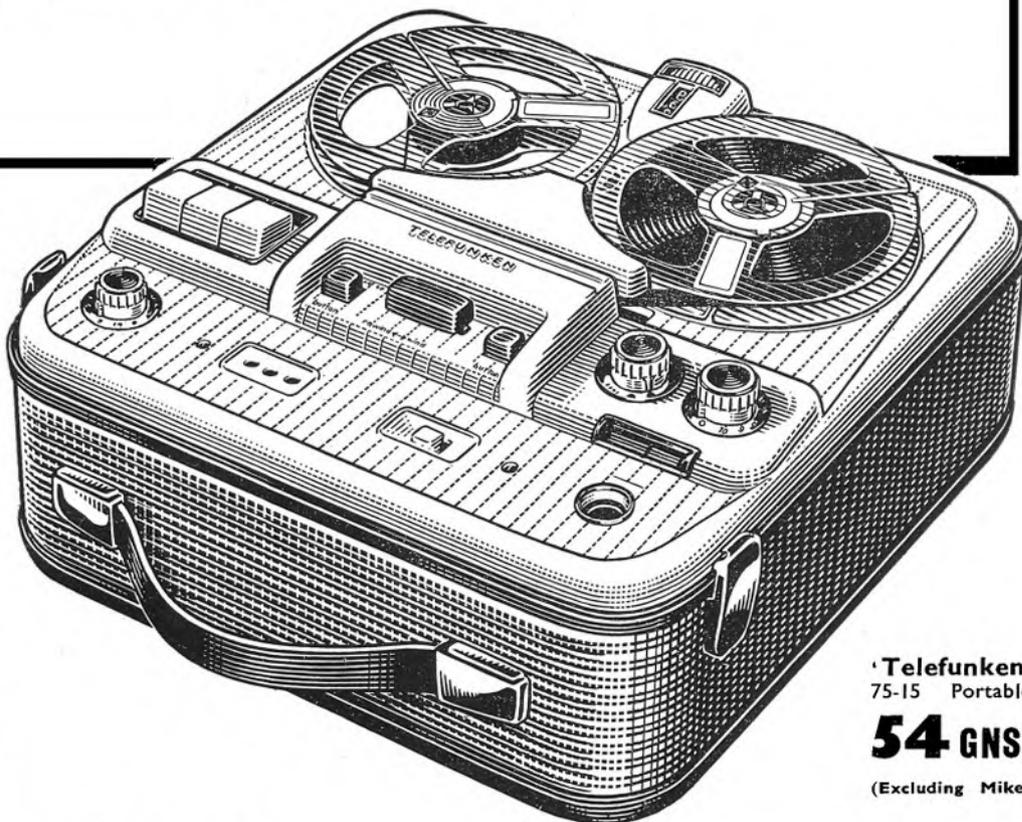
75-15

★ **NEW** 5½ in. tape spools give an even longer playing time of over 6 hours using Telefunken DP tape at the slower speed of 1½ i.p.s.

★ **NEW** Special Tone Control allowing for regulation of treble response.

★ **NEW** Volume and input controls now separated for easier manipulation.

★ **NEW** Horizontal fluorescent bar recording level indicator.



'Telefunken'
75-15 Portable

54 GNS.

(Excluding Mike)

and look at this specification !

Two tape speeds with frequency range: 60-16,000 c.p.s. at 3½ i.p.s., 60-9,000 c.p.s. at 1½ i.p.s.

Connections for synchronised control of automatic slide projectors. All miniature film sound couplers can be used. Fully automatic press-button controls guarantee simple operation. Twin track to International Standards, Telefunken Recording Heads with dead straight extremely fine gap.

Super sensitive tape tension and control system ensures protection and longer life of recording heads and tapes.

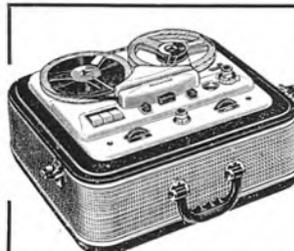
The excellent quality of reproduction well justifies the use of a separate larger speaker from the extension sockets provided.

Lightweight Styrol case (weight 21 lbs.).

Sole U.K. Distributors

WELMEC CORPORATION LIMITED

147, Strand, London, W.C. 2. Telephone : TEMple Bar 3357 (10 lines)



'TELEFUNKEN'
85K still leads
for quality

Each model carries an individual certificate of frequency response from 30-20,000 c.p.s and 7½ i.p.s., ± 3dB.

D.C. heated pre-amplifier valves reduce hum to the minimum; Matched speakers give excellent tonal quality; L.F. Amplifier with treble and bass controls operates separately for "straight through" and monitoring work; Patent automatic tape tensioning ensures fullest tape protection; **75 GNS.** Push button controls for easy operation. (Excl. Mike)

TELEFUNKEN

The originators of tape recording

SEND COUPON for details of the complete range to **WELMEC CORPORATION** Ltd., 147, Strand, London, W.C. 2

Name

AddressTGM

TAPE RECORDING AND HI-FI MAGAZINE

Vol. 3 No. 7

JULY 1959

Tape Recording and Hi-Fi Magazine is published on the 20th of each month by Print and Press Services Ltd., from 7 Tudor Street, London, E.C.4.

GENERAL EDITORS: **IAN ARNISON** and **R. BROWN**

TECHNICAL ADVISORY EDITOR: **CHARLES LANGTON**,
A.M.Brit.I.R.E., A.M.Inst.E.

TECHNICAL ADVISERS: **ANGUS MCKENZIE**
F. C. JUDD, A.M.Inst.E.

STEREO: **DOUGLAS GARDNER**
Editor of Stereo Sound and Music Magazine

MUSIC: **EDWARD GREENFIELD**
Manchester Guardian recorded music critic

DON WEDGE
News Editor, New Musical Express

MOVIE-MAKING: **JOHN ALDRED**

NEWS AND CLUB ACTIVITIES: **FRED CHANDLER**

The Editors are always glad to receive articles, news items, illustrations, etc., intended for publication and payment is made on publication. When not accepted, material will be returned if a stamped, addressed envelope is enclosed, but the Editors cannot accept responsibility for the safety of such material.

"Tape Recording and Hi-Fi Magazine" is available by a postal subscription at 28s. per annum, post free, or can be obtained at newsagents, bookstalls and radio and music dealers. In the event of difficulty, write to the distributors, Rolls House Publishing Co., Breams Buildings, London, E.C.4.

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

EDITORIAL

Address all communications
7 TUDOR STREET, LONDON, E.C.4
FLE 1455-6

ADVERTISING

All advertising communications to
1 CRANE COURT
FLEET STREET, LONDON, E.C.4
FLE 0197

IN THIS ISSUE

- We take the view . . .** 18
Editorial comment and information
- Tape Records reviewed** 11
Edward Greenfield and Don Wedge
- With a midget in the Med.** 20
Norah Jarman
- Tapes to serve the blind** 23
Maurice Goldsmith
- Putting a recorder into orbit** 24
- Home-built time switches** 28
The prize-winning idea
- The ideas pool** 30
- Transformers and replay heads** 34
Charles Langton
- New products review** 39
- News from the clubs** 45

TAPE RECORDING
HI-FI HANDBOOKS

AN INTRODUCTION TO THE TAPE RECORDER

Charles Langton
3/6d.

HOW TO RECORD WEDDINGS

Paul Addinsell
3/-

TAPE AND CINE

John Aldred
3/-

The above prices do not include postage—Sixpence extra



TAPE TIME CALCULATOR

A simple, read-at-a-glance device which gives you the playing times for any reel or length of tape, from any speed, $\frac{1}{8}$ ths to 15 ips.

3s. 6d. (including 4d. postage)



TEST TAPE

We apologise for the delay in producing our special test tape, owing to unexpected production difficulties. A full description of the tape will appear in our next issue and supplies will be available later this month. Orders already received will be dispatched first.

Further details from

TAPE RECORDING HI-FI MAGAZINE
7 TUDOR STREET · LONDON · E.C.4

A DIGEST OF

NEWS, COMMENT AND

EDITORIAL OPINION

WE have long since ceased to be surprised at the variety of ways in which tape recordings are being made and being used, but the past month has brought an exceptional crop of interesting news items.

In ancient Athens, for example, amid the columns of the Acropolis, tape is sliding smoothly past the sound heads each evening now, recapturing something of the glorious story of the past.

Son et Lumiere—the spectacle of sound and light—has spread to the classical Greek remains. And this is probably the most ambitious performance of the kind anywhere. Eleven hundred floodlights are used, and eight sound columns.

Apart from the Acropolis itself, the lighting covers the Parthenon, the Erechtheion, the remnants of the Periclean walls, the Areopagus, and numerous other buildings. The lighting projectors are removed each morning and re-installed in the evening, so that no one's æsthetic feelings need be disturbed.

The sound columns are arranged around Mount Pnyx in a semi-circle and the story is given in Greek, French and English versions. Over 200,000 visitors are expected to attend during the season, which extends to mid-October. The Philips organisation have installed the equipment.

Fair Lady taped

WE hear, too, that the recent wedding of Julie Andrews, the star of *My Fair Lady*, was fully taped. Jeffrey L. Langley, of Ilford, who did the job, used Vortexion equipment in the church and an EMI L.2 and a Stuzzi portable for interviewing well-known personalities at the wedding reception.

The business of recording weddings is developing rapidly, and a number of firms are coming up in various parts of the country to specialise. Charges vary quite a bit, but an average fee seems to be about eight guineas for recording a church ceremony and reception, with the results delivered on a 12 in. disc.

Another way in which history has just been made—a complete contrast—was the recording of the proceedings of the Association of Surgeons at a session at Queen Mary's Hospital Roehampton. Simon Sound Service Ltd. made the recording.

Many professional bodies are now beginning to realise the potentialities of sound recordings of their activities.

We take the view .

Astonishing

ASTONISHING evidence of public interest in tape recording was provided by a newspaper competition in Birmingham recently. The *Evening Despatch* invited its readers to win a recorder by listing in order the various advantages of such a machine.

THERE WERE OVER 8,000 ENTRIES.

Mr. V. W. R. Smytheman, Managing Director of Jewkes and Co., the Birmingham hi-fi specialists, presented a Telefunken recorder to the winner, Mr. E. Knight, of Moseley.

Education

WE have just heard from a United States veteran, our old friend Harry Matthews, the President of World Tape Pals. He comments that the reader who suggested in our May issue that there should be a Schools Tape Recording Club may not be aware of the activities of the World Tapes for Education programme of W.T.P.

This facilitates exchanges between schools and students, Scouts and Y.M.C.A. and Y.W.C.A. groups, and others. Teachers in many countries take part, and a full register was recently published showing their addresses and interests.

A series of feature tapes are available on loan from a W.T.P. "tape bank."

Specimen titles are "School life in Kerrville, Texas" and "Stories on Stamps." There are 40 titles in the series, but not all are available yet in Britain. Further information can be obtained from the new W.T.E. representative here, Mr. Ivor George Watson, of 3 Wentworth Avenue, Westbrook, Margate, Kent.

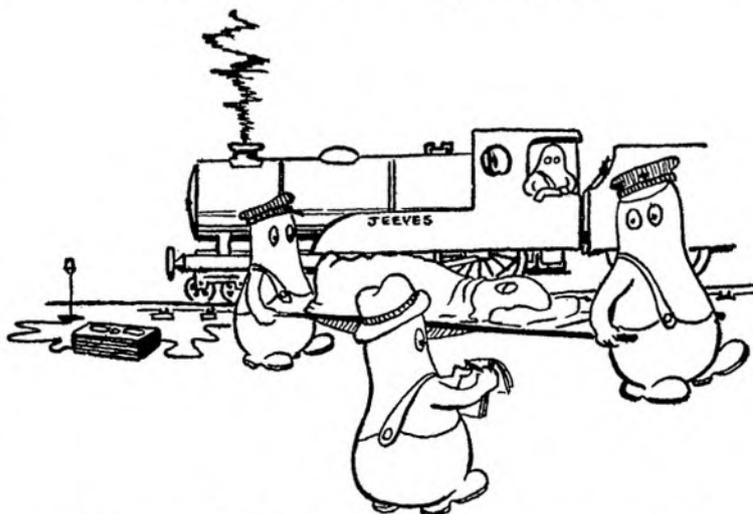
Photo Fair

TAPE RECORDING AND HI-FI MAGAZINE carried its banner into the heart of the ciné citadel recently, when it exhibited at the Olympia Photo Fair. As readers will see from contributions elsewhere in this issue, this event has now become the scene of the introduction of new recorders.

There were also some very interesting pieces of equipment giving ciné and tape recording facilities in a single, compact case.

To quote an example, the Dominus machine combined

LAUGH WITH JEEVES



"He recorded his stereo on the wrong track"

a complete two-speed tape recorder and an 8 mm. ciné projector in a cabinet measuring 16½ x 11¼ x 11 in. and weighing only 33 lb. Standing on its back, the recorder deck was on one side and the ciné controls on the other.

There were also some interesting new items for adding sound track to projectors for still transparencies, and we shall return to a discussion of this subject in an early issue.

Over-all, however, we formed the impression that the marriage of tape and ciné has not yet been properly consummated. Oddly enough, there were still quite a few people who did not understand where tape fitted into the ciné picture. We think that, with our stand at the Photo Fair, we effectively began the process of education.

The "Soggies"

THE technique of our new artist, Jeeves, attracted immediate interest when the first contribution appeared last month. His cartoons will appear regularly on this page in future.



He calls the curious humans who figure in them "Soggies." He first invented them six years ago.

Mr. Jeeves is 36, was a wireless mechanic in the R.A.F. during the war, and afterwards settled down as a schoolmaster. But art has always been his hobby, and he has won one or two prizes in amateur competitions.

He is a keen tape recordist, with a Recordergram and a Ferrograph, and this year he is serving as treasurer of the Sheffield Recording Society.

Mrs. Norah Jarman
 ~~~~~  
**describes her cruise**  
 ~~~~~  
to the sunny South—with
 ~~~~~  
**a battery portable recorder**  
 ~~~~~

WRITING last August in *Tape Recording Magazine* about the pleasures of owning a fly-weight portable recorder, I ended by wondering how it could possibly be kept going in a cargo-boat for several weeks, with only D.C. available. To take sufficient batteries would be terribly expensive, at twenty-four shillings a set. Could I bring myself to pester the ship's electrician to re-charge the batteries, thus far and no farther, every time they ran low? The more I thought about that, the less I liked it.

Well, all came right in the end. First the makers of the "Fi-cord" modified my battery-charger so that it could be run on A.C. or D.C. Then I called on the shipping-line's chief electrician in his office, and found him exceedingly kind and co-operative. He asked for the number of our state-room, and when we came aboard a few days later we found him there: he was putting the finishing touches to a go-between attachment, so that I could run the charger from a wall-socket.

After warning me never to push the prongs in the wrong

WITH A MIDGET IN THE MED.

holes, he answered my manifestations of joy and relief by telling me it was "all part of the Line's service."

Before we left the dock-side, it was obvious that the ship's chief engineer thought I was more than ripe for certification. He found me standing on a great box full of deck chairs, with one arm thrust deep down through the open engine-room hatch, and all agog to know how soon the engines would really get going.

How was he to know that I was holding a mike—and trying to keep it out of the wind—and that the small box hanging from my shoulder was neither a deaf-aid nor a geiger-counter? (It has been taken for both.)

Being a nice man, he humoured me, telling me I'd hear the engines very soon: then he hurried away, small blame to him, and no doubt told the first officer we had a loony woman on board, the worst yet.

Later, when all was explained, he arranged a recording session in the engine-room, which was just what I'd hoped for.

To get the best effects it was necessary to go down just before leaving a port, when there would be the maximum of signals and manoeuvring: so on a blazing hot day in Palermo I braved the vertical oily descent and dizzy open-work platforms that I have never really become hardened to, and found when I reached the bottom at last that a seat—a box with a clean white cloth over it—had been put immediately under one of the ventilators, so that I could cool off if the heat became too overpowering.

Chief had given orders that the telegraph signals were to be repeated orally for the occasion. He gave a running commentary on all the exciting noises associated with changes of speed and direction, high-pressure steam and the eventual "coming in" of the auxiliary turbine. Between times we squeezed through all the narrow, hot and oily places that seem to be obligatory in a steam-ship's engine-room, collecting every possible sound, from the oil-furnace roar to the pumping of the passengers' water supply.

I brought home fourteen reels in all, which include wind, waves, winches and ships' whistles (the last-named quite splendid when reproduced in a quiet country cottage, especially the ones that re-echo from the shore!) anchors and gangways, and loadings and unloadings, with the accompanying brouhaha of Italian dockers coping with monster blocks of marble, trawler-bobbins and tinned tomatoes.

DIXONS OF MANCHESTER offer you

TAPE RECORDERS ONLY

In addition to supplying all good makes and stocking almost every accessory, we are the main service and Sales agents for the famous **Telefunken**.

Our service department cannot be equalled in the North and is up to Telefunken and Grundig standard so that we are able to implement maker's guarantee on most makes without returning to manufacturers.

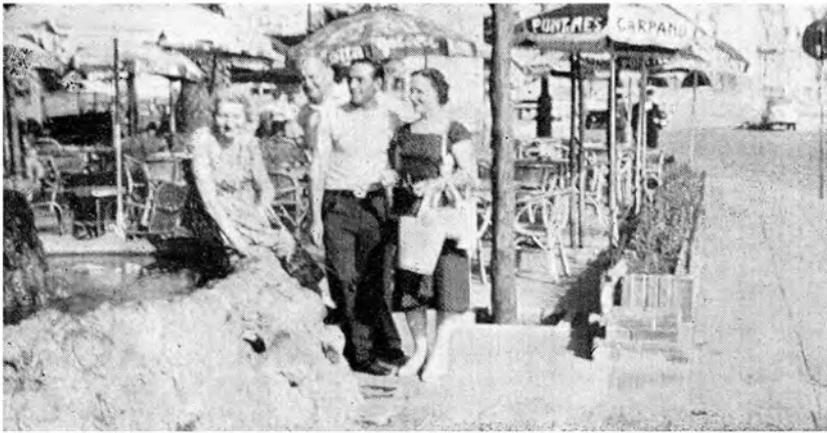


Tapes, microphones and all spares by return of post and reasonable H.P. terms available.

DIXON'S TAPE RECORDERS

227, Oxford Road, Manchester

ARDwick 4269



ANOTHER ARTICLE IN OUR SUMMER SERIES

The author, on the right, seen with her midget recorder slung from her shoulder in a typical Mediterranean setting.

Ashore we had a mad noisy night in the seamen's club in Naples, where our visit coincided with the annual Grape Festival: festoons of unbelievably enormous grapes hung everywhere in the great echoing hall (once, we were told, the castle stables).

Rowdy Naples

What with seamen of all nations drinking and jiving, troupes of local dancers celebrating the festival with whoops and shrieks and clashing of sticks together, and the final hauling down and sharing out of the grapes—while the band blared and everything re-echoed in the high vaulted roof—this is quite the rowdiest recording I have ever made. I enjoy it a lot—it takes me back!—but I haven't tried it out on anyone else up to now.

In Lisbon we re-visited a little restaurant we love, which is run by a terrific character—a well-known bull-fighter (retired). There the Portuguese “fado” is sung to perfection, and the food and wine are served by demure and beautiful girls.

Having nerved myself to ask if I might use the Fi-cord during the evening, and fearing a severe refusal, I was astonished to be told, “Of course you may! You can do anything you like!”

I still find that hard to credit: could it happen here? And there was professional recording going on at the same time!

I filled two reels with singing and magic guitar-playing, and found on play-back that the “Mesquita's” acoustics are very kind: the four young singers perform in turn from various parts of the restaurant, yet though I was sitting at the same table throughout, all the songs have registered equally well.

In Sorrento a tiny Italian boy of only four, who was staying in the hotel where we lunched, sang “Volare” into the mike for us from beginning to end; he sang it with gusto and adult gestures, putting in the instrumental parts vocally whenever necessary. The result is the funniest recording I have ever made, and one of the most attractive. Unfortunately I held the mike too near to the talented tot, not dreaming that he would produce such volume, and the result is some distortion of the higher notes. However, I have had quite a successful disc made from the tape, to send to little Massimo's parents.

Properly and patiently recorded, and with some form of accompaniment, I don't see how he could fail to reach the Top Ten: I only wish I had asked for more songs from him, and watched the magic eye instead of gaping in amazement!

