

RECORDING
TIPS FOR
BEGINNERS

TAPE

RECORDING
AND HI-FI MAGAZINE

FREE!

72 page
catalogue



For Tape Recorders and Hi-Fi, YOU MUST SEE the unique comprehensive Catalogue from the Tape Recorder Centre. 72 illustrated pages, free of charge, giving details of all makes of Tape Recorders, Accessories and Hi-Fi equipment. The most complete catalogue of its kind, listing over 350 products from 50 makers. ALL ORDERS OVER £30 ON NO-INTEREST TERMS.

TAPE RECORDERS

Grundig
Elizabethan
Ferrograph
Vortexion
Walter
Brenell
Reflectograph
Simon
Harting
Telefunken
Philips
Spectone

Verdik
Veritone
Stuzzi-Magnette
Ficord
Truvox
Korting
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
Philips
Wright & Weaire
G.E.C.
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
B.A.S.F.
Grundig
Telefunken
Agfa
Elpico
Soundrite
Gevaert
Philips

Choose with confidence from the leading Specialists

All accessories, tapes, etc. by return of post.
All makes in stock.

THE TAPE RECORDER CENTRE

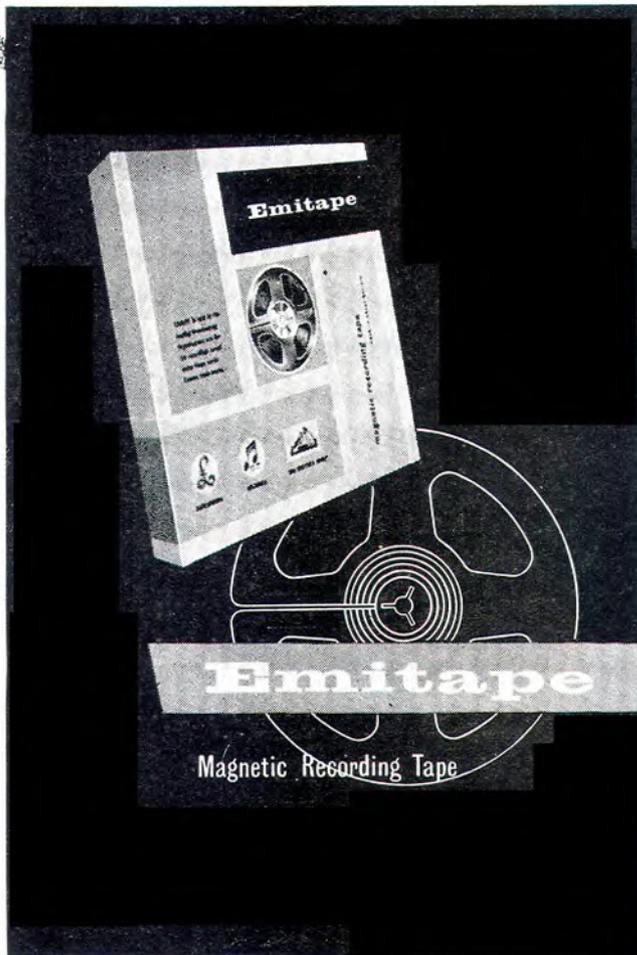
THE TAPE RECORDER CENTRE, LTD. (Dept. TRF), 75, GRAND PARADE, GREEN LANES, HARRINGAY, LONDON, N.4 STAmford Hill 1146

BRITAIN'S LEADING PUBLICATION IN THIS FIELD

FORTNIGHTLY **1/6**

9th March, 1960

The Sign of Good Tape!



Wherever you see this poster you can be sure to buy Emitape — the World's finest recording tape, preferred by professionals and amateurs alike.

Emitape

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

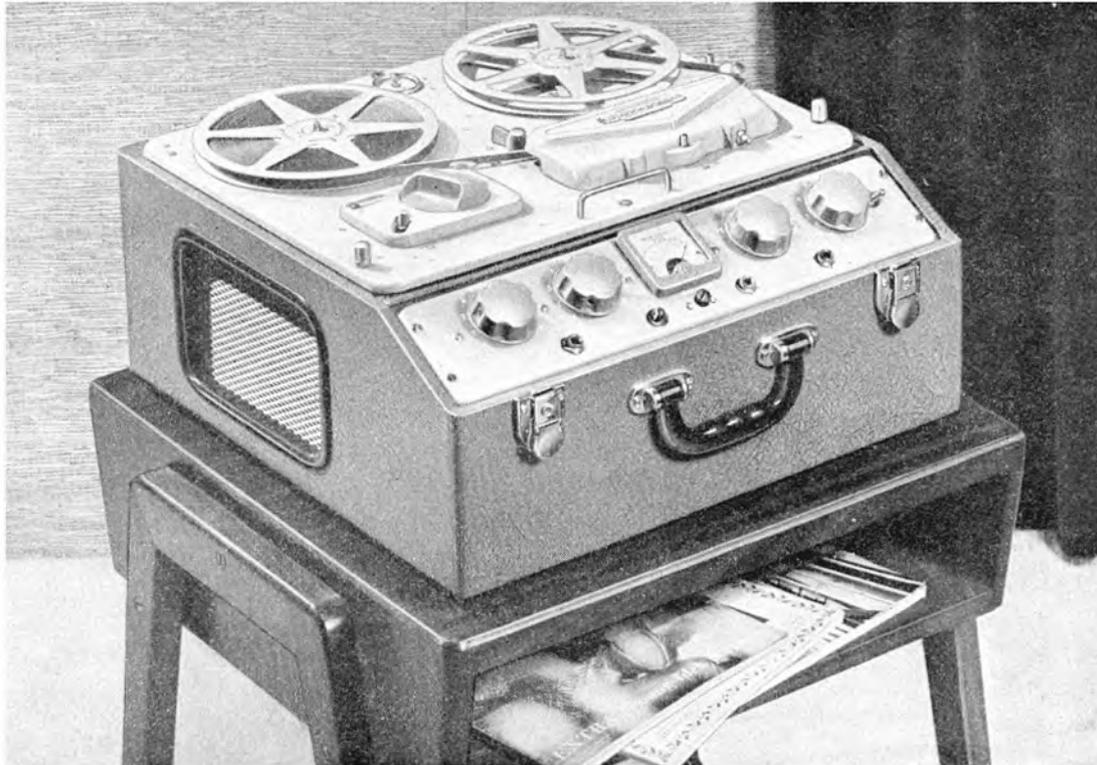
“44” Popular (Acetate)

“88” General Purpose

“99” Long Play giving
50% increased
playing time

“100” Double Play

EMI SALES & SERVICE LTD (Recording Materials Division) HAYES · MIDDLESEX · Tel: SOUthall 2468



The Incomparable **Ferrograph**

Whenever Tape Recorders are discussed one name commands respect. Over the years Ferrograph has become the accepted synonym for Quality. The first Tape Recorder to be made in this country, the Ferrograph has established such an ascendancy among those who are expert in these matters that it has become the standard by which others are judged. Whether your interests lie in monophonic or stereophonic sound, be sure to choose the Ferrograph and have no regrets in the years to come.

Stereo 808

Two speeds $3\frac{3}{4}$ i.p.s. For use with external Hi Fi amplifiers and Loud Speakers. The all-purpose machine for Monaural or Stereo Recording/Playback
105 Gns.

Series 4A

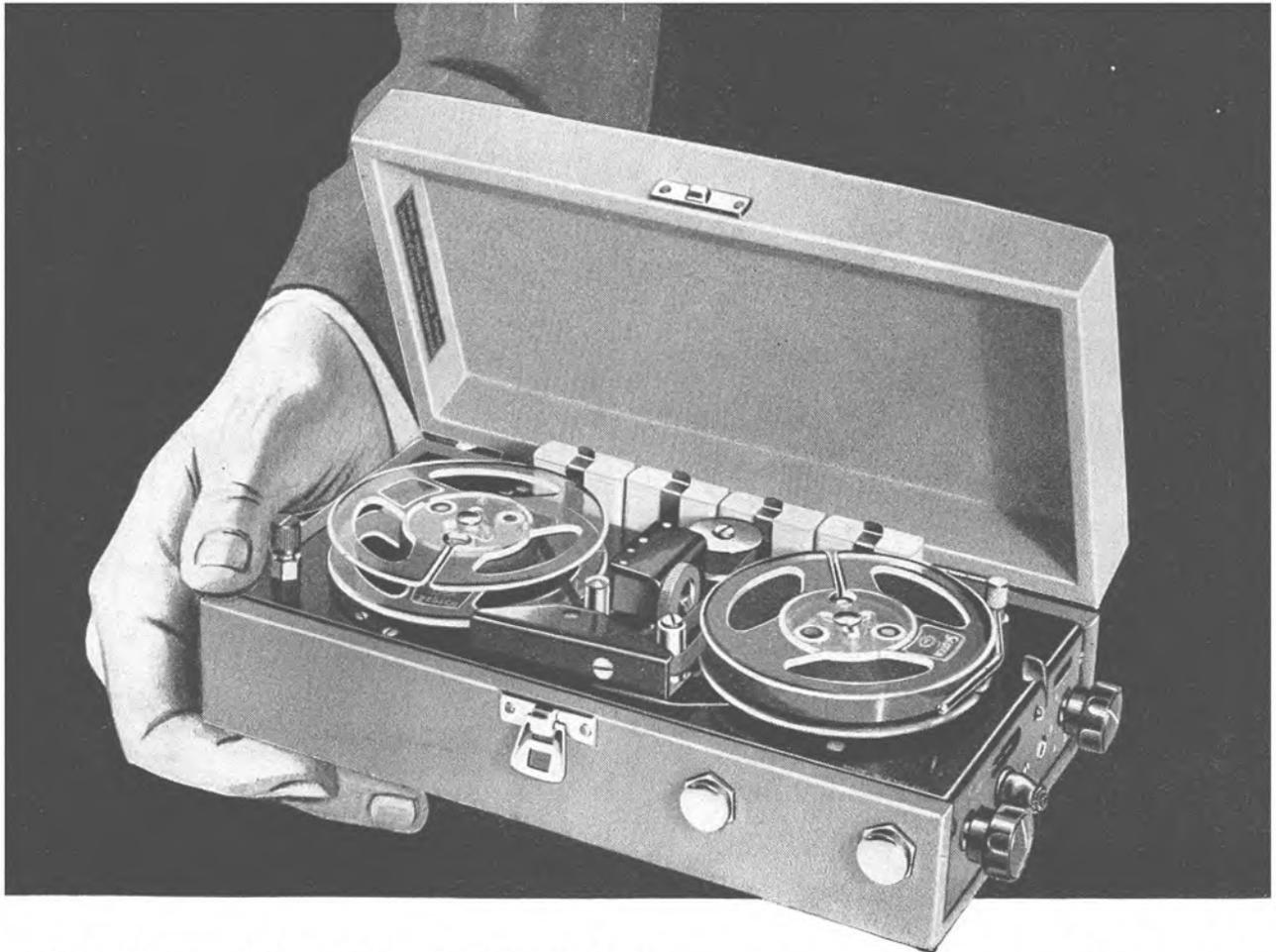
4A/N Two speeds $3\frac{3}{4}$ i.p.s. Monaural Recording/Playback
81 Gns.

*Three Independent Motors · Synchronous Capstan Motor · Recording Level Meter · Brief Stop · Interchangeable Plug-in Heads
Switched Speed Change with Compensated Correction Network · Separate Tone Controls · High Fidelity $2\frac{1}{2}$ Watts Output Stage
Uses $8\frac{1}{2}$ " Tape Spools · Gear-Driven Turns Counter · Automatic Switch Cuts Motors at End of Spool · Endless Loop Cassette (Optional Extra)*

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



Only with **FI-CORD** can you have it both ways—really HI-FI and really portable

Don't be misled by the compact size. The **FI-CORD** is a high fidelity instrument of advanced scientific design—assuring true-to-life recordings.

Frequency 50-12,000 c.p.s. \pm 3db. Tape speeds $7\frac{1}{2}$ i.p.s. and $1\frac{1}{2}$ i.p.s. Twin track record/playback, using standard $3\frac{1}{4}$ " spools.

Wherever you go, you can take your **FI-CORD** with you, it is ideal for adding

the realism of sound to movie films.

The **FI-CORD** weighs only $4\frac{1}{2}$ lbs., measures $9\frac{1}{2}$ " x 5" x $2\frac{1}{4}$ ", operates in any position (lid open or shut) and requires no power point. It runs on 4 batteries, rechargeable from the automatic charger supplied.

Built-in speaker. Full playback volume. Extension speaker socket. Dynamic microphone with stop/start switch.

**CATCH IT—
AND KEEP IT—WITH**



Write for name and address of your nearest stockist to:—

FI-CORD Ltd · 40a Dover St · London · W1
Tel: HYDE PARK 3448

Complete with
Microphone, Tape,
Batteries and Charger

59 GNS

or with Grampian DP4/M
Microphone

66 GNS

NOW!

enjoy dynamic sound-true recording

new in the U.K.



MAGNETONBAND TAPES

PE

pre-stressed
polyester base

They're here! Agfa PE Magnetonband Long Play and Double Play tapes—the first-choice tapes of leading European Broadcasting stations. And these are the facts that put Agfa PE tapes first.

Absolutely uniform thickness of the thin coating throughout every Agfa PE Polyester Base tape ensures peak-quality reproduction. Sensitivity Tolerances: $\frac{1}{2}$ dB within reels. Plus or minus 1 dB between different reels. Mechanical stretching during manufacture makes Agfa PE tapes as tough as steel. They are pre-stressed to attain maximum tensile strength and resistance to further stretching.

Heat, moisture, variations in temperature, water or chemicals do not affect Agfa PE tapes.

New type wear-resisting binder gives Agfa PE tapes unrivalled resistance to abrasion. A million-run endurance test failed to produce any change in the magnetic layer.

For all their durability, Agfa PE tapes are unusually flexible. Run easily and snugly through the magnetic head to give sound-true recordings.

The distortion factor in Agfa PE tapes is so low that considerable overloading can be absorbed without affecting the recording.

The wide range of recorded frequencies (far greater than that perceptible to the human ear) means that home recordings will be comparable with professional studio ones always. At $3\frac{3}{4}$ " per sec. 40-16,000 cps; at $1\frac{7}{8}$ " per sec. 40-8,000 cps.

Agfa Magnetonband tapes are supplied in the following types and lengths:

Type	Length feet	Spool Diameter ins.	Playing time Double track at 9.5 cm/sec* —3½ ins./sec. Mins.	Price
Long Play tape Agfa PE 31	210	3	2 x 11	9s. 0d.
	900	5	2 x 45	£1 8s. 0d.
	1200	5½	2 x 60	£1 15s. 0d.
	1800	7	2 x 90	£2 10s. 0d.
Double Play tape Agfa PE 41	300	3	2 x 15	14s. 0d.
	1800	5½	2 x 90	£3 0s. 0d.
	2400	7	2 x 120	£4 0s. 0d.

* At 4.75 cm/sec (1½ ins/sec) recording speed the playing time is doubled. All tapes are supplied on reels with leader and contact strips.

* Registered Trade Mark of the Manufacturers, Agfa A.G., Leverkusen/Western Germany.

FREE fully informative booklet from your Dealer. Or write :

AGFA LIMITED · 27 Regent St · London · SW1 · REGent 8581/4





The man who knows what's inside says:

You get more out of **TELEFUNKEN**

TELEFUNKEN Magnetophon 75K-15

TWO TAPE SPEEDS $3\frac{1}{2}$ ips and $1\frac{7}{8}$ ips

FREQUENCY RANGE 60-16,000 cps at
 $3\frac{1}{2}$ ips and 60-9,000 cps
at $1\frac{7}{8}$ ips

PLAYING TIME 6 hours 20 minutes
($5\frac{1}{4}$ " DP tape at slow speed)

Press button controls. Extra-sensitive braking and tape tension control system.

Recording head with ultra-fine gap. Indirect flywheel drive. Fast rewind, quick stop button. Digital counter. Automatic tape-end stop. Connections for earphones, remote stop/start control and extension speaker. In attractive lightweight Styron Case.

PRICE: **52 GNS**
(excluding microphone)

TELEFUNKEN Magnetophon 75T-15

Table model with output stage only. PRICE: **45 GNS**
(excluding microphone)

TELEFUNKEN Magnetophon 85KL

Six watts push/pull power stage, two matched oval speakers with cut-out switch, volume control, and separate bass and treble tone controls.

Monitoring through loudspeaker or earphones while recording. Straight through amplifier facilities. Magic eye level control. External speaker connection. Continuously variable trick control can be fitted. In luxury case.



PRICE: **79 GNS**
(excluding microphone)

and the amazing

TELEFUNKEN Magnetophon 76K

Over 12 hours playing time from one $5\frac{1}{4}$ " DP Tape—4 track selection and super-imposition facilities.

PRICE: **64 GNS**
(excluding microphone)

A full selection of Telefunken Accessories, Microphones and Telefunken tapes are available. Ask for free brochure.

TELEFUNKEN

The originators of Tape Recording

SEND COUPON for details of the complete range to:

WELMEC CORPORATION LIMITED

147-148 STRAND, LONDON, WC2

Name

Address..... TRG

HIGH QUALITY TAPE RECORDER SPECIALISTS

OFFICIALLY APPOINTED
AGENTS FOR:

- ★ FERROGRAPH
- ★ REFLECTOGRAPH
- ★ SIMON
- ★ GRUNDIG
- ★ REPS
- ★ BRENELL
- ★ TANDBERG
- ★ VORTEXION

Amazing
Stuzzi Magnette
2 Speeds
Fully Transistorised
Complete **69 gns.**
Deposit £7.9.0.
12 instalments
of £5.8.4



ALSO IN STOCK:

PHILIPS
TELEFUNKEN
VERDIK
KORTING
WYNDSOR
SPECTONE 161
MAGNAFON

REGENTONE
SOUND
FERGUSON
BALMORAL
SABA
CLARION
KURLAND

PERTH-SAJA
ELEKTRON
HARTING
TRUVOX
VERITONE
FI-CORD
ARGYLL

On NO INTEREST TERMS

150 models on display — free maintenance — 2/- in the £ deposit
free insurance on your instalments.

Best PART EXCHANGE

ALLOWANCE ON YOUR OLD TAPE RECORDER HI-FI EQUIPMENT

REW EARLSFIELD Ltd. 545 Garratt Lane, S.W.18

Tel. Wim 0709

10 minutes bus from Tooting Broadway; 100 yards from Earlsfield Station

For Styling, Performance and Workmanship

The best of Both Worlds

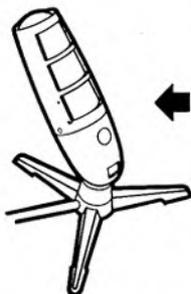
Cadenza Ribbon MICROPHONE ➔

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

The unique arrangement of ribbon and magnets 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. Patent No. 810064.

Cadenza dual impedance microphone head only in presentation case, **8½ gns.**

Cadenza dual impedance microphone, with tripod desk stand, connected 11 ft. of cable. Complete in presentation case, **10 gns.**

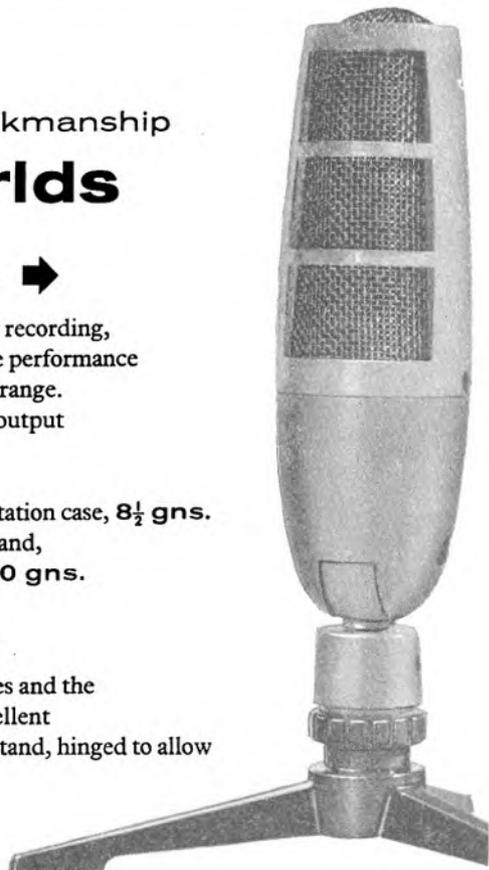


← *Cadenza Crystal* MICROPHONE

Top crystal performance, robust and handy, these qualities and the low price make this an ideal second microphone or an excellent partner to any tape recorder. Complete with tripod desk stand, hinged to allow adjustment of microphone head angle, **3½ gns.**

Simon Equipment Limited

46-50 George Street, London W1. Telephone: WELbeck 2371

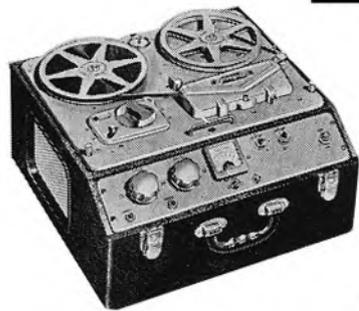


SIMON CADENZA
MICROPHONE



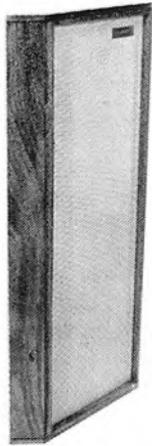
GIFT TOKENS TO ANY VALUE FROM 6/-

IMHOFS



IMHOFS

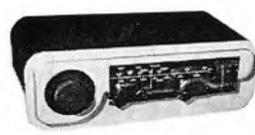
TANNOY CHATSWORTH LOUDSPEAKER



IMHOFS

FERROGRAPH 808 TAPE RECORDER

ACOUSTICAL QUAD FM TUNER



ACOUSTICAL QUAD AM TUNER

It's always the personal service that counts. No wonder so many people the world over buy from Imhofs, either as personal shoppers or through the post from the furthest corners of the globe. Wherever you are, fully qualified sales staff attend to your needs in a friendly manner and quickly become acquainted with your preferences and tastes. And however you buy you are guaranteed expert advice and the same personal attention.

tape recorders - stereo - hi fi records - radio - tv - service

STEREO AND HI FI INSTRUMENTS AND TAPE RECORDERS A complete floor of Imhof House is entirely devoted to stereo and single-channel hi fi instruments. Here you can really relax in comfort under ideal listening conditions. You can listen to your favourite recordings, whether on tape or disc, played on any system of your choice. Through the Comparator—an exclusive Imhof device—you can hear over 4,000 combinations of different loudspeakers, amplifiers, tuners, players, tape-decks and tape-recorders at the flick of a switch. Whether you are interested in stereophonic or single-channel hi fi reproduction comparison is easy at Imhofs—and you enjoy yourself more!