Is there anything good to be said for the cut-away type of spool which was all I could find in some Italian towns? There is a large wedge missing from the spool, as though from a cut cake, and the LP tape is already beginning to overspill before you have even got it threaded into the machine. Start recording, and before long you may find an unsupported spare-tyre of tape standing out a good half-inch or more round the take-up spool, and still more to come. What happens next must depend on individual decision. I never found the right answer, and found it doubly difficult to keep a cool head in the Mediterranean heat.

Far too much precious virgin tape ended up in the sea, by way of our cabin port-hole.

Editor-housewife

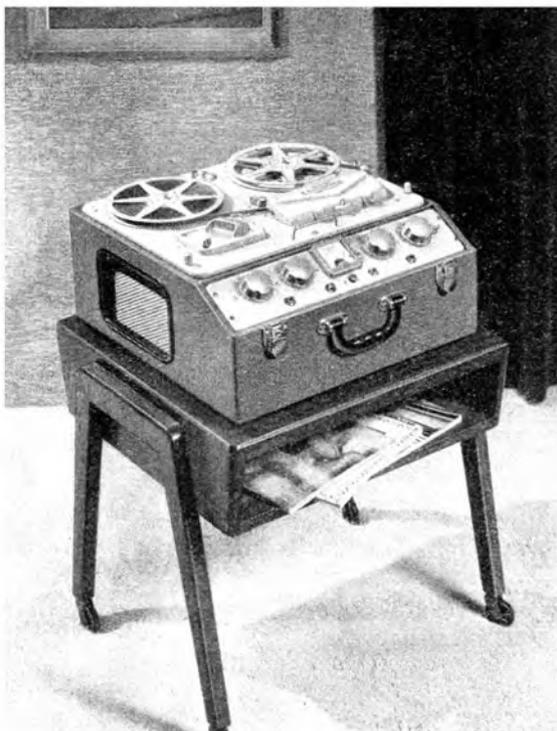
And now, after a happy holiday with a tape-recorder, comes the reckoning: all these tapes must be edited, and since a housewife's chores must be dealt with before her recordings, it is going to be a long business. I have recorded the Fi-cord tapes on to 7½ in. reels, on my Kenton Truvox. After editing, there will of course be scores of joins, so I must re-re-record on to Fi-cord reels—the final reel will then have only one join every nine minutes.

I hope that is plainer than it looks when re-read!

I have learnt a lot of things that should be helpful if I am ever fortunate enough to go to sea again with a Fi-cord. I realise, having learnt it the hard way, that some subjects are a waste of time and tape, e.g., recordings on the open deck, where the gentlest zephyr hits the microphone like a peal of thunder. Also that much more should be made of other subjects, such as the jolly little boys laughing and splashing, diving for coins in the sea at Amalfi.

And above all, I have learnt never, never to leave the tape-recorder behind when going ashore. Any regrets I have on that score I thoroughly deserve, since mine weighs only four-and-a-half pounds!

"Ask the
man who
owns one"



The man about to buy a Tape Recorder may be pardoned if—after reading some of the more extravagant claims appearing in advertisements—he finds himself in a state of complete mental confusion. We for our part have always preferred to make no claims for Ferrograph performance other than the conservative factual information to be found in our printed specifications. To us, the most satisfying and encouraging feature is the high reputation enjoyed by the Ferrograph in all parts of the world—particularly among those to whom cost matters little but to whom quality is paramount. It is a notable fact—for which we are grateful—that this almost legendary reputation has been created by Ferrograph users themselves and not by us.

"Ask the man who owns one" would seem to be singularly appropriate for intending Ferrograph purchasers. If you are seriously interested in good music—if it is your ultimate intention to build up your own personal tape library of the world's classics—if high quality recording really means something to you—if the possibilities of stereophonic sound excites your imagination, we believe that nothing less than the incomparable Ferrograph will satisfy you.

Series 4A

With standard monaural Recording Playback facilities

Model 4A/N 3½/7½ i.p.s. 81 gns.

*Model 4AN/CON 3½/7½ i.p.s. 81 gns.

Model 4A/H 7½/15 i.p.s. 86 gns.

*Model 4AH/CON 7½/15 i.p.s. 86 gns.

* Suffix CON denotes chassis form for building into own cabinet.

Series 4S

With optional stereo sound playback facilities in addition (when used with Stere-Ad Unit.)

Model 4S/N 3½/7½ i.p.s. 88 gns.

*Model 4SN/CON 3½/7½ i.p.s. 88 gns.

Model 4S/H 7½/15 i.p.s. 93 gns.

*Model 4SH/CON 7½/15 i.p.s. 93 gns. Stere-Ad Unit (when required) 30 gns.

Stereo 88

With full stereophonic recording and playback facilities

Model 88 7½/15 i.p.s. 105 gns.

The Incomparable **Ferrograph**

BRITISH FERROGRAPH RECORDER CO. LTD.

(A subsidiary of the Ferrograph Company Ltd.)

131 SLOANE STREET, LONDON, S.W.1 • Tel: SLOane 1510, 2214 and 2215

It is remarkable how great a contribution to human happiness can be made by one enthusiast. This story of the activity of Maurice L. Chambers, of Birmingham, during the last 18 months is a striking illustration of what is possible. Next month we shall relate how other enthusiasts are serving hospital patients.

TAPES

FOR THE

BLIND

and to help world friendship

WHEN, in November, 1957, Maurice L. Chambers, of Birmingham, purchased his first tape recorder, it was intended primarily as a means of home entertainment. But he had always been concerned with the welfare of people less fortunate than himself and he quickly realised the potentialities of the recorder in opening up new fields of interest and entertainment for those who had been robbed of their sight.

He decided to make a number of recordings of general interest and to place them at the disposal of any blind person anywhere who owned or had access to a recorder. The scheme called for a title and it was decided that "Tape Programmes for the Blind" would be appropriate.

Today there are about 35 members of the scheme in different parts of the British Isles, one in Berlin, and another in Amsterdam. All receive tapes as regularly as is possible and a record is kept of the likes and dislikes of each individual. The usual type of material is music, short stories, biographies and travel talks.

Most of the work involved is still done by Mr. Chambers, but there are one or two enthusiasts who appreciate the work he is doing and who occasionally submit material for inclusion in the library. Most of these are blind owners of recorders.

For instance, one particular tape which has been round the "circuit" and is in current demand was prepared by the blind member in Berlin and consists of folk music from all parts of Europe.

Mr. Chambers believes Tape Programmes for the Blind to be the only organisation in this country which caters exclusively for the blind. The Voicespondence Club of America, of which he is an enthusiastic member, plans to inaugurate its own blind service scheme in the near future and, if so, he will feel that his pioneering efforts have been well rewarded.

Through the recommendation of blind friends who had benefited from the early programmes, contacts were made in foreign countries. One of these was a blind youth named Helmut Buccholz in western Berlin. A personal and lasting friendship was formed between Helmut Buccholz and Maurice Chambers, and soon a regular flow of recorded conversation, discussion and music passed between the two each week.

So was born an even more ambitious aim—to improve understanding between peoples by regular exchange of messages.

Intent on using the tape recorder as a means of improving international relations, both Helmut Buccholz and Maurice Chambers decided to make a start by enlisting the co-operation of the Burgomeister of Berlin-Neukölln, Herr Kurt Exener, to establish an official tape exchange club.

A tape was sent to Herr Exener by Maurice Chambers and upon its receipt and translation Herr Exener decided that the contents of this tape warranted the unusual step of calling an immediate Press conference. This resulted in reports in two leading Berlin newspapers, emphasising the importance of the tape recorder as a means of establishing better relations between the German and the British people.

To assist this project, arrangements were made for a portion of the local Youth Centre in Berlin-Neukölln to be used by the blind Helmut Buccholz to establish the nucleus of an International Tape Recording Club. He very quickly began to enrol interested members of his community. The first three to join were members of the West Berlin Police Force, their ages ranging from 25 to 31.

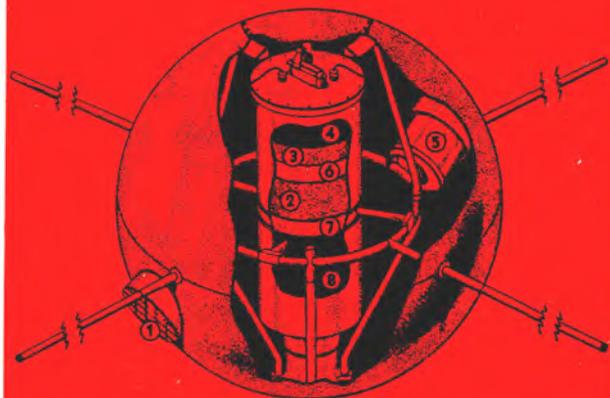
Being, in a way, responsible for the formation of this club, Mr. Chambers in Birmingham was among the first to receive a most interesting and entertaining tape made collectively by "the boys of Studio B" (as the club is known) in which they sent their greetings.

Naturally the German policemen were interested in the activities of our British policemen and a request was made for a recorded conversation between Maurice Chambers and a couple of policemen. This was arranged without difficulty and a most interesting discussion is now on its way to Studio B in Berlin.

News travels fast and soon after the inauguration of this club in Berlin, Maurice Chambers began to receive tapes from different parts of Germany asking for information and requesting to be included in any friendly exchanges on tape which were to take place in the future. Among those contacting him was a blind doctor who lost his sight on the Russian Front during the last war and who is now a director of a plastics factory.

Tape recordists who are sincerely interested in this form of tape exchange and who would like to contact any of these people are invited to get in touch with Mr. Maurice Chambers at 139, Goldthorne Avenue, Sheldon, Birmingham, 26 and he will be pleased to assist in the expansion of this scheme. Teenagers are particularly welcome.

Tape Recording **EXCLUSIVE**



A cutaway drawing of the "cloud-cover satellite" placed in orbit by the Americans earlier this year. It shows: 1, photocell light shield; 2, magnetic tape recorder; 3, interrogation radio receiver; 4, meteorological data transmitter; 5, photocell; 6, data electronics; 7, tracking transmitter; 8, mercury-cell batteries.

Diagram by courtesy of the United States Army.

PUTTING A RECORDER INTO ORBIT

—and the benefit it brings

WASHINGTON

THE fantastic triumph of the tape recorders flying in space is only now being fully revealed. The most dramatic follow-up to the pioneer flight in the American Atlas missile, described in last month's despatch to *Tape Recording Magazine*, has been the tape recording of weather conditions around the globe.

A midget recorder of the same type—5½ ins. in diameter and weighing only 21 ounces—was again used, with a continuous loop of ¼ in. tape, 75 feet long.

EST. 1889 **THE SERVICE Co. (LONDON) LTD.** HOL. 1792-2193

14, HIGH HOLBORN, W.C. 1

(25 YARDS FROM CHANCERY LANE TUBE STATION)

CENTRAL LONDON'S TAPE RECORDER & PHOTOGRAPHIC DEALERS

A Tape-Recorder offers a complete new interest to the movie camera enthusiast—sound with your films is a possible exciting addition to your hobby-music commentary-dialogue! All yours on the "SERVICE" plan. Or if you have a Recorder think what a difference colour home movies will make to your life. Write or call for full details.

Remember that Cameras—Projectors—Enlargers—in fact all your photographic equipment is available on the famous "SERVICE" terms.

It will be to your advantage to come to us!

NO INTEREST CHARGES — DEMONSTRATIONS — SMALL DEPOSIT

All postal enquiries answered by return of post

	Cash Price		Deposit		12 Monthly Payments	
	£	s. d.	£	s. d.	£	s. d.
Grundig TK20	54	12 0	4	4 0	4	4 0
Philips EL3527	40	19 0	3	3 0	3	3 0
Brenell Three Star.....	60	18 0	4	13 0	4	13 8
Brenell Mk. 5.....	67	4 0	5	4 0	5	3 4
Wyndson Viscount	51	9 0	4	1 0	3	19 0
Walter 303	44	2 0	3	8 0	3	7 10
Elizabethan Essex	68	5 0	5	5 0	5	5 0
Elizabethan Mayfair ...	75	12 0	5	17 0	5	16 3
Elizabethan Escort.....	47	5 0	3	15 0	3	12 6
Philips AG 8108.....	65	2 0	5	2 0	5	0 0
*Telefunken KL75K	52	10 0	4	1 0	4	0 9
*Telefunken KL85K	78	15 0	6	3 0	6	1 0
*Grundig TK30	75	12 0	5	17 0	5	16 3
*Grundig TK25	65	2 0	5	2 0	5	0 0
Elizabethan F.M. Tuner	17	0 0	1	7 0	1	6 7

*Microphone Extra

ALL MAKES OF TAPES & ACCESSORIES SUPPLIED

HEAR THE SPECTONE

LOOK AT ITS SPECIFICATION!

The Most Astounding Value **£51. 9. 0.**

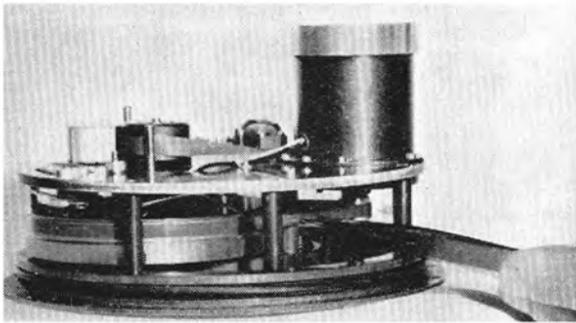
Deposit **£4 1s.** and 12 Monthly Payments of **£3 19s.**

Two pairs of recording, playback and erase heads for continuous operation.

Pause control for momentarily interrupting recording or playback. Conforms to C.C.I.R. specifications. Provision for full size 7-in. spools. Built-in facilities for mixing all inputs.

Built-in superimposition facilities. Three knobs for simple operation of:—

- (1) mains on/off/tone control;
 - (2) microphone or playback volume;
 - (3) radio/gram volume.
- Complete with Acos mic.



for home recordists

The recorder was at the heart of a 20 inch satellite, which had a total weight of only 21½ lbs. This satellite circled the globe and sent back information for a fortnight.

Two photo-electric cells scanned the earth's surface. They detected the varying degrees of reflected sunlight from clouds, land masses, and oceans.

These reflections were converted into electrical signals, which were recorded on the tape moving at 0.3 inches per second. After each circuit of the globe, a ground station triggered off the replay function and re-recorded on to a tape recorder on the earth at 15 ips. The tape in the satellite was simultaneously erased and the recorder set for "record" again on the following circuit.

During every 24 hours of orbiting, cloud cover data was collected over about a quarter of the earth's sunlit surface.

The resulting meteorological picture was divided into 600-mile-wide "strips" and these were then electronically transformed into crude photographs, which were fitted together much in the manner of ordinary aerial photographs.

The result was the first global picture of the world's weather.

These scientific successes may at first appear remote from the interests of ordinary domestic tape enthusiasts, but they are already having a direct effect all round.

The tape for these satellite recorders has been produced by the Minnesota Mining and Manufacturing Company, the manufacturers of 3M "Scotch Brand." A spokesman for the Company has just announced: "The improved tape-making techniques learned in the development of satellite tape are now being applied to the manufacture of all Scotch magnetic tapes, and these tapes are being made on the same equipment used to produce the near-perfect satellite tape."

When the 3M Company first faced the problem, it discovered that tolerances for satellite recorder tapes are five times tighter than for commercial recording tapes. The work that went into achieving such standards will benefit every type of tape user.

It is logical to expect that we shall benefit, too, in due time, from the research effort that has produced the midget recorders. They were designed to withstand exceptional vibration and shock, to operate in very low pressure and extreme temperature variations, and to reduce frictional loss to a minimum. So efficient was the mechanism that the recorder motor used only a third of the power required by an ordinary torch bulb.

The photographs above give a close-up view of the midget tape recorders placed in American satellites, side and above views. This machine weighs only 21 ounces and is 5½ in. in diameter. It uses a 75-foot endless loop of tape.

In the photograph below, Robert A. Von Behren, research and development manager of the magnetic products division of Minnesota Mining and Manufacturing Company—the firm which provided the special tape—is seen examining the recorder.

All photos by courtesy of the United States Army.



The popular Tape with Price Appeal!

The complete range

EMITAPE "77" 'Pen-tested' for professional use

EMITAPE "88" General purpose

EMITAPE "99" Long Play

EMITAPE "100" Double Play

and

EMITAPE "44" Acetate Base



*... and remember -
the B.B.C. use
Emitape
9 times out of 10!*

E.M.I. SALES & SERVICE LTD

The popular Tape with Price Appeal!

NEW

Emitape

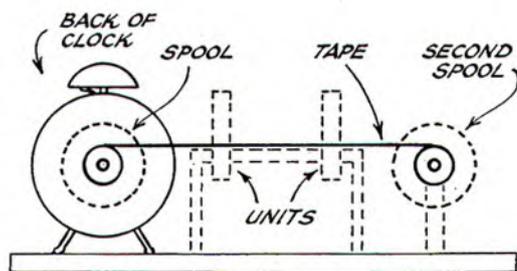
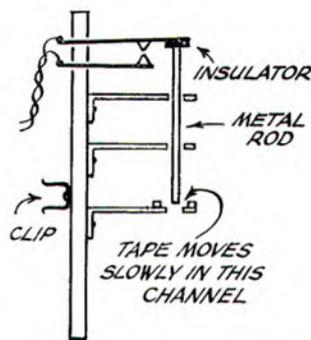
"44"
ACETATE

MAGNETIC characteristics
as for Emitape "88" and "99"

- 4 spool sizes
- High sensitivity
- Anti-static
- Low 'print through'
- Metallic contact strips for auto-stop on all but the message spool

Type No.	Title	Size	Length	Price
44/3N	"Message "	3 $\frac{1}{4}$ "	175'	6 9
44/6	"Junior "	5"	600'	18 0
44/9	"Continental "	5 $\frac{3}{4}$ "	850'	1 4 6
44/12	"Standard "	7"	1200'	1 10 0

HAYES · MIDDLESEX · Tel: SOUTHALL 2468



MORE BRIGHT IDEAS FOR TIME SWITCHES

New recorders make their bow at the Photo Fair

By a Special Correspondent

SEVERAL particularly interesting new tape recorders made their bow at the recent Photo Fair at Olympia, including the first machine manufactured in Eastern Europe to become generally available here. This model is described elsewhere in this issue.

Otherwise the most interesting innovation was probably the 25-guinea battery portable called the Clarion Transitaape. The price includes microphone and reel of tape.

This all-transistorised miniature recorder will run continuously for 50 hours on four U2 flash-light cells. It will operate for considerably longer periods from a 6-volt car battery, for which a special changeover jack socket is provided.

Little larger than a folding camera, it will record and play back over a built-in Isophon miniature speaker, and it has a standard record/playback speed of 3½ ips.

This machine should prove a useful little instrument for recording where no mains are available.

It is housed in an attractive plastic case, with detachable lid, and operation requires the use of only two push buttons and a thumb wheel volume control.

G.B.C. Electronic Industries Ltd., 121/123, Edgware Road, W.2.

Another newcomer, with teenage appeal, was the "Amplion" at 25 guineas, complete with a high-fidelity crystal microphone and a reel of L.P. tape.

Careful circuit design has reduced the number of working valves to three only: an EF.86 tape head amplifier, triode/pentode intermediate and output stage (ECL.82) and one rectifier valve.

Extremely simple control should make this recorder ideal for family use. The tape drive mechanism is operated from a gate control having only three positions for the main functions of play/record, wind and re-wind. An interlocking safety button prevents accidental erasure.

The usual volume control, a single tone control, and magic eye record indicator are incorporated, together with sockets for microphone (standard telephone jack), gram/radio and external loudspeaker.

A 7-in. elliptical speaker is built in. No information is available at the moment with regard to frequency response, but a demonstration from a pre-recorded tape gave quite convincing reproduction.

Tape spools up to 7-in. diameter can be accommodated and the detachable lid has facilities for carrying spare reels.

The deck and amplifier chassis are removable as one complete unit, the recorder case being most substantially constructed with an attractive leatherette finish in contemporary colours. The recorder is lightweight and compact, the dimensions being approximately 11½ × 9½ × 6½ in.

Amplion Ltd., 175/179, Cricklewood Lane, London, N.W.2.

Our contest for a design for a home-made time switch attracted a large number of entries, and it has been difficult to reach a final choice. We have decided to divide the three-guinea prize—£2 2s. to Mr. Ian Gibson, of Liversedge, Yorks, for the idea explained on the opposite page, and £1 1s. to Mr. R. L. Tams, of Preston, Lancs, for the "two-disc system" described in last month's issue. We thank all readers who submitted entries, and regret that we have not had space to print more than a small selection of them. Back numbers of last month's issue, giving four other ideas, are still available.

MY idea uses an ordinary 30-hour clock, two empty 3 in. message spools with 1½ in. diameter hub (Emitape are ideal), six feet of standard recording tape, and two 2 in. lengths of 1/16 in. diameter metal rod.

A metal extension is made to fit tightly over the knurled knob on the clock designed to turn the hands; one of the message spools is fixed to the other end of the extension, far enough from the back of the clock to clear the winding keys.

The clock is clamped near one end of a wooden baseboard about 15 in. long and the other spool is mounted on a spindle at the same height and in alignment with the one attached to the back of the clock. There should be a 7 in. clearance between the two spools.

A piece of wood 6 in. long by 1 in. wide by ½ in. thick is lined up horizontally between the two spools and fixed on two uprights so that its upper surface is level with the top of the spool hubs.

Two special units are now made, as illustrated above left. For each, three metal brackets, each with a 1/16 in. hole, are arranged above one another, so that one of the 2 in. metal rods will slip easily through them. Above these brackets two relay type contacts are so mounted that they are kept open by the rod when it is just clear of the lower bracket.

It will be necessary to fix a piece of insulating material to the contact strip where the rod touches it.

A second unit should then be made, identical except that the metal rod will, in this case, keep the relay type contacts closed.

Both these units must be fixed to the horizontal wooden strip at such a height that the recording tape, moving between the two spools, slides smoothly over the lowest brackets. Guides should be provided for the tape.

Punch a clean hole, 1/16 in. diameter, centrally in the recording tape one foot from one end.

Now set the clock for the time at which the recorder is to be switched off.

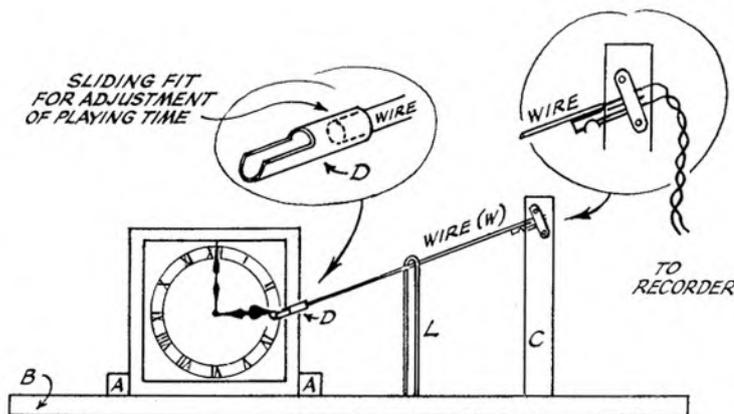
Remove the spool on the clock and wind on tape, so that the end with the punched hole goes on last. Refix the spool to the clock in such a way that, with the tape under tension, the punched hole exactly coincides with the hole in the bottom bracket of the second special unit, which is fixed to the horizontal wooden strip at the end nearest the clock.

Thread the loose end of tape on to the second spool and wind on just sufficient tape to rotate the clock hands to the

. . . **total cost 4s. 10d.,**
accurate to within one minute,
made in
an hour

THE WINNING ENTRY

Submitted by
IAN GIBSON
of Liversedge, Yorkshire



THE type of time-switch which I use can be made for a total cost of 4s. 10d., is accurate to within one minute of switching on and off, and can be constructed in half-an-hour and accurately set up for use in another half-hour.

Charles Langton, our Technical Advisory Editor, comments on the winning entry:
*"This is a simple device, requires no relays and is well within the ability of the average enthusiast."
 "One point to mention is that it will switch on every twelve hours until the clock runs down. This may or may not be an advantage, but the clock need not be fully wound."*

(Continued from page 28)

time at which it is desired to switch on the recorder. Now clip the first special unit to the wooden strip so that the punched hole in the tape coincides with its bottom bracket hole.

When tape and bracket holes are lined up, slip the two metal rods into place. They will then be held in place, resting on the tape, as further adjustments are made.

Finally, rotate the second spool again until the tape brings the clock hands back to the actual time at which the operation is being performed.

The two special units are now electrically wired in series. If the clock is in good condition, its minute hand drive will have sufficient power from the clock spring to rotate the spool and so drive the tape against the slight friction of the two metal rods resting on it. Tape speed will probably be about 4 in. per hour, but is not important.

When the time for switching on arrives, one metal rod will drop clear through the tape, and contact will be made. At the time for switching off, the punched hole in the tape will reach the second unit and the second rod will drop clear, and contact will be broken.

Heston, Middlesex.

H. G. EDE

Liversedge, Yorks.

IAN GIBSON, B.Sc.

Materials used are one Bulgin micro-switch, a length of 18 s.w.g. piano wire (obtainable from model shops), a few pieces of wood, and part of an old tin.

The clock stands on a baseboard (B), held between two positioning blocks (A). A piece of wood six inches long (C) is fixed upright to the baseboard, in line with the front of the clock.

The micro-switch is screwed to this upright, angled downwards, and a length of the wire (W) is soldered to the switch.

Over the other end of the wire is fitted a "finger" (D) made with the piece of tin, one end being cut to U-trough section. A loop of wire (L), pressed into the baseboard, keeps the wire (W) in alignment.

To set up, the clock is positioned so that the hour hand will move into the finger-trough. The clock is then moved sideways until the exact position is found in which it will switch on when showing 3 o'clock.

The blocks 'A' are then glued to the baseboard, so that the position of the clock is permanently assured. (The clock can, of course, be removed between recording sessions for normal use.)

As the hour hand moves downward, it will slide out of the trough, releasing the wire, which springs back and turns off the switch. The "turn off" position is set by sliding the finger along the wire to the appropriate position.

The apparatus, as now set up, will always switch on the recorder when the clock shows 3 o'clock. If, therefore, you wish to switch on the recorder at 5 p.m., the clock should be put back two hours; to switch on at noon, it should be put forward three hours; and so on.



SUGGESTIONS

LEARNING MORSE

I HAVE found the following idea useful for learners of the morse-code. When a message is coming over the radio too fast to read, record it at the fastest speed on your tape recorder. Then, by playing it back at the slower tape speeds, it is more easy to read the morse message, as the speed of the sender is proportionately reduced.

Hoping this idea is of interest.

E. WATSON

Blackpool.

AUTOMATIC STOP

A WAY of satisfactorily having tape machines "switched off" from their power supply has so far not come up in your publication. I have found a simple method, by which the recorder may be switched off automatically at the end of the spool of tape.

Standard tape is used, with stop foils attached; this comes standard with most commercial tapes. The method involves a very simple use of the metal stop foil.

Two pieces of wire on the tape deck make circuit when the stop foil passes them. This circuit now completed enables current to pass through a solenoid with a soft iron core (those which are found in old bells serve admirably) as the current passes through the coil it attracts a soft metal bar, which breaks the tape recorder's mains supply, thus switching the recorder off.

The power for the solenoid is obtained from tapping the filament wires of the valves supplying 6.0 volts. When the switch breaks the circuit it switches off the initial supply and so also switches off the solenoid's supply. Here we have to insert a small ratchet to stop the supply from switching on again.

An old bell can be converted very easily with no trouble to serve this purpose.

J. M. PARKES

Newcastle-upon-Tyne.

If you want to seek the advantage of other readers' experience in solving a problem, write to "The Ideas Pool" about it. And if you think you have an answer to any of the queries, let other readers share your knowledge. Other problems may be submitted to our free Advice Bureau, using the coupon below.

THE IDEAS POOL

MAKING AN ECHO

Method 1

WITH reference to your recent article your readers may be interested in producing an echo. The requirements are two tape-recorders. These are placed side by side, and a tape is threaded through one to the other, as illustrated.

The recorder "A" is put on to RECORD, and the other ("B") is put on to PLAY. They are both started at the same time, to prevent a loop forming between them.

Anything recorded on "A" is played back by "B," picked up by the microphone and re-recorded, again and again. At the speed of 15 ips the time lag is cut down to a few seconds, and I have had one word echoed up to ten times.

T. DEVEREUX

London, S.W.5.

Method 2

HERE is my method of producing an echo, which is simpler than any I have seen in previous correspondence in *Tape Recording Magazine*.

Using a Brenell deck, add a second replay/record head, or on other machines remove the erase head and add another record/replay head—machines with three head are quite O.K.

Use the first head for replaying a tape to which the echo is to be added. Feed the output from the first head, via a sub. amplifier such as the Rogers booster unit at £3, into the recording amp. which is coupled to the second head.

Needless to say, the erase head will have to be unscrewed or uncoupled or the tape will be erased.

IAN GIBSON, B.Sc.

Liversedge, Yorks.

TAPE RECORDING AND HI-FI
MAGAZINE ADVICE BUREAU

JULY, 1959

AND QUERIES

RECORDING FROM TV

YOU have warned readers of the dangers of attempting to couple a recorder to a radio or TV with a "live" chassis. For the benefit of readers who are capable of carrying out a fairly simple wiring job, I have found the following a perfectly safe and satisfactory method of coupling to the output of AC/DC chassis as used in most TVs.

Purchase an ex-radar cathode ray tube heater isolation transformer from a radio "surplus goods" dealer and couple one winding direct to the voice coil connections on the loudspeaker, and the other to the screened cable used for the recorder connection. If twin-screened cable is used for this purpose, the outer braid should be "earthed" only at the recorder end; on no account should it be connected to the TV chassis.

Some manufacturers mount the output transformer on the loudspeaker, so make sure the isolating transformer is connected to the wires actually coupled to the voice coil, and not to those leading back to the chassis.

These isolating transformers are usually 1:1 or 3:2 ratio, so it does not matter which way round the windings are used, although the 3:2 type can be employed to give a slight increase or drop in the final output. There is usually sufficient room in the TV cabinet to mount the transformer well away from the chassis and other metal parts, where it can be left permanently and the recorder cable firmly secured.

The additional load across the loudspeaker will result in some reduction in the normal volume heard, but since the load is permanent, a somewhat higher position of the volume control will maintain the *status quo*. If the output to the recorder is insufficient at normal speaker volume, a step-up transformer can be coupled to the isolating transformer.

Doncaster.

P. S. WARRINER



Douglas Cleverdon, the distinguished B.B.C. producer, who—with Jo Douglas and Douglas Gardner—adjudicated in the Schools Contest

But London school is close second

THE equivalent of a photo-finish between the two best entries in the Schools Section of the 1959 British Amateur Tape Recording Contest resulted in a victory for the second year in succession by Mr. John Weston and Class 4A of Meeching Junior School, Newhaven, Sussex.

Voted into second place by a narrow margin was the entry by Mr. B. A. M. Herbert and pupils of Lee Manor Primary (J) School, Leahurst Road, Lewisham, S.E.13. Mr. Herbert, Headmaster of the school had been doing amateur recording for only three months.

Meeching Junior School will now retain the Grundig Cup, presented by Grundig (Great Britain) Ltd., for another year, and they will receive a second small replica for permanent retention.

The judges, Miss Josephine Douglas, Mr. Douglas Cleverdon and Mr. Douglas Gardner were unanimous in their choice and in their desire to give the Lee Manor Primary School entry the highest possible commendation as runners-up, in view of the standard reached after such short experience.

In consequence it has been decided that the ten guineas presented for this Section by *Tape Recording and Hi-Fi Magazine* should be divided, giving Meeching Junior School six guineas and Lee Manor Primary four guineas.

The subject for this year's Schools Section was "How we see the world." The two winning tapes were distinguished not only by their technical excellence, but also by the originality, imagination and good programmatic shape they displayed.

PETER WATTS REPORTS ON

A tape contest at the universities

THE National Union of Students recently sponsored its own Tape Recording Competition and Mr. Peter Watts, the B.B.C. Producer who judged the entries, has written this commentary on the tapes submitted.

The first three entries that I picked up made me turn up the original circular with the terms of the Competition.

Yes, I was right: it had asked particularly for "originality and the full use of the medium." Why on earth, then, had I just been listening to *A Dock Brief*, with a cast of two and no technical problems whatever, and which had recently been performed inimitably on Sound, on T.V., and on the London stage? *Ring Round The Moon* (yet another duologue), though extremely well acted, was hardly an enterprising choice either.

After that came a more interesting choice—an original translation and adaptation of a de Maupassant story. Unfortunately this was weak both on production and recording technique; in particular, the actors were allowed to speak almost anywhere but into the mike, and that old fault of music snatched away in mid-phrase raised its ugly head.

Next came a tape I threaded on with some reluctance; it was titled *Three Mood Pieces*, and I prepared myself for the usual shapeless and pointless high-brow introspection. To my delight, the University College of London's entry turned out to be three short original poems which, if not earth-shattering

verse, at any rate made compelling listening. They were beautifully spoken, with great simplicity and relaxation, cleverly set to some very effective music specially composed and played by a small amateur orchestra.

The production was excellent, except for a tendency to let the actors get too close on the loud passages. In fact, the whole production which was to win first place easily, was worthy of a professional programme, and I hear that it is being considered for a broadcast on Network Three.

After this, anything was bound to be an anticlimax, and although all the rest of the entries turned out to be original material, the stories tended to be muddled and ill-told. There were, too, far too many of the usual faults: speech at a pace more suited to an open-air meeting; heavy-handed effects too close to the mic; monotonous voices, each taking the tone of the previous speaker; unwanted noises, script-rustles, and even the clicks of switching on and off.

Only one other entry, *The Shapes of Time*, from the University College of North Staffordshire, really tried to exploit the possibilities of the medium. Unfortunately, these programmes made up of sound-montages, verse, music and snatches of dialogue, really need very careful scripting and assembling if they are to hold the listener's interest. Often I felt the producer had fallen in love with some of his ingenious loops and had let them go on long after they had made their full effect, and there was much that didn't seem to have much bearing on

the main theme. But he had really experimented with sound, and I placed his entry third, for its real enterprise and inventiveness.

In second place I put Hull University's *Ring Round The Moon*, because, though it lost many marks for its unenterprising choice, the acting was so good that as sheer entertainment it was hard to fault.

What advice would I give to entrants in these competitions? First, I think, to remember that they are tape recording competitions, not drama festivals; acting is liable to be your weakest point, and it seems a pity to send in a mere scene from a well-known play, where you are, in effect, pitting your actors against the professionals that your listeners will remember in the parts.

Original plays? Yes, certainly, if they are well written, and especially if they make full use of this very exciting and flexible medium—but here again, the actors could let you down. But where the amateur is most likely to be able to stand up to the professional, is in the freer type of programme that calls only for ingenuity in the devising and linking together of sounds. It is important, though, to pick a good theme, and one that will give you scope. See that every effect is relevant to it, and if possible try to impose a "shape" on the whole programme. Whatever you do, see that your recording is technically good, without extraneous noises and without booming or distortion. This sort of programme needs very careful scripting and assembling, but it also offers almost unbounded opportunities to the amateur producer.

Is this licensing scheme the answer?

THE Mechanical-Copyright Protection Society Ltd. has now decided to make a definite proposition to tape recording clubs that it shall issue them with licences authorising recording of copyright music made under club auspices for use at club functions or by the individual member for his private and domestic use.

The proposed fee is two guineas a year, but if licences could be issued in bulk through a central organisation this fee might possibly be reduced. It is intended, the Society explains, to be nominal. The revenue from clubs is considered unlikely to cover the cost of collection.

FEDERATION MEETS

The position will be considered by the Federation of British Tape Recording Clubs at its annual meeting on 20th June and further developments will be fully reported in *Tape Recording and Hi-Fi Magazine* which has, from the first, played the leading part in attempting to clear up the problems posed by copyright

Readers will remember that the subject was first raised by us in April, when we learned that the Mechanical-Copyright Protection Society Ltd. was contemplating some action as a result of the growth of tape recording clubs. Last month, as the result of taking expert legal opinion, we were able to define more exactly than had been possible earlier the various kinds of copyright with which the amateur recordist must concern himself.

We made it clear that, apart from the copyright in the music itself, there are separate copyrights in a particular recording (i.e., a disc put out by one of the big recording companies) and in a broadcast or TV transmission.

We repeat what we then said. So far as the copyright in a particular recording is concerned, it is illegal to tape-record from a commercial disc, and there is no disposition on the part of any of the interests concerned to change that situation in any way. Despite what may have appeared in print elsewhere, it is a practice in breach of the law and the owners of the copyright would be free in any such case to take appropriate legal action to prevent further copying and to seize any such copies made.

So far as copyright in a broadcast or TV transmission is concerned, the notice which has been published by the B.B.C., seems adequate for the amateur recordist.

We are left, then, with the copyright in the music itself, and that is what the Mechanical-Copyright Protection Society

BY THE EDITOR

Ltd. is concerned with and what it proposes to cover by its licensing system.

To clarify the position for the benefit of our readers, we have put five questions to the Secretary of the Society, Mr. B. W. Pratt, and we print them, with his replies, below:—

Q. What annual fee do you propose for a licence to give copyright clearance to tape recording clubs, covering recordings made for private, domestic and club use only?

A. It has been approved by the copyright owners represented by M.C.P.S. that a licence be granted to clubs at a fee of £2 2s. per annum, such licence authorising the recording of copyright music made under club auspices for use at club functions or by the individual member for his private and domestic use. If the issue of licences could be handled through an organised body representing a number of clubs, the annual fee would possibly be reduced.

Q. It is assumed that the licence would cover the recording and reproduction of copyright music; further, that the official statement from the B.B.C. gives adequate protection in respect of the copyright in broadcasts and performing rights. It is assumed, therefore, that a licence issued by the M.C.P.S. would effectively cover recordings made by members of clubs from radio performances of copyright music. It is understood that copying of commercial discs on to tape would not be covered. Do you accept the above as an accurate statement of the position?

A. The proposed licence would cover the recording of copyright music under the control of the Society acting as agent on behalf of its principals, which include almost all British copyright owners and the majority of American owners. The licence would not authorise the recording of a B.B.C. or I.T.A. broadcast or television programme, the re-recording or "dubbing" of an existing recording of an artiste's or musician's performance, or the performance in public of the music so licensed.

Q. What about live performances, e.g., by a local amateur choral society or orchestra when copyright music is employed, and when the society or orchestra has given its permission?

A. The licence can only relate to the recording of the works controlled by the Society, which would not be concerned with the source of performance. It should be noted that in many cases where hired material is used by amateur choral/orchestral and dramatic societies,

it is made a condition of hire that no recording is allowed.

Q. How would individuals unable to join a club be covered? If legalistically they would be in breach of the law, could they, in fact, pursue their hobby without fear of injunction or prosecution? Or do you envisage any system of individual licences?

A. At this stage we can see no practical way of authorising the recording of copyright music by the individual who is not also a club member, but the copyright owners reserve unto themselves the right to take whatever action they may think fit in protection of their interests should occasion arise.

Q. A number of clubs put speech and music items into a programme on tape and circulate it as a free service to hospitals and the blind. Would your licence cover such activity?

A. The copyright owners generally are sympathetic in their attitude where there is any question of recording for a charitable purpose, and in the case of taped programmes for hospital patients or for the blind they have agreed to issue licences at a nominal fee of £1 1s. per annum if the club or association exists solely for that purpose. If the service formed part of the general activity of a club holding a licence at £2 2s. per annum, no extra charge would be made.

EXCHANGE OF TAPES

At the end of the questionnaire, Mr. Pratt adds the following comments:—

"One other point on which we would like to comment is the practice of interchange of recordings between clubs, and it will be understood that this can only be permitted where each individual club concerned holds the Society's licence.

"In the case of recordings made for overseas exchange, there is some difficulty as the ownership of copyright in a particular work may change from country to country and, strictly speaking, the club receiving a tape from overseas sources or exporting should first obtain the permission of the owner of any copyright music reproduced thereon.

"In conclusion, we would like to mention that the fees named are nominal and it is not anticipated that the gross income from clubs will meet the cost of issuing licences or collection, but it is felt there is the need to establish the principle that copyright music is protected by law and that unauthorised use thereof is illegal."