RECORDS Imhofs carry one of the largest stocks of records with unrivalled facilities for choosing and listening. Each department, Classical, Export and Imhofs famous Melody Bar, has its own expert staff. You can rely upon them for the best advice if you are uncertain in your choice. Any type of record currently available in Britain can be readily supplied, including a wonderful selection of Continental recordings. Close liaison with manufacturers enables us to place orders in advance and many of them give us priority in allocating records in short supply.

SWIFT WORLD WIDE DELIVERY Your order, whether for instruments, records or spares, receives the immediate individual attention of the most experienced staff in the business. Every order is carefully packed into special sturdy boxes made to our own requirements. We carry out all paperwork on Customs and Shipping and every item is fully insured to guarantee safe delivery.

MONTHLY ACCOUNTS (HOME & ABROAD) This popular credit service permits you to buy your records as and when you wish and make one payment for them later. This is not an 'instalment plan' and there is no extra charge for this facility.

RADIO AND TV All the latest models are here. All of them are on permanent demonstration for easy comparison. You'll find 1960 transistorised radios giving longer life, lower power consumption and cleaner reception. You can hear all the new portables, mains sets and mains-portables, from miniature pocket radios no bigger than your hand to sets of all shapes and sizes in clean modern designs. Have you seen the new ultra-elegant line in TV sets? All the best makes are on permanent side-by-side demonstration—portables, table models and consoles in all screen sizes. New elegance in cabinet design and the shallower tube with improved picture definition indicate the considerable advance in television production methods during the last year. And there's a very wide range of models from which to choose. Call in and see the 1960 range at Imhofs and enjoy them in comfort.

PRE-RECORDED TAPES For musical reproduction at its very best choose from a big selection of pre-recorded tapes and stereo tapes in the Ground Floor Record Department.

SERVICE At our Service Shop on the Second Floor you can have new diamond or sapphire styli fitted while you wait and choose from an extensive range of accessories. Small repairs are quickly dealt with or, for larger jobs, book an appointment for an engineer to visit your home on same-day service.

GIFT TOKENS Imhofs own Gift Tokens are available at values from 6/- upwards for any make of record or equipment. They are valid indefinitely and we will gladly send the records chosen to any address in the world. No charge for the greetings card. Call in or send for some today for your friends.

RECORDS POSTAL SERVICE Of special value to overseas music lovers, this famous postal service guarantees you swift, safe delivery of the records you want. All records are meticulously examined before despatch. All are exported free of purchase tax. All parcels over £10 in value are sent post and packing free with free insurance. Whatever their value, all orders from H.M. Forces overseas for L.P.'s and 45's are sent post and packing free. Our record postal service was begun in 1897 and the experience we have gained since then is always at your service.

IMHOFS

TO: Alfred Imhof Ltd. Dept 81, 112-116 New Oxford St., W.C.1
MUSEUM 7878

Please send me a FREE copy of
'This Year of HI-FI' (revised edition)

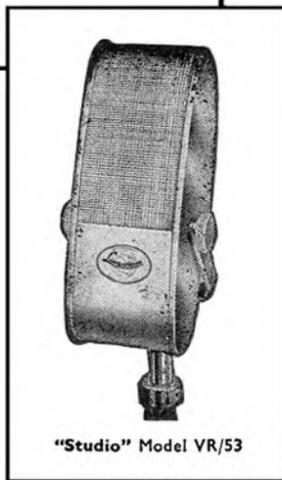
NAME

ADDRESS

Add **QUALITY** to your recorder
with a **LUSTRAPHONE**
microphone

**MODEL VR/53
RIBBON VELOCITY
MICROPHONE**

Bi-directional microphone, having a high level of sensitivity and extended frequency response. Blast screening and anti-vibration mounting are fitted. The VR/53 will provide the highest standard of sound for single channel or stereophonic reproduction and is particularly recommended for use with good tape recorders as well as for broadcasting and other professional requirements. With stirrup positioning attachment. In high, line or low impedances. **£9. 19. 6**



"Studio" Model VR/53

*British in Design,
Materials and Manufacture*

Details of this and other LUSTRAPHONE microphones and 4-Channel Mixer Unit sent on request.



LUSTRAPHONE LTD.

ST. GEORGE'S WORKS,
REGENTS PARK ROAD
Telephone: PRImrose 8844 LONDON, N.W.1

PSYCHO-TAPES

*Home Psychology for
Tape Recorder Owners*

PERSONALISED tapes recorded individually for each patient by well-known Psychotherapist for:—

**NERVOUS FEARS, STAMMERING,
INFERIORITY, AND ALL PERSONAL
PSYCHOLOGICAL PROBLEMS**

Also SPECIAL TAPES on:—

**DEVELOPING A POSITIVE PER-
SONALITY, SELF-HYPNOSIS, MIND
MANAGEMENT, HOW TO OVER-
COME INSOMNIA, ETC.**

Please post Coupon NOW for full details

Please send free details of PSYCHO-TAPES

Name (Mr. Mrs. Miss).....
(Block letters please)

Address.....

To THE PSYCHO-TAPE INSTITUTE (Dept. TH1)
27, YORK ROAD, ILFORD, Essex

We have customers in . . .

Leicester, West Drayton, Lewisham and Preston; Chichester, Sheffield, Bristol and Grimsby; Edinburgh, Carlisle, Plymouth and Leeds; East Grinstead, Ebbw Vale, Hitchin and Southall; Orpington, York, Bridgewater and Ventnor; Dulwich, Hanley, Redhill and Burntoak; Rugeley, Biggin Hill, Leigh-on-Sea and Salisbury; Brentwood, Purley, Ashton-under-Lyne and West Hartlepool; West Wickham, Innerleithen, Ilford and Aintree; Sanderstead, Gorleston-on-Sea, Liverpool and Middlesbrough; Nottingham, Bexleyheath, Croydon, Tredegar, Dalton in

Furness, Thetford, Rainham and Bradford; Leamington Spa, Cheltenham, Loughton and Birchington; Spilsby, Chorley, Derby and Barnsley; Alford, Chessington, Woodford Bridge and Sevenoaks; Feltham, Southampton, Kendal and Tonbridge; St. Helens, Doncaster, Watford and Bromley; Richmond, Cheadle, Corby and Warlingham; Bexhill, Hemel Hempstead, Sydenham and Bromsgrove; Arborfield, Gravesend, New Ferry and Beckenham; Canada, Australia, Ceylon and Hong Kong!

**WHY NOT WRITE FOR DETAILS NOW
OF OUR RANGE OF TAPE RECORDERS**

TAPE RECORDER SERVICE CO.

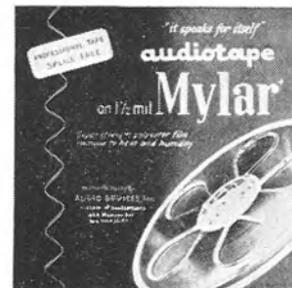
95 Beckenham Lane, Shortlands, Bromley, Kent.

RAVensbourne 6119

Sensational success of audiotape

TRADE MARK

Tape Recording experts and enthusiasts all over the country are changing to AUDIOTAPE for its flawless perfection of sound reproduction over the entire audio range and its *consistent, uniform quality* from reel to reel.



Available on all standard reel sizes, there are eight different types to meet every recording requirement. AUDIOTAPE, manufactured in the U.S.A., by Audio Devices Inc., gives you the truest sound your recording equipment can produce—try AUDIOTAPE . . . it speaks for itself.



Sensational C-SLOT REEL!

All 5" and 7" reels of AUDIOTAPE are supplied on the exclusive C-Slot Reel—the fastest-threading tape reel ever developed. The tape end, dropped into a slot in the hub, anchors itself automatically at the first turn of the reel.



ELPICO A NAME FOR BETTER PERFORMANCE

Concessionaires to the United Kingdom and Eire

LEE PRODUCTS (Gt. Britain) LIMITED
ELPICO HOUSE, LONGFORD STREET, LONDON, N.W. 1

Telephone: EUSton 5754 (all lines) Telegrams: Leprod, London.

5 reasons for choosing irish tape

The exclusive Ferro-sheen process produces a mirror-smooth tape and offers five distinct advantages:

1. Exceptional high frequency response, due to intimacy of contact between tape and heads.
2. Minimum head wear.
3. Freedom from head contamination by oxide build-up.
4. Considerable reduction in background noise.
5. Minimum drop-outs.

In addition, the Tensitized Mylar base gives Irish double-play tape twice the strength of conventional thin tapes.

Irish tape has only recently been introduced into this country, and supplies are not yet sufficient for it to be stocked by all dealers. If your local dealer does not yet stock Irish tape, give him this coupon, which will ensure that the spools you require will be sent him by return.



* PRIORITY ORDER

Please obtain for me the following IRISH tape

Brown Band	5"	5½"	7"	} Delete items not required.
Long Play	5"	5½"	7"	
Double Play	5"	5½"	7"	

NAME.....

ADDRESS.....

Note to Dealer: Send your order to us and we will dispatch the tape by return.
WILMEX LTD., 131 Sloane Street, London, S.W.1.

Sole British Concessionaires:
WILMEX LTD.,
131 Sloane Street, London, S.W.1.
Telephone: SLOane 0621



TIP OF THE MONTH by Mr. Irish

Before connecting a lead from the radio to your amplifier or tape recorder, make sure that the radio is not a universal AC/DC set. With such radios the chassis is often "live" and thus, when plugging into an earthed device, one can receive an unpleasant, if not dangerous, electric shock. If in doubt consult your dealer.



Brown Band (Acetate base)

600'	5" spool	17/-
850'	5½" spool	23/-
1,200'	7" spool	27/6



Long Play* (Mylar base)

900'	5" spool	28/-
1,150'	5½" spool	35/-
1,800'	7" spool	50/-



Double Play* (Tensitized Mylar base)

1,200'	5" spool	45/-
1,650'	5½" spool	52/6
2,400'	7" spool	80/-

* Ferro-sheen process

TAPE

RECORDING
AND HI-FI MAGAZINE

Vol. 4 No. 5 9th March, 1960

Tape Recording and Hi-Fi Magazine is published fortnightly, on alternate Wednesdays, by Print and Press Services Ltd., from 7 Tudor Street, London, E.C.4

EDITOR: R. D. BROWN

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

MUSIC: EDWARD GREENFIELD
The Guardian recorded music critic

DON WEDGE
News Editor, New Musical Express

MOVIE-MAKING: JOHN ALDRED

NEWS AND CLUB ACTIVITIES: FRED CHANDLER

OVERSEAS CORRESPONDENTS:

FRANCE: GEORGE GINIAUX
Revue du Son, 40, rue de Seine, Paris-6e

U.S.A.: PETER M. BARDACH
210-16, Grand Central Parkway, Queens Village 27, New York

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

"Tape Recording and Hi-Fi Magazine" is available by a postal subscription at 45s. per annum, post free, or it can be obtained at newsagents, bookstalls and radio and music dealers. In the event of difficulty, write to the distributors, Rolls House Publishing Co., Breems Buildings, London, E.C.4.

Back numbers, if still in print, are available at 2s. 6d. per copy for issues up to November, 1959, and 2s. per copy for later numbers.

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 . . .** 14
- The World of Tape** 15
A news digest
- Tape Records Reviewed** 16
Don Wedge
- Letters to the Editor** 16
- Hi! Hi! Fiddle de dee!** 17
David Lazell
- Recording Organ Music** 18
Stanley R. White
- Basic advice for beginners** 20
- Sound effects** 22
Alan Edward Beeby
- The Average Reader** 23
- A home-built battery portable recorder—part 2** 24
Richard A. Margoschis
- A Lecture on Tape** 24
F. C. J. Hodge
- The New Decks—6** 26
Wearite Series 4
- Stereo Notes** 28
Douglas Gardner
- Equipment under test** 29
- New Products** 31
- News from the clubs** 34

We take the view . . .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

OUR American correspondent gave the first news, in our last issue, of laboratory work in the United States on a new-type tape magazine sponsored by Minnesota Mining (Scotch brand). This is designed for use at $1\frac{7}{8}$ ips.

Latest reports from New York, as I write, suggest that an announcement about this development is imminent; it may be made before these words get into print.

From Paris I hear another fascinating story—that one of the big Continental tape manufacturers are about to produce a new "triple-play" tape. This is described as being two-thirds of the thickness of double-play tape. This means that it will be possible to get 3,600 feet on a 7-inch spool.

Do you brood?

TALKING of new ideas, do you think you are a likely candidate for Psycho-tapes? Do you find it difficult to make friends? Do you brood over your troubles? If so, you may be interested in the enterprise of Mr. Percival Ager, who has founded The Psycho-tape Institute.

He has been a practising osteopath and hypnotherapist for more than thirty years. Now he thinks that tape will advance and extend his work.

His patients send him details of their complaints. Mr. Ager records a special message for each case.

This type of tape has been produced in America for some time, but Mr. Ager seems to be the pioneer over here.

Way to learn

I DISCUSSED here recently the way in which tape recorders can be used in a variety of jobs and professions. From an old reader, Mr. Kenneth Blake, I have now heard of an outstandingly effective use of a recorder in this way.

Some time ago Mr. Blake passed the tests set by the Metropolitan Police for London taxi-drivers on their knowledge of London. Studying part-time, it usually takes one 18 months to two years to acquire the staggering amount of information considered necessary.

Mr. Blake tells me that he qualified in just over nine months. "I attribute it to the use of my tape recorder," he explains.

He practised with his recorder, calling

out the routes road by road and corner by corner. He then played it back, checking on a map. Any mistakes would be immediately obvious. "Without hearing what one has actually said, you are very tempted to cheat and say: 'Oh well, that's what I thought I meant,'" Mr. Blake explains.

If there is anything you want to learn, use the tape recorder, he concludes.

Pre-recorded silence

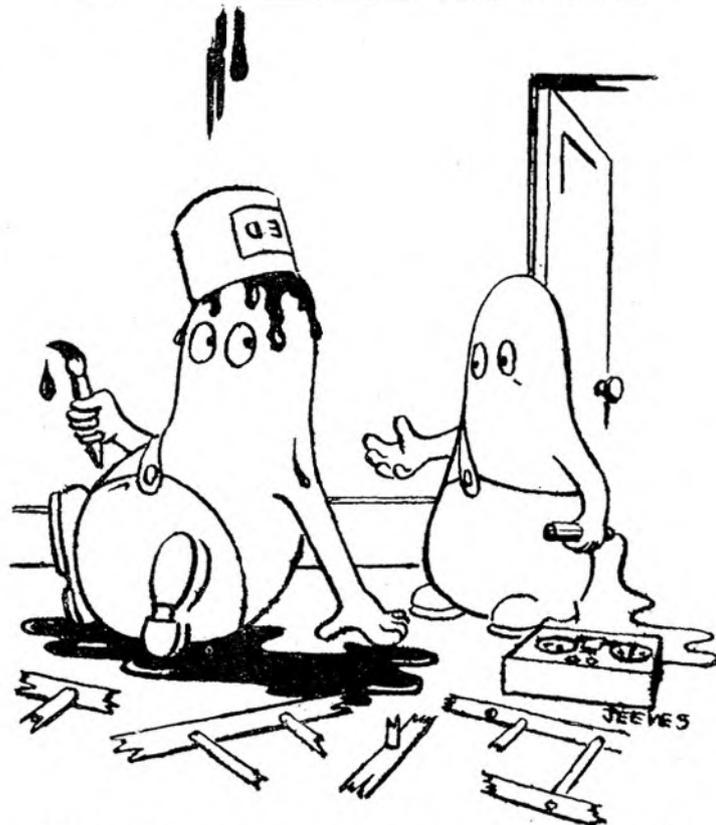
READERS seem anxious, after my comments here before Christmas, to prove that there is plenty of sense of fun among tape folk.

You may recall an article by Bill Rawle in our Christmas issue remarking (in a light-hearted vein) on the recording problems of aircrew in planes flying faster than sound. Now Mr. Charles H. Standen, of South London, writes me, very solemnly:

"This article quite unwittingly exposed one of the most closely guarded trade secrets of tape. For some time past, recording tape has been transported by jet and supersonic aircraft, and every purchaser of a new reel of recording tape has received a pre-recorded tape of inaudible sound.

"Programmes of inaudible sound are regularly broadcast whenever the transmitters are closed down, and I have myself several recordings of such transmissions—of both inaudible music and speech."

LAUGH WITH JEEVES



"Five bob—or I let mum hear the recording"



B.B.C. STARTS NEW BEGINNERS' COURSE

A SPECIAL series of broadcasts to guide newcomers to tape recording is being featured in the BBC Network Three programme "Sound." The first in the series was broadcast last Monday and we understand that future items will be included in every other "Sound" programme.

The form of these programmes will be a series of interviews and discussions between Angela Jeffries, a schoolteacher just taking up tape recording, and resident experts at the BBC. Miss Jeffries teaches partially deaf children in an ordinary school.

In the first programme there was an introductory discussion between Miss Jeffries and I. W. Jarman which concentrated on the form and the significance of manufacturers' specifications.

In the second programme they will discuss the controls on a typical domestic recorder. In later contributions, questions and problems—such things as microphone balance, effects, recognising recorder faults, mixing—will be dealt with in sequence as they arise.

In the photograph on the left, Miss Jeffries and Mr. Jarman are seen in the studio discussing the operation of a recorder.

RECORDING LAST TRAM

LEEDS city authorities have accepted for their archives an excellent 15-minute tape recording entitled "The Last Tram," made by Mr. Magnus (Mick) B. Drury, of Malton, Leeds, and his blind associate, Mr. James E. Hodgson.

Leeds is the latest of the cities to abolish trams, and an exciting era in transport is ending.

The Leeds recording includes the sounds of the last tram to run in the city: it is heard moving off, clanking over points, rattling down hills, and coming to a halt.

There is also an interview with the Transport Manager.

The recordings were made with a Simon SP2 and Val Radio convertor. Mr. Hodgson made the "on-the-spot" recordings and Mr. Drury, who is a polio victim, was responsible for script, editing and presentation.

LIVERPOOL STAGES HI-FI EXHIBITION

LIVERPOOL is to have a Hi-Fi Exhibition on April 28-30, with continuous demonstrations of stereo and mono equipment and demonstrations of live recording. Admission will be free.

This event is being organised by the Lambda Record Co. Ltd., and will be held in the lounge of the Regent Cinema, Liverpool Road, Great Crosby, Liverpool 23. It will open at 8 p.m. on the first two days and 3 p.m. on the third, closing at 10.45 p.m. each evening.

THE WORLD OF TAPE • A NEWS ROUND-UP



PARLIAMENT SWITCHES TO TAPE—IN FIJI

MECHANICAL tape-recording equipment, instead of shorthand writers, for recording proceedings of the Legislative Council will be used in Fiji, shortly. The new system will be cheaper.

Constant difficulty has been experienced in securing and retaining the services of qualified Hansard reporters in the past.

Under the new system there will be a table microphone before each member of the Council. Members will then be able to switch on their microphone when they speak.

There will be a glassed-in control room and desk fitted with a local microphone for the operator to interpose speakers' names.

London has had some sunny foretaste of spring, though the weather has been rough and tough in many other parts of the country. Heightening the impression of approaching spring was this striking window display at the Grundig showrooms.

Stark, leafless trees were silhouetted against a dawn sky. Crocuses and snowdrops peeped from a bed of snow. Birds perched in the trees, and a robin was "recording" on to a Grundig Cub. Other recorders were displayed on tree stumps.

A concealed recorder relayed a recording of the dawn chorus.

Olympic tape

TAPE recordings of the latest news about the Winter Olympic games in Squaw Valley, California, can be heard by East Berlin telephone subscribers by simply dialling the appropriate number.

Letters to the Editor

HISTORIC RECORDS

THANK you for mentioning the Phonograph—my pet subject—in *Tape Recording and Hi-Fi Magazine*, February 10 issue. My sister-in-law still has one of the first Edison Bell phonographs, complete with the six-foot brass horn and 230 records (barrelled).

The machine has never been repaired and the diamond needle is still in use. It still plays perfectly.

What has happened to all the cylinder records? I think they have gone to the United States, where they have been transcribed on to L.P. records which are selling like hot cakes. Some are sold in a beautiful coloured sleeve showing the Phonograph, with its long brass horn, and giving the full story of the artist and the song.

But where are the early cylinders or discs with recordings of the operas and songs of Michael William Balfe? There seem to be none in the U.S.A. and no supplier in England catalogues any of them.

I have a very old Zonophone record called "The Bohemian Girl Opera," slightly bigger than the present 12-in. discs. I had to cut $\frac{3}{4}$ -in. all round the record so that I could play it on my radio-gram. It cost me fourpence, off a rag-man.

If anyone knows of any of this composer's work around, will they please write me?

J. W. GREEN

97, Newport Road,
Middlesbrough, Yorks.

DID YOU NOTICE?

I WONDER if any other tape recording fans spotted a mistake in Norman Wisdom's film, "Follow a Star"? When Norman was supposed to be making a recording, the machine was not switched to record at all.

Norman need not have been so worked up; he was wasting his breath. Jerry Desmond's accomplice in the film just switched the machine to play-back on two occasions when they were supposed to be recording.

J. H. BENNETT

Folkestone, Kent.

Editor's note: Quite right, Mr. Bennett, but the manufacturers of the tape recorder used were not guilty. They did their best to get the film folk on the right lines. Did you notice, too, that Norman Wisdom recorded his song to the accompaniment of a piano only, but on play-back he had full orchestral backing? Artistic licence, no doubt!

NEW POPULAR MUSIC ON TAPE

Salute to two towering figures



By
**DON
WEDGE**

of "New
Musical Express"

WHO made the biggest contributions to popular music in the last twenty years? Your answer will probably give away your age. It could be Benny Goodman, Miles Davis, Glenn Miller, Frank Sinatra, Billy Cotton or even Elvis Presley.

After all, a big contribution does not necessarily have to be a good one. Though it helps.

Two of the towering figures of the period have undoubtedly been Stan Kenton and Tommy Dorsey, whose music forms the latest issues from Music on Tape in the "Salute to..." series, as recreated by the Brussels International Big Band.

Dorsey is, alas, no longer with us. Kenton is very much around, perhaps not receiving the fan acclaim that once was his, but still a forceful figure in modern music.

He has always been a controversial man. Powerful, yet living on his nerves; dynamic, but never short-tempered; witty and intensely sincere about his music.

Not to create would be not to live to Kenton. He must constantly strive to bring new approaches to composition and arrangement—find new sounds and styles. He has been doing it for twenty years now.

Kenton accompanied each move with forceful publicity, striving to hammer home his message verbally as well as musically. He has not, as far as I know, written a book. Rather better he has set down, in sound, a short but compelling history of his career as a leader.

It fills the opening side (LCT 6157) of a series of Capitol L.P.s, unfortunately available on disc only, *The Kenton Era*. On it he describes with illustrations the phases in his musical life from the formation of his first band in 1941 for the Rendezvous Ballroom, Balboa Beach, on the outskirts of Los Angeles.

"We played at top pitch. We were young and I am sure we wanted to be noticed," he recalled. Even two decades later the same thing almost literally holds true. Everything he does holds a spirit of adventure.

Stan Kenton's records were not generally available here until 1948. Britain soon caught up with the enthusiasm which had swept America. We had the impression that it had been a sensational triumph from the start. This was not so.

"For three years, we had not made much progress, musically or otherwise," he said, and on reflection put it down to "growing pains." The period did, at any rate, produce *Eager Beaver*.

Success, in America, was really his by 1945, when *Intermission Riff* and *Artistry Jumps*, which he wrote himself, established his name and music.

In two years, he had worked himself

to a standstill and went to South America for a six-months holiday. He did not return to resume as before, but to create something new. It was called progressive jazz.

At times the rhythm section was dropped completely. For other numbers, like *Machito*, it was enlarged for colourful Cuban effects. It was exciting, challenging music—and not very commercial.

It did have an enormous influence on jazz—others followed and developed—and ultimately on pop music, too. There are chords on Billy Cotton's broadcasts today that originated with Kenton!

And Kenton? Well, two years ago, he bought the Rendezvous Ballroom as a permanent base for his band.

It seems that he will be best remembered as the man who made sense of searing trumpets, clipped chords, heavy accents, loud and polished dynamics. This is the material that forms the majority of Music on Tape's "Salute to Stan Kenton" (CA 1133, 3 $\frac{3}{4}$ ips; CA 1167, 7 $\frac{1}{2}$ ips, both monaural; CA 1127, 7 $\frac{1}{2}$ ips stereo).

They include *Eager Beaver*, *Intermission Riff*, *Artistry Jumps*, and *Machito*, previously mentioned, as well as Pete Rugolo's *Unison Riff*, *Southern Scandal*, which Kenton wrote, and *Collaboration*, which they wrote together.

Most of the material which won him early fame was written by Kenton or those, like Rugolo, who worked primarily for him. But the band had a distinctive way with standards like Richard Rodgers' *Lover*, as well as *How High the Moon* and *The Peanut Vendor*, both of which have been played by many other groups yet have somehow come to be associated with Kenton.

So much so, that like the original compositions mentioned they have been included on this tape album, which like the other "Salutes..." has already been issued on disc by Colrich Audio.

The performance is very faithful to Kenton's. The solos do not come up to the standard of the originals, but the overall effect and excitement is captured. It is quite a good next best thing, particularly as EMI show no signs of releasing on tape any of the material they have available.

The performance does not reach the same standard on "Salute to Tommy Dorsey" (CA 167, with versions similarly available in monaural and stereo).

A good comparison is the two-volume set recently issued by Top Rank *Tommy Dorsey's Greatest Band* (35/026-7) which consists of performances recorded in the mid-'forties.

(Continued on page 19)

HI! HI! FIDDLE-DE-DEE!

THIS IS HI-FIDELITY

HAVE you noticed this new range of adjectives used to describe new methods of recording? In some ivory tower in Shaftesbury Avenue, a lean, bespectacled, clerical-grey-suited, second-class honours degree graduate sits at a desk, producing phrases like "ultrasonic fidelity," "plus perfectability in sound," and even "you are there in the middle of a one hundred piece symphony orchestra reproduction."

The competition in technical phraseology is a kind of "One Upmanship," I suppose; fools like me continue to buy twelve-inch LPs because we like the picture on the record sleeve.

I suppose that the sense of "presence" will be heightened when the "Be Your Own Conductor" records arrive here from America. Already, in that mighty benevolence on the other side of the Atlantic, there is for sale a long-playing recording of various light classical works, which comes complete with baton, and a guide to conducting. You glance through this booklet, start the record-player, grasp the baton and pretend that you are preparing for the Prom. season.

Of course, you will have to be very careful that the vicar, or your mother-in-law, or your boss, doesn't catch you in the middle of the "allegro vivace."

I once knew a man called Ken, who ran a concert party, and owned a tape recorder way back in the early nineteen-fifties. Ken used to take this recorder to parties with him, and always gained a laugh by having the tape (1,200 ft.) shoot out of the machine and all over the floor.

I do not know how he really managed this, but within a few seconds, magnetic

tape would be around Mrs. Jones' neck, in Mr. Jones' beer, trodden on by one guest, sat on by another, dragged along the floor and tugged, in true pantomime tradition, by Ken himself.

Later, when the tape had been recaptured and thrust into its proper position, he would persuade a number of the guests to sing into the microphone, held tightly in his hand. They, in turn, were usually very eager to hear the result. The tape, when played back, produced a strange sound, rather like a hissing B.R. tea urn impatiently awaiting the arrival of thirsty travellers.

One could just—and only just—detect the sound of voices, and it was quite impossible to identify them, or to guess their nationality. But Ken's beaming smile demonstrated that he, at least, believed this to be the ultimate in reproduction.

The recorders, those gentle people who had anticipated hearing some rich and tender harmony produced by the peculiar blend of their voices, usually adjourned to the bar, where they would ask each other furtively "Is that what I really sound like?"

I suppose that these situations take us this way; my mother, bless her, would not speak for almost a week, after hearing her voice reproduced on a thirty-nine guinea machine for the first time.

I heard the thesis once that our ears are the wrong shape for the best reproduction of sound. I have since consoled myself that my ears are possibly the wrong shape for anything, although I find them useful enough for keeping my spectacles on.

A psychologist might suggest that the

an article

by

David Lazell



fervent pursuit of "hi-fi" is caused by the fact that our parents, whilst we were yet young, would not permit us to shout as frequently and as often as we would have liked. Or that the search for perfect sound reproduction is intimately connected with our own desire for wholeness, for perfection in ourselves.

The suggestion that we like "high fidelity" because we like the sounds, e.g. music, that it creates for us, cannot be accepted by anyone who recognises the complexity of the human mind.

At last, at the age of twenty-seven, and in full knowledge of the magnitude of the step I was taking, I purchased a tape recorder.

It is a fine machine! But every time a new model appears on the market, I read the advertisements carefully, sternly, lest this later arrival should eclipse the tape recorder standing by my book case.

I continue to trouble myself by considering if my machine can give me that "you are there in the middle of a hundred piece symphony orchestra reproduction."

How can I know? I have never been in the middle of a one hundred piece symphony orchestra, although my younger brother once started to learn the trumpet, and, for a few days (until my brother was persuaded to make better use of his time, like going out to the cinema) we all had the impression that a brass band had somehow insinuated itself into our home.

So I will just never appreciate the wonders so graphically enumerated by the copy writer. While he exhorts me to listen to the wonder of "ULTIMATE FREQUENCY RECORDING," I will realise that it's only a 7 in. x 4 in. elliptical, with a 3 in. tweeter thrown in, maybe.

One day, we will all wake up and find that this world of birds and rippling water and laughing children and church choirs and diesel lorries seems to have a lack of balance. Perhaps we had best return to the spring-wound gramophone and the wax cylinder before then.

There was a certain sense of wonder about it all in those days.

Don Wedge reviews two "Salutes" on Tape

(Continued from facing page)

The reason is that there was only one Tommy Dorsey. Kenton wrote for musicians, and his scores could be followed by any competent instrumentalist familiar with the idiom.

No one has yet matched the svelt tone of Tommy's trombone. The band was geared around it, and the leader's forceful personality. Probably without him, it was quite ordinary.

His is a better known story, helped by a biographical film, "The Fabulous Dorseys." One of two brothers, both keenly interested in music as youths, who fought publicly when they sought careers as joint leaders.

Both Jimmy and Tommy reached the height of their profession independently only to come together again shortly before they died, tragically, within a few

months of each other only three years ago.

Tommy, the elder, was probably the more successful and better known. He picked a stream of good singers, including Frank Sinatra and Dick Haymes, to work with him and add to his fame. But he had a great many instrumental hits to his credit over the years. Ten are included on the tape, among them *Opus One*, *Hawaiian War Chant*, *Not So Quiet*, *Please and Well Git It*.

There are also *This Love of Mine* and *I'll Never Smile Again*, which were surely vocal rather than band features—Sinatra, in fact, being a part composer of the former.

A strange thing about both albums is that neither leader's theme tune is included—Kenton's *Artistry in Rhythm* and Dorsey's *Getting Sentimental Over You*.

There is now a thriving International club for those who like

RECORDING

ORGAN MUSIC

ORGAN enthusiasts are found all over the world, their organ interests as varied as the countries they live in. There are those who enjoy the music of the great composers, played on the beautiful concert hall and cathedral organs; others prefer the church organ and the type of music played on them. The popular organ followers, who abound, fall into distinct categories according to the actual instrument they prefer—the theatre pipe organ or the modern electronic organ. Some like both, but the majority prefer one or the other. Then again, there is the enthusiast who enjoys the mechanical organ, of which the most popular type is the well-known fairground instrument.

As a matter of fact, all types of organ lovers seem interested in the mechanical organs.

Now there is a special tape organ club, known as Organ Music Enthusiasts. The club secretary and founder is Carl Williams, of 152, Clizbe Avenue, Amsterdam, New York, U.S.A. Membership applications should be sent to him direct.

In the short time that this club has existed, it has built up a tremendous following. It does a first-rate job in bringing together organ enthusiasts by means of tape exchange. Many of the club members are organists, others are just listeners, but all are active.

All types of organ music are covered by the club: church, concert, theatre, electronic, mechanical and others; in

fact, the club welcomes anyone to membership who has an interest in any type of organ music.

The club supplies a roster containing the names and addresses and specific organ interests of all members, and thus it has been possible for enthusiasts in different countries to exchange talk about organs and programmes of organ music.

Quite a number of members own their own organs—usually of the electronic

sounds of the organ in all its many voices, and from all parts of the world.

Most of the recordings are made personally by members, who, when satisfied that they have captured the required sound and quality, submit the recording to the librarian. It is filed, according to its nature, as an entertainment programme or as an historic example of the type of organ or recital.

The library is trying to build a collection of the theatre pipe organ. Many of these have been removed from cinemas in recent years.

The recordings are available to club members; the member sends along a suitable length of tape for the organ music he requires, together with return postage, and the selected organ music is dubbed for him.

Organ music in the library is building up fast. Many recordings of rare instruments have been donated. The music of certain interesting theatre pipe organs which are no longer in general use is still being sought.

Club members have been able to secure the services of several famous organists to play for recording purposes. The club itself boasts several well-known organists in its membership roster.

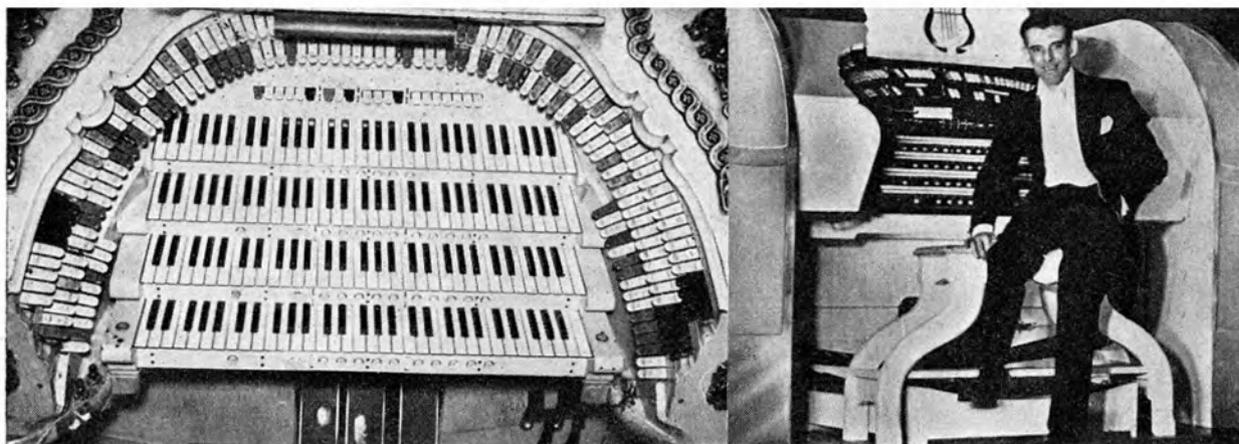
Members in the British Isles wishing to record theatre organs can often do so by joining one of the organ clubs which organise special recitals for club members in cinemas all over the country, usually in the daytime on Sundays. The recitals often feature well-known organists and, providing the club

By
STANLEY R. WHITE

type. Some members have built their own organs, some electronic and some pipe.

It is now becoming commonplace to walk into the house of a popular organ enthusiast, and find nothing less than a large theatre pipe organ. Several of the club members are the proud owners of the famous Wurlitzer theatre pipe organs which once graced the auditoriums of the cinema. A large amount of work goes into moving these instruments, which altogether weigh many tons, from the cinema to their new home.

The club has its own "Organ Music Library," administered by Seward Orton. The aim is to preserve, on tape, the



The manuals, stop keys and pedals of the Wurlitzer theatre organ at the Empire, Leicester Square

Jack Helyer at the console of the huge Conacher organ at the Odeon, Nottingham

photo by courtesy of the Theatre Organ Club

Organ pipes, like those on the right, may look a formidable recording proposition, but the author of this article offers encouragement to those interested in this type of music



secretary, the theatre owners and the organists are approached beforehand, it is often possible for the individual enthusiast to take along his recorder.

The Theatre Organ Club, of 121, Clyfford Road, Ruislip Gardens, Middlesex, and the Cinema Organ Society, of 19, Glanville Road, Bromley, Kent, offer these facilities. For other types of organ music, it is usually possible to make individual arrangements—the local church organist will usually be only too pleased to record his instrument.

Here in England, club membership has risen steadily. Among members we have Gerald Shaw, the organist at the "Odeon," Leicester Square, who often broadcasts on the large Compton theatre organ. We have Hubert Selby, another famous broadcasting and cinema organist, who is Chairman and founder of the British Cinema Organ Society.

American membership includes the internationally-known theatre organist, Billy Nalle, whose album "Swingin' Pipe Organ" (RCA Victor LPM 1521), recorded at the Wurlitzer organ of New York's Paramount Theatre, is sought after by enthusiasts the world over.

Membership in Britain costs 10s. a year, which is used to finance the club journal, "Pipe, Reed and Pedal."

Readers may wonder what kind of equipment is suitable for recording the organ. Almost any recorder, used sensibly, will produce reasonable results. The secret is to avoid overloading of the signal. As long as your magic-eye or meter is kept under observation, so that it can handle the full volume of the organ without moving over the peak signal level, the quieter tones of the organ will record perfectly, and this method maintains the original mood, as played by the organist.

But many members have the finest equipment it is possible to buy.

Come with me to make a recording for the club library. We have chosen a little-known Wurlitzer organ housed in the private theatre of Stanford Hall, Rempstone, near Loughborough. Once a private residence, Stanford Hall is

now a training college for the Co-operative Society.

The Wurlitzer in the private theatre was originally installed in the Madeleine theatre, in Paris, in 1926. It fell into disuse, and in 1938 was brought over to England.

The organ has only two manuals and five ranks of pipes, and has no stop-key lighting. It is the only known Wurlitzer in Europe which has mechanism which enables it to play from music-rolls made by Jesse Crawford and other American organists, over thirty years ago.

With us, to play the organ for recording, is club member Stanley Whittington, an ex-professional organist.

We enter the theatre. The console is on a central lift in the orchestra pit, and the organ chamber containing the pipes and effects is located high in the wall

towards the front of the theatre on the left-hand side. I set up my recording equipment, a Ferrograph recorder, with Reslo ribbon mikes, and try different mike placings, while Stan has a run-through on the Wurlitzer.

Finally I decide upon one mike raised on its stand to about seven feet, placed half-way across the hall from the organ chamber and facing upwards towards it.

The tapes begin to roll and Stanley plays a programme designed to demonstrate the various ranks of pipes, traps and effects. Thirty minutes of recording is then chosen for the tape organ library in America.

Such is the success story of the Organ Music Enthusiasts, a club which has already become internationally known to organ-minded tape recordists. Tape is serving the organs well.

BRITISH AMATEUR TAPE RECORDING CONTEST 1960 AND C.I.M.E.S. 1960

Entry forms and full conditions for the 1960 British and International Amateur Recording Contests are now ready. Write for your copy immediately, in order that you have as much time as possible to prepare your entry before the July 1st closing date.

The 1960 British Contest, divided into seven special sections to cater for every kind of tape recording activity, will be the biggest event of its sort ever organised.

Leading firms in the tape field are co-operating closely and we shall be able to announce shortly the exciting panel of judges and the impressive prize list.

The tape club movement is represented in the organisation of the Contest by the Federation of British Tape Recording Clubs.

Write today for entry forms to British Amateur Tape Recording Contest, 7, Tudor Street, London, E.C.4.

TAPE TITTER



"I think it's very life-like of you, dear."

GEORGE POLLOCK tells you HOW TO GET QUALITY RESULTS

Try to find another tape-recording enthusiast residing in your area; this way you can get together and help each other to edit and transcribe tapes. You will have two machines to work with, instead of one. Preferably, they should be of the same manufacture.

Use one channel only of each tape for important recordings. These can be edited and kept complete; the second channel can be used for those odd recordings. Keep an index of your recordings; most tape containers help you to do this.

Learn to use a splicer; this is quite easy. Most of us at some time or other have a broken or damaged tape which has to be joined, and we need to edit some tapes.

Never place the microphone on the same table as, or too near to, the tape recorder. If possible, place the microphone on a rubber or other soft pad about 6 to 8 feet away; this avoids those irritating and unwanted footsteps and other noises, especially hum, that so often spoil home recordings.

Clean your tape-recorder as often as you can. A damp, but not wet, cloth will do for most decks. The heads can be cleaned with methylated spirit; never use carbon-tetrachloride or

acetone fluid. The spools can be washed too. This all helps to get good service and recording, for it keeps dirt away from the heads and, incidentally, prolongs their life.

Demagnetise the heads with a defluxer. Again this helps to produce good recordings, for it ensures maximum signal/noise ratio, and protects recorded tapes from accumulative background noise, and the gradual attenuation of the higher frequencies.

Storage temperature of recording tape should be between 60 to 70 degrees F. Store away from even slight magnetic fields to minimise print-through. Never store your tapes in a wireless cabinet, near an amplifier or a fireplace, because of heat.

When recording or replaying your tapes try to use two spools of the same dimensions, e.g., two 7 in. or two 5 in. This avoids tape spill and damaged tapes.

Finally, a word about the crystal microphones which are supplied with most popular recorders. These, in general, should not have long leads. Eight to 12 feet should be about right, and the lead should be of the screened variety. Longer leads introduce hum. When speaking into a crystal microphone, keep it about 10 to 12 inches from your lips, and speak normally.

Basic Advice for Beginners

A. WOOLGAR suggests

TEN GOLDEN RULES

- 1 *Rewind all reels of tape before use to check that any joins are sound.*
- 2 *Have your spare reels of tape ready "laced up" to empty spools to avoid those frustrating moments trying to "wind on" between items.*
- 3 *Label all reels clearly after recording; a "Chinagraph" pencil will write easily on plastic reels.*
- 4 *Check that the capstan rollers and tape guides are free from any deposit, which could cause the tape to stick and so induce serious "wow".*
- 5 *Don't risk using an untried brand of tape for an important recording session; test it thoroughly on your own machine first.*
- 6 *Record some "audience noise"; it can prove very useful in helping to prepare an edited tape of the event, being suitable to link gaps, etc.*
- 7 *Use a small "neon" screwdriver to check that the "live" terminal of the mains outlet is correctly wired. Attention to the above may well avoid risk of "hum", especially if only two-core cable is fitted to your recorder.*
- 8 *If an earthed power point is not available, never earth to gas piping, as each section should be insulated from the next, and so you will get more noise on the recording than with no earth at all!*
- 9 *Lay all cables neatly, as far away from main gangways as possible, so that you won't trip up!*
- 10 *Don't have the mic. too far away from the sound source, as the extra "gain" needed for recording will increase the background noise too much.*

EQUIP YOURSELF PROPERLY WHEN YOU GO TO RECORD

WE ASKED THREE "OLD HANDS"
AT TAPE RECORDING WHAT TIPS
THEY COULD PASS ON TO THE
NEW-COMERS TO THE HOBBY.

By John Berridge

HOW many times have you happily carted your recorder and all your gear somewhere to make a recording, only to find either that you hadn't got enough cable or that your mains plug was the wrong kind? The remedy is to indulge in some preliminary planning.

The technique of making good recordings consists not only of the recording itself, but also in having the right equipment for a given situation. There are only two ways of being sure of that.

The first is to carry every piece of equipment you possess, and use only what you need. The second is to size up the situation in advance. From past experience, I'd suggest you try this one whenever possible.

A preliminary visit, several days in advance, to the place and the people you hope to record helps in a number of ways. You are more likely to get permission to record if you first show up without a load of equipment, and also people will know who you are when you come along a second time and won't ask too many questions. In addition, you'll have time to look around, find out where the nearest mains outlet is and what type, and where you can place your gear.

The mains socket situation causes as much trouble as anything in this country. The best way out is to keep one kind of plug on the recorder cable (and any other powered equipment you may be using) and to make up short adaptor cables to cover different contingencies. One end of these cables will, of course, have a socket to match the plug on your recorder and the other end has a plug to match the local mains outlet. Don't make up a whole bunch of adaptors at once; do it only as you need them.

If you need extension cables, and you probably will, make them in different lengths. Nothing is more infuriating than to have to uncoil 100 feet of cable when you only have to stretch ten feet. But start with a 100 feet length, and then make the shorter ones. Better too long than too short.

If you are using extension cables for the mains, buy the three-core heavy duty type and limit yourself to fifty feet. Even if your recorder is unearthed, the cable can be used for other equipment which may be.

The reason I suggest limiting the mains cable is that if you are using much equipment on the end of it, the voltage drop may be rather high and your recorder will fluctuate in speed rather badly. It is far better to use long runs of microphone cable.

This, of course, is a matter of personal preference, since using high-impedance microphones can limit you to about 25 feet. If you wish to invest in a good quality low-impedance mike and a matching transformer, however, I think you will find your set-ups to be much simpler and easier. If you make up extension cables for a low-impedance mike, use two-core shielded cable and three-pin plugs and sockets. You will get your investment back in hum-free operation, a big problem when you have long runs of cable. Again, make up the longer lengths of cable first.

You can, of course, stop right there and still go out and do a lot of your recording without having any trouble. But sooner or later, you will run into difficulties and they become all the more infuriating because they would be simple to fix if only you had some tools. Carry some with you.

A pair of pin-nose pliers, a small four-inch adjustable spanner, and one of those electrician's screwdrivers with half a dozen different blades will cover almost every mishap. Added luxuries could include a small soldering iron (with solder) and a small multi-meter. You can usually get by, however, without the latter.