Readers may feel that the above information does not entirely clarify the situation, but it is our belief that it takes the matter as far as can reasonably be hoped at the moment.

(Continued on opposite page)



FIRST RECORDER FROM BEHIND THE IRON CURTAIN

Exclusive

The first tape recorder manufactured behind the Iron Curtain to be sold in Britain is now available. It was shown for the first time at the recent London Photo Fair. It has some unique features which will be of wide interest to British enthusiasts and manufacturers, though it comes in the most modest price range.

We have, therefore, arranged for the first machine imported to be fully reviewed by one of our technical experts, and his comments are printed below.

By F. C. Judd, A.M.Inst.E.

THIS attractively-finished recorder is now available here at the competitive price of 38 guineas. In view of its simplicity of operation, it is an excellent domestic recorder and, although only the one speed of $3\frac{1}{2}$ ips is provided, the manufacturers claim a frequency response of 70-10,000 cps. They do not quote a reference frequency.

COPYRIGHT (Continued from opposite page)

The language used by the Mechanical-Copyright Protection Society Ltd. is, at times, carefully guarded, but we feel that a sensible interpretation of the new position would be as follows:—

1. Clubs can cover the normal activities of their members by an annual payment of not more than two guineas, and individuals can cover themselves simply by joining a club.

2. Individuals who cannot join a club may be legally vulnerable, but the M.C.P.S. admits that it has no practical proposal to make at present and the reasonable approach which it has adopted to clubs may be taken as an indication that it will not suddenly mount an offensive against individual recordists.

3. So long as the B.B.C. maintains its present attitude, recording from radio programmes is likely to be unaffected if it is of material of which the copyright is controlled by the M.C.P.S. and if the recordist is covered by a licence.

4. So far as commercial discs are concerned, it is clearly illegal to make tape copies of them.

We again invite readers to keep us fully informed of any developments of which they become aware and we shall act quickly in any new situation to safeguard their interests.

“Piano key” push buttons simplify operation and are interlocking, while the variable tone and volume “thumb wheel” controls are attractively set into each of the front corners of the deck panel. Input sockets for recording from microphone, gramophone or radio are provided and a magic eye recording level indicator is fitted in a prominent position on the deck.

Up to 5 in. diameter tape spools can be accommodated and the instrument features a rather unusual method of tape re-wind which is affected by simply pressing the centre of either of the tape spools hubs. This allows an accurate but rapid return to any desired part of the tape. A clutch device on either spool engages the motor drive so that the spool hubs are driven direct from the motor.

A power output of 2 watts from an EL.84 is comfortably handled by a built-in elliptical speaker, although an extension loudspeaker socket does provide for a larger external speaker (3 ohms).

The model sent for review was submitted to the usual tests for wow, flutter and noise, etc., but did not quite comply with the frequency response claimed by the makers. It was still favourable, however, considering the slower speed, being -3 dB at 70 cps and -3 dB at 9,000 cps, when referred to 1,000 cps. Measurement showed the hum and noise level to be -35 dB at full gain. The tone control provides a reasonable margin of compensation for loss at the higher frequencies.

Wow and flutter are negligible; this recorder, in fact, is a good deal better in this respect than others of higher price.

The slight 100 cps ripple was noticeable at full gain, but quite inaudible at comfortable listening level. On experimenting with the controls it was found that the playback key could be set so that the tape came into contact with the head during re-winding and, by setting the instrument to “record,” quite a variety

The Terta 811 portable is manufactured in Hungary by the Electroimpex Hungarian Trading Company and is being distributed here by English Exporters (London) Ltd., of 9-10 Marble Arch, London, W.1.

It is a single-speed machine, at $3\frac{1}{2}$ ips, and a frequency response of 70 to 10,000 cps is claimed for it. It accommodates 5-in spools and an unusual method of tape re-wind is operated by pressing the centre of either of the spool hubs.

of sounds a la “music concrete” could be obtained by what amounts to recording at very high speed and replaying at normal speed. I should emphasise that the recorder is not designed to do this normally, and the information is offered by way of interest.

The deck is cast in one piece and carries the amplifier and power supplies complete. It is, in fact, of very substantial construction and can be removed from the case in a matter of minutes.

Provision is made for correct azimuth alignment of the tape head, and the tape guides and mechanism are well made and finished.

Tape spooling is good at both re-wind and normal play/record speeds and braking is almost instantaneous. No tape length counter is provided, but a desired part of the tape can be found by means of the standard gauges engraved on most makes of tape spool. The unusual method of tape re-wind makes it possible to “inch” the tape backwards or forwards past the head and, by partially depressing the stop/start button, it is possible to hear what is on the tape.

The main on/off switch is incorporated with the volume control and the motor on/off switch with the tone control, which provides approximately 6 dB lift at 6,000 cps.

Playing time at $3\frac{1}{2}$ ips is two hours, as the recorder features the usual twin track system; re-wind in either direction takes 60 seconds.

Erase is clean, but inclined to leave very slight noise on the tape. The instrument is finished with a plastic material (several colours are available), the deck being stove enamelled off-white.

Weight is approximately 22 lb. and dimensions approximately $13\frac{1}{2}$ x $10\frac{1}{2}$ x $5\frac{1}{2}$ in.

The instrument is recommended for tape recording enthusiasts who have not aspired to hi-fi and it may prove popular with teenagers because of its compactness and low price.

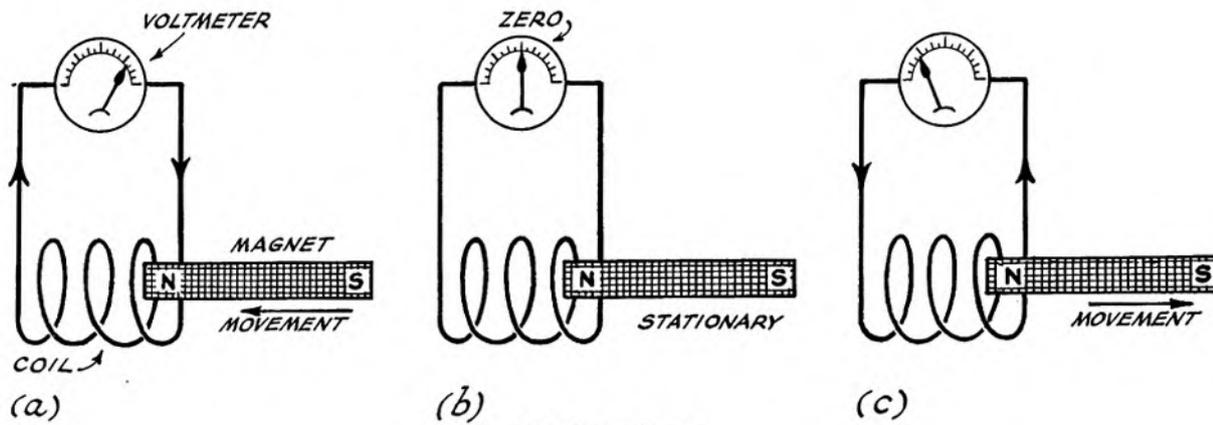


FIGURE 1

TRANSFORMERS AND REPLAY HEADS

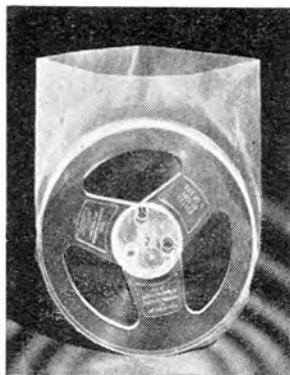
CHARLES LANGTON

continues his series
on Simple Theory

I AM grouping transformers and replay heads together in this article because both are used in tape recorders and make use of the same basic principle of operation.

Consider any coil of insulated wire, large or small. If a sensitive voltmeter is connected between the ends of the coil,

To
keep
your
tapes



in
perfect
order

use TAPE PROTECTORS!

Made from top-quality polythene, and having a generous 'turn-over' closure, they protect your tapes from dust and atmospheric changes.

Equally necessary for both pre-recorded and virgin tapes, they are the answer to "sticking."

In packets of 12: 3"—1/6d.; 4"—1/8d.; 5"—1/9d.
5½"—2/- 7"—2/4d.; 8½"—2/8d.

FROM YOUR DEALER; OR WRITE TO US, ADDING 6d. POSTAGE

Swains
Papercraft Ltd.

Dept. 6,
Buckhurst Hill,
Essex.

TRADE
ENQUIRIES
INVITED

BANISH DIRT
THE MODERN WAY

CLEAN WITH KLENZATAPE

Metro-Sound proudly present KLENZATAPE, a new and scientific device designed to clean the record and erase heads of your tape recorder, and to reduce faults caused by oxide deposits. Using KLENZATAPE is as easy as playing through 12 feet or normal tape. Price 12s. 6d. Please write for leaflet giving full details.

METRO-SOUND
MFG. CO. LTD.
19a Buckingham Road, London,
N.1
CLIssold 8506/7



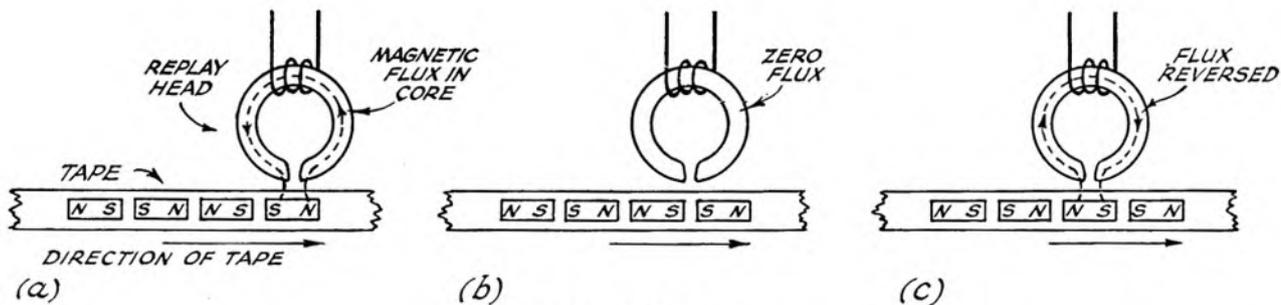


FIGURE 2

and a magnet is brought near to the coil, the voltmeter needle will be deflected *as long as the magnet is moving*. When the magnet stops, the voltmeter will fall to zero. (Fig. 1).

If the magnet is moved away from the coil, the voltmeter will kick backwards. This indicates that a voltage or e.m.f. is *induced* in the coil as long as the magnet is moving, or more correctly, as long as the magnetic field linking with the coil is *changing*. Thus the e.m.f. will also be induced if the magnet is stationary and the coil is moving.

A closer look at this natural phenomenon will reveal that the e.m.f. is proportional to the speed or rate at which the magnetic field changes. A powerful magnet will, therefore, induce a larger voltage than a weaker magnet moving at the same speed.



The e.m.f. also depends upon the number of turns of wire on the coil. If the coil is wound upon a soft-iron core, this will encourage a greater magnetic flux to pass through the coil as the magnet approaches, thus increasing the induced e.m.f.

Now take the case of a magnetic tape passing across the gap of a replay head. The signal on the tape consists of a continuous stream of tiny magnets of varying strengths and sizes, and as each passes across the gap a momentary magnetic flux flashes through the iron core of the head, thus inducing an e.m.f. in the coil.

(Fig. 2). As before, the e.m.f. at any instant will be proportional to the strength of the tiny magnet passing at the time. Thus, what was recorded as a loud signal will be reproduced as a comparatively large e.m.f., whereas a quiet sound results in a low e.m.f.

It might be thought that each magnetic element would pass by at a constant rate, but this would only be so if each was the same physical size. In practice, high-pitched notes will be recorded on the tape as a large number of small magnets, and so, during playback, the rate at which they pass across the gap is greater than is the case for recordings of lower pitch, even though the tape speed remains constant.

This brings us back to the earlier paragraph in which it was stated that the induced e.m.f. is also proportional to the *rate* at which the magnetic field changes. Thus a higher-pitched recording will be reproduced as a larger e.m.f. than a bass note, all other things being equal. The replay, amplifier, therefore, must have a response which emphasises the bass notes to compensate for this; otherwise the reproduction would sound high-pitched and tinny.



Let us now consider how the above principle is applied to the action of a transformer. Returning to the coil in Fig. 1, the e.m.f. is induced as long as the coil is subjected to a varying magnetic field. Instead of using the permanent magnet shown, this varying field could be produced by placing another coil close

by, and passing through it an *alternating current*. (Fig. 4). Thus an alternating magnetic field is set up round the *primary* coil, which links with the secondary coil, thereby inducing an *alternating e.m.f.* in the secondary coil. The coils are said to be *coupled*, and the nearer they are together the *tighter* will be the coupling.



If the coils are wound close together upon a soft-iron core, the coupling will be greatest, and under these conditions the "turns ratio" rule holds good. That is to say, if there are twice as many turns on the secondary winding as on the primary, the transformer is said to have a *step-up* ratio of 2:1. This will give an output voltage from the secondary of twice the input voltage applied to the primary.

This rule applies to any ratio. For example, a microphone transformer may have a step-up ratio of 100:1, thus giving an output voltage 100 times as great as the input.

If the secondary winding is *smaller* than the primary, then the transformer has a *step-down* ratio. A filament transformer is a good example here, when a step-down transformer of 40:1 is used to reduce the mains voltage of 240 volts down to 6 volts, to light the valve heaters.

In conclusion, it must be stressed that, as we have seen from the above principles, a transformer can only be used on A.C., and in most cases damage would be caused if a transformer were to be used on D.C.

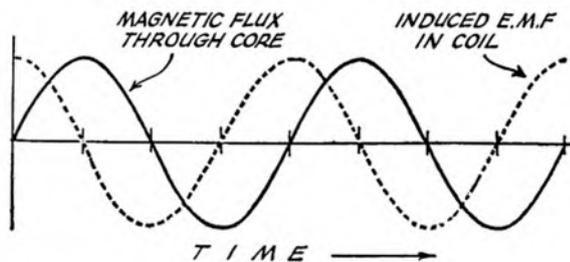


FIGURE 3

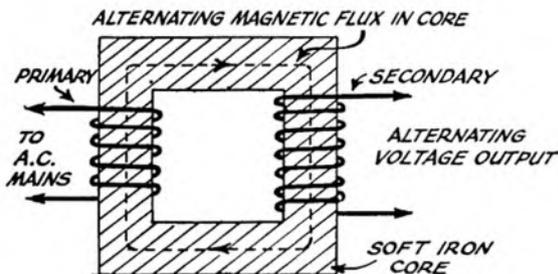


FIGURE 4

Lee Electronics

TAPE RECORDER & HI-FI AUDIO SPECIALISTS

SPECIAL BARGAINS

Collaro Mk IV Tape Decks New and Boxed at £18 10s. each. Pamphonic 1004 10 watt Shelf-mounting Amplifiers new and boxed, listed at 25 gns.—offered at 15 gns. Philco Self-powered FM Tuners listed at 19 gns.—offered at £12 10s. each. Free Lists.

400 Edgware Road, W.2 PAD 5521

DOUBLE PLAY TAPE

Double Play Tape uses a new plastic base which is half the thickness of standard tape. Any reel will thus hold twice the length of Double Play Tape compared to Standard Tape.

Owners of Recorders which take 5" or smaller reels will find this tape of particular interest as the playing time can be considerably increased.

BASF. 300ft. (3") 14/-. 600ft. (4") 25/-. 1,200ft. (5") 42/-. 1,600ft. (5½") 52/6d. 2,400ft. (7") 77/6d.

TELEFUNKEN. 1,200ft. (5") 35/-. 2,400ft. (7") 72/6d.

All post free

ALL ORDERS SENT BY RETURN OF POST

New list of Standard and LP Tapes and Accessories free upon request

WATTS RADIO 54, Church Street, Weybridge, Surrey
(Mail Order) Ltd. Telephone: Weybridge 4556

NOTE.—Post orders only to this address please

Dealers! You may not always have the time to—

MIND YOUR OWN BUSINESS!

—but if you make a point of dealing with the WHOLESALERS WHO REALLY HELP, it won't matter so much! Every month we issue a friendly little booklet which introduces, and offers help and advice on all the new and more profitable lines, as well as the current best sellers. It's absolutely free to all bona-fide dealers, and all you need do is telephone, call or write to: V.E.S. WHOLESALE SERVICES LTD., 11, GUNNERSBURY LANE, ACTON, W.3. ACORN 5027. We specialise in TAPE RECORDERS, and HI-FI, and are approved Wholesalers for all the best makes, including REPS, ELIZABETHAN, SOUND, TRUVOX, HARTING, G.B.C. GELOSO, PERTH-SAJA, STUZZI, TANDBERG, BRENNEL, COLLARO, VERITONE, ELEKTRON, FI-CORD, and the GRAMDECK attachment. We also stock SCOTCH BOY, MASTER-TAPE, and BASF tapes and accessories. We have different cabinets suitable for Hi-Fi equipment, and a selection of amplifiers and loudspeakers by LEAK, QUAD, AVANTIC, C.O., DULCI, LINEAR, TRIPLETONE, BRITAMER, GOODMAN'S, WHARFEDALE, W.B., G.E.C., ELAC, LORENZ, etc. Apart from this we keep an enormous selection of Radio, Television and Electrical lines, ranging from Scratch Removers to Spin Dryers, Control Knobs to Convertors, Fire-bars to Fluorescent Fittings, and Toasters to Test Gear! We have, in fact, more lines than Clapham Junction, but you will be on the right track if you Open an Account With Us Now! THE SIGNAL'S SET FOR SALES!

Build your own HI-FI!

At last! A specially selected and designed Hi-Fi Sound Installation for your home at really reasonable cost!

You save because you assemble everything yourself following our step by step instructions. You gain because you learn about the equipment as you build and are able to service and maintain it afterwards. Best of all—you'll have fun building it and be thrilled with the finished instrument which will bring you an entirely new experience in the enjoyment of sound. No previous skill or experience is needed. Post coupon now for full details, without any obligation. Easy terms available. Equipment includes:—Luxury Cabinets · Top Quality Amplifier suitable for stereo or non-stereo reproduction VEF/FM Radio Units · Record Player Tape Recorder · Hi-Fi Speaker System.

RADIOSTRUCTOR
Britain's Leading Radio Training Organisation



FREE BROCHURE - POST TODAY

To: RADIOSTRUCTOR, Dept. H.43
46 Market Place, Reading, Berks.

Please send Brochure without obligation to:

Name _____

Address _____

(318) BLOCK CAPS PLEASE 7-59

TESTED IN THE LAB



By
F. C. JUDD
A.M.Inst.E.

ONE delightful feature of this recorder is the simplicity of operation due to the Walter patent "joystick" control which is used for all the principal functions of record, playback and re-winding. On unpacking the instrument I was surprised to find that the makers include a spool of pre-recorded tape, for the benefit of both dealer and buyer, which features several excellent recordings by E.M.I.

Included with the recorder is a fidelity crystal microphone, as well as a lead, complete with plugs for coupling the tape recorder to an external amplifier or for taking an output from a radio tuner. These items, and a very comprehensive instruction book, are packed in a handy plastic container.

The tape deck features a "record safety button," which must be depressed before the joystick control can be set for recording. An instant "stop/start" control is fitted, which leaves the main control still in operation and the motor idling. Apart from a revolution counter and a magic-eye recording level indicator, a drive connection for a cine synchroniser attachment is thoughtfully provided, so that the instrument can be used for adding synchronised sound to films.

The instrument is attractively finished with a grey enamelled deck, the case covered with leatherette in two tones of grey. The makers do not mention whether other colours are available.

CONTROLS

The main controls are located on the tape deck and amount to nothing more complicated than the speed change control (7½ or 3½ ips), the volume control and the extremely simple "joystick" control mentioned above. A tone control is situated at the side of the instrument, together with input and output sockets. The deck will accommodate standard 7½ in. spools when the detachable lid of the recorder is removed and smaller spools may be left on the hubs with the lid closed and screw-caps are provided to secure them to the hubs.

CIRCUITRY

A basically simple combined record/playback amplifier circuit is used, involving only five working valves including the HT rectifier. Pre-emphasis for the two recording speeds is taken care of by a negative feedback circuit between the first and third amplifier stages, the entire amplifier being contained on a printed circuit board, whereas the mains transformer and rectifier are separately mounted so as to avoid hum pick-up by the recording head.