It is a well worth-while expenditure to get a pair of high-quality headphones for monitoring. There are quite a few occasions when it is difficult to use the recorder speaker for this purpose, because of the noise it would make, and

recordings can be improved a great deal if you are able to hear what is going on. Spare no expense, since a cheap headset will not give you a true idea of the quality of the sound you record. You will probably find that, for most jobs, your headphones will be your biggest investment.

A large roll of electrician's tape (preferably) or masking tape will prove exceedingly useful for a number of different purposes, not the least being to tape up cables out of other people's way. A word of warning: do not tape the microphone and mains cables together, or even lay them side by side. That is the best way to pick up hum.

Never go without a tape splicer and either some splicing tape or jointing compound. A broken tape on a job can be disastrous and a fast repair is easy, and useful for raising your prestige in the eyes of interested bystanders.

A large rubber grommet or foot forced over the handle of the screwdriver will turn it into an excellent rubber hammer, ideal for tapping suspiciously noisy components in your recorder.

As for the tape itself, if you have a bulk eraser, erase all the tape before you leave home. Then you won't have to worry about double-recording or other spurious background noises on a valuable recording.

You would be amazed, too, how many people have been frustrated by not having enough tape to finish their recording! Stick to the bigger reels of tape and carry one or two more reels than you think you will use. You can always use them again some other time.

Don't forget a notebook and pencil; memory can be treacherous when it comes to remembering all one has recorded.

The only other item worth adding to the list is a box or case in which to carry microphone, cables, boxes of tape, etc. About the cheapest, and incidentally the best, way to get hold of a sturdy carrying box complete with handles is to hunt through the surplus stores. War-time transit cases seem to be ideal.

Almost any of the items on my list could safely be left out without unduly jeopardising one's recordings. Strangely enough, I have had occasion to use all of them at some time or another, and, without them, I feel unprepared.

Sound Effects

ONE of the easiest sound effects to obtain in Location Recording is that of **STREET NOISES**. There are three angles to this: road-traffic noise (vehicles, etc.), pedestrian-traffic noise and general street-noises, which are a balanced mixture of the first two.

Let's take road-traffic first. This is best recorded from a fairly high point well above street-level and your best bet would be to obtain permission to use either the first- or second-floor window of a building overlooking a busy shopping-area. I have heard it argued that recordings taken from above street-level in this way have no character, sounding flat and monotonous. In my experience, this argument is completely unfounded.

Granted, the sound is more uniform in content when heard from above; but I can assure you that this is infinitely preferable to wandering along a busy street with a portable tape recorder and trying to cope with the welter of sudden and unexpected noises coming from all sides at once!

Choose a time of day when people are either going to or returning from their work; this ensures a plentiful supply of road-traffic. You'll find that two recordings, one being superimposed over the other, gives the best results. This is because during the first run there will be times when all traffic appears to have come to a permanent stand-still. In this event, the second "take" can usually be relied upon to fill in the gaps.

A passing motor-cycle provides a reliable yard-stick for your gain-control setting and once this has been determined, *leave it alone!* This is important because, in these circumstances, a recording-level can play some very queer tricks and it's so easy to be fooled into believing that a little more gain is called for when, in fact, the machine is coping quite favourably.

I have known the constant roar of a steady stream of heavy-goods vehicles to produce barely a flutter from the recording-level, yet, on play-back, heard it reproduced almost at full volume!

Resist the temptation to take "snapshots," there's really no point in it. By this, I mean should you notice a smart, little ultra-modern sports-car just about to pull away from the kerb beneath the window, don't try to bring the sound into prominence with the idea of giving character to the effect as a whole. The ratio of sound between the car-engine and the accompanying street-noises will remain constant whatever the gain-setting, and if the effect is to be used afterwards for "dubbing" purposes, you'll need to drop the gain at that

particular point to compensate for the sudden rise in the general volume level, which leaves you where you were in the first place!

Individual car-effects, if needed, are best recorded in a quiet side-street and then mixed-in to the effect proper in the appropriate place.

PEDESTRIAN TRAFFIC is a simple proposition. Whereas road-traffic effects are recorded from above ground-level, I find that the best position from which to record pedestrian-traffic is *below* ground-level.

In every town, there are factories of some kind and, inevitably, a street nearby which, although devoid of heavy road-traffic, is used at least twice a day by the workers on their journeys to and from the factory.

A basement or cellar having a window open to the street is an ideal recording-spot for this effect, with the microphone suspended from the wall a little to one side of the window itself. If the pause-control is operated upon the approach of the odd motor-car or motor-cycle and the spool wound back by hand for a half-turn, the tape can be re-started again after it has passed with almost no noticeable break in the continuity of the effect. Again, as in the previous effect, a "double" recording will give a better result than a single effort.

By the way, if your machine has two speeds, try recording the *first* impression at double-speed. I mustn't be too emphatic about this trick because it doesn't always work out, but in some cases it will provide a nice, steady "background" for the second "take."

Our regular contributor **ALAN EDWARD BEEBY** offers further advice on location recording out of doors. If you have a sound effects problem, write to him, c/o Tape Recording Magazine.

GENERAL STREET NOISES are, of course, a product of the mixing-deck, being simply a run-together of road and pedestrian-traffic effects. The chief thing to aim for is a natural balance between the two. An uneven but gentle "see-sawing" of the mixer-controls usually does the job. Straight-through "dubbing" from one recorder to another is a little more difficult owing to the internal speaker cutting-out on superimposition work; nevertheless, it is possible to obtain a satisfactory degree of synchronisation by using the digital-counter.

Which leaves just about space to deal, briefly, with another Location Effect which is equally useful in either the dramatic or documentary field, that of **CHILDREN AT PLAY**.

An application to your local Education Authority will normally bring permission to take your recorder along to the nearest school during "play-time." Other than this, there are no real problems attached to this particular effect.

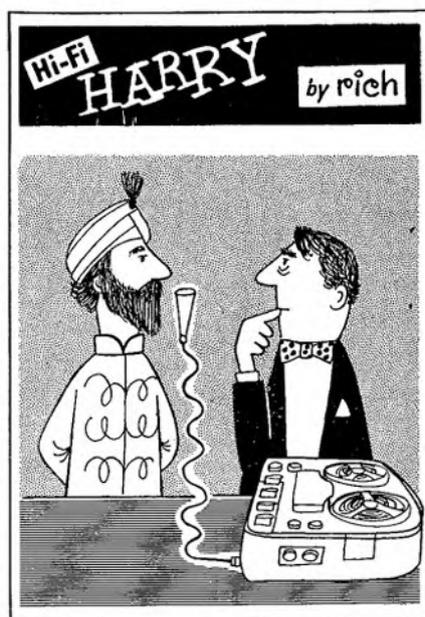
Quite a number of schools have a tape recorder of their own nowadays, in which case, you might safely leave a spool of tape with a co-operative Headmaster who will have the whole thing ready for you to collect inside a day or two.

My own stock of "children" effect is divided into five parts — cheering, laughing, shouting, booing, and singing — each lasting for about thirty to forty seconds, except for the song, which is sung complete.

The effect is best recorded out-of-doors; the weird things fifty child-voices raised in unison(?) can do to room-acoustics is nobody's business!

If you have to record the effect yourself, this will probably mean that the school does not own a machine and, consequently, the sight of one in operation may prove to be something of an awe-inspiring novelty. Try, therefore, if you can, to keep out of sight with your equipment, behind an open window, for instance. Children will react far more normally when not distracted by anything which arouses their curiosity.

And . . . don't forget to play it back to them when you've finished or the poor old Headmaster will never hear the last of it!



INTRODUCING—YOU, THE READER

MET yourself, dear reader, face to face. What a splendid, enthusiastic, versatile, interesting chap you are. What determination you show in seeking the utmost satisfaction out of your tape recording and high fidelity reproduction. What aspirations you nurture for the future.

I have been wallowing in a vast pile of completed questionnaires which you have been kind enough to fill in and send to me. They have provided a mass of fascinating detail. It will take me all my leisure time for many weeks to digest it all and to make all the deductions which are possible.

Meanwhile, I hope you will be interested in a few of the facts we have established.

Firstly, you will have noticed that I equated the words "reader" and "chap" in my opening paragraph. We must face the fact that we are overwhelmingly a man's magazine. We have, I know, many charming ladies among our readers (and a number among our valued contributors), but they have been bashful about filling in the quiz form.

As I wrote in the last issue, there is, in fact, no average reader.

* * *

Take the question of AGE. The tape recording enthusiasts who read this magazine are spread across all Shakespeare's seven ages of man. Some who sent in forms were not content simply to tick their appropriate age group: they wrote in that they were schoolboys or old age pensioners.

In fact, out of every 100 of our readers, there are 17 who are under 20 years of age, 37 who are between 20 and 30, 21 who are between 30 and 40, and the remaining 25 who are over 40.

Of every 100 readers, 55 are single and 45 are married.

From these figures, I think we can safely assume that the appeal of tape recording persists as men grow older, but those who are in the early period of setting up a home find it more difficult to spare the necessary money.

And what about money? Is tape a rich man's hobby? On the contrary, the majority of enthusiasts earn average wages and salaries. Seventy-one out of every 100 readers earn less than £850 a year (£16 7s. a week).

But, just as men of all ages are interested, so are men of all social classes. Fourteen of every 100 readers earn between £850 and £1,200, five others earn between £1,200 and £1,500, and a fortunate five more earn more than £1,500. In other words, about a quarter of our readers have more than £16 7s. a week coming in.

Their interest in tape and hi-fi has been long-standing. Fifty-six in every 100 have been interested for longer than two

The Editor, still wading through the avalanche of quiz forms completed by readers, offers this report on the sort of people you are, on your tape and hi-fi activities—and your plans for the future.

years. But eight in every 100 have been new recruits to the hobby during the last six months.

Their allegiance to this magazine shows a slightly different statistical pattern. We have a hard core of loyal readers—25 in every 100 have been with us since we started over three years ago.

Thirty-five others have read *Tape Recording* for over one year.

But, and this is what particularly pleases me, we are winning new readers at a faster rate than the newcomers are taking to hi-fi and tape. For 40 out of every 100 of our present readership have turned to this magazine for information and guidance within the last twelve months. They are turning still.

I can now tell you something about yourselves that I found surprising. *Only 20 out of every 100 readers belong to a tape recording CLUB, and only 30 out of every 100 do any TAPE-SPONDING.*

Almost half of you have managed to get to an audio fair, to the Audio Hall at the Radio Show, or at least to a local exhibition of tape and hi-fi equipment. But the other half have not, and you depend on the printed word.

* * *

What about the equipment you use?

Almost every reader has a mains recorder. Seven in every 100 have two mains recorders, and 16 in every 100 now possess both a mains and a battery machine.

And you go for the best you can afford. Over a quarter of you have machines that cost more than £90—an astonishing proportion, I think.

What about STEREO? Of every 100 readers, 17 have stereo tape facilities and 13 have stereo disc equipment.

What other equipment do you use? Of every 100 readers, 67 have disc-players, 45 have additional microphone(s), 44 have tuners, 67 have extension speakers, 31 have mixers, and 58 have splicers.

And are you satisfied with all this equipment you have?

Well, 55 out of every 100 of you are; but the other 45 are not. As I say, you are obviously men of hopes and aspirations, striving for perfection.

And you are ready to share your dreams with others. During the last year, 83 out of every 100 of you have given advice, when asked, to friends who are thinking of buying equipment.

Thirty-four of every 100 of you are contemplating buying a new recorder for yourselves during 1960.

There was one section of our quiz form which I read with apprehension. We asked you to state your preferences in reading matter and to suggest ways of improving *Tape Recording Magazine*.

That was inviting trouble; but I am delighted to say that we have not met it. Three or four who filled in the forms apparently didn't think much of us—but no-one used such language that I had to hide the forms from my children.

And, on the other hand, over and over again, there were unrestrained congratulations. "Excellent magazine—the best", "It could not be any better", and "carry on the good work"—these were typical comments. And, over and over again, readers urged upon us the idea expressed by a friend in Cambridge in these words: "Monthly—good; fortnightly—better; weekly—excellent."

Well, we would like it to be weekly. But that cannot be yet.

* * *

Let me conclude by saying that I do not agree with those who kindly said we could not be better as a magazine. We can, and we will be.

We have had several hundred valuable and constructive suggestions for improvements offered for our consideration. They are being considered now. Steps have already been taken to meet some of the points made.

But it is clear that we must not alter the basic pattern of the magazine. There are as many readers who want good technical reading as there are who insist that we retain a clear, simple language and a presentation suitable for beginners.

We have got to please all of you. We shall keep the balance, therefore, much as at present. But there will be improvements all round.

To cite one example, our test-reviews of equipment are among the most popular features in the magazine. In future, therefore, there will be more of them and we shall endeavour to deal with the latest models introduced to the market.

We are very grateful to all those who took the trouble to complete the thirty questions in our quiz. It was a striking demonstration of your enthusiasm. Now we shall do our part by an intensified effort to produce the sort of magazine you have told us you want.

THE drive to the take-up spool provided one of the greatest problems of the whole deck. After much thought, I decided that the only possibility was to take a drive from the large gear which drives the capstan shaft (top left of the photograph).

I had an aluminium pulley made of a diameter slightly less than the gear and 3/16 in. thick, carrying a U-shaped groove 1/8 in. wide.

The spindle carrying the take-up spool has its top bearing fixed to the deck and its bottom bearing on a small triangular aluminium plate carried on three spacers. A collar fixed to the spindle rests on the bottom bearing and thus carries the entire weight of spindle, pulley, spool and tape.

By relying on this one bearing, friction loss is reduced to a minimum; bearings and collar are of brass, while the pulley and the spool rest, both fixed with grub screws, are of aluminium. This assembly can be seen in the photograph on the opposite page.

The size of the pulley on the take-up spindle is important. I always use E.M.I. 5-inch spools, the centre core of which have a smaller diameter (1 1/4 in.) than the capstan (2 in.) This means that, in order to ensure the initial take-up of tape, the spindle must revolve at a higher speed than that of the capstan.

The diameter of the driving pulley is slightly smaller than that of the gear driving the capstan shaft, and so I was careful to make the driven pulley on

DEVisING THE TAPE TRANSPORT

By **RICHARD A. MARGOSCHIS**

the take-up spindle smaller than the driven gear of the capstan shaft.

The result is perfect take-up from the very beginning of the tape.

But my troubles with the take-up drive were not over, for obviously, as the tape increases on the take-up spool, the required r.p.m. are reduced, and some form of slip must therefore be introduced into the drive.

Before going into the problem of making a slipping clutch, I experimented with a slipping belt. The first belt I tried was of the spring wire type, as used on cine projectors. This drove an empty spool perfectly, but when slip was neces-

sary the drive became erratic, due to the springiness of the belt—to such an extent that it affected the motor speed.

My next attempt was made with a leather boot-lace joined with a small wire clip. In order to give the correct direction to the spool the belt had to be twisted and, although the slipping quality appeared correct, the joint gave continual trouble; a joint made of flexible wire was no improvement.

The only answer was to cut out an endless leather belt, and to do this I used good quality plyable leather, cut from the side of one of my wife's discarded handbags—with her permission, of course!

The top plate had to be removed from the motor in order to slip the belt over the

How literary societies can use tape

F. J. G. Hodge describes the success of a lecture which he pre-recorded

MY three hobbies are reading, writing and recording. Recently I had the opportunity of combining all three when my local Literary Society invited me to present "An Evening with Dylan Thomas."

I decided to tape the lecture, so that the various readings and extracts could be prepared at leisure and in the familiar surroundings of my own home, thus lessening the dangers of butterflies in the tummy and stumbling delivery on the night.

Being a Dylan Thomas fan, I wasn't stuck for material to use—the question was what to leave out, rather than what to put in.

I had an idea of the shape I intended to lecture to have. It was to be in six parts: introduction, biography, poet, lecturer, dramatist, and then a finale. The whole lecture was to last seventy minutes, and each section was to be a

separate "watertight" compartment, and to be recorded as such.

A few bars or chords of harp music were to be used to divide the sections, to give my audience coughing and chair-scraping space.

A script to link the sections and to introduce the readings was prepared. Having collected the material together from various sources, I started the actual recording—and the fun started. After one particularly trying passage was practically "on tape"—only two more sentences to record—a gang of children came whooping into the drive, playing cowboys and Indians. On playback the whoops and war cries were a not-so-muted background to a moving eulogy on Dylan Thomas. The next attempt found me stumbling over a sentence which included the words "... girl in an enormous bathing suit. . . ." Try saying or reading the phrase in such a way that the result is loud and clear!

I used five-inch spools and a speed of

3 1/2 ips, having in mind the convenience of other recorder users who had asked to borrow the tape at a future date. This meant that there would be a short break while I changed the spools over, and this was used to give the members a chance to ask questions about what they had heard up to that point.

At the meeting when the tape was ready for presentation, the chairman of the Society called upon me, I got up from my chair, raised the lid of my tape recorder, pressed the playback button, and sat down. Apart from an occasional twiddle of the tone or volume controls, I sat back and watched the reactions of my listeners.

I had enjoyed preparing the "Evening," and it seemed that the audience were enjoying listening to it. They have even invited me to give a second hearing in the autumn.

One result of my efforts is that the use of tape in the Literary Society's programme is going to increase. Future projects include play readings, poetry readings, prose readings, literary discussions and quizzes, as well as interviews with authors, booksellers and bibliophiles—all presented on tape.

My three hobbies are reading, writing and recording—it looks as though I am going to be kept busy.

driving pulley, but it was well worth while, for the resulting drive was smooth and even. I discovered, however, that when the take-up spool was over half-full of tape, the tension on the belt was insufficient to overcome the inertia of the spool, and the belt simply slipped around the pulley. This was overcome by adding an adjustable jockey pulley to increase the tension on the belt as required.

One fact worried me about this endless belt; if it broke, it would be necessary to strip down both the deck and the motor to replace it. Soon after the completion of the machine that belt *did* break, but before stripping down I decided to have another try with a jointed belt. I split a leather boot-lace down its length, pierced each end with a needle and threaded it around the pulley. The *joint* was then made with a very small staple from a paper stapling machine. Careful adjustment then provided a satisfactory drive and obviated the snag of a broken belt.

My attention was next given to the spindle to carry the reservoir spool. The fact that I was not providing any fast forward or back wind eliminated the necessity for any braking system, but obviously some constant brake must be applied to the reservoir spool in order to put just sufficient tension on the tape arriving at the record head. The method first tried is indicated in Fig. 1.

The spindle runs in an "oilite" bearing, mounted in a boss which is bolted to the underside of the deck. The bearing protrudes through the deck $\frac{1}{4}$ -inch and the spool rest, of aluminium and turned up on the spindle, rests on this top surface of the bearing. A shallow reveal is machined in the side of the spool rest and its surface is polished; this acts as a braking surface.

Two collars, A and B, are fitted nearby. A is secured to the deck by a 4 B.A. bolt and nut, while B is similarly secured to a short arm situated below the deck, and can move freely. The end of this arm coincides with a slot cut in the deck and a 4 B.A. thread on a knurled knob, C, passes through this end and is threaded into the lever.

A length of narrow webbing, which was soaked in liquid paraffin and allowed to dry, is attached to collar A by means of a 6 B.A. screw, passes round the brake drum and is similarly attached to collar B. Rough adjustment is made by turning collar A and tightening down; very fine adjustment of the tape tension is then possible by movement of the knurled

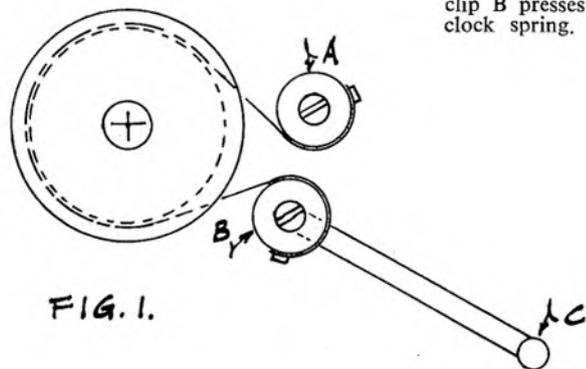
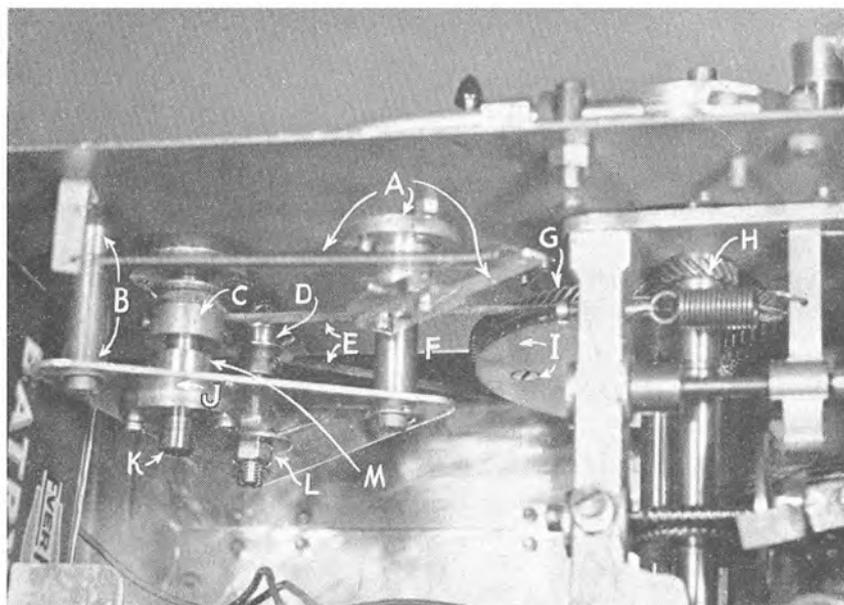


FIG. 1.



THE TAPE TRANSPORT. Key—A, Bearing arm and spring for spring-loaded tape guide; B, spacer; C, driven pulley; D, tension pulley; E, drive belt; F, drive; G, capstan drive gear; H, capstan shaft; I, take-up drive pulley, screwed to gear; J, bearing; K, take-up shaft; L, adjustment; M, collar

knob C, which rotates the collar B and increases or decreases the braking power of the webbing, the lever being held in place by tightening knob C.

This method worked very satisfactorily until the dry weather of the summer came to an end, and then I found that the deck would not run properly because the brake was binding too much, due evidently, to shrinkage of the webbing in a damp atmosphere. By this time I had also discovered that, when coming towards the end of a tape, spilling tended to occur when the machine was stopped, due to the tension brake being insufficient to stop the increased speed of the reservoir spool.

I redesigned the brake as indicated in Fig. 1A, and by extending the boden cable included a brake which is now applied by the stop-start lever of the recorder.

A piece of clock spring is fixed at one end by the clip A and, at the other end, carries a small pressure pad which is in contact with the brake drum, in the place previously occupied by the webbing. A 6 B.A. screw threaded through the brass clip B presses against the centre of the clock spring. Very fine adjustment of

the brake applied can now be made by adjustment of the screw, which is then locked up with a nut.

The boden cable is extended from the slide bar carrying the pressure pads (Fig. 1A.) in a sweep around the brake drum and held by clip C, the inner cable being attached to the arm D. This arm is made of 18 gauge aluminium and is pivoted at E.

Another piece of clock spring fixed to it holds a pressure-pad against the drum. The spring F ensures the removal of the brake when the deck is started. The automatic application of the brake has prevented any spilling of tape when the deck is stopped.

The lay-out of the spring motor—the position of the capstan, power take-off for take-up spool and the winding handle—indicated quite clearly that the run of the tape should be from right to left. This is, of course, the reverse to normal British practice, but, aligning the heads to the bottom track, standard recording is achieved.

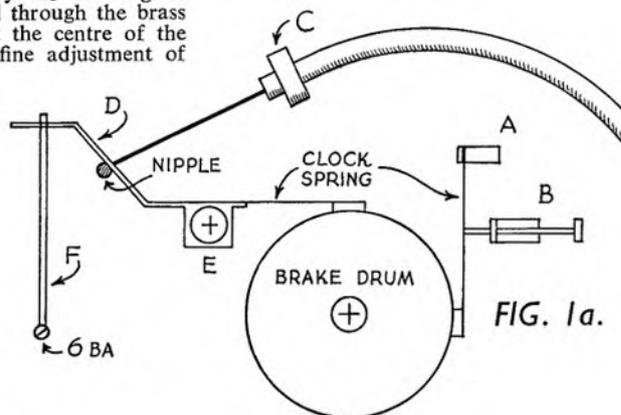


FIG. 1a.

TAPE TO DISC SERVICES

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

SSS Private gramophone record 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 Leviss, Sunderland Sound Services,
28, Viewforth Terrace, Sunderland S7032
▪ If you can hear it—We can record it! ▪

RAPID Recording Service

78's and L.P.'s from your own tapes.
Master Discs and Pressings.
Recording Studio
equipped with Bechstein Grand.
Practising studios
with or without accompanist.
Mobile Recording Van.
"Off the Air" Service.

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

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, "Deroy" Sound Service, Little
Place, Moss Delph Lane, Aughton, Orms-
kirk, Lancashire. Tel.: AUG 3102

When writing to manufac-
turers for information about
new products, please mention
that you "saw it in Tape Re-
cording and Hi-Fi Magazine"

The New Decks

THE WEARITE SERIES 4

By H. Burrell Hadden

THE "Incomparable Ferrograph" is a phrase known to all tape enthusiasts from the advertisements for that excellent tape recorder. The Wright & Weaire "tape deck" is the basis of this instrument, and the latest series 4 model of this deck is the subject of this review.

It is significant that the tape deck has changed but little in the many years it has been available. It says much for the original design that it has maintained its pre-eminent position in the face of increasing competition, both from this country and abroad, and is still in the forefront of domestic and semi-professional equipment throughout the world.

The deck is available in several versions, the one sent for review being the model 4A/N. This, as do all the versions, runs at either of two speeds, in this case, 3½ ips and 7½ ips, and is fitted with erase head and record/playback head for normal half-track working. The model 4AH is exactly the same, except that it is arranged to run at 7½ ips and 15 ips.

Both these models have provision for a third head, either a head for monitoring a recording whilst it is being made, or a stereo head for record/playback on two channels. These heads can easily be mounted by removing a plug-in dummy head fitted to the machine, and replacing with the desired head. Wiring is already provided to take away the necessary connections beneath the deck.

An excellent and simple means of accurate adjustment of the gap azimuth of the third head is provided and it is a pity that this has not also been provided for the normal record/replay head. The method of adjustment on this head is more difficult and not nearly so precise.

The deck is powered by three motors, two of the induction type mounted on the take-up and supply reels, and a synchronous motor driving the tape capstan. The capstan itself is mounted on the shaft of a heavy flywheel, which is driven from the motor via a neoprene idler wheel. This bears on a two-step pulley on the motor shaft, and the speed changing gear selects which of the two steps is to pro-

vide the drive. The motor is thus flexibly coupled to the capstan itself and this, in conjunction with the heavy flywheel, is the secret of the low wow and flutter performance of this machine.

During record and replay, both the tape reel motor are energised, the feed reel motor driving at reduced power in a clockwise direction, that is, in the opposite direction to the tape travel. This effectively keeps the tape in tension between the two reels, and helps to keep it lying closely against the face of the heads. In this some assistance is rendered by felt pads pressing the tape on to the head faces.

On fast forward or rewind the appropriate reel motor is energised, and the brakes are removed from the opposite hub. Rewind is very fast indeed, being approximately 50 seconds for 1,200 ft. of standard tape. This machine will take spools up to 8½-in. diameter and such a spool loaded with 1,750 ft. of standard tape still takes under one minute to rewind. Some sacrifice has to be paid, however, for this high speed, and in this case it is that the wind is not very flat, which could result in the edge of the tape being damaged if the rewound reel is carelessly handled.

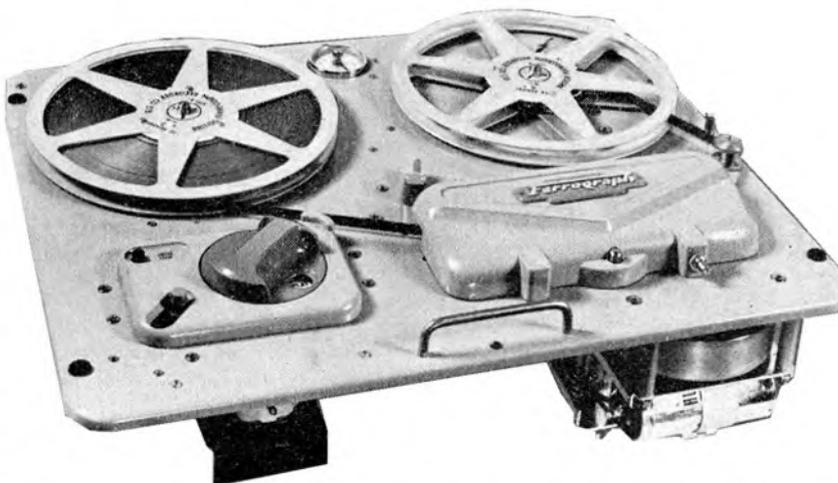
Lacing the machine with tape is a very simple operation, the head cover lifting completely clear of the heads, pressure pads, and capstan/pincer wheel assembly. This also simplifies marking the tape for editing purposes, a facility too seldom found in domestic equipment.

A very easily read tape position indicator is provided, driven by a worm gear from the take-up spindle via a flexible shaft. This indicator is of the clock type, and has two hands moving over a circular scale calibrated 0-10, with each unit sub-divided into ten smaller divisions. Each small division corresponds to one turn of the take up reel, and so accurate cueing of the tape is possible.

A small button is provided on the head cover enabling the tape to be halted without switching off the motors, so that a pause can be made if required during recording or reproduction. On releasing the button the tape regains operating speed almost instantaneously.

The actual starting and stopping of the machine is accomplished by two controls. The start control is a lever, which makes

Three views of the Wearite Series 4 tape deck. Right, a general view. Centre, showing head and capstan assembly. Bottom, a view from underneath



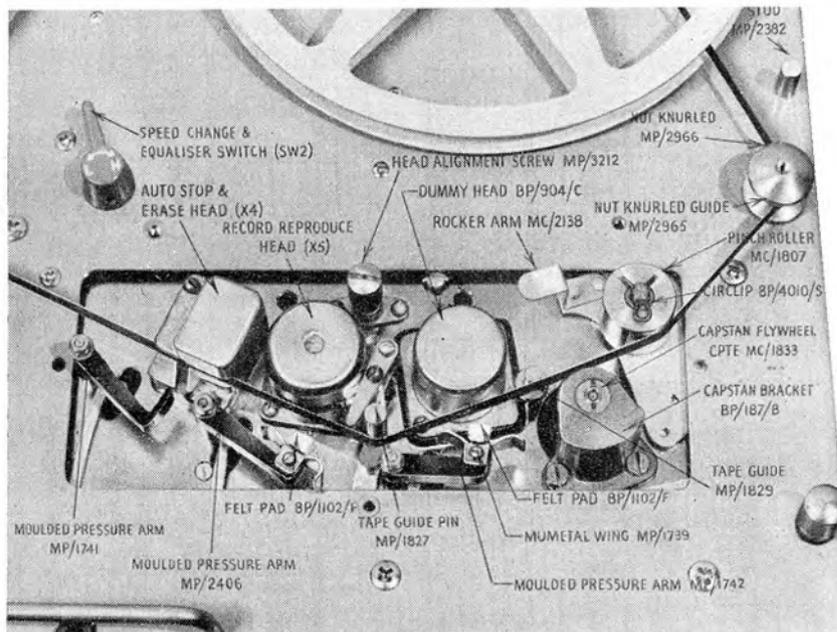
the motor switches and removes the brakes from the tape reels. This lever is spring loaded, and is held in the "on" position by means of a solenoid operated from the amplifier H.T. supply.

Switching off is accomplished by a small button which shorts this solenoid, allowing the spring to return to the start lever. This ingenious device ensures that the motors are switched off and the tape reels firmly held when the amplifier is switched off. An automatic stop is provided which switches off the motors when the tape comes to the end of the reel.

The functions of Record, Fast Rewind, Fast Forward, and Play-back are controlled by one knob which has been restyled in the Series 4 deck so as to be easier to turn. This knob, in addition to operating the tape gate levers, and arranging the motor switching, also carries switches for arranging the amplifiers for record or play-back. These switches are already wired, and tag strips on the main plate of the deck are provided for connections to the amplifiers. The speed change switch carries a wafer for selection of the appropriate equalisation.

On technical matters, careful tests established that the maker's specification was met in every particular, and this specification therefore gives the expectation that a tape recorder based on this deck will give superlative results.

That this deck is used by many professional broadcasting and government organisations throughout the world should be a good enough recommendation for the most critical tape enthusiast. It is supplied in an excellent protective packing case, complete with a reel of tape, and an instruction book which gives complete details of a suitable amplifier. At £36 15s. for the basic model 4A, it is cheap at the price.



MANUFACTURER'S SPECIFICATION

Attainable frequency response, 50-12,000 cps ± 3 dB at $7\frac{1}{2}$ ips, 50-6,000 cps ± 3 dB at $3\frac{1}{2}$ ips (50-16,000 cps ± 3 dB at 15 ips for the 4 A/H model).

Recording head impedance, 12 K ohms at 10,000 cps.

Recommended erase and bias frequency, 53,000 cps.

Erase head impedance, 160 ohms approx.

Erase voltage, 25-35.

Playing time per track 90 and 45 minutes per track with 1,750 ft. standard tape.

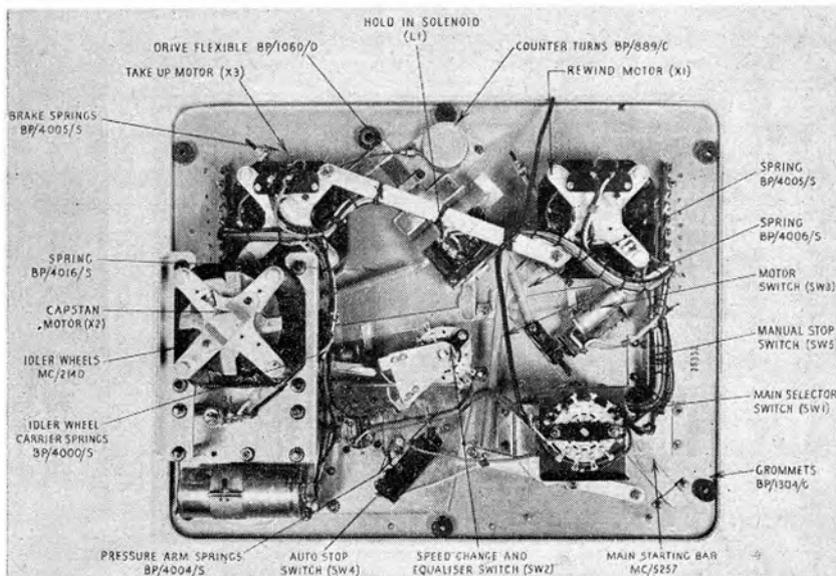
Rewind time, less than one minute.

Wow and flutter, not greater than 0.2 per cent at $7\frac{1}{2}$ ips.

Long-term stability, better than 0.5 per cent.

A.C. line voltage, 200-250. Power consumption, 57 watts.

Dimensions, $16\frac{1}{2}$ x 13 x 1 inch above deck and 6 inches maximum below. Weight, 18 lb.



I HAVE been trying out an Emisonic Orthotone 555 Stereo Integrated Amplifier in all kinds of combinations under operational conditions, and I have decided that I am very much in favour of the flexibility it provides and the ease with which one can keep track of what is going on.

It is first and foremost a magnificent audio instrument with a performance as high as any normal enthusiast can desire. Its total output of 20 watts (10 on each channel), enables it to handle whatever comes along with supreme ease. It would give a good account of itself in a large hall if necessary, I am sure, but it is, nevertheless, primarily designed for home use.

The 555 is a joy to look at and has won the admiration of some very fastidious interior designers to whom I have shown it. Resting on a shelf it has an air of relaxed, unostentatious efficiency that is perfectly suited to this modern age. Normally I am inclined to favour the concealment of equipment as much as possible, but in this case I decided it would be a pity not to let it have a full quota of limelight—and in this I have the warm approval of a wife who is uncompromisingly opposed to all "hi-fi clutter."

The 555 has 17 front panel controls, counting the three dual concentric knobs as two each. There are always people ready to produce the argument that such a number is more than the average person wants to cope with. This argument, to my mind, is irrelevant "shop talk." Such instruments as the 555 are intended and bought, for years and years of service. What does it matter if the first few seconds of one's acquaintance with it are a little bewildering? After the first week anyone of normal intelligence will be perfectly at home with every important aspect of

Seventeen controls—and I'm all for it

the 555 control system, and that is allowing a very comfortable margin.

Pleas for the greatest possible simplicity for technical reasons are more impressive—but it would be idle to hope for an amplifier that will automatically suit any set-up and situation without a number of adjustments.

What is more, the advent of two-channel reproduction has placed in our hands possibilities of incidental advantages that are too good to ignore. The 555 makes intelligent use of the fact that two amplifiers are available and gives the user the opportunity of using them separately or together, as desired, with modifying controls on each channel.

Let us not, above all, blind ourselves to the fact that first-class stereo is largely a matter of delicate adjustment and that without full power of control the finest stereophonic results will remain out of reach. There is surely no point in paying for first-class equipment and then being unable to achieve the results of which it is inherently capable through lack of facilities for the finer adjustments.

In any case, the arrangements of the 555 controls, and the use of four signal lights to keep you clearly posted on the matter of which input is going through which amplifier (and how) greatly simplifies control.

Nothing could be simpler, too, than the method of checking for correctness of phase. The flick of a switch gives you a low frequency tone, and by moving the phase switch from one side to the other,

and comparing the loudness, you are able to ascertain which is correct.

Flexibility of control with maximum simplicity of operation is again the keynote when we come to consider the cathode ray oscillograph, which provides visual balance indication, level monitoring and a versatile means of checking performance.

The fourteen input positions at the rear are a model of clarity. They include matched inputs for magnetic and crystal or ceramic pick-ups.

I am convinced that the person who buys a complete outfit at one go and settles down to use it for one purpose only, and in one way only, is a very rare specimen—virtually, in fact, a myth. We all experiment from time to time and try out new speakers and other pieces of equipment and new positions. That is the way we progress. And it is when this fact is borne in mind that the virtues of the 555, and other amplifiers that offer considerable flexibility, become overwhelmingly apparent.

For the 555 is not just a good performer: it is designed to bring out the best that is in the rest of your equipment.

The advantages of an instrument like the 555 are greatest of all for the tape recording enthusiast. For when recording is a part of the work to be done, then the variable factors multiply considerably, and the value of versatility, together with a visual check of what is going on, is even higher.

At its price of 63 guineas the Emisonic Orthotone 555 is obviously good value for anyone in search of first-class stereo. And for those who are thinking in terms of tape, the value is further enhanced by the fact that it will deal with signals direct from tape heads, eliminating the cost of separate tape pre-amplifiers.

It will be apparent that I am enthusiastic about the 555. This is not only because I have found it to be a beautiful instrument, visually and technically, but also because I am convinced that it represents a type of amplifier that can play a tremendous part in ensuring the successful general development of stereo-phony.

ESSEX TAPE RECORDER

PART EXCHANGE
SPECIALISTS

• CENTRES •

UNIQUE EASY
H.P. TERMS

Largest Tape Recorder Stockists in East London and Essex—over 200 Models in stock

205 High St. North, East Ham, London, E.6 | 2 Maryland Station, Stratford, London, E.15
(opp. East Ham Station) Tel: GRAngeewood 6543 | (Head Office) Tel: MARYland 5879



Equipment Under Test

THE ELPICO GELOSO G.256

THE Gelosso G256 is quite the most ingenious and most compact mains-operated recorder I have yet seen. Before carrying out performance tests, I decided to have a look inside and accordingly consulted the well-written instruction book for information on dismantling the recorder (this is in Italian, but an abbreviated translation is given in English).

A few screws release five separate assemblies, the main one being the recorder chassis, with a neat printed-circuit board carrying the components and the two valves.

I have commented in another review on the use of double triodes as voltage amplifiers in tape recorders and I was not surprised to find that the Elpico-Gelosso uses this form of voltage amplifier, comprising a 12AX7 followed by an EL95 output valve.

The deck mechanism is nicely finished and uses the conventional induction motor drive, capstan and pinch-wheel, so that the single operating speed of $1\frac{1}{2}$ ips is linear. This means that tapes recorded on this machine may be played on larger, standard recorders.

The G256 has a whole host of uses, according to its "Bolletino Technico." For example, as an office dictating machine it may be operated from a foot pedal or finger control, it may be used with a telephone adaptor (which the distributors can supply), or it may be operated in a car from a special vibrator supply, which runs from the car battery. The special telephone adaptor may also be used to pick up signals directly from the loudspeaker of a radio receiver.

The recorder is supplied complete with a crystal microphone and reel of tape; numerous other accessories, such as "stethoscope" headphones and leather carrying case, are obtainable from the distributors.

The Elpico-Gelosso is housed in a biscuit-coloured plastic case, measuring $9\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{2}$ inches, and is fitted with a small elliptical internal loudspeaker.

Controls are simple and clearly marked, and other facilities include a dual-speed, fast reverse and forward re-wind system, tape position indicator, the remote control stop/start socket mentioned above, and a small magic eye recording level indicator.

A socket is provided for an extension loudspeaker and the single microphone input jack socket may be used for connection to the output of a radio receiver or pick-up.

Tape travel is to standard—left to right—and for half-track, so that the 3-inch spools fitted to this machine will allow 85 minutes' playing time for both tracks, using LP tape.

PERFORMANCE

Re-wind times were checked at 4.75 minutes for forward wind and 2.75 for reverse wind; this does need to be a quicker operation. The tape winds evenly and runs smoothly in the guides and across the combination record/erase head, which comprises two separate

measurement showed this to be quite low, such was not the case for hum, which was of the "grid pick-up" variety and was present to a fairly marked degree at full gain.

Wow was noticeable on a 1,000 cps steady tone, which did not well support the maker's claim of 0.2 per cent.

Erase is clean, as a normal erase head is used with AC bias, and recordings generally are bright and clear.

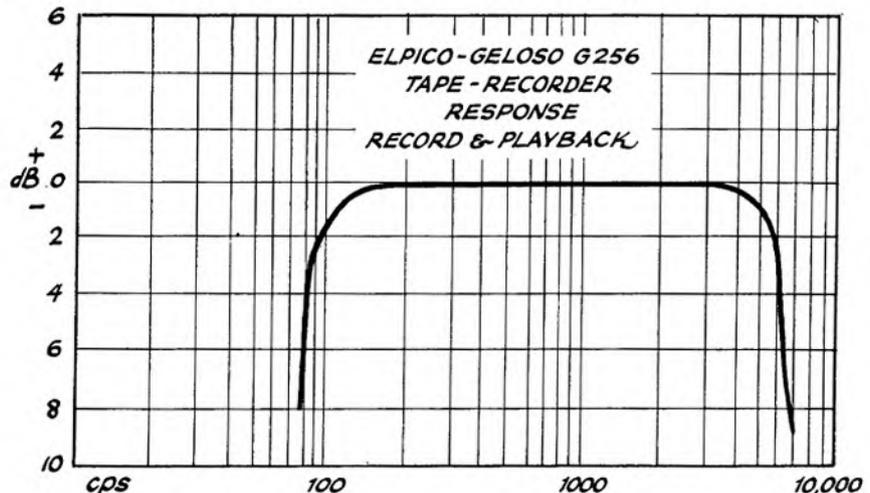
The maker's specification includes the following facts and figures against which performance checks were made:

Frequency response: 80 to 6,500 cps.

Hum and noise level: -40 dB.

Wow and flutter: 0.2 per cent.

Power output: 2 watts.



heads housed in the same container and well screened from 50 cycle motor field.

The frequency response of these small recorders cannot be properly appreciated, because the very small loudspeaker has no appreciable bass response. The through amplifier response (record/playback) as shown by Fig. 1, however, compares very favourably with that claimed by the makers.

As no tone control is fitted, the treble response cannot be boosted; in any case, a tone control would hardly be justified in this type of recorder.

Hum level cannot be estimated via the internal speaker, as quite appreciable hum in the amplifier would not be audible. The maker's claim for noise, however, is quite justified; although

As so many of these small machines are now available, it seems fairest to classify them and to judge their merits in relation to one another and to price. One cannot, obviously, compare their performance with expensive, larger machines.

I would, therefore, estimate the Elpico-Gelosso to be one of the best of its type, giving a favourable performance at its price.

It should be of particular interest to the business man, who wants a compact office machine that is simple to operate, and to those who demand a lightweight portable mains recorder with a reasonable range of facilities.

F.C.J.

TSL present the most advanced recorder programme ever

THREE SELF-CONTAINED
4 - TRACK
STEREO RECORDERS

- ★ Mono and Stereo Record and Replay
- ★ No add-on Units
- ★ 8 Hours Playing
- Mono at 3 3/4" on 7" Reel



Korting M.K.128

From TSL come today's most advanced Continental tape recorders, each with its own special features to give you choice from a range that will be modern for years to come. With any of the three, live stereo recording becomes as practical and as simple as single-channel operation, and you don't need an add-on unit to do it. Used monaurally, you make a fabulous saving in tape costs for each reel gives twice or four times what is obtainable

from a conventional mono instrument without resorting to extra low speed and loss of quality. Thus 8 hrs. playing from a 7-in. reel at 3 3/4 i.p.s. is possible. The heads and dual record/replay amplifiers ensure the highest standards of reproduction. Many other advantages are offered, particularly for owners of photographic equipment, and are described in the leaflets available. *Microphones and tapes extra.*

HARTING HM8

4-track, 2-speed recorder (7 1/2 and 3 3/4 i.p.s.) with two speakers (one in lid) for direct stereo replay. Overall response 30-20,000 c/s ±3dB. Heavy Engel Motor, Telefunken heads; pause, super-impose and monitor facilities, etc.