A 9 in. x 5 in. elliptical loudspeaker comfortably handles the three watts of output provided by the main amplifier valve and provision is made for connecting an extension speaker. Full recording level may be obtained for an input of 2 mV at the microphone socket or 200 mV at the radio socket and the amplifier may be used "straight through," whereby it is only necessary to button to the stop position. Gramophone pick-up, radio tuner, or any signal source of the order of 300 mV is required for full power output in the "straight through" condition.

THE WALTER 303 DE LUXE

RECORDING AND PLAYBACK

Fully screened combined record/play and erase heads are fitted, the record/play head being high impedance. A magnetic pre-erasing device, followed by the normal erase head, leaves the tape clean and free from noise, even after the heaviest recordings.

The recording and playback times are standard: 3 hrs. 90 mins. per track for an 1,800 ft. long play tape at $3\frac{1}{2}$ ips and $1\frac{1}{2}$ hrs. 45 mins. per track for an 1,800 ft. long play tape at $7\frac{1}{2}$ ips. Fast forward re-wind was timed as 2 mins. 3 secs. and fast reverse re-wind at 2 mins. 28 secs.

MECHANICAL FEATURES

The capstan is belt-driven by a single induction motor to which the loaded and take-up spools are also coupled by a clutch system operated from the "joystick" control. Braking is instantaneous, as it is automatically linked with the control unit but is otherwise independently adjustable. Tape spooling was found to be accurate under normal play/record conditions and on fast forward re-wind, but a little uneven on reverse re-wind.

FUNCTIONAL TESTING

The instrument submitted for review was subjected to a considerable number of tests and found, generally, to be within the maker's specification. Mechanical noise from the drive motor could have been a little lower, as it was audible above quiet passages of music or with the volume turned to a fairly low level.

Frequency response came well within the maker's specification and when checked with an E.M.I. frequency test tape the pen recorded response curve showed +4.5 dB at 60 cps, the response after this being reasonably flat up to 10,000 cps, at which frequency an increase by 1 dB was shown, the reference frequency for these tests being 1,000 cps.

Hum and noise level proved to be slightly less than that quoted by the maker, being measured as -38 dB for full output, whereas the maker quotes -35 dB. The tone control circuit is a simple one designed to provide only treble cut, but there is ample reserve in the bass response to offset the lack of a separate bass cut or lift control.

The erase and recording bias waveform is clean and evidence of this is the low residual noise from the tape after erasing.

Using a recorded tone, a rather fast "wow" effect was apparent, but was finally cleared up by adjustment to a tape pressure pad which operates in conjunction with one of the tape guides. Slight speed variation was otherwise only just detectable from a recorded continuous tone, a most difficult test for any domestic class tape recorder to pass.

Although the drive motor runs continuously, no excessive heating was noticed after an eight-hour run.

Recordings were made from an FM tuner, as well as from the microphone provided. Recorded music was extremely clear and crisp. The microphone provided does full justice to speech recording, but a better quality instrument would be advisable for recording music. Walter can, in fact, provide a dynamic microphone with a wider frequency response, as well as stethoscope pattern earphones for monitoring, and a ciné-synchronisation attachment.

LISTENING TESTS

Reproduction from the internal speaker is comparable with that from a good class radio receiver, the high frequency response doing full justice to transients.



Those who possess a high fidelity amplifier and speaker system could undoubtedly use the recorder to good effect, as the frequency characteristic at the external amplifier output socket is substantially flat and not affected by the tone control.

The instrument is compact (14 x 11 x 8½ in.) and convenient for carrying, as it is not unduly heavy (19½ lb.).

It is constructed for easy servicing, a point well worth considering when buying any radio or tape recording equipment, and is reasonably priced at 42 guineas.

For those whose interest in recording is of a general nature, the Walter 303 is a typical example of a well-made domestic class recorder and one which should be a favourite with other members of the family, particularly because of its simplicity of operation.

(The machine reviewed was selected by the Editor from the current range of stock at Walter Instruments, Morden, Surrey, factory.)

Letters to the Editor

PLAYING TIME OF THE CLASSICS

THE recent correspondence giving playing times of various classics reminded me of an experience some months ago. I decided to record the broadcast Promenade concert performance of Tchaikovsky's No. 1 piano concerto and, to my regret, work lasted 34 minutes, whereas my 5 in. standard tape provided only 32 minutes.

A few weeks later I had another go; this time I cunningly stopped the tape for 2½ minutes during the second movement, in order to record the whole of the last movement, which previously I had missed.

Imagine my feelings, however, when the work ended and I still had about two minutes of tape left.

The reason for the four minutes difference was simply a different orchestra, conductor and soloist.

The moral is not to take too literally the various playing times of any music. It all depends upon the conductor, orchestrator and soloist—not the composer; he only wrote it.

JACK E. CALVER.

Norwich.

HERE are a few more playing times, all in minutes:—

Beethoven—Piano concerto No. 1, op. 15, 40; Piano concerto No. 2, op. 19, 30; Piano concerto No. 5, op. 73, 39; Sonata No. 21, op. 53 (piano), 21.

Bizet—Symphony No. 1 in C major, 27;

Rachmaninoff—Concerto No. 2, op. 16 (piano and orchestra), 41.

ALBERT S. HOWARD,

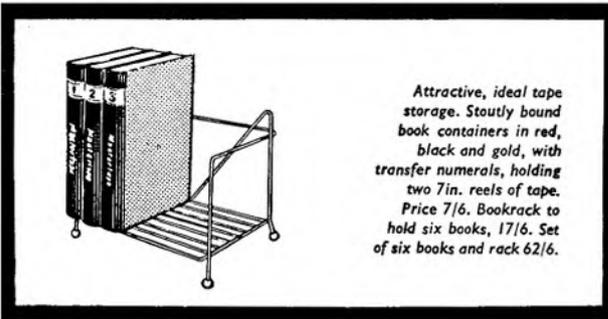
Ilford, Essex.



HIGH TOP RESPONSE

The ability to capture and reproduce sounds of extremely high register—even beyond the limits of human hearing, that is what is meant by High Top Response. This the bat can do—and so can MASTERTAPE, recording and playing back every sound with the utmost clarity, in a way that must be heard to be believed. High Top Response also means that MASTERTAPE can record efficiently at lower speeds with maximum possible brilliance.

Mastertape in the News! Mastertape is now supplied for use with the British Communication Corporation Mars Recorder in service with the United States Air Force.



Attractive, ideal tape storage. Stoutly bound book containers in red, black and gold, with transfer numerals, holding two 7in. reels of tape. Price 7/6. Bookrack to hold six books, 17/6. Set of six books and rack 62/6.

Mastertape

MAGNETIC RECORDING TAPE BY
MSS RECORDING CO. LTD. Colnbrook, Bucks.
Telephone: Colnbrook 2431.

Showroom and Studio

21, Bloomsbury Street, London, W.C.1.
Telephone: MUSeum 1600.

FRANCIS OF STREATHAM

- ★ THE LARGEST STOCKS OF LATEST-TYPE RECORDERS
- ★ LARGE STOCKS OF ASSOCIATED EQUIPMENT

● *The Centre for Personal Attention and respect for your Pocket*

NO EXTRA FOR CREDIT

Equipment available on terms to suit your personal convenience at no extra cost, with FREE service whilst under Guarantee

HIRE SERVICE

Tape Recorders available on hire from 45/- per week

MICROPHONES AND MIXERS

	£	s.	d.
Lustraphone "Lustrette" M/C	3	7	6
Lustraphone VR/64 Ribbon	7	17	6
Lustraphone LFV/59 Dynamic	8	18	6
Simon "Cadenza" complete	10	10	0
Grundig GCM 3	6	6	0
Reslo Ribbon	8	15	0
TSL 3-Channel Mixer	2	gns.	
Grundig Mixer	16	gns.	

Also by Ronette, Acos, etc. We will gladly advise on the type best suited to your requirements

HI-FI & ASSOCIATED EQUIPMENT

	£	s.	d.		£	s.	d.
Dulci AM/FM.....	24	19	0	Lenco GL/58 less	19	17	6
Jason FM.....	23	8	3	cartridge.....	26	8	3
Jason JTV	23	8	3	Garrard 301.....	31	10	0
Pye FM.....	23	2	0	Pamphonic 3000.....	30	9	0
Pye AM/FM.....	30	9	0	Leak Stereo 20			
Collaro 4TR200	14	11	0	Loudspeakers by			
Garrard 4HF and P.U.				Wharfedale, C.Q., W.B., Pye,			
cartridge to choice				Goodman, etc.			

TAPE TO DISC SERVICE

P.T. Reductions passed on where applicable

Balmoral Tape Recorder	43gns.	Phonotrix	26gns.
*Brenell Mk. V.....	64gns.	*Reflectograph	94gns.
Brenell 3 star.....	58gns.	*Saba	89gns.
Elizabethan Bandbox ...	29gns.	*Simon SP4	95gns.
Elizabethan Escort	45gns.	Sound 444	45gns.
*Elizabethan Essex	65gns.	Sound A20	55gns.
*Ferroglyph 4AN	81gns.	Sound 555	65gns.
*Ferroglyph 4ANH	86gns.	Sound Belle	26gns.
*Ferroglyph 4AN/S.....	89gns.	Spectone 161	49gns.
Ferroglyph Stereo-Ad..	30gns.	Stuzzi Magnette	69gns.
Grundig TK20	52gns.	*Telefunken KL85	75gns.
*Grundig TK25	62gns.	*Telefunken 85K	79gns.
*Grundig TK30	72gns.	*Telefunken 75/15	54gns.
*Grundig TK35	82gns.	Verdik	45gns.
*Harting	82gns.	*Vortexion WVA	£93 13 0
Magnafon Courier	49gns.	*Vortexion WVB	£110 3 0
Magnafon Diplomat	51gns.	Walter 101	29gns.
Minivox Battery Port-		Walter 303 De Luxe	42gns.
able	34gns.	Walter 505	57gns.
Perth-Saja Standard	45gns.	Wyndor Dauphin	89gns.
Perth-Saja De Luxe	59gns.	Wyndor Viscount	49gns.
Philips EL 3527	39gns.		
Philips 8108G	62gns.		

*Microphone extra

PRE-RECORDED TAPES AND TAPE SERVICE

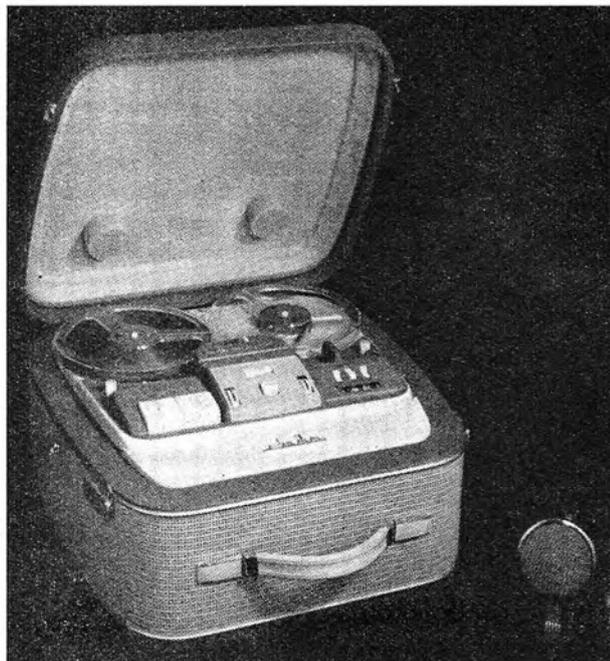
ALWAYS AVAILABLE Pre-Recorded Tapes by Columbia and "Music on Tape," etc. Lists on request. ALSO Tapes of every size and type by leading makers ready for prompt dispatch.

169-171, STREATHAM HIGH RD., LONDON, S.W. 16

Between St. Leonard's Church
and Streatham Station

STreatham 0466 & 0192

PRODUCTS REVIEW



GRUNDIG ANNOUNCE A FIRST STEREO MODEL

GRUNDIG HAVE produced their first stereo machine—based upon the design of the handsome TK35 and selling at 92 guineas. The new machine, which records monophonically but provides for replay of all stereo tapes, has been designated the TK55.

When used as stereo equipment, it reproduces the left-hand channel and feeds the output of the right-hand channel to the pick-up terminals of a domestic radio.

If one already has stereo equipment, the new Grundig will match it. The stereo pre-amps are matched to exacting limits and there is an illuminated panel which gives visual indication of the changeover from monophonic to stereo reproduction.

The recorder is very compact in design and has the customary ease of operation of Grundig models.

The price does not include a microphone.

Grundig (Great Britain) Ltd., 39/41, New Oxford Street, London, W.C.1.

The Ferrograph series

FERROGRAPH HAVE rationalised their series of recorders for the domestic market, under the description Series 4, the basic instrument in the range being Model 4A/N. The head arrangement allows the addition of an additional head, so that at any time the instrument can be modified to meet the needs of any new system or innovation. For example, Model 4A/N having speeds of $3\frac{1}{2}$ and $7\frac{1}{2}$ ips for single channel recording, can be fitted by the user with an extra head for monitoring, stereo playback of pre-recorded material, stereo recording, and "dual stereo" to the new American standard.

Any Series 4A can be converted to a Series 4S by connecting the stereo head and a Stere-Ad Unit for stereophonic reproduction. The Series 4 is available in two forms at similar prices, either as a self-contained transportable, with built-in speaker,

(Continued on page 40)



In this feature every month you can check

YOUR LOCAL DEALER

who gives special attention to tape

LONDON

Lee Electronics

TAPE RECORDER & HI-FI AUDIO SPECIALISTS

400, EDGWARE ROAD, LONDON W.2

London's Leading Stockists of High-Fidelity and Audio Equipment. Many Bargains in new and reconditioned Equipment.

SEND FOR FREE LISTS

All Machines demonstrated for performance on Record and Playback
All leading makes of Hi-Fi equipment from stock

PADDINGTON 5521

Hi-Fi Consultants and Dealers

STUDIO RECORDING & DUBBING FACILITIES

Studio A, 40 ft. x 40 ft.

TAPE to DISC

professional standards

OLYMPIC SOUND STUDIOS

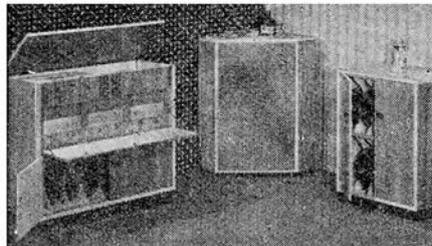
Carton Hall, Carton Street, London, W.1.

Tel. HUN. 1635

Agents for SAGA Records and Tapes

CABINETS FOR TAPE RECORDERS

by STAMFORD



Equipment Cabinet GP61. Size 36" wide, 33" high, 16" deep. Control panel 34" x 9" high. Price £28 15 or £47 dep. and 9 monthly payments of £2 18 3. S.43 Enclosure to house any 12" speaker, provision for tweeter. Strictly to Goodmans' specification. 36" high, 21" panels. Price £15 15 or £2 8 dep. and 9 monthly payments of £1 12.

Record and Tape Storage Cabinets. Full range from £8 12 6. Delivery, England and Wales, 12/6, Scotland and Northern Ireland, 25/-. Write for new catalogues or visit our showrooms.

A. L. STAMFORD LTD. (Dept. G 3) 84/86 & 98 Weymouth Terrace off Hackney Road, London, E.2. Telephone: SHOREDITCH 5003



In this feature every month you can check

YOUR LOCAL DEALER

who gives special attention to tape

LONDON

TAPE RECORDERS

by

Grundig, Repts, Spectone,
Simon, Truvox, etc.

but

SERVICE

by

WADDEN & HILL LIMITED,
44, HIGH STREET : HOUNSLOW

Telephone: HOUnslow 1736

THE SOUTH

ALL TAPE RECORDERS

From the Specialists

TAPE RECORDERS

(Bournemouth) LTD.

Main Area Dealers for

FI-CORD : PHILIPS : GRUNDIG

Authorised Service Agents for

TELEFUNKEN and WALTER (Southern England)

Tapes and Accessories by Return. Terms available on New or Reconditioned sets.

WRITE OR PHONE FOR FREE BROCHURE
Seamoor Road, Westbourne, BOURNEMOUTH, Hants.
Telephone: Westbourne 64292

We supply all makes of

Tape Recorders

WE SERVICE ALL MAKES OF TAPE RECORDERS.
OUR TERMS ARE THE BEST, OUR SERVICE THE
BEST. 10% DEPOSIT, INTEREST FREE.

If you want a RECORDER, If you have a
RECORDER, You need SERVICE

Telephone: RAV 4498.

WRITE FOR FREE DETAILS & BROCHURES TO:

The Tape Recorder Service Co.

43, NAPIER ROAD, BROMLEY, KENT.

(Continued from page 39)

or as a chassis mounting unit, without speaker, to put in a cabinet.

Nominal tape speeds: 3½, 7½ and 15 ips (according to model). Wow and flutter: less than 0.2 per cent at 7½ ips. Frequency response: 3½ ips, 50-6,000 cps ± 3 dB; 7½ ips, 50-10,000 cps ± 2 dB and 40-12,000 cps ± 3 dB; 15 ips, 40-15,000 cps ± 2 dB. Signal to noise ratio: in the range 200 to 12,000 cps, better than 50 dB.

Models with suffix CON are in chassis mounting form. Prices of Series 4A models with monaural recording and reproducing: 4A/N and 4AN/CON (3½ and 7½ ips), 81 guineas; 4A/H and 4AH/CON (7½ and 15 ips), 86 guineas. Series 4S, with additional stereo head for playback of stereo tapes when used with Stere-Ad Unit: 4S/N and 4SN/CON (3½ and 7½ ips), 88 guineas; 4S/H and 4SH/CON (7½ and 15 ips), 93 guineas. Stere-Ad Unit, 30 guineas.

Sizes: Con models' motor-board area is 17½ × 17½ ins.; height above board, 4½ in., depth below, 4½ in. Transportables: 18½ × 17½ × 9½ ins. Weights: CON models 45 lb., transportables 50 lb.

British Ferrograph Recorder Co., 131, Sloane Street, London, S.W.1.

* * *

New Rogers stereo amp.

THE NEW ROGERS HG 88 stereo amplifier has ten inputs providing for every possible programme source, including direct replay from tape heads.

The output is eight watts per channel, and a high pass filter guards against noise when other than a transcription motor is used. Frequency response with radio input is given as 30 to 20,000 cps ± 1 dB. Cross-talk is given as better than 40 dB and hum and noise below seven watts in the amplifier section. The overall figures are respectively -85 dB and -55/60 dB. The dimensions are 15½ × 10½ × 7 in. and the weight is 22 lb.

The chassis costs £37 10s. the case is £2 10s.

Rogers Developments (Electronics) Ltd., Rodevco Works, 4-14, Barmeston Road, Catford, London, S.E.6.

* * *

New Motek deck

MODERN TECHNIQUES are now in production with their new tape deck, the Motek K.10. Several new features are incorporated, and one of the main changes is in general appearance; it has been attractively restyled in two-tone grey.

An enlarged drive wheel on the rev. counter spindle ensures accurate tape positioning, and the non-slip push buttons make operation positive and simple. Improved spool holders take up to 7 in. spools. Greatly improved record/replay head gives a frequency response stated to be better than 40 to 12,000 cps at 7½ ips, combined with extremely low hum pick-up.

A photograph of the new deck will appear in our next issue.

Modern Techniques, Wedmore Street, London, N.19.

* * *

THE REVIEW of the Fi-Cord portable recorder in our last issue contained one or two inaccuracies, for which we apologise. This machine is made under licence from the Swiss firm of Stellavox, not a Swedish firm, as stated.

There is only one input for recording, with 400-1,000 ohms impedance. There are, however, two outputs: one a high impedance output of 100,000 ohms, and the other of 15 ohms. The first, of course, is for playing through an external amplifier and speaker, and the second for use by a secretary transcribing notes dictated at the slow speed of 1½ ips.

* * *

Another modest mixer

ANOTHER MODESTLY-PRICED mixer recently placed on the market is the TSL Universal, priced at 2 guineas. This permits controlled fading in and out of one, two or three separate signal sources.

It is housed in a gold hammer finished case, measures 4½ × 3½ × 4½ in., and weighs 22 oz.

Technical Suppliers Ltd., 63, Goldhawk Road, London, W.12.