86GNS

ELEKTRON 9S/4K

4-track, single-speed recorder (3 3/4 i.p.s.) in small compact "airline" styled case, 2 15-ohm outlets; built-in speaker. Pause, superimpose, monitor facilities, etc., etc. Response 30-16,000 c/s ±3dB. Squirrel-cage motor by Papst.

77GNS

KÖRTING MK. 128 (Illustrated)

4-track, single-speed recorder (3 3/4 i.p.s.). Telefunken heads, built-in speaker for monitoring. Response 30-16,000 c/s ±3dB. 5 watts total output. Superimpose, pause, etc., etc. Heavy-duty AEG motor. 7-in. reels.

68GNS

From leading Stockists everywhere. Brochures on request.

Sole Trade Distributors for Great Britain and British Commonwealth

TECHNICAL SUPPLIERS LTD

HUDSON HOUSE, 63, GOLDHAWK RD., LONDON, W.12

Telephone—SHEpherds Bush 2581 and 4794

SUPPLIERS OF FINE RECORDERS TO THE TRADE

Bib RECORDING TAPE SPLICER
FOR EASIER AND ECONOMICAL TAPE EDITING



The easy-to-lift clamps on the new Mark II Bib Recording Tape Splicer are both hinged on the same side of the splicer, making the jointed tapes easy to remove. Precise, rapid tape jointing is ensured, and because you can use all the odd lengths of tape, you soon save the cost of the splicer.

Everyone who uses a tape recorder will need this little tool. It is indispensable. P. Wilson. "The Gramophone."

18/6 each (subject)

Send a stamped addressed envelope for a helpful leaflet on tape editing.

If you have difficulty obtaining a Bib splicer, let us know the name and address of your dealer.

Multicore Solders Ltd., Multicore Works, Hemel Hempstead, Herts. Tel: Boxmoor 3636

NEW! DO-IT-YOURSELF TRAINING TECHNIQUE in RADIO & ELECTRONICS

You LEARN while you BUILD...

SIMPLE...PRACTICAL...FASCINATING...

ANNOUNCING—after years of successful operation in other countries—the latest system in home training in electronics introduced by a new British training organisation. AT LAST—a simple way of learning—by practical means—the "how and why" of electronics with the minimum of theory and no mathematics! YOU LEARN WHILST BUILDING actual equipment with the components and parts which we send you—and you really have fun whilst learning! And afterwards—you have a first-rate piece of home equipment plus the knowledge of how it works and how it can be serviced. THIS NEW SYSTEM brings an exciting new opportunity and is very moderate in cost. Post the coupon now without any obligation for full details.



BUILD YOUR OWN:—

- RADIO EQUIPMENT
 - HI-FI INSTALLATION
 - TEST EQUIPMENT
- AND LEARN AS YOU DO IT

LOTS OF INSTRUCTIVE EXPERIMENTS AT HOME!

No Mathematics!

FREE

To: RADIOSTRUCTOR (Dept. G35)
46 Market Place, Reading, Berks.

Please send Brochure without obligation to

POST TODAY

Name _____
Address _____
(812) _____

BLOCK CAPS PLEASE 11-59

RADIOSTRUCTOR

BRITAIN'S LEADING ELECTRONIC TRAINING ORGANISATION

Special binders for *Tape Recording and Hi-Fi Magazine* are now available, designed especially to hold a year's supply of the new fortnightly publication—26 issues.

No more torn covers and dog-eared edges ★ No more hunting for those mislaid copies ★ Each copy is inserted as received to form a completely bound volume for permanent reference ★ All pages open flat and effect secure binding with steel bars from first to last copy ★ Strong board binders covered with rexine with the title printed in gold on spine.

PRICE 14s. 6d. (post free)

From: 7, Tudor Street, London, E.C.4

MONARDECK POPULAR ON NEW MODELS

Three more at
modest prices

The B.S.R. Monardeck appears on several new modestly-priced tape recorders just announced. Cheapest of them is the Falcon TR2, priced at £25 4s., complete with tape and microphone.

This operates at $3\frac{1}{2}$ ips, gives an output of $3\frac{1}{2}$ watts, and the frequency response is quoted at 60 to 10,000 cps.

A 7 x 4 in. speaker is built in.

Two input sockets are provided, for microphone and radio/pick-up, and there is a magic eye recording level indicator.

The Falcon is housed in a two-tone rexine-covered cabinet measuring $14\frac{1}{2}$ x $12\frac{1}{2}$ x 7 in., with brass trim. The machine can be used as a straight-through amplifier.

*John Street (Manufacturers) Ltd.,
71-73 Beacon Road, London, S.E.13.*

TWO SPEEDS

The new Balmoral TH12 recorder offers two speeds— $3\frac{1}{2}$ and $7\frac{1}{2}$ ips—with the B.S.R. Monardeck, by using a capstan sleeve, and great accuracy in the higher speed is claimed.

With microphone, tape, spare spool and connecting lead with jack plug, the Balmoral costs £33 12s.

It has separate record and playback amplifiers, input for microphone/radio/pick-up, and output for extension speaker. A 7 x 4 in. built-in speaker is provided. Output is rated at three watts.

A magic eye level indicator is fitted and there are monitoring facilities. The machine can be used as a straight-through amplifier.

Maximum spool size is $5\frac{1}{2}$ in.

The Balmoral has a two-tone case, with gilt trimmings, measuring $15\frac{1}{2}$ x $13\frac{1}{2}$ x $7\frac{1}{2}$ in. The weight is 28 lb.

*Taplin-Hurst & Co. Ltd., Oxford
Circus House, 245 Oxford Street, London,
W.1.*

THE ARGOSY

Another new low-priced recorder using the B.S.R. Monardeck is the Argosy 28TR, costing £29 8s. The makers claim the tone control as a special feature on an instrument at this price.

The Argosy has inputs for microphone and radio/pick-up and an output for an external speaker. The speaker provided is a 7 x 4 in. Output is given as two watts.

There are facilities for mixing and for monitoring and twin neon lamps indicate recording level.



THE FALCON TR 2



THE ARGOSY 28 TR

The speed is $3\frac{1}{2}$ ips, and the recorder is supplied with 800 feet of tape, two 5-in. spools, and a crystal microphone.

Frequency response is quoted as 50 to 8,000 cps.

The recorder is housed in a wooden case covered in two-tone leatherette and weighs 19 lb. It measures 14 x 13 x 7 in. and includes a storage compartment for leads, microphone, extra spools, etc. The lid is detachable.

*Argosy Radiovision Ltd., Eastern
Avenue West, Romford, Essex.*

Price reduction

BIRMINGHAM ELECTRONIC PRODUCTS LTD., announce a reduction in price of their Norfield tape recorder. The new retail price is £50 8s., plus £2 2s. for the legs.

*Birmingham Electronic Products Ltd.,
1, Lodge Road, Birmingham 18.*

New Products

Another big radio firm takes to tape

Another of the big radio firms is entering the tape recorder market—Murphy Radio Ltd. They have just announced their first model, the TR1, using the Garrard magazine tape deck and priced at £29 18s. 6d.

It is a single-speed recorder, operating at $3\frac{1}{2}$ ips, and has a built-in 7 x 4 in. speaker.

There is an output for an extension speaker, however, and inputs are provided for microphone and radio pick-up.

There is a magic eye recording level indicator.

The machine is housed in a cabinet covered in off-white and sage green leathercloth, measuring $13\frac{1}{2}$ x $10\frac{1}{2}$ x $7\frac{1}{2}$ in. The lid is fitted with release hinges. Weight is 21 lb.

There is a spring clip inside the cabinet to hold the microphone.

*Murphy Radio Ltd., Welwyn Garden
City, Herts.*

New Butoba portable

A new model of the Butoba portable recorder, made in Germany, is now available in this country. It is a transistorised machine which can be operated either from batteries or the mains, and is known as the MT4.

It is normally supplied with a battery holder for eight U2s, and the 110-260 volt AC mains converter is an optional extra.

The Butoba operates at $1\frac{1}{2}$ and $3\frac{1}{2}$ ips and frequency range at the top speed is given as 50 to 13,000 cps. Noise level is quoted at 40 dB and output at 1-2 watts.

Normal two-track recording is provided, with push-button controls, including fast forward and rewind, and tone and volume controls.

There are inputs for microphone and radio. A "magic line" recording level indicator is provided.

The machine takes 5-in. spools. A clock-type counter is incorporated. There are two meters.

The machine measures 12 x $9\frac{1}{4}$ x 6 in. and weighs 12 lb. It costs £72 9s., the mains converter about seven or eight guineas, and the microphone five guineas.

*Denham & Morley Ltd., Denmore
House, 173-175 Cleveland Street,
London, W.1.*

Choose well
choose a
Brenell
MONAURAL or STEREO REC/PLAYBACK EQUIPMENT

See April 6 issue of *Tape Recording*
for the Brenell advertisement

Brenell Engineering Co.
Ltd., 1a Doughty Street,
London, W.C.1
CHA 5809 & HOL 7358

Cabinets, enclosures and equipment by Stamford

TUNERS	Cash Price			Hire Purchase Deposit 18 Months		
	£	s.	d.	£	s.	d.
Dulci FM Powered...	16	13	11	50	3	18
Rogers FM	24	10	3	73	6	26
Armstrong FM61	25	18	0	77	0	28
AMPLIFIERS						
Quad II and Control.	42	0	0	126	0	45
Rogers Junior	28	0	0	84	0	30
Leak Stereo 20	51	9	0	155	0	55
MOTORS						
Garrard 4HF	18	9	9	55	6	20
Collaro 4T/200	18	13	0	54	9	20
SPEAKERS						
Axiom 110	5	0	0	15	0	5
Axiom 300	11	5	9	34	0	12
WB HF1012	4	15	0	14	3	5
10in. Golden FSB ...	8	6	7	25	0	9

EQUIPMENT CABINET
3ft. wide, 35in. x 14in.
Motor Board, 35in. x 13in.
Control Panel or portion
for tape storage.



Price £16 16s. or Deposit
51s. and nine monthly
Payments of 34s.
Choice of finishes.

A. L. STAMFORD, LTD. (Dept. L.3)
84/86/98, Weymouth Terrace, Hackney Rd., London, E.2

Triumph

TAPES

BRING A NEW SOUND

TRT. 1000

I HEAR A NEW WORLD

A STEREO OUT OF SPACE FANTASY

THE BLUE MEN DIRECTED BY

ROD FREEMAN

★ TRIUMPH RECORDS, EMPIRE YARD, 538 HOLLOWAY ROAD, LONDON, N.7. ARCHway 6777

what goes on in tape?

R. B. TAPES know! The best recorders of today are always in stock and our organisation is in the forefront of the latest developments in this exciting field.

All our machines may be bought on very convenient terms under our own 12-months guarantee and our famous free after-sales service. We specialise in conversions. Write or call for free booklet!

▼ AGENTS FOR ▼

WYNSOR	GRUNDIG
TELEFUNKEN	ELIZABETHAN
ABBEY	SIMON
SPECTONE	VERITONE
SABA	SOUND

R.B.TAPES

NORTH LONDON'S LEADING TAPE-RECORDER AND RECORD SPECIALISTS

179 STOKE NEWINGTON HIGH ST
LONDON N16 CLISSOLD 9477

ANOTHER NEWCOMER

Another newcomer to the tape field is Volmar Ltd., a firm which has produced record reproducers. They are now marketing two recorders: one, known as the Vectis, uses the Collaro Studio deck, and the other, the Vega, incorporates the Garrard magazine deck.

The Vectis offers three speeds—1½, 3½ and 7½ ips and facilities for mixing the two inputs, for monitoring and for use as a straight-through amplifier.

A printed-circuit 4-watt amplifier is used and a 9 x 5 in. speaker is built in. Digital counter and level indicator are provided.

The Vectis is housed in a two-tone case and measures 15½ x 13 x 8½ in. It is supplied with 1,200 ft. of tape, spare reel and microphone.

The Vega has a similar specification, except that it uses the Garrard deck and so has a single speed of 3½ ips. It measures 13½ x 11 x 7½ in.

Volmar Ltd., 141 High Street, Brentford, Middlesex.

SIX UHER MODELS

Six new Uher recorders, including one with stereo playback facilities, have now appeared in this country. These are German machines and they feature several interesting developments, including facilities for synchronising to a cine projector and (by use of an accessory called the Acoustomat) automatic control of slide projectors.

One machine is called the Universal and is suitable for use as a dictating machine, as it has a leather carrying bag and a microphone providing remote control. But it also includes the cine sync facility.

Other models, full details of which are not yet available, are known as the 500, the 502, the 720, the 730 and the 750.

All these machines are 110-240 volt AC, have press-button controls, digital counter, inputs for microphone and radio/pick-up, output for extension speaker, monitoring and superimposition facilities, and can be used as straight-through amplifiers.

Tedalex (London) Ltd., Valric House, 2-4 Great Eastern Street, London, E.C.2.

NEW DAYSTROM LIST

Daystrom Ltd., Gloucester, have just issued a new catalogue of Heathkit easy-to-build electronic kit-sets, describing eight new kit-sets added to the range.

These are a stereo control unit, a monophonic amplifier, a hi-fi equipment cabinet, a 2¼-in. service oscilloscope, a multimeter, a decade capacitor box, a Balun coil unit and a power pack.

The catalogue also lists American Heathkit models which can now be obtained for customers in this country, as a result of recent relaxations in import regulations.



NEW ACOS PRODUCTION LINE

COSMOCORD LTD. have installed a new production line at their Waltham Cross factory for the assembly of the famous Acos Mic 40 microphone. and the immediate result has been still greater productivity.

Following detailed method study of the assembly of the Mic 40, the assembly line has been completely re-designed by Mr. Anderson, head of production, and Mr. Maynard, the work-study engineer responsible. The new line is based on the most advanced principles of works organisation and ergonomics, so as to achieve ideal positioning of all materials,

components and instruments in relation to the operators.

The line has reduced the overall floor space taken up by the same processes, and yet given each operator more working space.

Nine operators now produce 6,000 Mic 40 microphones a week, compared with fourteen operators previously turning out 5,000. The principles of this pilot line are now being applied to the whole of Mic 40 production, and similar processes will shortly be introduced for other Acos products.

BULK PACKAGE

Bowaters have now produced a new fibre drum with single-faced corrugated lining to pack tape reels in bulk—48 to each container. The new method is stated to halve the cost of packaging.

Bowater-Eburite Bulk Packaging Ltd., Bowater House, London, S.W.1.

IN BRIEF

TECHNICAL SUPPLIERS LIMITED, announce the introduction of two new items of equipment—a recorder and a microphone.

The recorder the "Vedette," is equipped with a modified B.S.R. Monardeck and has a tape speed of 7½ ips added to the standard 3½ ips. German heads, "doctored" by Technical Suppliers engineers, are fitted—and German amplifiers are incorporated. The price is 29½ guineas, complete with microphone.

With a quoted frequency capability of 40-13,000 cps ±3dB, the new T.S.L. crystal stick microphone is designed primarily for use with recorders incorporating the B.S.R. Monardeck. The technical details include a sensitivity of 2½Mv per microbar, and an impedance of 3½ ohms. It has a self capacitance of 2,000 pf.

Retailing at 45s., including a gold-plated stand, the microphone will be available next month.

Technical Suppliers Ltd., Hudson House, 36, Goldhawk Road, Shepherd's Bush, London, W.12.

In Next Issue

On Sale March 23

With a tape recorder in Ireland

by A. A. WALES

EQUIPMENT REVIEWED

The Elizabethan Avon is reviewed by F. C. JUDD

Tape Recording in Switzerland

Special despatch by Fredy Weber, our Swiss correspondent

And all the usual features Out March 23rd. Price 1s. 6d.

News from the Clubs

A GENERAL discussion of the lessons learned during the six-week **Rugby Tape Recording Course** was the main topic during the final session held on February 11. Roy Reynolds and Brian Race, respective Secretaries of **Coventry** and **Warwick and Leamington** clubs, were present to hear the Rugby President, John Bannister, introduce the debate with the motion: *That a tape club is essential to the furtherance of tape recording.*

Before the discussion Mr. Alexander, Secretary of the **British Recording Club** presented gold-embossed diplomas to those who had completed the course. He said the course, the first of its kind in this country, would do much to raise the level of tape recording generally.

General appreciation of the task successfully carried out by the organiser, Mike Brown, was shown by the

Edited by
FRED CHANDLER

presentation to him of photographic flashbulbs.

Outstanding among the subjects discussed was the obvious need for greater consumer-retailer-manufacturer contact, especially regarding recorder maintenance. Roy Reynolds pointed this out when he told the meeting that recorder maintenance would be the most important subject if the Coventry club inaugurated a similar course.

Readers will be interested to hear that Grundig (Great Britain) Ltd., are the latest firm to register as a *Trade Associate* of the **National Federation of British Tape Recording Clubs**. You may remember this scheme was proposed by the Federation last November in order to stimulate the tape recording activity by serving as a link between customer and manufacturer. Preference of buyers, as gathered by the Federation members, would be of interest to manufacturers whose support would in turn

help the financial stability of the organisation.

The date of the Annual Convention of the Federation has been decided for June 11, in the Hotel Russell, London. Further details will be given in our next issue, meanwhile club secretary's may wish to know that the Convention is open to any club in the United Kingdom.

The Federation's A.G.M., to be held after the convention, will be for member clubs only.

The Federation, with the unswerving devotion of its Secretary, Alan Stableford, is still maintaining a firm grasp of the activities of clubs spread throughout this country. As has been obvious in these columns in the past, Alan has been giving up a great deal of his free time to visit clubs and give to newcomers the benefit of the experience gained by the older hands in the field.

Latest club on his list of visits was the newly-formed **West Herts Society**. He was present at their inaugural meeting on February 19, and once again provided his well-known and sometimes perhaps unorthodox approach to tape recording. He told me that the West Herts Society is typical of the many clubs now being formed, with the initial nucleus of a dozen keen members. For the benefit of enthusiasts in the Hemel Hempstead area, the guiding light behind the new club is Peter Holloway, 29, Fishery Road, Hemel Hempstead.

Another recently started club had its first meeting in **Northampton** on February 16. Alan Beeby organised the meeting and further details may be

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 Recora and Playback. All leading makes of Hi-Fi equipment from stock

PADDINGTON 5521



YOUR LOCAL DEALER

In this feature you can check your nearest dealer who is a hi-fi specialist giving expert attention to tape equipment.

MIDLANDS

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, Walter, etc.

JEWKES & CO. LTD.

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

Hi-Fi Consultants and Dealers

STUDIO RECORDING AND
DUBBING FACILITIES
Studio A, 40 ft. x 40 ft.

TAPE TO DISC
professional standards

OLYMPIC SOUND STUDIOS

Carton Hall, Carton St., London, W.1
Tel.: HUN 1635

Agents for SAGA Records and Tapes ★ Dealers in CQ Audio Equipment

ALL TAPE RECORDERS

From the Specialists

TAPE RECORDERS

(Bournemouth) LTD.

Main Area Dealers for

FI-CORD : PHILIPS : GRUNDIG

Authorised Service Agents for

TELEFUNKEN & 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

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 STREET
Coventry 60913

obtained from him at 88, Clare Street, Northampton. Of the persons professing interests in this magazine, a great deal seem to be cine enthusiasts in addition and it is therefore probable the society will embrace both hobbies.

While his initiative in club formation is being proved in his own area, Alan Beeby's regular series of sound effect articles in this magazine are being put to good use further North, where the first 1960 meeting of the **Grantham and District** club had sound effect construction as its main subject.

A car's skid and eventual crash into a solid object was realistically produced with the aid of a piece of information gleaned from his column. Throat sounds supplied by members simulated the engine, a piece of plastic was scraped across a pane of glass for the screeching tyres and a balloon burst (Sound effects, December 2 issue), for the explosion. The tinkling of breaking glass was made with the aid of a box of nuts and bolts.

At their second meeting of the year, the Chairman Mr. R. V. Huddleston, demonstrated a Grundig Memorette and a Telefunken recorder. The following meeting saw members eagerly using an oscilloscope and an audio signal generator for testing frequency responses of their equipment. A final test showed that everyone could hear a 15,000 cps tone, but only a few heard 16,000 cps and above.

For their latest meeting, February 8, members welcomed Mr. Parrington of Walter Instruments Ltd., who demonstrated his firm's range of recorders and answered members' technical questions. Following his visit, members inquired into the possibilities of visiting the Walters factory at Morden, Surrey. This is hoped to be accomplished in the very near future.

Details of three competitions planned for members are given in the latest issue of their monthly Sound Magazine. The first is for ladies only and is to consist of a three-minute recording of a piece of music taken from the radio or television. The quality of the recording and the method used will be taken into consideration during the judging, to decide who shows most skill in the exercise.

A three to five-minute recording of radio or television commercials edited to produce a humorous tape, and a five-minute thriller of sound effects only are the other two competitions.

Mr. Huddleston would be pleased to hear from any club or individual enthusiast who have tapes suitable for their hospital service. Write to him at 33, London Road, Grantham, Lincs.

At a meeting of the **West Wales** club, held on February 4, members were fortunate enough to have as their guest Mr. Pontzen of Lustraphone Ltd. He demonstrated microphones and other recording equipment. During the very entertaining evening provided by Mr. Pontzen, members heard the history of the microphone industry from the time of the first carbon microphone. Among the instruments demonstrated, top marks were awarded by members to the Ribbonette, and much enthusiasm was shown when a noise-cancelling model was shown.

An interesting feature has come to light concerning members of the



E.T.E.S.S.A. Club members
(See text)

E.T.E.S.S.A. club. A recent count estimated that of the 1959 total of seventy members, over 60 per cent owned continental recorders. British recorders do have a place in their heart, however, as can be seen from the photograph above. Grouped around an Elizabethan Princess are left to right: Geoff Jones (Secretary), Charlie Crisp, Stan Mansfield, Marie Lockmuller (100th member) and Alf Needham (Treasurer).

Twelve members recently visited the International Broadcasting Co. Studios in London. Highlight of the visit was a two- and three-track stereo demonstration. The Secretary of the British Recording Society visited E.T.E.S.S.A. for lunch last month and as a result they have become affiliated to his society.

The club has decided to sell its Magnafon recorder and purchase a more expensive machine.

The February 4 meeting of the **Coventry** club produced seven recorders including a stereo Reflectograph, Ferrograph, Boosey-Hawke, Uher, and a Simon SP2. These machines were used during the evening to compare tonal quality playing pre-recorded tapes.

Prospective member, Mr. Findley, who owns the stereo Reflectograph, provided a striking demonstration of the recorders capabilities using pre-recorded tape, and pointed out the many features incorporated in the machine's controls.