Three speeds for 39 guineas

A NEW ELIZABETHAN recorder, the Princess, has just been introduced, offering three speeds and a very good specification at 39 guineas, including microphone, tape and accessories.

One of the facilities provided is monitoring on the internal speaker—a 7 × 4 in. high-flux elliptical.

The speeds are 1½, 3½ and 7½ ips, and frequency response is quoted at 60 to 4,000 cps at the lowest speed, and 60 to 12,000 cps at the highest.

There is simple push-button control, a place indicator, provision for mixing of two inputs and for super-imposition.

The amplifier, which supplies 3½ watts, can be used as a public address system.

Size of the recorder is 16 × 11½ × 6¾ in., and weight 23 lb. E.A.P. (Tape Recorders) Ltd., Bridge Close, Oldchurch Road, Romford, Essex.

Avantic range extended

FOUR ITEMS ARE ADDED to the Avantic range of high fidelity equipment by Beam-Echo Ltd. One, the BM611 radio tuner, is a self-powered shelf-type unit. Frequency coverage: medium wave 545-1,600 kc/s; VHF 88-108 mc/s. Automatic frequency control and Foster-Seeley discriminator on VHF portion.

There is also a new BM612 radio tuner, similar to BM611 with the same frequency coverage. It has a tuned R.F. amplifier for medium wave and variable automatic frequency control on the VHF section. A continuously variable muting circuit is used for inter-station noise suppression on both bands.

The STEP11 pre-amplifier is designed to increase amplifier sensitivity where this is inadequate for use with high-grade stereophonic pick-ups. The signal to noise ratio is quoted at 60 dB at 600mV output, and the provisional price is 5 gns.

A high sensitivity VHF FM radio tuner is being made available to purchasers of the Junior "Glyndebourne" at 18 gns. This cabinet is supplied with either the SPA11 or SPA21 stereophonic amplifiers or the PL6-21 single channel amplifier fitted. There is space for a record player or tape deck.

Price cut: The PL6-21 is now 28 gns.
Beam-Echo Ltd., 13, South Molton Street, London, W.1.

SCIENTIFIC AND Technical Developments Ltd., of Melbourne Road, Wallington, Surrey, have undertaken distribution of the new Audio Fidelity gramophone records shortly to be made available by Audio Fidelity (England) Ltd. in the following areas: London and Home Counties, East Anglia and the South-East.

THE SOUTH

HAMPSHIRE—HIGHCLIFFE-ON-SEA

J. H. WOOD

TAPE RECORDER STUDIO

Elizabethan, Ferrograph, Gramdeck, Reflectograph, Spectone, Truvox, Walter, etc.
Authorised Walter Service Centre.

STEREOPHONIC & MONOPHONIC HIGH FIDELITY SOUND EQUIPMENT

Demonstrations of synchronised sound with home cine.

117, Ringwood Road, Highcliffe-on-Sea Telephone: 2040

THE MIDLANDS

R-E-S OF COVENTRY

SPECIALISTS IN HIGH FIDELITY and all makes of Tape Recorders

- ★ Stocks of Stereophonic and Pre-Recorded Tapes.
- ★ Demonstrations always available by fully qualified staff
- ★ The Best Selection—Terms or After Sales Service in the MIDLANDS

R-E-S (COVENTRY) LTD.

128 FAR GOSFORD ST, Coventry 60913

THE NORTH-EAST

TAPE RECORDERS

on "NO-INTEREST" Terms!

Buy your new Tape Recorder without touching CAPITAL! NO EXTRA CHARGES FOR EXTENDED CREDIT. You pay the Retail Price only. All leading makes stocked—Grundig, British Ferrograph, Philips, Vortexion, Telefunken, Baird, Walters, etc.

JEWKES & CO. LTD.

The Midlands Hi-Fi and Tape Recorder Specialists
285, BROAD STREET, BIRMINGHAM 1. MID 4829/20

TAPE RECORDERS

SPECIALISTS in all Types of High Quality SOUND EQUIPMENT

Grundig - Telefunken - Reflectograph
Fi-Cord, etc.

Quad - Avantic - Leak - Rogers, etc.

Cash or Terms (Prompt Attention to
Postal Enquiries)

W. A. JUDGE

Dept. H., 7, BOW STREET, KEIGHLEY, Yorkshire
TEL. 2526



In this feature every month you can check

YOUR LOCAL DEALER

who gives special attention to tape

THE NORTH-WEST

MANCHESTER

HIGH FIDELITY DEVELOPMENTS LIMITED
THE SOUND REPRODUCTION SPECIALISTS
FOR TAPE RECORDERS

FERROGRAPH : TELEFUNKEN : PHILIPS
HARTING : GRUNDIG : REFLECTOGRAPH
BRENELL WYNDSOR : TANDBERG etc.

RADIO TUNERS • LOUDSPEAKER SYSTEM

The HOME MUSIC Shop
8 DEANSGATE
MANCHESTER

(Near Grosvenor Hotel)



JOHN SHINN & SONS LTD.
Electronic Engineers

TOWN CENTRE, LEIGH, LANCs.

Also at MELODY HOUSE, 109 HIGH STREET.
BANGOR, N. WALES.

and MELODY HOUSE, 43 HALLGATE,
TOWN CENTRE, WIGAN, LANCs.

Pioneers in Tape Recorders since 1946

ALL MAKES STOCKED - TERMS AVAILABLE

All customers are made honorary members of the John Shinn Recording Club, with its attendant benefits

for SOUND
value SEE US

Hear and test the latest Philips, Simon, Vortexion, Elizabethan, Grundig, etc. You're safer with the specialists (fully equipped service department). Terms arranged.

M^cCORMACK'S

7 COWCADDENS ST.

(Opp. Buchanan St. Railway Stn.)

GLASGOW C.2 Phone: DOUglas 2846



GRAMPIAN HAVE just produced a new microphone matching unit for use when it is desired to use a low impedance microphone with an amplifier with a high impedance input.

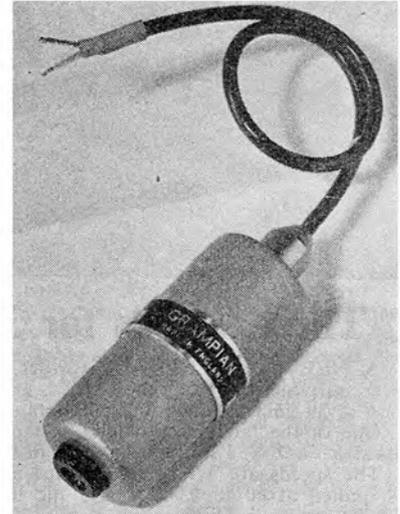
It can also be used in cases where very long microphone leads are called for and the direct extension of the high impedance input might otherwise lead to instability and treble loss.

The unit consists of a double wound transformer in a Mu-metal case. It is provided with a jack socket on the primary side for input, and a short screened lead on the output for connecting to the input of the amplifier.

It is 3½ in. long by 1½ in. diameter, and weighs 5½ oz. The input is to match 15-30 ohms, the output to work into high impedance. The price is £3 5s.

Grampian Reproducers Ltd., Hanworth Trading Estate, Feltham, Middlesex.

NEW
UNIT
AIDS
LONG
MIC.
LEADS



IN BRIEF

THE THIRD EDITION of the International Radio Tube Encyclopædia by Mr. Bernard B. Babani has been enlarged to 768 pages to cope with the extra radio tubes produced since the second edition in 1954. The latest edition contains data on more than 27,000 tubes, including the types used by the Armed Services of the British Commonwealth, United States, Russia and Europe.

Tubes dealt with include normal radio valves, cathode ray tubes, sub-miniatures, klystrons, magnetrons, microwave oscillators, frequency multipliers, etc. Coverage is world wide. The edition costs 63s.

Bernard (Publishers) Ltd.

* * *

IN HIS NINTH annual review of Winston Electronics Ltd., the Managing Director, Mr. F. W. Reynolds, revealed that the total value of the Company's manufactured equipment exceeded £500,000 in the year just ended. This compared with £15,000 equipment value during the company's first year, to February 1951. The labour force has increased from one employee in 1950 to 200 today.

* * *

GOODMANS INDUSTRIES announce reduction of purchase tax on some hi-fi speakers—from £1 18s. 6d. to £1 12s. 1d. on the Axiette, and from £6 14s. 9d. to £5 12s. 4d. on the Axiom 80.

* * *

MESSRS. JOHN SHINN & SONS LTD., the north-west tape recorder specialists, have just opened a new branch at Culcheth, a Lancashire village which is being rapidly expanded into a town as a result of the establishment of the Atomic Energy Commission headquarters. To mark the opening the firm published a special six-page newspaper.

STEREO



PAGE

Edited by
D. W. GARDNER

GIVEN the knowledge of what stereophonic sound amounted to theoretically, one might have predicted at the outset (and probably did) that opera would come over well—that opera lovers would find in stereo recordings a really first-class substitute for the stage performance, with soloists and choruses coming and going, and answering each other from side to side, in true simulation of Covent Garden.

What we did not, perhaps, so readily appreciate was the possibility that stereo opera might grow wings of its own and, in certain circumstances, produce a fuller realisation of the inherent qualities of a work than has ever been achieved on any stage. This is actually happening, not necessarily over entire operas but certainly in sections of some of them. And as those responsible for production and recording become more experienced in these matters we shall, no doubt, see an even greater degree of success.

Part of the reason, of course, is that a properly stimulated imagination ranging on its own provides a far more vivid picture than a stage production. To be fair, a good stage production relies to a great extent on imagination, too, but this has its limitations. In avoiding chillingly realistic scenery, it is possible to run into the ridiculous or the distractingly sensational.

In the case of stereo opera the willingness to suspend disbelief, the evocative nature of the music and the apparent absence of physical barriers encourage us to indulge in flights of imagination that would otherwise be impossible.

RHEINGOLD

IN Wagner's "Rheingold," for example, we are called upon to accept the idea of the Rhinemaidens swimming and singing under the Rhine—something which the most determined Wagnerian must find difficult to swallow in any stage production. In the Decca stereo version, however, this scene becomes perfectly credible in the dramatic sense. The atmosphere created by the stereo music is complete and compelling and, in consequence, one is in the right frame of mind to appreciate the full beauty of the music.

The same advantage is apparent in the case of Boito's "Mefistofele." It is summed up admirably by Edward Greenfield in the June issue of *Stereo Sound and Music Magazine*.

"The spectacular effects which Boito

conceived for his prologue and witches' sabbath," he writes, "are liable to prove disappointing in the cold reality of an opera-house stage. On the new recording the stereo allows the heavenly choirs on and off stage to appear in depth. The prologue, in particular, depends for its effect on the massive contrasts of loud and soft. It is one of the phenomena of stereo that a sudden soft passage after a fortissimo has a "real" feeling unobtainable in mono, and this adds to the effect of the new recording."

CARTRIDGE

WHEN I spoke to Peter Burne-Jones the other day he was full of enthusiasm for the new BJ—Elac 300 Studio cartridge—which he naturally recommends for use with the BJ Tangential arm.

He stressed the importance of low tracking error for stereophonic cartridges, because of the smaller dimensions of the stylus and groove, and seemed very happy about the way in which the BJ-Elac 300 and Tangential arm, with its automatic stylus pressure control, cope with the inner record convolutions. A bench test of this combination is scheduled for publication in *Stereo Sound and Music Magazine* later in the year.

TWO-CHANNEL

MANY people still seem to be puzzled about the claims that "you can play your monophonic L.P.s through stereo equipment." It is quite true, although it would be wrong to jump to the conclusion, as some have done, that this accomplishes the miracle of stereo out of non-stereo. The facts are that there is nothing to lose and quite a bit to gain by employing the two channels for a mono recording, since the two are already in operation.

At the same time, it is not a bad idea to try using the old mono head for the purpose, if this is convenient.

Discs can be a little happier with the stylus size they are used to, and this procedure would help to preserve the stereo stylus. Always remember, however, that although no damage should arise from playing mono discs with a stereo stylus the reverse is absolutely taboo. Never play a stereo disc with a mono stylus.

Tape to Disc Services

TAPE TO DISC RECORDING

Microgroove LP from 27/6d.

78 rpm from 11/-

Also 45 rpm

48 HOUR SERVICE

S.A.E. for comprehensive leaflet to:—

Marsh, "Dero" Sound Service, Little Place, Moss Delph Lane, Aughton, Ormskirk, Lancashire. Tel.: AUG 3102

TAPE TO DISC SERVICE

78's or L.P.

QUEENSWAY RECORDING STUDIOS

123, Queensway, London, W.2

Tel.: BAYswater 4992

TAPE RECORDER HIRE

TAPE TO DISC 78-LP RECORDING STUDIO SALES—EXCHANGES

MAGNEGRAPH

1 Hanway Place, London, W.1.

s.a.e. for leaflet or telephone LAN 2156

RAPID RECORDING SERVICE

21, Bishops Close, Walthamstow, E.17. LAR 3889

Recording Studio equipped with new Steinway Grand. Mobile Recording Van. 78s. and L.P.s from your own tapes. Commentaries and music on Synchronised L.P.s for cine enthusiasts. Master Discs and Pressings

RENDEZVOUS RECORDS

(T. H. ADKINS)

TAPE TO DISC SERVICE

33 — 45 — 78 R.P.M.

S.A.E. to:

19 Blackfriars Street, Manchester 3

SSS Private gramophone records made from your own tape

Microgroove LPs from 20/6
Standard 78s from 10/6

Mobile Unit available for Weddings, Receptions, Choirs, Meetings, etc. S.A.E. for full details:—
John Levis, Sunderland Sound Services,
28, Viewforth Terrace, Sunderland 57032
■ If you can hear it — We can record it! ■

high
performance
dual
impedance
the

Cadenza
REGD.

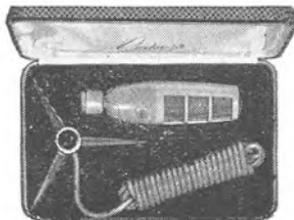
ribbon microphone

designed and manufactured in England

A worthy link in the chain between live sound and perfect recording, the Cadenza ribbon microphone has been designed to give performance of the level of studio equipment, while remaining in the medium price range.

It can be used as either a low or high impedance microphone to suit any type of equipment and to give almost unlimited cable length without line transformers.

The entirely new arrangement of ribbon and magnet gives an output which is flat to within close limits over the wide range from 50 c.p.s. to 12,000 c.p.s. This enables the user to record the full gamut of symphony orchestra, cathedral organ, or the strong rhythmic bass and percussive highlights which add so much to the drive of jazz—even the solo piano, normally the most difficult instrument, is faithfully reproduced.



Microphone with dual impedance head in presentation case, 84 gns.

Microphone (dual impedance head) and tripod desk stand, with 11 ft. of cable, 10 gns.

Send now for illustrated folder (EC7) or ask your radio dealer

Simon Sound Service Ltd
46-50 George Street, London W1
WELbeck 2371

YOURS FOR 10% DEPOSIT

Detailed below is a selection of equipment available on easy repayment terms

Whatever your requirements—we stock it

	Cash	Deposit	12 Monthly Payments	18 Monthly Payments
AMPLIFIERS & CONTROL UNITS				
Acoustical Quad M. 11 ...	£42 0 0	£4 4 0	£3 12 6	£2 10 6
Leak TL12+ and Point One C/U ...	£31 10 0	£3 3 0	£2 14 4	£1 17 10
Rogers Junior Mk. 11 ...	£28 0 0	£2 16 0	£2 8 4	£1 13 7
LOUDSPEAKER ENCLOSURES COMPLETE & SPEAKER UNITS				
Wharfedale S.F.B.3 ...	£39 10 0	£4 0 0	£3 8 1	£2 7 4
Goodmans Sherwood 1 ...	£32 11 0	£3 6 0	£2 16 1	£1 19 0
Acoustical Electrostatic ...	£52 0 0	£5 4 0	£4 7 5	£2 19 10
Wharfedale Super 12 FS/AL ...	£17 10 0	£1 15 3	£1 10 2	£1 1 0
Goodmans Stereophonic Bowl Unit ...	£8 8 0			
Goodmans Axiom 300 ...	£11 5 9	£1 4 0	19 4	13 6
TAPE RECORDERS				
Grundig TK35 ...	£86 2 0	£8 13 6	£7 8 5	£5 3 3
Ferroglyph 3AN ...	£82 19 0	£8 9 0	£6 19 8	£4 15 3
Veritone Venus ...	£69 6 0	£6 19 0	£5 15 5	£3 19 7
*Sound 555 ...	£68 5 0	£6 17 3	£5 17 3	£4 1 10
*Brenell 3 Star ...	£60 18 0	£6 8 0	£5 1 9	£3 7 5
*Grundig TK20 ...	£54 12 0	£5 12 0	£4 11 6	£3 2 8
Telefunken KL75K ...	£52 10 0	£5 5 0	£4 8 3	£3 0 5
*Sound 444 ...	£47 5 0	£4 14 6	£4 1 6	£2 16 9
*Verdik ...	£47 5 0	£4 14 6	£4 1 6	£2 16 9
*Sound Belle ...	£27 6 0	£2 16 0	£2 5 9	£1 11 4
Complete with Microphone				
TURNTABLE UNITS & PICKUPS				
Garrard 301 Stroboscopic	£23 18 4	£2 8 4	£2 1 3	£1 8 8
Connoisseur Type B ...	£27 16 0	£2 16 0	£2 6 8	£1 12 0
Lenco GL 58/RD (with Stereo Pickup) ...	£27 16 6	£2 16 6	£2 6 8	£1 12 0
Decca Stereo Pickup ...	£21 0 0	£2 0 0	£1 16 5	£1 5 4

THE RADIO CENTRE E & G THE RADIO CENTRE LTD.

33 Tottenham Court Road, London, W.1

Tel.: MUSeum 6667

LONDON'S TAPE RECORDER CENTRE

LECTURES

for tape enthusiasts

A series of monthly lectures organised by "Tape Recording and Hi-Fi Magazine," in association with Olympic Sound Studios

JULY 4th (3 p.m.)

The lecturer:—

F. C. JUDD

The title:—

Electronic Music and Musique Concrete.

The venue:—

**Olympic Sound Studios,
Carton Hall,
Carton Street,
(off George Street),
London, W.1.**

Admission free

Eccles calls on Acos



ON THE OPENING DAY of the recent Hanover Fair, Sir David Eccles, President of the Board of Trade, visited the Cosmocord (ACOS) stand and inspected all the latest ACOS monophonic and ACOStereo stereophonic equipment. Shown in the photograph (left to right) are: Sir David, Mr. R. H. Fisher (Export Sales Manager), Mr. E. G. Lennard (Assistant Managing Director) and Mr. F. H. Knight (Technical Sales Manager).

NEWS IN BRIEF

THE SIMON SP/4 Automatic Recorder has recently been adopted for inclusion in "Design Index," the Council of Industrial Design's photographic and sample record of current, well-designed British goods.

MR. D. M. SHEIL-SMALL has been appointed Sales Manager of the M.S.S. Recording Co. Ltd.

THE JASON MOTOR and Electronic Company have opened new West End showrooms, under the management of Mr. E. G. Bailey, at 3/4, Great Chapel Street, London, W.1.

THE DEMAND FOR tape recorders is considerable, but there never seem to be enough of certain models. Somebody, however, went to extremes on the last day of the Photo Fair when one of the four Wyndor "Viscounts" displayed on various exhibitors' stands was "collected" by a party or parties unknown. Such party or parties is/are now wanted by the police. The serial number is 5367 and Messrs. Cinecraft Supplies Ltd., of 246a, Green Lanes, London, N.13, or the manufacturers would be interested to hear if it is offered for sale.

A SOUTH LONDON FIRM is now offering "tailor-made" tape and hi-fi equipment. It has full facilities for designing, building and installing audio equipment to any specification.

A customer can, for example, order an installation with specially-designed tape deck, B.B.C.-style mixing unit, programme level metering, and circuit monitoring facilities.

The cost, of course, is substantially more than for mass-produced equipment. A "custom-built" hi-fi system might work out at £200 to £250.

Details are available from Messrs. Ronald Tutt and Co., Ltd., 273, Brixton Road, London, S.W.9.

VARIABLE SPEED OF THE "SOUND BELLE"

[TO THE EDITOR]

A READER has pointed out to me that I did not mention in my review of the "Sound Belle" last month that it has a differential speed, so that tape recorded on other recorders cannot be replayed on this machine. The makers stress this point in their literature.

The difference between this and the standard tape recorder lies in the fact that it has no pressure roller or pinch wheel to drive the tape. It records from left to right and the tape is pulled past the heads by the right-hand motor spool.

The speed is variable the whole time, for it is governed by the amount of tape on the take-up spool, i.e., speed will be slow at the beginning and will increase as more tape is taken up by the right-hand spool.

Mitcham.

G. POLLOCK.

NEWS FROM THE CLUBS

Birmingham

"TAPE EXPRESS," the journal of the Birmingham Tape Recording Club, recently made an appearance. A twelve-page duplicated booklet, "Tape Express" lists members and machines, gives an up-to-date account of club activities, and outlines suggestions and ideas for later discussions.

Among recorders demonstrated to members have been the Elektron, shown by Doug Nicholls, and a Ferrograph introduced by Charles Cockshott. Messrs. Walker Bros. have also shown the Brenell Mk. V and the Simon SP4.

(Secretary: Dennis Osborne, 75, Millmead Road, California, Birmingham 32.)

Bournemouth

HOME-MADE recorders were featured in a well-attended meeting of the Bournemouth Amateur Tape Club. The first was demonstrated by its builder Mr. W. Rawlings, who made the complete machine, including mixer. Mr. J. Russell made and introduced a second recorder.

The competition tape, a jumbled-up sentence set by the Secretary, was solved by four members.

A local firm demonstrated a Fi-Cord, Telefunken and Elizabethan Bandbox at a recent meeting. Mr. Jones played a tape of sounds ranging from a thunderstorm and a railway journey, to monkeys and alligators. The tape finished on a continuous echo effect produced by negative feed-back.

A Hospital Service has been organised and an invitation is extended to all clubs wishing to make use of this service.

(Secretary: Hedley R. Jones, 442, Poole Road, Branksome, Poole.)

Catford

MEMBERSHIP of the Catford Tape Club has risen to fifteen. Two new members were enrolled at a stand organised by members at the Lewisham Hobbies and Handicrafts Exhibition. A recorder on the stand provided an attraction to visitors, who were able to record their voices.

At a recent meeting, Mr. Parrington, of Walter Instruments Ltd., demonstrated the Walter recorders and accessories. This visit was followed by a demonstration given by club member Harold Clarke, on behalf of Stern Radios Ltd.

Derek Harker appeals to club secretaries for advice on how to start a Hospital Service. Any offers?

(Secretary: Derek Harker, 62, Barmeston Road, Catford, S.E.6.)

Chesterfield

A TAPE received from World Tape Pal George Kelly of Kimberley, South Africa, was replayed at the latest meeting of the Chesterfield Tape Recording Society.

Another enlightening tape was received from John Penman, of Edinburgh Club, dealing with the copyright problem.

The quiz tape was provided by John Taylor. His recording of a purring cat was identified by George Hooley, who was awarded a leader tape.

To conclude the programme, Steve Brasher, the club technical expert, gave a talk on the correct use of high and low gain microphones.

(Secretary: C. Robert Newman, 9, Devonshire Villas, Barrow Hill, near Chesterfield.)

Coventry

COVENTRY TAPE CLUB members have been active lately, holding auditions for a play—"The Permanent Way," by Anthony Booth—which they are to produce on tape. First test recordings have been made, using Mr. Phillips' Simon SP4 and Ron Longmore's home-made mixer unit.

Mrs. Dora Newall produced a quiz tape at a recent meeting and once again baffled all present with her ingenuity.

Another tape played came from Mervyn Dunn, of Durban.

(Continued on page 46)

Native music and songs from South Africa were featured in the tape.

(Secretary: Roy Reynolds, 1, Thurlestone Road, Radford, Coventry.)

Edinburgh

A MUSICAL tape quiz was a feature of one of the recent meetings of Edinburgh Tape Club. Sir Mark Dalrymple introduced Mrs. Nan Moorman, who gave a talk on her experiences with a recorder in connection with her profession as an organist.

James Sime introduced "Tape recorders for beginners," and explained how he had gradually built up his equipment. A Stuzzi recorder demonstration was also given.

"Around the world with a tape recorder," a tape by Bob Newman of the Chesterfield Club, has been heard by the club. One of the members is featured on the tape, giving a recipe for porridge. Slides, with a tape commentary, of a Canadian tour were presented at the same meeting.

The Society has been offered the use of the Edinburgh Ciné Society club rooms. All future meetings are to be held there.

(Secretary: John Penman, 22, Lauriston Place, Edinburgh 3.)

Jarrow

THE Central School in Jarrow has been selected as the meeting place for the Jarrow and District Tape Society. Meetings are to be held fortnightly. Next meeting, July 2, at 7.30 p.m.

To date, there are fifteen members of the club. Membership is to be limited to thirty, thereby maintaining a compact group of enthusiasts.

Mr. W. Troupe has been chosen as Chairman, and Mr. John Rippington is the Secretary.

At a recent meeting of the club, Mr. Troupe demonstrated his Ferrograph recorder and a recorder constructed by himself with a Truvox deck. Another self-constructed recorder was shown by Mr. Wilde. He used a Collaro deck.

(Secretary: John Rippington, 30, Breamish Street, Jarrow, Co. Durham.)

Kettering

PRODUCTION of the Kettering and District Club's tape "Our Town" is well in hand. Members are busy at the moment working on location recordings.

At a later meeting, it was the turn of the Chairman, Mr. J. S. G. Potter. He demonstrated his Telefunken recorder, and presented an hour-long recorded talk. This included samples of recordings he has made over the past ten years.

Dennis Scotney introduced a quiz tape, the highest marks being obtained by Mr. W. Liner.

(Secretary: A. M. Webb, 93, Regent Street, Kettering, Northants.)

Leicester

THE May meeting of the Leicester Tape Club produced a tape received from Ken Clements of Lusaka, Africa. Their next meeting opened with a quiz tape. Mr. Rudkin still leads on points. Peter Starie demonstrated tape splicing and then dismantled a TK 5. The chassis was examined and explained. After re-assembly, a tape was played on the machine—to make sure everything was back in its right place! The tape used for this demonstration had been received from Paul Ricketts, of Brampton, Canada.

(Secretary: Peter J. Starie, 56, Minehead Street, Leicester.)

Luton

LUTON Tape Recording Club, now just over a year old, recently held its A.G.M. The new Committee was elected and comprises Mr. W. Farbridge, Chairman; Mr. R. Thody, Secretary; Mr. R. A. Cooper, Asst. Secretary; and Mr. G. Parfitt, Treasurer.

Membership totals eighteen, and a move is afoot to increase this number. The Secretary would especially like to hear from female enthusiasts interested in joining. Next meeting is on Tuesday, June 30 at 7.30 p.m., in the Midland Hotel, Williamson Street, Luton.

(Enquiries to: Maurice Nicholls, 53, Sundon Park Road, Sundon Park, Luton, Beds.)

THE BEST TERMS YOU CAN GET

★ NO INTEREST CHARGES ★ 1/- IN £ DEPOSIT ★
★ 24 MONTHS TO PAY ★

**We have the Biggest Sales in Britain. Why?
Because we give the Best Terms!**

SPECIAL CASH TERMS ★ FREE DELIVERY ANY-
WHERE IN U.K. ★ FREE SERVICING FOR 12
MONTHS ★ NO PURCHASE TAX ★ PART-
EXCHANGES & SECOND-HAND MACHINES ★
200 machines, 35 models in stock ★ Mail Order Department covers the whole country ★ Open all day Saturday
★ Main Agents for all the best makes ★



HOWARD

PHOTOGRAPHIC

Write, phone or call for Free Brochures & details of our Terms to the TAPE RECORDER CENTRE:

218, HIGH ST. • BROMLEY • KENT • RAV 4477

Maidenhead

MAY has been a fund-seeking month for the Maidenhead Tape Recording Society. The first of the schemes was the raffle for a Walter Recorder. Later in the month, a social was held and proved very popular. With the monies collected the club intends to buy equipment for club use. First piece of equipment is to be a vibrator to help with outside recordings. The club is concentrating on the social side right now, for at the end of June a coach trip to Southend is planned.

The latest of the Walter recorders were demonstrated when Mr. Parrington visited the club early in May.

(Secretary: Mr. G. Strong, 89, Clare Road, Maidenhead, Berks.)

New Zealand

THE growth in membership of the Auckland Tape Club has led to a change in title which now embraces both islands. The new title, New Zealand Tape Recording Club, came as a result of enquiries from all over the dominion from enthusiasts seeking to join.

A classified directory of tape enthusiasts is now issued to each member. An overseas section is included and if anyone would like to have their name and details listed they are invited to contact the U.K. Representative, Stanley G. Cox, 77, Tachbrook Street, Westminster, London, S.W.1.

(Secretary: Murray J. Spiers, 39, Ponsonby Road, Auckland, W.1, New Zealand.)

Reading

A LARGE gap has been filled in Reading since the Ciné Society opened its doors to tape recording enthusiasts. Already, membership of the Society has increased, and it is hoped that more will join in the season commencing September 7.

Following the A.G.M., an auction was held of members' unwanted equipment. Thanks to the pater of the auctioneer, the recording made of the session will provide an amusing source of entertainment for the future.

(Secretary: D. M. Noyes, 4, Froxhill Avenue, Reading, Berks.)

Rugby

MR. PARRINGTON, of Walter Instruments Ltd., visited the Rugby Amateur Tape Society during May. He demonstrated the entire range of Walter recorders except the 1000. Telephone attachments, microphones and strobes were also closely inspected by members.

(Secretary: Mike Brown, 219, Clifton Hill, Rugby.)

Sussex

A DISPLAY of equipment and accessories by Walter Instruments Ltd., and an "Any Questions" interlude by courtesy of Mr. D'alvarez, of Telesound Ltd., were features of the second meeting of the Crawley and Sussex Tape Recording Club.

The competition for the most original tape was judged by Alan Stableford, of the National Federation, and won by Mr. Wales, who received a prize from Messrs. Telesound Ltd.

Club Treasurer, Mr. A. Runki, gave a demonstration of editing and splicing at the June meeting. Mr. Runki is a research physicist and a keen tape man.

(Secretary: R. C. Watson, 32, Southgate Drive, Southgate, Crawley.)

Walthamstow

THE Walthamstow and District Tape Recording Society held its inaugural meeting just over a month ago. Sixteen persons attended and elected a chairman, Mr. Bernard Wells; a treasurer, Mr. W. J. Tomlinson; and a secretary, Mr. J. A. Wells. A constitution was discussed and approved, and it was decided that meetings should be held on the first Friday in the month, at Danecourt, Church Hill, Walthamstow, E.17.

The meeting concluded with a demonstration given by the Secretary, of the Simon SP4.

Mr. Maurice Dudley attended the A.G.M. of the Friends of Connaught Hospital, to offer the services of the club for the benefit of patients.

(Secretary: J. A. Wells, 178, Selwyn Avenue, Highams Park, E.4.)



A fully transistorised battery operated recorder with all the features expected from a mains operated recorder of advanced design.

NEW WATERPROOF COVERS to protect your valuable recorders. Choice of colours: bottle green, navy blue, tan, and wine with white piping. Full range in preparation.

COVER PRICES

TK5 with microphone pocket	36s.
TK20 with microphone pocket	35s.
TK8 with microphone pocket	39s.
TK25 cover with microphone pocket	39s. 6d.
TK 30 with microphone pocket	40s.
TK35 with microphone pocket	45s.
TK820/3D (no pocket)	40s. 6d.
TK830/3D (no pocket)	40s. 6d.
Telefunken 65KS and 65KX (no pocket)	31s. 6d.
Telefunken KL85 (no pocket)	45s.
Telefunken 75	38s.
Telefunken 85	45s.
Elizabethan Escort (no pocket)	37s. 6d.
Phillips AG8108 (with pocket)	41s. 6d.
Phillips AG8109 (no pocket)	38s.
Regentone	38s.
Sound 444	46s.
Stella ST450	42s.
Wyndor Viscount	41s. 6d.
TRADE ENQUIRIES INVITED	LEAFLETS NOW AVAILABLE

THE STUZZI 'MAGNETTE' IT'S SPECTACULAR!

- * Size 11" x 4½" x 8" Weight 8lbs.
- * Twin Speed 1½ and 3½. * Twin Track.
- * Frequency 80-9000 cycles.
- * Up to two hours per reel playtime.
- * Magic Eye. * Position Indicator.
- * Amplifier Facilities.
- * 1d. an hour to run—approx.

69gns. complete with microphone and radio connecting leads.



also the

minifon

One of the world's smallest wire recorders

TAPE RECORDERS BY

Grundig, Geloso, Telefunken, Truvox, Elizabethan, Wyndor, Simon, Phonotrix, Tutor, Ficord, Reflectograph, Perth Saja, Tandberg, Harting, etc.

MONAURAL AND STEREOHONIC PRE-RECORDED TAPES.

MICROPHONES AND STANDS. Grundig, Cadenza, Geloso, Cosmocord, Lustraphone, Reslo, etc.

CRYSTAL PEN STAND MICROPHONE complete with ball point pen—suit Geloso TR 175. Price £5 10s. 0d.

TAPES. Grundig, B.A.S.F., Emitape, Scotch Boy and Telefunken Double Play.

JOINTING AND EDITING ACCESSORIES. Mixers, Tuners, Amplifiers, Converters, Speakers, Record Transcription Units, Spares.

★ No Interest Terms

★ Free Delivery

A. BROWN & SONS LTD. TAPE RECORDING DEPT. 24-28 George Street, Hull, E. YORKS.

Telephone: 15412, 15413

Classified advertisements

Rate—Sixpence per word (minimum 5s.); Trade, ninepence per word (minimum 10s.); box numbers, one shilling extra. Payment with copy. Copy should be sent to Advertisement Department, "Tape Recording Magazine," 1 Crane Court, Fleet Street, London, E.C.4.

Schoolmaster offers for sale in exc. cond. "Elon" strongly built tape recorder, with Collaro Mark IV deck. £36 o.n.o. Box 301.

J. & B. Recordings, tape/disc, all speeds. 14, Willows Avenue, Morden, Surrey. Mit 8155.

EXCHANGE motorised Drummond Lathe, Tools, Etc., for Battery Portable Recorder. R. Brown, West Street, St. Georges, Salop.

JOHN HASSELL RECORDINGS. Tape/Disc. All Speeds. C.C.I.R. Studio, 21, Nassau Road, London, S.W.13. Riverside 7150.

TAPE RECORDERS, players, radios, etc. (modern), wanted for cash or exchange. Callers or particulars. Cooks, 159 and 187, Praed Street, W.2 (opp. Paddington Station). PAD 6464.

TAPE RECORDERS. Large selection of used models, most as new. Three months guarantee. Part exchanges with other machines, cameras, binoculars, etc. Ferrograph Tape, 7 in. spool, 1,200 ft. 25s. Cooks Miscellaneous Store, 159 and 187, Praed Street, W.2 (opp. Paddington Station). PAD 6464 or 5931.

TAPE RECORDER SPECIALISTS

	Cash		Deposit		Months	
	£	s.	£	s.	£	s. d.
Grundig TK.12. S.H.	19	10	2	0	12 x 1	9 2
Bandbox Elizabethan	30	9	3	9	24 x 1	4 9
Philips Portable	40	19	4	19	24 x 1	13 0
Grundig TK.5. S.H.	35	0	3	0	12 x 2	16 0
Battery Portable	26	0	2	0	24 x 1	2 0
Sound Belle Twin Track	27	6	2	0	24 x 1	3 0

OVER 50 NEW AND RECONDITIONED MODELS IN STOCK. PART EXCHANGES WELCOMED. HIRE PURCHASE TERMS UP TO THREE YEARS

TAPE RECORDER SPECIALISTS
181, DALSTON LANE, LONDON, E.8
Telephone: AMHerst 2238/5253

FRIENDLY FOLK ASSOCIATION, 87, Terrace, Torquay. Leading International Correspondence Hobby Club since 1943. Now included, facilities for Tapesponding. Details free.

MUSIC on TAPE tape-records—3½ and 7½ ips, 13s., 17s., 29s., 35s., 39s., 49s. and 69s. Dance, accordion, theatre organ, piano (popular and classical), light orchestral and operatic, Viennese and Scottish—good retail and wholesale terms—public performance. Hear them at Imhof's (Retail) Ltd., Teletape of Edgware Road, Francis of Streatham and many other leading dealers. All enquiries to: Music on Tape Ltd., 6, Laurence Pountney Hill, London, E.C.4.

Hi-Fidelity Bradmatic Heads, record/replay and erase. As new, used only on experimental deck. Terminus 0497 (London).

Elizabethan "Essex" with "Cadenza" mic. As new. Nearest £55. Dixon, 51, Elmdene Road, Kenilworth, Warks.

RECORDER and ALL-WAVE Radio available for any type of recordings with brief summary. Box 302.

Factory fresh recording tapes sent by return of post. The new Emitape Type 44. 3½ message 175 ft., 6s. 9d. 5 in. Junior 600 ft., 18s. 5½ in. Continental 850 ft., 24s. 6d. 7 in. Standard 1,200 ft., 30s. Post Free from The Hi-Fi Centre, H. Jarvis & Sons (Southend) Ltd., 132, London Road, Southend-on-Sea, Essex.

Do you know that one of the main causes of distortion, faulty recording, noisy playback and other faults, is often due to tape oxide deposits on the Erase and Record Heads? The Metro-Sound Klentatape is designed to clean these inaccessible surfaces quickly, easily and with safety. As easy to use as playing 12 feet of normal tape. Two spools, Cleaning Tape and Cleaning Fluid and instructions are supplied complete with a polythene wallet at only 12s. 6d. post and packing 1s. extra. Obtainable from The Hi-Fi Centre, H. Jarvis & Sons (Southend) Ltd., 132, London Road, Southend-on-Sea, Essex.

FOR SALE. GRUNDIG TK8 and microphone in good condition; £40. 17, Three Colts Lane, E.2. SHO 3822.

Sprung pivoted clamps of EASYSPLICE make tape splicing simple and accurate



PAT. No. 815333 PRICE 6/9 P. & P. 6d.
EASYSPLICE, 30, LAWRENCE RD., EALING, LONDON

BISHOPS for BARGAINS, LOOK. New Tape Decks in original packings: Collaro Mark IV Transcriber, £17 10s. Wright & Wearre, £30 10s. Truvox, £15 10s. E.M.I. Stereophonic, £45 10s. Microphone Jack Plugs 3s. 6d. each. Slightly shop soiled but in perfect order: Gelloso Recorder, £29. 777 Recorder, £25. Phonotrix, £20 9s. 6d. Grundig T.K.20, £40. E.M.I. T.R.50, £95. BASF Doubleplay Tapes and all accessories in stock. Post and packing extra from 48, Monmouth Street, W.C.2. TEMple Bar 7484/5. TAPE TO TAPE, TAPE TO DISC SERVICES.

SECOND TAPE RECORDING COURSE, 27th August to 1st September, 1959 (inc.). Two days of technical instruction with John Borwick, I. W. Jarman and F. C. Judd, followed by three days of outside recording with Jack Singleton, Richard Burwood and other B.B.C. personalities. Fee: 8 guineas. Details from: SPECIAL COURSES ORGANISER, ROSE BRUFORD TRAINING COLLEGE, SIDCUP, KENT

THE TAPE KING scoops again with new low priced tape bargain! 7 in. "Gevaert" L.P., 35s.; 5 in. "Gevaert" L.P., 19s. 6d. P. & p. 1s. 6d. each. Also 7 in. L.P. by various leading British and Continental makers at up to 30 per cent cheaper than list. 7 in. 1,200 ft. "Ferro-tape" (X.M.O.S.) (list 45s.) 25s. P. & p. 1s. 6d. Secondhand latest PHILIPS AG 8108G (list 62 gns.) 49 gns. or terms; Secondhand GRUNDIG TK9, 37 gns. or terms. Secondhand GELOSO, 20 gns., complete or terms. 20 secondhand Recorders, Amplifiers, Pickups, etc. Send for list. E.C.D. Kingsley & Co. "Always first for tape," 132, Tottenham Court Road (Corner of Warren Street), London, W.1. EUS 6500.

Professional quality recording tape, used only once, no joins. (EMI, SCOTCH BOY, BASF, AGFA). 24s. for 1,200 feet (brand new boxes), 35s. for 1,800 feet. Write Olympic Sound Studios, Carton Hall, Carton St., London, W.1.