Henry Hopfinger again took along his photographic equipment and photographed members and their machines.

Members intend to pay a visit to the International Friendship League on March 24. A week earlier they are to present a colour film show given by Mr. Miles, the City Corporation's Public Relations Officer, of the retiring Lord Mayor's tour of duty. The club is working very closely with Mr. Miles, and with his co-operation hope to visit senior officers of the Corporation and interview them as part of their plan to put Coventry on tape.

Stereo was again to the fore at the January 11 meeting of the **Wakefield** club when Mr. Wood gave a demonstration using his Ferrograph to provide much food for thought amongst members, many as yet undecided about the prospects of stereo.

Here also a variety of recorders were on view. This seems to be an increasingly popular activity whereby those undecided about any particular model have

the advantage of examining a number of machines before making a purchase.

Their February 29 meeting, arranged by Mr. Storey with Beckett Film Industries Ltd., of Leeds, included demonstrations of the latest Ferrograph and a Fi-Cord by Mr. Hulse.

The club is arranging to form a specialised group who will be responsible for compiling material gathered for their proposed "Wakefield on tape" venture.

A library has been started and a number of books have been donated to be made available to members.

Increasing interest in the **Walthamstow** Society's activities due to the untiring efforts of the Publicity officer Maurice Dudley has been shown by members of the public recently. Encouraged, in turn, by this show of interest, activity has been particularly intensive during the past few weeks. Leonard Chanter and Harry Epton had started the ball rolling by operating a *Record your Voice* stand at a World Refugee Year Bazaar. They collected 14s., and at only threepence a head.

A further excursion, this time into a local pub, provided members with some interesting reminiscent material collected on Don Coupes' Fi-Cord and the Chairman's Ferrograph.

Using a Reflectograph 500, the Secretary John Wells, made recordings of a Schools' Carol Festival in the Walthamstow Assembly Hall. He is soon to return to the hall to record at the forthcoming Festival of Music and Drama. The Borough Librarian has asked for their co-operation in obtaining recordings of local interest. This they have agreed to and, to the material already gathered in past excursions, they will soon add their observations on the May Carnival in which they plan to enter a float, provide a P.A. system and operate another recording stand.

The Secretary welcomes all inquiries at 178, Selwyn Avenue, Walthamstow, London, E.4.

FORTHCOMING MEETINGS

BIRMINGHAM: Every Monday at the White Horse Cellars.

BLACKPOOL: Every Wednesday at 173, Church Street.

BOURNEMOUTH: Alternate Tuesdays at the Civil Defence Centre, Holdenhurst Road. (March 22.) (March 22.)

BRIGHTON: Every Tuesday at Fairlight School, Pevensey Road.

CHESTERFIELD: Every 3rd Monday at the Yellow Lion Inn, Saltergate. (March 21.)

COVENTRY: Alternate Thursdays at Rotherham's Social Club. (March 17.)

EDINBURGH: 1st Tuesday and 3rd Sunday in month at 23, Fettes Row, Edinburgh 3.

GRIMSBY: Alternate Tuesdays at the RAFA Club, Abbey Drive West, Abbey Road. (March 15.)

IPSWICH: 1st Saturday at the Art Gallery Committee Rooms, High Street.

LEEDS: Every Thursday at the Hope and Anchor, The Calls, Leeds 1.

LONDON: 2nd Thursday at the Abbey Community Centre, Marsham Street, S.W.1.

LUTON: 2nd and 4th Tuesdays at 17, Dunstable Road.

MANCHESTER: Every Saturday, 6 p.m., at 20, Naylor Street, Hulme, Manchester 15.

NOTTINGHAM: Alternate Thursdays at the Co-operative Education Centre, Broad Street. (March 17.)

WEST MIDDLESEX: 2nd Thursday at the Co-operative Hall, Station Road, Hampton.

WEYMOUTH: Alternate Wednesdays at the Waverley Hotel, Abbotsbury Road. (March 23.)

WINCHESTER: Every Friday at the Ship Inn.

Please state dates and venues for inclusion in this list. Meetings start at 7-30 p.m. unless otherwise stated.

SPECIAL OFFER — Half-a-crown to find a ready buyer or a willing seller

IF YOU HAVE SURPLUS EQUIPMENT YOU WISH TO SELL, OR IF YOU WANT TO BUY ITEMS SECOND-HAND, YOU WILL GET RESULTS BY USING OUR CLASSIFIED COLUMNS. TO PROVE THE POINT, WE ARE OFFERING READERS A SPECIAL RATE UNTIL APRIL 19th NEXT—2s. 6d. FOR UP TO TWENTY WORDS IF YOU USE THE FORM BELOW

Classified advertisements

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.

D.B. Meters, F.R. Flat plus or minus half D.B. connect across L/S terminals. Instructions supplied 59s. 6d., P. & P. 2s. Professional tape 17s. 6d.—1,200 ft. P. & P. 1s. Boxes 1s. extra. Olympic Sound Studios, Carton Street, W.I.

SPECIAL OFFER! SAVE 11 GNS.! Stella—Philips Tape Recorder. 3 speeds with moving coil mike. List 63 gns. OUR PRICE 52 gns. or Terms. E. C. Kingsley & Co., 132, Tottenham Court Road (Corner Warren Street) London, W.1. EUSton 6500.

Unimixer 2—two mics. (ribbon or xtal) gram, with power pack—suit Ferrograph. Perfect condition—£15 or near offer. Box 340.

Truvox Mk. IV Tape Deck. K. Amp separate W.B. 8 in. speaker in solid mahogany contemporary cabinets. Perfect condition, genuine bargain. Nearest £50. G. F. Hobbs, Linden House, 211, High Road, Chiswick, W.4.

TAPE RECORDERS: for the BETTER CLASS machines you go to "EROICA" RECORDING STUDIOS. There you discuss your needs with EXPERIENCED RECORDISTS and you BUY WISELY. Industry, Medicine, Music, Drama, Research, Professional, Private, all your requirements are met. From battery portable to sixteen channel data recorder! Recorders, Mics, tape, defluxers, erasers, mixers, extension speakers, amplifiers, dictation machines, factory or hotel and store music installations. BRENELL, FERROGRAPH recorders in stock; Studio and Mobile Recording, Tape/Disk. "EROICA" RECORDING STUDIOS (1949) Peel Street, Eccles, Manchester. ECCLES 1624. Adjacent A.57 near Eccles Library. Easy Parking, open Saturdays. Studio Director, Thurlow Smith, A.R.M.C.M.

FOR SALE—Telefunken K.L.75 with tape and mike. Mint condition. £42. Phone: Footscray 2650.

Reflectograph 500 or 570 wanted for cash. State age and condition and price. Bernard, 36, Morley Road, Lewisham, London, S.E.13.

Philips Tape Recorder—cost £66 3s.—accept £25. Seen London. Phone: BAYswater 0964.

Latest Model Stuzzi Tricorder for Sale, hardly used, in perfect condition—55 gns. Can be seen Sheffield area. R. W. Barnby, 20, Westfield Road, Dronfield, Sheffield.

Wanted—Stuzzi Magnette—in good working order, must be cheap. Jones, 66, Merwell Road, Flixton, Manchester.

One-Tenth Deposit—Three Years to Pay! All makes stocked, let us quote you. Simmon of Halifax. Paul Simmon, 35, Northgate, Halifax.

TAPE RECORDER need repairing? Let the specialists do it for you at an economical price. See page 28. ESSEX TAPE RECORDER CENTRES.

Tape Recorders. Large selection of used models mostly as new with Three Months Guarantee. Part exchange with cameras, binoculars, etc. Good quality recording tape on spools—3 in., 7s.; 4 in., 8s. 6d.; 5½ in., 19s. 6d. and 25s.; 7 in., 25s. Cooks Store, 159-187, Praed Street, W.2 (opposite Paddington Station). PAD. 6464.

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

Schoolmaster wishes to contact tape recording enthusiast with good equipment to record broadcasts for him occasionally. Small payment. B. Tublin, 16, Marsworth Avenue, Pinner, Middx.

Ferrograph 3 A/N perfect. Mike stand accessories. Best offer over £55 secures. B. Grant-Duprez, 6, Pratt Street, Soham, Ely. Phone: Soham 574.

Vortexion W.V.B. and carrying case. Purchased February 1960. Perfect condition. Reslo Ribbon mic., Tapes, etc. Value £158. Sell £100 o.n.o. Box 336.

3 MORE SALESMEN WANTED. Must be young, enthusiastic, preferably single, able drive, know tape recorders, be keen to sell, live locally. Starting £12 to £14 plus commission evening sales. Write only, fullest details: Howard Photographic, 218, High Street, Bromley.

Office Manager Wanted. Preferably with the above talents, plus good English and Maths. to run office side of sales. under Sales Director. Starting around £650 and must be capable earning £800 by Xmas. Write only, fullest details: Howard Photographic, 218, High Street, Bromley.

WANTED—Second-hand mixer unit, any make. WRITE, NOT PHONE. Michael Ockrent, 86, Heathcroft, Hampstead Way, N.W.11.

Grundig T.K.60 Stereo Tape Recorder—New, two mikes, leads, tape. £125 o.n.o. Terms. VAL 3705. 54, The Drive, Ilford, Essex.

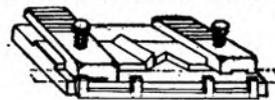
CLASSIFIED ADVERT — SPECIAL OFFER

I enclose postal order for 2s. 6d. Please insert as follows

Name..... Address

Trade announcements not included. Box number extra

Tape splicing is simple, easy and accurate with EASYSPLICE



PRICE 6/9

EASYSPLICE Co., 30, LAWRENCE RD., EALING, LONDON

THIS or THIS?



Grundig TK 30

The best way to choose is to have a full demonstration. In other words come to The **Telefunken 75K-15** Recorder Co. and see the whole range of Tape Recorders available, side by side, so that you can



appreciate the merits of one against the other in open competition. The price range of Recorders offered is from £25 to £155. If you live too far to call, our mail-order department is at your service.

- ★ 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.
- ★ INTEREST FREE H.P. TERMS.

THE RECORDER CO.

(Dept. T) 188, West End Lane,
WEST HAMPSTEAD, LONDON, N.W.6

'phone: SW1 4977

Index to Advertisers

	page
Agfa Ltd.	5
A. L. Stamford Ltd.	32
Audio Devices Ltd.	11
Brenell Engineering Co. Ltd.	32
British Ferrograph Recorder Co. Ltd.	3
Deroy Sound Service	26
Easysplice	36
E.M.I. Sales and Service Ltd.	2
Essex Tape Recorder Centres.	28
Fi-Cord Ltd.	4
Francis of Streatham	6
Gramplan Reproducers Ltd.	39
Henri Selmer & Co. Ltd.	6
Howard Photographic	39
Imhof's (Retail) Ltd.	9
Jewkes & Co. Ltd.	34
Lee Electronics	34
Lustraphone Ltd.	10
Magnegraph	26
Metro-Sound Manufacturing Co. Ltd.	39
Multicore Solders Ltd.	30
Olympic Sound Studios	34
Pyscho-Tape Institute	10
Radiostructor	30
Rapid Recording Service	26
R. B. Tapes Co. Ltd.	32
R. E. W. Earlsfield Ltd.	8
Simon Equipment Ltd.	8
Sunderland Sound Services	26
Tape Recorders (Bournemouth) Ltd.	34
Tape Recorder Service Co.	10
Technical Suppliers Ltd.	30
The Recorder Co.	38
The Tape Recorder Centre	Front cover
Triumph Records	32
Truvox Ltd.	40
Welmec Corporation Ltd.	7
Wilmex Ltd.	12

CUT ALONG DOTTED LINE

THIRD FOLD HERE

TAPE RECORDING & H.I.F.I. MAGAZINE,
ADVERTISEMENT ENQUIRIES,
7, TUDOR STREET,
LONDON, E.C.4.

SECOND FOLD HERE

BUSINESS REPLY FOLDER
Licence No. ND 922

POSTAGE
WILL BE
PAID BY
PRINT AND
PRESS
SERVICES
LIMITED

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

FIRST FOLD ALONG THIS LINE

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.

March 9th, 1960



ALL YOUR RECORDINGS CAN BE FOUND QUICKLY AND EASILY BY USING —

METRO-TABS

3/11 per set

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. Price 12/6



Write for illustrated leaflets to:

METRO-SOUND MFG., CO., LTD.

19a BUCKINGHAM ROAD
LONDON - N.1
Telephone: CLIssold 8506/7

THE DP/4 IMPROVES THE BEST RECORDER



The Grampian DP4 Microphone is ideally suited to the recordist requiring a high quality instrument for use with a tape recorder. Designed with a uniform wide frequency response from 50 c/s. to 15,000 c/s, it fulfils the needs of Wire, Tape and Disc Recording, Public Address, Call Systems, etc.

Low, medium or high impedance models are available together with a complete range of stand adaptors, stands, swivel holders, and switch assemblies.

OUTPUT LEVELS:—

DP4/L—25 ohms—
86dB below 1 volt/dyne/cm²
DP4/M—600 ohms—
70 dB below 1 volt/dyne/cm²
DP4/H—50,000 ohms—
52 dB below 1 volt/dyne/cm²

Retail price DP4/L/pack 1:—
low impedance Microphone, complete with connector, 18ft. screened lead, swivel holder and circular base. £8 19. 6d. (Extra for H or M impedance models—£1. 0. 0.)

MATCHING UNIT G.7

For use in cases where it is desired to use a low impedance microphone with a recorder or amplifier having a high impedance input. It can also be used in cases where very long microphone leads are necessary. Retail Price £3. 5. 0.



Literature on this and other equipment readily available

Grampian REPRODUCERS LIMITED

21 HANWORTH TRADING ESTATE, FELTHAM. MIDDXX
Telephone: Feltham 2657/8. Cables: Reamp, Feltham

FREE H.P!

★ NO INTEREST CHARGES ★
★ ★ 1/- IN £ DEPOSIT ★ ★
★ ★ 2 YEARS TO PAY ★ ★

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



SPECIAL FREE TAPE OFFERS ★ FREE DELIVERY ANYWHERE IN U.K. ★
FREE SERVICING FOR 12 MONTHS ★ NO P/TAX ★ PART-EXCHANGES &
SECOND-HAND MACHINES ★ 250 machines, 40 models in stock ★ Mail Order
Department covers the whole country ★ Open all day Saturday ★ Main Agents for
all the best makes ★ Write, 'phone or call NOW for free brochures and full details of all our items:

HOWARD

PHOTOGRAPHIC

218 HIGH ST · BROMLEY · KENT · RA1 4J7

TOP OF THE BILL

FOR EVERY PERFORMANCE

TRUVOX

ALL THAT THE NAME IMPLIES

Music or speech, "Pop" or classic . . . they're all on a good thing when they're Truvox taped. The young and gay will delight in the "Melody," the enthusiast will revel in the "Harmony," . . . whichever you choose, every programme will "top the bill" for you and your friends.



Melody

Has the size and elegance of a lady's vanity bag, finished in Summer Blue. Ideal for teenagers.

Excellent reproduction from 5in. x 3in. hi-flux speaker. Simple to operate. Tape Speed 3 1/2 in. p.s. Half Track. 4in. spools. Dimensions 11in. x 9in. x 5in.

£36
COMPLETE

Supplied with spool L.P. Tape and empty reel, Crystal Microphone and radio lead. For 110-240v. A.C. Mains.

Harmony

Designed for the enthusiast. Reproduction far in excess of that normally expected from an instrument of its size. Handsome, light tan leatherette case with gilt trim. Tape speed 3 1/2 in. p.s. Half Track. 6in. x 4in. high-flux speaker. 5in. spools. Dimensions 12in. x 9in. x 5 1/2 in.



£44
COMPLETE

MARK VI TAPE DECK

A worthy newcomer to the range of Truvox tape recording equipment, introducing refinements in appearance and facilities for higher quality recording with accurate timing and editing. Fully controlled by push buttons. Electrical and mechanical braking. Speed change knob. Pause control. Reels "locked" in "off" position. Precision revolution counter. Contemporary colour scheme to harmonise with any cabinet finish.



Tape Deck Mark VI
Fitted with Monaural Head 25 gns.
Fitted with Stereophonic Head 37 gns.

TRUVOX LIMITED NEASDEN LANE, LONDON, N.W.10, ENGLAND

**1960 TAPE
RECORDING
CONTEST** See
page 17

TAPE

RECORDING AND HI-FI MAGAZINE

EVERYONE'S GOING ELIZABETHAN

GOING FOR BRITAIN'S MOST POPULAR TAPE RECORDERS



GOING FOR THE PRINCESS!

Going for tremendous performance . . . terrific value . . . and getting both. 3 speeds, 7" spools, four hours' playing time. Facilities for mixing and superimposing.

It's happening everywhere. Suddenly everyone is seeing the sense of buying a British tape recorder. Finding that British electronics, British engineering have no equals in this world. And finding that nowhere else do electronics and precision engineering combine so effectively as in the Elizabethan range.



GOING FOR THE AVON!

Today's most astonishing tape recorder value. A first-class machine with excellent recording quality and sound reproduction. With facilities for sound mixing and superimposing. With simple controls, elegant styling—and all at a record low price.

PRINCESS 39 gns

**ELIZABETHAN
TAPE RECORDERS**

AVON 27 gns

E.A.P. (TAPE RECORDERS) LTD., BRIDGE CLOSE, ROMFORD, ESSEX. Tel: Romford 62366/7

FIRST AND FOREMOST IN THIS FIELD

FORTNIGHTLY **1/6**
23rd March, 1960

A Tape Recorder

BY

"HIS MASTER'S VOICE"



**TODAY'S FINEST
TAPE RECORDER
VALUE!**

You'll hardly believe it! Here's a tape recorder that's stepped straight out of the 'professional' class into the popular price group. It's nothing short of astonishing that so many quality features, such as masterly engineering could be offered for so little. The Hi-Fi fan and amateur alike will rave about this recorder.



- * Two speeds: $7\frac{1}{2}$ i/s and $3\frac{3}{4}$ i/s
- * Frequency response: 50-10,000 c/s at $7\frac{1}{2}$ i/s ± 3 dB
- * Takes 7" Reels
- * Half-track
- * Three motor drive
- * Separate record and playback amplifiers
- * Three head system for instantaneous playback
- * Pause control for instantaneous stop/start

**PACKED WITH
"PROFESSIONAL MACHINE"
FEATURES
YET COSTS
ONLY**

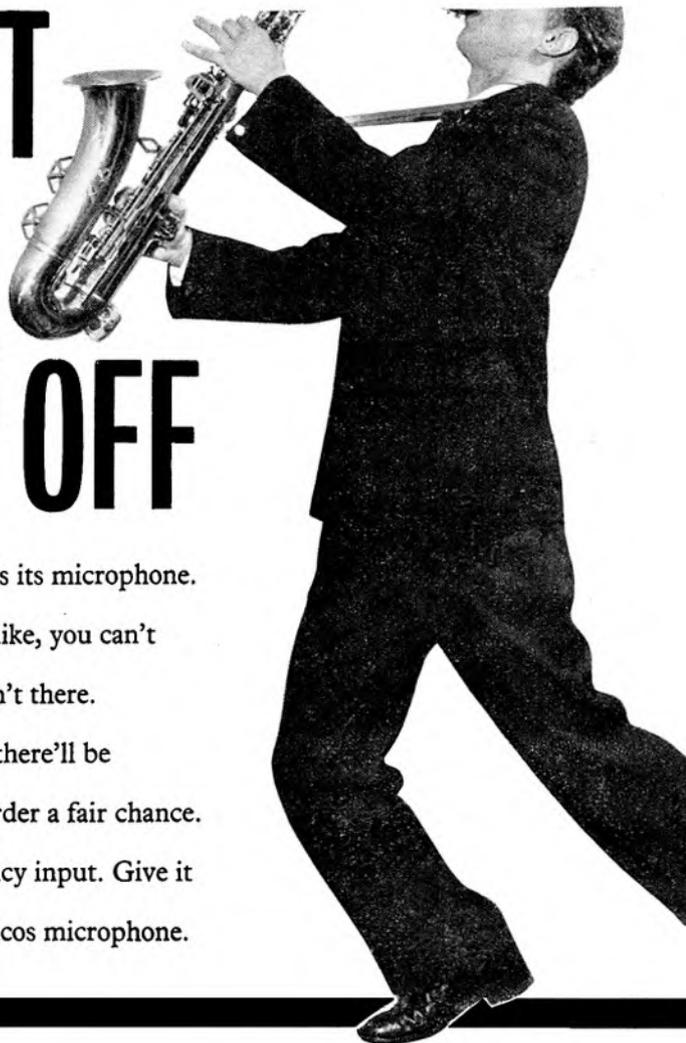
£50

Complete with 1,200' Emitape, spare spool and crystal microphone

**AVAILABLE AT YOUR
DEALER'S NOW!**

THE GRAMOPHONE COMPANY LTD., HAYES, MIDDLESEX

DON'T CUT THE TOP OFF



A tape recorder is only as good as its microphone.
If you cut a top note off in the mike, you can't
blame the recorder if the note isn't there.
If there's distortion at the start, there'll be
a din in the end. Give your recorder a fair chance.
Give it a balanced, wide-frequency input. Give it
a good microphone. Give it an Acos microphone.

USE AN ACOS MICROPHONE



MIC 39

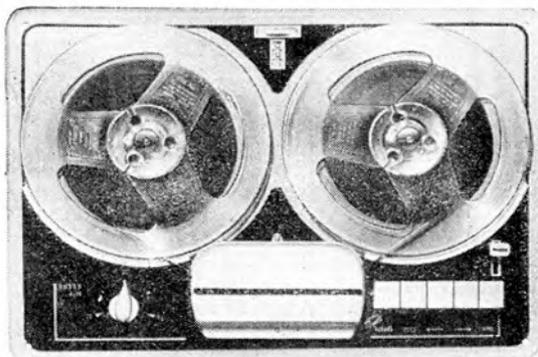
A crystal hand microphone of exceptionally attractive appearance. Extended frequency response; noise-free cable and die-cast liner to minimise hum and ensure excellent signal-to-noise ratio. Available with table-stands and floor stand adaptor. U.K. Retail price 3 gns. Other Acos microphones include the famous fold-away MIC 40 (35/-) the MIC 28 Lapel Microphone (50/-) and a superb new stereo microphone (£6.0.0)

Acos microphones are standard equipment with most British high-quality tape recorders.

acos ARE *also* **DOING THINGS IN STYLE**

COSMOCORD LTD WALTHAM CROSS HERTS · TEL: WALTHAM CROSS 25206 (London subscribers please dial WS 25206)

the NEW Patents Pending
MOTEK **K10**
 3 SPEED
 TAPE DECK



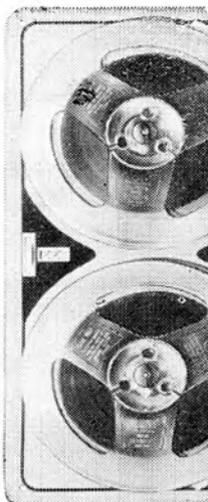
Incorporating many new features and a greater frequency response

Look

Now restyled in two tones of grey—you must see the new, attractive Motek K.10

- ★ Frequency response better than 40 c/s—12,000 c/s at 7.5" per sec.
- ★ Enlarged drive wheel on the rev. counter ensures accurate tape positioning.