T.S.L. Universal Sound Mixer, 3 High Impedance Inputs, Standard Socket Connections. £2 2s. Post and Packing 2s. extra. Obtainable from The Hi-Fi Centre, H. Jarvis & Sons (Southend) Ltd., 132, London Road, Southend-on-Sea, Essex.

GRUNDIG TK5 Hardly used £43 o.n.o. Box 303.

PHONOTRIX for hire, £2 per week. Box 304.

EDUCATIONAL TAPESPOENDING, Languages, Shorthand, Morse Code, etc. Mitchell, 150, Station Avenue, West Ewell, Surrey.

Warwick and Leamington

MR. BASIL HARLEY and his wife, the creators of "Dialogue for Cats," were recent guests of the Society in Warwick. Mr. Harley gave a talk on tape technique, with illustrations provided by his "Tape of the Year." He also played extracts from tapes he has made on holiday in past years. Of special interest to members was his talk on the use of a script in recording. Advice was noted for their sound portrait of the two towns.

Another visitor to the club was Mr. Holmes-Tolley, who gave a talk on actuality recording. His winning tape for the 1956 International Contest—a recording of Rumanian Folk Dancers—followed by a recorded interview with Harry Secombe, were two of the many tapes played.

The Society has had a change of rendezvous. Meetings are in future to be held at the Town Hall in Leamington Spa.

(Secretary: Brian Race, 30, Ashford Road, Whitnash, Leamington Spa.)

West Middlesex

WEST MIDDLESEX TAPE CLUB have also entertained Mr. Parrington, of Walter Instruments, in his round-the-clubs tour demonstrating his company's products and answering members' questions.

Another visitor to the club has been John King, now finishing his National Service at Aldershot. He has a self-constructed Paragon Recorder.

The outdoor activity section has divided into groups covering different areas. Cecil Pearce is organising the Uxbridge team, while Peter Woodford Ward explores the possibilities in Hampton and Twickenham. The tapes produced will be moulded into a complete frame and entered in this year's contest.

Mr. Woodford Ward demonstrated his new Valradio Converter, using seaside and other outdoor recordings, at a recent meeting.

(Secretary: H. E. Saunders, 20, Nightingale Road, Hampton, Middlesex.)

Winchester

A TAPE recording and ciné club has been formed in Winchester by Mr. Terence Offord and Mr. John Beck. To date the club has eight members, who have five recorders, including a stereo machine.

Mr. Offord has constructed the simple mixer which appeared in our April number. The mixer is to be for club use.

A tape library is being organised and will cater for all musical tastes. Once settled down, members hope to contact clubs in the U.K. and abroad. Meanwhile, they welcome tapes from other clubs.

(Secretary: Mrs. P. E. Rushton, 11, Chatham Road, Winchester, Hants.)

World Tape Pals

THE World Tape Pals get-together planned for this month has been cancelled. A small party will still be going to Schliersee, although there will be no organised activities.

Mr. Frank Weston, the East African representative for W.T.P., is taking steps to form a club in Tanganyika. He recently broadcast over the Tanganyika transmitters and would be pleased to hear from any East African readers who missed his talk and who are interested in forming a club. He has a Ferrograph and a Telefunken recorder. Write to him at H.M. Prison, Kingolwira, Tanganyika.

(U.K. Representative: Len Watkins, 40, Ravenslea Road, London, S.W.12.)

Information

Here are six more districts in which there are persons keen to form a club.

P. Copinger, 2, Seaford Street, Kilmarnock, Ayrshire.
G. H. Leighton, 21, Langton Drive, Nunsthorpe, Grimsby, Lincs.

N. D. Littlewood, 129, Stanhill Road, Nottingham.
S. S. Nixon, 16, Beethoven Street, Kilburn, London, W.10.
K. Wells, 318, West Lane, Keighley, Yorks
S. J. Yeman, 1, De Vere Road, Lexden, Colchester, Essex.

CUT ALONG DOTTED LINE

ADVERTISEMENT ENQUIRIES SERVICE

Tick against entries in the index below advertisement(s) of product(s) about which you would like to receive further information. Fill in your name and address, fold form as directed overleaf, and post.

Page	Page
<input type="checkbox"/> British Ferrograph Recorder Co. Ltd. 22	<input type="checkbox"/> Perth Radios Ltd. 51
<input type="checkbox"/> Brown, A. & Sons Ltd. 47	<input type="checkbox"/> Quality Mart 51
<input type="checkbox"/> City Sale & Exchange 13	<input type="checkbox"/> Queensway Recording Studios 43
<input type="checkbox"/> Deroy Sound Service 43	<input type="checkbox"/> Rapid Recording Service 43
<input type="checkbox"/> Dickinsons of Pall Mall 8	<input type="checkbox"/> Rendezvous Records 43
<input type="checkbox"/> Dixon's Electronics 20	<input type="checkbox"/> R.E.S. (Coventry) Ltd. 41
<input type="checkbox"/> Dynatron 9	<input type="checkbox"/> R.E.W. Earlsfield Ltd. 50
<input type="checkbox"/> E.A.P. (Tape Recorders) Ltd. 10	<input type="checkbox"/> Shinn, John & Sons Ltd. 42
<input type="checkbox"/> Easysplice 48	<input type="checkbox"/> Simon Sound Service Ltd. 44 & 52
<input type="checkbox"/> Educational and Technical Developments Ltd. 36	<input type="checkbox"/> Souvenir Press Ltd. 12
<input type="checkbox"/> E.M.I. Sales and Service Ltd. 26 & 27	<input type="checkbox"/> Specto Ltd. Front cover
<input type="checkbox"/> FI-Cord Ltd. 15	<input type="checkbox"/> Stamford, A. L. 39
<input type="checkbox"/> Francis of Streatham 38	<input type="checkbox"/> Sunderland Sound Service 43
<input type="checkbox"/> Grundig (Great Britain) Ltd. 3	<input type="checkbox"/> Syrpha Sound Sales Ltd. 4
<input type="checkbox"/> Hi-Fi Developments Ltd. 42	<input type="checkbox"/> Swains Papercraft Ltd. 34
<input type="checkbox"/> Howard Photographic 46	<input type="checkbox"/> Tape Recorders (Bournemouth) Ltd. 40
<input type="checkbox"/> Hughes, F. A. & Co. Ltd. 2	<input type="checkbox"/> Tape Recorder Service Co. 6 & 40
<input type="checkbox"/> Jewkes & Co. Ltd. 41	<input type="checkbox"/> Technical Suppliers Ltd. 11
<input type="checkbox"/> Judge, W. A. 41	<input type="checkbox"/> The Radio Centre 44
<input type="checkbox"/> Lee Electronics 36 & 39	<input type="checkbox"/> The Recorder Co. 14
<input type="checkbox"/> Lustraphone Ltd. 13	<input type="checkbox"/> The Service Co. 24
<input type="checkbox"/> Magnegraph 43	<input type="checkbox"/> V.E.S. Wholesale Services Co. 36
<input type="checkbox"/> McCormack's 42	<input type="checkbox"/> Wadden & Hill Ltd. 40
<input type="checkbox"/> Metro-Sound Manufacturing Co. Ltd. 34	<input type="checkbox"/> Walter Instruments Ltd. 7
<input type="checkbox"/> Modern Techniques 8	<input type="checkbox"/> Watts Radio (Mail Order) Ltd. 36
<input type="checkbox"/> M.S.S. Recording Co. Ltd. 38	<input type="checkbox"/> Wellington Acoustic Laboratories Ltd. 14
<input type="checkbox"/> Olympic Sound Studios 39	<input type="checkbox"/> Welme Corporation Ltd. 16
	<input type="checkbox"/> Wood, J. H. 41
	<input type="checkbox"/> Wyndors Recording Co. Ltd. 5

I should also like further information about the
(product) mentioned in the editorial reference on page

NAME

ADDRESS

.....

.....

.....

July, 1959

NEW AND USED TAPE RECORDER SPECIALISTS

BEST PART EXCHANGE

SOUND 444

THREE SPEEDS
TWIN TRACK
RECORDING

45 GNS.

Dep. £4 5 0

12 instalments

£3 11 8



ALLOWANCE on your TAPE RECORDER—RECORD PLAYER

HI-FI EQUIPMENT

- ★ NO INTEREST TERMS
- ★ DEPOSIT 2/- IN THE £
- ★ FREE MAINTENANCE
- ★ FREE DELIVERY
- ★ 40 MODELS ON DISPLAY

**FANTASTIC BARGAINS, ANNUAL SALE
BRAND NEW TAPE RECORDERS**

Prices 56—55 gns. reduced to **45 gns.**
 " 45 gns. " " **39 gns.**
 " 40 gns. " " **30 gns.**
 " 26 gns. " " **19 gns.**

ONLY FEW LISTED :: :: CASH OR TERMS

TANDBERG STEREOGRAPHIC ...	114gns.	*FERROGRAPH	89gns.
ELIZABETHAN ESCORT	45gns.	KURLAND HI-FI	56gns.
*ELIZABETHAN ESSEX	65gns.	HARTING HI-FI	82gns.
BALMORAL	43gns.	WALTER 101	29gns.
STUZZI MAGNETTE	69gns.	WALTER 303 DE-LUXE	42gns.
ELIZABETHAN MAYFAIR	72gns.	WALTER 505	57gns.
SOUND 444	45gns.	PERTH-SAJA Standard	45gns.
SOUND A20	55gns.	PERTH-SAJA De-luxe	59½gns.
SOUND 555	65gns.	TELEFUNKEN KL75	50gns.
PHILIPS 8109	39gns.	TELEFUNKEN KL85	75gns.
PHILIPS 8108	62gns.	ELECTRON EMG 9/1	43½gns.
TRUVOX	59gns.	GRUNDIG T.K.20	52gns.
WYNDSOR VISCOUNT	49gns.	GRUNDIG T.K.25	62gns.
BRENELL 3 STAR	58gns.	*GRUNDIG T.K.30	72gns.
GELOSO	38gns.	*GRUNDIG T.K.35	82gns.
CLARION TRANSI. (Batt.)	25gns.	SONOMAG	54gns.
G.B.C.	40gns.	REGENTONE	55gns.
VERDIK	45gns.	*BRENELL 5 STAR	64gns.

*MIKE EXTRA

Large selection of Tapes and Accessories. 2/- in the £ Deposit.
 All machines available on No-Interest Terms. Call or write in confidence
 Large selection of used machines in stock

REW EARLSFIELD LTD., 545, GARRATT LANE, S.W. 18.

WIM 0709

5 MINUTES TOOTING BROADWAY UNDERGROUND STATION

BUS STOP OUTSIDE, 100 YARDS FROM EARLSFIELD STATION

CUT ALONG DOTTED LINE

POSTAGE
WILL BE
PAID BY
PRINT AND
PRESS
SERVICES
LIMITED

BUSINESS REPLY FOLDER
Licence No. ND 922

TAPE RECORDING & HI-FI MAGAZINE,
ADVERTISEMENT ENQUIRIES,
7, TUDOR STREET,
LONDON, E.C.4.

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

FLAP A

FLAP B

FIRST FOLD ALONG THIS LINE

TO OBTAIN DETAILS
OF ADVERTISERS



Make sure your name and
address etc., is clearly shown
on the form overleaf.

Cut along the dotted
lines.

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

July, 1959

Truly Portable

Here are three recorders in size and weight truly portable, as easy to carry and use as a camera. Battery powered, they may be used anywhere independent of electric mains supply. Their unobtrusiveness makes them ideal for taping family or public events, or business interviews. Invaluable to add sound to amateur cine films. Recordings may be played on larger recorders. Come to Audio House for a demonstration of these remarkable recorders or send for details to-day.

Fi-Cord

A precision made recorder capable of high fidelity recordings. New improved model.

Measures only 9 $\frac{1}{2}$ x 5 x 2 $\frac{1}{2}$ ins., carried by shoulder sling strap.

Weighs only .4 $\frac{1}{2}$ lbs.

Records in any position.

7 $\frac{1}{2}$ and 1 $\frac{1}{8}$ i.p.s. speeds.

Small microphone with pocket clip, with stop-start switch. Supplied with unit for economical recharging of battery from mains supply. 59gns.



Clarion

Transitape

New, especially simple to handle, offers quite remarkable value.

Plastic case, 9 $\frac{1}{2}$ x 5 x 3 $\frac{1}{2}$ ins. Weight 5lbs.

Speed 3 $\frac{3}{8}$ i.p.s.

Operates from standard torch batteries. Complete with microphone and tape. Only 25gns.

Stuzzi

"Magnette"

A popular and reliable model.

Size 11 x 4 $\frac{1}{2}$ x 8 ins. Weight 8lbs.

Operated from standard torch batteries. Supplied complete with microphone, tape and lead for connection to radio, amplifier or another recorder. 69gns.

GUARANTEED OPERATION Available solely to purchasers of tape recorders from Quality Mart, this scheme guarantees efficient free service for 12 months. Wherever you are a telephone call to us or a local centre will bring a qualified engineer to your door to give attention to any defect within 48 hours. No charge for transport, replacement parts or valves.

KLENZATAPE—A new device which improves the quality of your recorder by removing deposits on the heads. Usable on any recorder. 12s. 6d. (post 6d.)



AUDIO HOUSE
8 DARTMOUTH PARK AVENUE, LONDON, N.W.5
Telephone: GULLiver 1131

No appointment required for demonstrations but if you don't know our district (within easy reach of West End) phone us now to ask how to reach us. Early closing, Thursday. Open until 8-30 every Wednesday.

more features in PERTH-SAJA

Made in Germany to exacting specifications

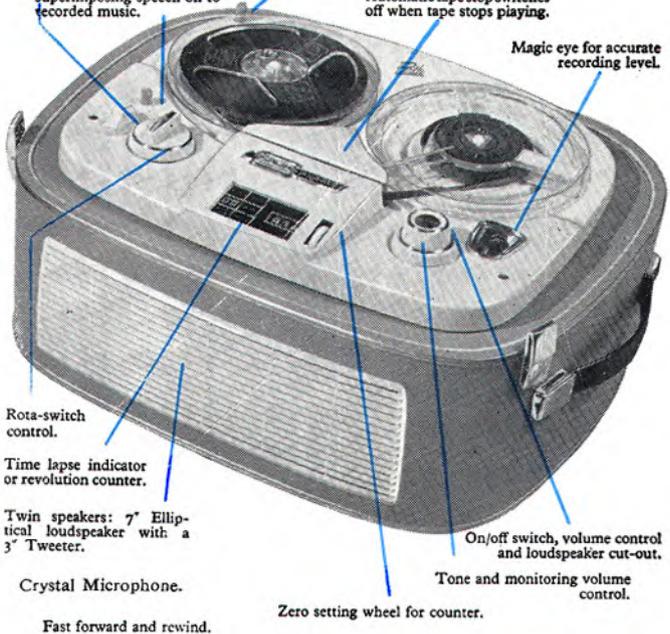
Stop-start lever and automatic locking device to prevent accidental erasing during play back

Tape speed control. Speeds: —two hours' recording at 3 $\frac{3}{8}$ " per second on 1,200 feet. Wow and flutter below 0.5%.

Trick effect button for superimposing speech on to recorded music.

Automatic tape stops switches off when tape stops playing.

Magic eye for accurate recording level.



Rota-switch control.

Time lapse indicator or revolution counter.

Twin speakers: 7" Elliptical loudspeaker with a 3" Tweeter.

Crystal Microphone.

Fast forward and rewind.

Zero setting wheel for counter.

On/off switch, volume control and loudspeaker cut-out. Tone and monitoring volume control.

Lovelier styling plus extra features make the Perth-Saja Tape Recorder the finest value money can buy. Send coupon for illustrated literature and name of nearest stockist



Beautifully styled two-tone carrying case. Easy to carry.

TWIN DE LUXE MODEL 59 $\frac{1}{2}$ GNS

Complete with Microphone and Tape.

STANDARD MODEL - 45 GNS

Complete with Microphone and Tape.

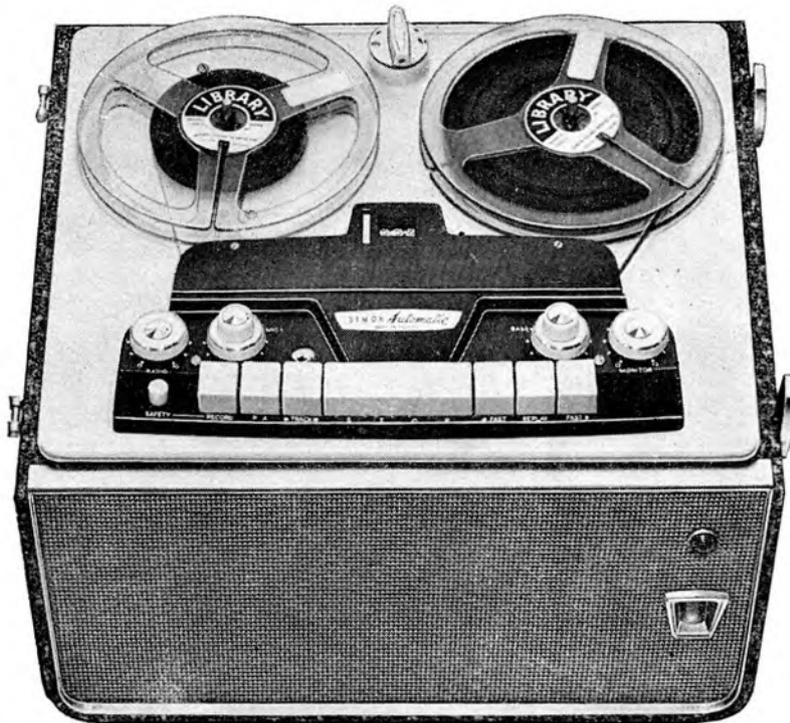
**EASY TERMS
AT YOUR DEALERS**

To **PERTH RADIOS LTD.**, Marten House, 39-47 East Road, London, N.1

Please send me literature on the Perth-Saja Tape Recorder

Name.....

Address



everyone's

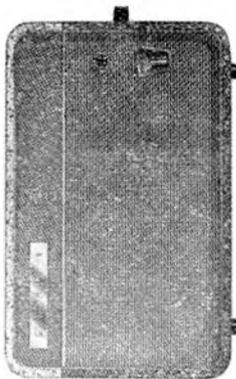
The Simon SP4 is the machine you've been looking for! Its combination of high performance and range of exclusive features has set off a chain reaction of enthusiasm throughout the hi-fi world.

Look at this list of star features—never have so many been brought together in a portable recorder.

Read what the press says, then come and see it for yourself at your nearest dealer—try it, test it and you too will join the crowds of Simon enthusiasts.

- SIMON AUTOMATIC DECK***
'push-button-controlled'
- AUTOMATIC TAPE REVERSAL**
without touching controls
- 3-WAY MIXING FACILITIES**
on both record and playback
- BASS AND TREBLE LIFT AND CUT**
with independent controls
- REMOTE CONTROL FACILITIES**
on both record and playback
- HIGH QUALITY MONITORING**
Paired bass and treble loudspeaker units
- 10 WATTS OUTPUT**
from ultra-linear push-pull amplifier
- PUSH-PULL OSCILLATOR**
for noise and hum suppression
- ACCIDENTAL ERASURE PREVENTION**
by special record 'safety button'
- ACCURATE TAPE POSITION INDICATOR**
based on linear tape scale
- 'PIN-POINT' MODULATION**
with cathode ray magic eye

you must hear it!



Two accessories
to do justice to the SP4

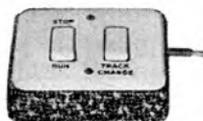


THE CADENZA Ribbon microphone

Dual impedance head for flexibility in use: output sensibly flat between 50-12000 c.p.s. In handsome presentation case: head only 8½ gns. With tripod desk stand 10 gns.

THE SIMON REMOTE CONTROL UNIT

Electrically operated, gives push-button control at any practical distance. (Stop/Start and track change on either Record or Playback). Size 1½" x 2½" x 3½" with 25 ft. of cable 3 gns.



simon

Choose Simon for Sound

*Automatic, in the Simon sense, is meant to be taken literally: it means continuous replay—the machine stops, reverses and changes to the other track with only a two-second pause, and with no necessity to touch any control. Similarly, up to three hours continuous recording can be made without attention, the machine automatically stopping at the end of the second track.