Please send for brochure of K.10



MOTEK **21GNS**

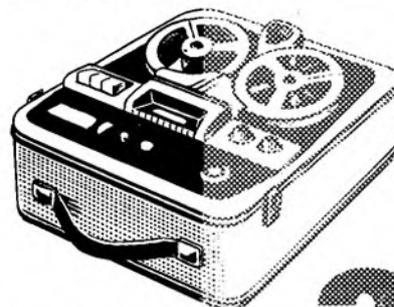
*makes a better
 Recorder*

**MODERN
 TECHNIQUES**

Wedmore Street, London, N.19
 Tel : ARCHway 3114

More and more manufacturers are installing Motek Tape Decks in their recorders.

**IS HALF
 YOUR TAPE
 RECORDER**



WASTED?

The performance of a portable tape recorder is severely limited by the space available for its internal loudspeaker.

The connection of a high quality external speaker will reveal hidden detail in your recordings, and the Wharfedale PST/8 is an ideal choice.

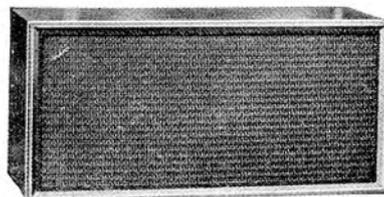
This unique, patented enclosure design gives optimum results with Wharfedale 8" foam surround units which are available in a range of impedances to suit all machines.

Descriptive literature sent FREE on request

**WHARFEDALE
 PST/8**

PRICES CABINET ONLY
 £7 10s. 0d. in whitewood
 £10 10s. 0d. finished in
 walnut, oak or mahogany
 veneers.

Recommended units 8" Bronze/FS/AL £4 6s. 7d. inc. P.T.
 Super 8FS/AL £6 19s. 11d. inc. P.T.



Tel : Idle 1235/6
 Grams:
 'Wharfedel' Idle
 Bradford

Wharfedale
 WIRELESS WORKS LTD
 IDLE BRADFORD YORKS



**I like the look of it—
a really nice piece of furniture for
the home—look at that lovely sapele
mahogany—so easy to use too—those
magazines—simple as putting on a record**



**I like its entertainment
value—my favourite
programmes, music,
recordings of the kids—I can
keep them—enjoy them when
I like.**



**I like the inside—not that
I'm allowed to touch it—
the amplifier's got a triode
push-pull output and there's
full control for treble and bass.**



**A magazine full of the
latest pops—it's just right for
parties and for dancing.
The built-in microphone is
great when the gang comes
round—you just talk at
it and it records.**

for all the family



the Simon **Minstrelle** tape recorder

WITH MAGAZINE LOADING

Everyone likes the Minstrelle—and that's the way it should be, because it's the first tape recorder to be specially designed with the whole family in mind. Designer Peter Bell was commissioned to style a recorder as a piece of furniture that would fit with distinction into the home—and here's the brilliant result. Using tape magazines which you put on like

records—no threading or fuss—all the family can use it—even the young and not-so-mechanically-minded members. And inside that handsome cabinet there's a piece of electrical design and workmanship that you can be really proud of—built to ensure that you too, will "Choose Simon for Sound".

Price with the built-in microphone **39** gns. Easy Terms available.

At your local dealer or write to: SIMON EQUIPMENT LTD., 46/50 George Street, Portman Square, London W.1

The LONDON AUDIO FAIR 1960

will take place at the HOTEL RUSSELL, RUSSELL SQUARE, W.C.1
on April 21st-24th

The Slogan of this fair will be:-

*Sounds
fine!*

from
records, tape
or radio

Have the world's finest orchestras in your home to play the programme of your choice whenever you command.

Sound reproduction today brings you music skilfully played, brilliantly recorded and faithfully reproduced.

Home music systems from makers of distinction throughout the world will be displayed and demonstrated.

for tickets send stamped addressed envelope to:-

AUDIO FAIRS LTD., 22 ORCHARD STREET, LONDON, W.1

CINESMITH DEPOLARISER

★ ★ NOT A GADGET—A NECESSITY ★ ★

This instrument demagnetises record/playback heads. It is a plastic moulding with a switch at one end and operative pole piece at the other so designed that recorder heads of any make can be easily demagnetised without any dismantling. Use occasionally for better recordings without hiss or mush and with background silent as the grave, no matter how often played.

- KILLS HISS AND MUSH ● PRESERVES TOP NOTES
- PROTECTS RECORDINGS FROM DETERIORATION
- ENSURES ALWAYS A CLEAN RECORD/PLAYBACK RESPONSE

Write today for leaflet or order from your agent
or by return post from:-

CINESMITH PRODUCTS
REGENT STREET, BARNSELY

35/-

Post paid

Special binders for *Tape Recording and Hi-Fi Magazine* are now available, designed especially to hold a year's supply of the new fortnightly publication—26 issues.

No more torn covers and dog-eared edges ★ No more hunting for those mislaid copies ★ Each copy is inserted as received to form a completely bound volume for permanent reference ★ All pages open flat and effect secure binding with steel bars from first to last copy ★ Strong board binders covered with rexine with the title printed in gold on spine.

PRICE 14s. 6d. (post free)

From: 7, Tudor Street, London, E.C.4

ESSEX TAPE RECORDER

PART EXCHANGE
SPECIALISTS

• **CENTRES** •

UNIQUE EASY
H.P. TERMS

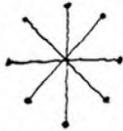
Largest Tape Recorder Stockists in East London and Essex—over 200 Models in stock

205 High St. North, East Ham, London, E.6
(opp. East Ham Station) Tel: GRAngeWood 6543

2 Maryland Station, Stratford, London, E.15
(Head Office) Tel: MARYland 5879

5

sound reasons for choosing from the TAPE RECORDER CENTRE



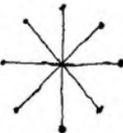
NO-INTEREST TERMS

on all orders over £30



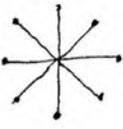
FREE ILLUSTRATED 72-PAGE CATALOGUE

the most detailed publication of its kind



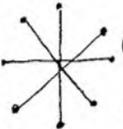
HUGE STOCKS OF ALL MAKES

ensuring quick delivery to all parts of the country



HONEST, INFORMED ADVICE

from enthusiastic tape-recording and Hi-Fi specialists



COMPREHENSIVE MAINTENANCE SERVICE

and inexpensive maintenance contract if desired

Tape Recorders

Grundig
Elizabethan
Ferrograph
Vortexion
Walter
Brenell
Reflectograph
Simon
Harting
Telefunken
Philips
Snectone
Verdik

Veritone
Stuzzi-Magnette
Fi-coord
Truvox
Kurland
Reps
Revox
WyndSOR
Regentone
Perth-Saja
Elektron
Minivox
Korting

Hi-Fi Equipment Microphones, Speakers, etc.

Leak
Quad
Rogers
Armstrong
Jason
Dulci
Pamphonic
Stentorian
Avantic
Pilot
Collaro
Elpico
Decca

Philips
Wright & Weaire
G.E.C.
Goodmans
C.O.
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
Elpico
Soundrite
Gevaert
Philips
Agfa
*All Accessories,
Tapes, etc. by
return of post.
All makes in stock.*

You can choose with confidence from the leading Specialists :

THE TAPE RECORDER CENTRE

For free Catalogue send this coupon to : The Tape Recorder Centre Ltd.,
Dept. T, 75 Grand Parade, Green Lanes, Harringay, London, N.4.

STAmford Hill 1146

NAME ADDRESS
.....(BLOCK LETTERS PLEASE)



PSYCHO-TAPES

Home Psychology for
Tape Recorder Owners

PERSONALISED tapes recorded individually for each patient by well-known Psychotherapist for:—

**NERVOUS FEARS, STAMMERING,
INFERIORITY, AND ALL PERSONAL
PSYCHOLOGICAL PROBLEMS**

Also SPECIAL TAPES on:—

**DEVELOPING A POSITIVE PER-
SONALITY, SELF-HYPNOSIS, MIND
MANAGEMENT, HOW TO OVER-
COME INSOMNIA, ETC.**

Please post Coupon NOW for full details

Please send free details of PSYCHO-TAPES

Name (Mr. Mrs. Miss).....
(Block letters please)

Address.....

To THE PSYCHO-TAPE INSTITUTE (Dept. THI)
27, YORK ROAD, ILFORD, Essex

THIS or THIS?



Grundig TK 30



Telefunken 75K-15

The best way to choose is to have a full demonstration. In other words come to The Recorder Co. and see the whole range of Tape Recorders available, side by side, so that you can

appreciate the merits of one against the other in open competition. The price range of Recorders offered is from £25 to £155. If you live too far to call, our mail-order department is at your service.

★ 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.

★ INTEREST FREE H.P. TERMS.

THE RECORDER CO.

(Dept. T) 188, West End Lane,
WEST HAMPSTEAD, LONDON, N.W.6

'phone : SW1 4977



the FINEST TAPE RECORDERS on INTEREST FREE TERMS

Write, Phone or Call today. You can buy by post with perfect confidence
Deposits from 10 per cent, 12 months to pay

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



NEW! 4-Track Monaural Recorders

PHILIPS 59 gns. TELEFUNKEN 64 gns.

4-Track Stereo/Monaural Recorders

PHILIPS 92 gns. HARTING 86 gns.
KORTING 68 gns.

SERVICING. We undertake rapid and efficient servicing of all Tape Recorders.

TAPES. Audio, Agfa, B.A.S.F., E.M.I., Geloso, Scotch Boy, Telefunken, etc. Send for lists.

CAMERAS. By Zeiss, Agfa, Eumig, Voigtlander, etc. Send for lists.

READ the all-in-one Tape Recorder Book, 12s. 6d. Packed with information.

TELEFUNKEN DA CAPO RADIO, 39 gns. Call and hear this fine instrument.

TELEFUNKEN TAPE DECK, 63 gns. Use it with your amplifier or with the Telefunken Radio.

Model	Gns.
Philips 3515	32
Sagatone	38
Elizabethan Princess	39
Simon Minstrelle	39
Perth Saja	45
Wyndson Victor	45
Electron	47½
Magnafon	49
Spectone Ex Tape	49
H.M.V.	£50
Telefunken 75 with mic.	56
Perth Saja De Luxe	56
Brenell 3-Star	58
Veritone	58
Mobile	58
Ficora	59
Grundig TK25*	62
Telefunken Deck*	63
Korting Stereo*	68
Telefunken 4-track with mic.	68
Stuzzi-Magnette	69
Brenell MKV with mic.	69
Grundig TK30*	72
Brenell MV with meter, mic.	74
Electron Stereo	77
Sabafon Automatic*	79
Harting Stereo*	86
Timbra*	89
Simon SP4*	95

Machines marked * are excluding microphone

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).

FREE H.P.!

- ★ NO INTEREST CHARGES ★
- ★ ★ 1/- IN £ DEPOSIT ★ ★
- ★ ★ 2 YEARS TO PAY ★ ★

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



SPECIAL FREE TAPE OFFERS ★ FREE DELIVERY ANYWHERE IN U.K. ★
FREE SERVICING FOR 12 MONTHS ★ NO P/TAX ★ PART-EXCHANGES &
SECOND-HAND MACHINES ★ 250 machines, 40 models in stock ★ Mail Order
Department covers the whole country ★ Open all day Saturday ★ Main Agents for
all the best makes ★ Write, 'phone or call NOW for free brochures and full details of all our items:

HOWARD

PHOTOGRAPHIC

218 HIGH ST · BROMLEY · KENT · RAY 4477

TAPE RECORDING HANDBOOKS

Written by four enthusiasts, experts in their own particular field, these handy-sized guides to four aspects of tape recording should find their way into the pocket of anyone interested in hi-fi and tape recording. A MUST for the newcomer.



INTRODUCTION TO THE TAPE RECORDER

Charles Langton
3/6 (4/- inc. postage)

HI-FI FOR THE MUSIC LOVER

Edward Greenfield
3/- (3/6 inc. postage)

TAPE AND CINE

John Aldred
3/- (3/6 inc. postage)

HOW TO RECORD WEDDINGS

Paul Addinsell
3/- (3/6 inc. postage)

Available from:

Tape Recording and Hi-Fi
Magazine
7, Tudor Street, London, E.C.4

A **GRUNDIG**

TAPE RECORDER

for only
26

GUINEAS

(including Microphone and pick-up lead. Batteries extra)

THE

Cub

**MINIATURE, PORTABLE, BATTERY-OPERATED
TAPE RECORDER**

Now you can own a Grundig tape recorder!

Now, for only 26 guineas (or the easiest of H.P. terms) the wonderful new Grundig battery-operated 'Cub' can be yours.

Completely self-contained, entirely independent of mains supply, the Grundig 'Cub' works *anywhere*. You can take it to parties, on trips, on weekends away. You can record sounds indoors and outdoors: music, friends' voices, birdcalls, important occasions, visiting celebrities—anything, anywhere.

Simple to operate, complete with its own microphone and built-in speaker, the 'Cub' weighs only 5 lbs. and yet plays for as long as 30 minutes. Plugged into a radio or radiogram by means of the special lead provided, it will give you reproduction better than machines twice its size.

Get the most out of life

GET A GRUNDIG

Cub

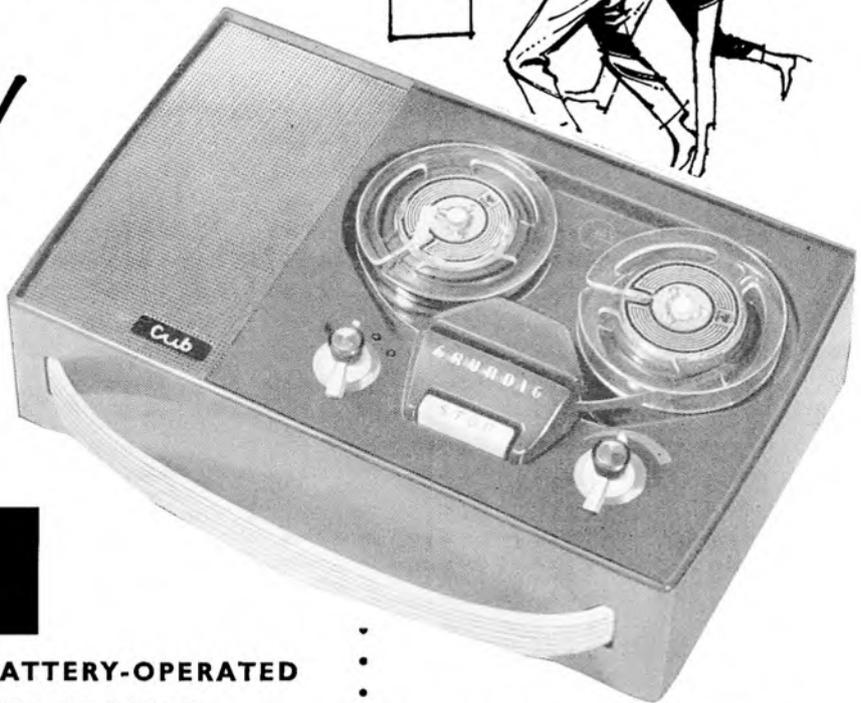
... and go places!

GRUNDIG (Gt. 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 Company Limited)



- * FULLY TRANSISTORISED
- * EASY TO OPERATE
- * GOOD TO LOOK AT



* **FREE LEAFLET**

Post this coupon for a free fully illustrated leaflet giving all the details.

TODAY

I'd like a copy of the leaflet telling me all the fun I can have with the Grundig 'CUB' Portable Tape Recorder.

NAME _____

ADDRESS _____

NEAREST TOWN _____

GS. TR. 194

TAPE

RECORDING
AND HI-FI MAGAZINE

Vol. 4 No. 6 23rd March, 1960

Tape Recording and Hi-Fi Magazine is published fortnightly, on alternate Wednesdays, by Print and Press Services Ltd., from 7 Tudor Street, London, E.C.4

EDITOR: **R. D. BROWN**

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

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

DON WEDGE
News Editor, New Musical Express

MOVIE-MAKING: **JOHN ALDRED**

NEWS AND CLUB ACTIVITIES: **FRED CHANDLER**

OVERSEAS CORRESPONDENTS:

FRANCE: **GEORGE GINIAUX**
Revue du Son, 40, rue de Seine, Paris-6e

U.S.A.: **PETER M. BARDACH**
210-16, Grand Central Parkway, Queens Village 27, New York

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

"Tape Recording and Hi-Fi Magazine" is available by a postal subscription at 45s. per annum, post free, or it can be obtained at newsagents, bookstalls and radio and music dealers. In the event of difficulty, write to the distributors, Rolis House Publishing Co., Breems Buildings, London, E.C.4.

Back numbers, if still in print, are available at 2s. 6d. per copy for issues up to November, 1959, and 2s. per copy for later numbers.

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 . . .** 12
- The World of Tape** 13
A news digest
- Swiss Sound Hunters** 14
Fredy Weber
- Tape in the Schools** 16
- To Dublin with a tape recorder** 16
A. A. Wales
- Editing and splicing** 18
Stanley Jepson
- Building a battery recorder—
part 3** 20
Richard A. Margoschis
- Sound effects** 22
Alan Edward Beeby
- A Reel Mistake** 25
Jean Rogers
- Equipment under test** 24
- Stereo Notes** 26
Douglas Gardner
- New Products** 27
- Using a balanced microphone cable** 28
Arthur H. Strange
- News from the clubs** 30

We take the view . . .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

THE 1960 Audio Fair is going to be a cracker-jack affair, outshining earlier events. The contributions which are being made by the B.B.C. and by the British Sound Recording Association are particularly striking. There will be added interest from the increased number of exhibitors, and the foreign firms who will be there for the first time. The Fair is bound to gain something from this new international flavour.

In addition to the full range of British equipment—including new models—we shall see Ampex and Steelman machines, Shure microphones and Irish tape from America, and from the Continent AKG microphones, Butoba and Chitnis recorders, and a wide range of hi-fi equipment from the French firm of Teppaz.

In our next issue we shall print a preliminary review of the Audio Fair, and *Tape Recording Magazine* out on April 20, will be a bumper Fair number. If you want to be sure of getting these issues, you will be wise to order them now.

Incidentally, the numbers of shows, exhibitions and fair which now include tape equipment is astonishing. I noticed recorders from several big firms included in the displays at the recent Ideal Home Exhibition in London. Natural enough, of course, now that the recorder is a standard fitting in so many homes.

An executive of one recorder company to whom I spoke the other day was almost dropping with exhaustion. He could not remember a period when business was so heavy; it was as much as he could do to keep abreast of public demand.

You may have noticed that the advertising of tape firms in the national press has recently been considerably stepped up, so that public demand is likely to go on rising. Grundig have given me a preview of the advertisements they are using during the next few months, and it is a dazzling exhibition which is not likely to escape a single individual in the country.

A short story club

IN line with this expanding activity, Mr. Tom Fieldhouse, of 524, Stanningley Road, Stanningley, Pudsey, Yorkshire, writes to me with a proposal for a Short Story Club.

He sees this as yet another way in which the tape recorder can be used creatively. The idea is that a group of up to ten people should exchange tapes on which they record original short stories, autobiographical narratives, or plays.

The purpose is not simply to give

amusement, but to secure constructive criticism. Tapes, recorded at 3½ ips on three-inch spools, would be accompanied by a special form on which comments would be entered and the author would eventually receive his tape back again with all these considered judgments of his work.

Mr. Fieldhouse has worked out the administrative arrangements for such a Club, and those who are interested can get in touch with him direct.

Recorders for journalism

I RECENTLY received a publicity article suggesting that tape recorders have been a great success with journalists, who have taken to them enthusiastically. Now the fact is that journalists are showing themselves extraordinarily conservative in this matter.

The number who use recorders professionally is very small.

The one technique which has been proved is the recording of the set-piece interview, in which there is full and

willing co-operation between a journalist and, for example, a distinguished literary or political figure.

But for the snap interview, in which the journalist must often probe and persuade, a glimpse of a recorder over his shoulder can still be a tremendous deterrent to speech.

For the reporting of meetings of any sort there is an equal, though quite different, difficulty. If a recorder "covers" a two-hour meeting, then it must take two hours for play-back. In the time schedules of newspaper production, there never is two hours available. A shorthand note, on the other hand, contains only the facts which have emerged after the filter in the journalists' mind (or in other words his news judgment) has been used.

The result is a summary in which the various facts can be assessed and graded as he goes along, so that transcription is the work of minutes.

There is a need for a recorder designed specifically for journalists: battery-operated, only one, slow speed, not necessarily capstan-governed, small enough to slip into the pocket, and, above all, cheap.

LAUGH WITH JEEVES



"I mean to record the very first cuckoo this Spring."



Youth clubs all over the country are turning to recording as an interesting and creative activity for teenagers.

The London Federation of Boys' Clubs recently called a conference of club leaders to hear the Editor of Tape Recording Magazine and Mr. F. C. Judd lecture on recording possibilities.

Our photos show, top, the Editor, accompanied by a Ferrograph, and, bottom, F. C. Judd providing musical illustrations of guitar chords.

BOLD PLANS FOR BSRA AUDIO CONVENTION

Overseas firms will be at Audio Fair

THE Audio Convention which is being organised by the British Sound Recording Association, in conjunction with the London Audio Fair next month, will provide enthusiasts with a unique opportunity to hear experts from several countries lecturing on the very latest developments in tape recording and stereo.

THE WORLD OF TAPE

A NEWS ROUND-UP

Conversion kits aid stereo switch in U.S.

THE stereo boom in the United States, and the popularity of the new four-track machines, has meant a lot of conversion work by those who had two-track recorders. It is estimated that, by the middle of this year, about 100,000 Americans will have converted their recorders to use the new method.

This is a trend that may be repeated in Britain, and enthusiasts will be interested to know how the change-over was handled on the other side of the Atlantic.

Manufacturers have been at pains to make fairly cheap conversion kits readily available. They can now be bought for most models.

Those who already have two-track stereo can convert to four-track with kits costing as little as thirty dollars (about £10 14s.), although the more expensive kits can cost up to 75 dollars.

Most of them are very simple to fix and often do not even require soldering.

One firm—Nortronics—have produced an outtrigged device which can be fitted to any make of recorder to enable it to take four-track stereo. With an extra amplifier and speaker, it will convert any monophonic set to stereo.

The aim of most of the available conversion kits, in fact, is to give the older recorders complete versatility, so that they will handle any system—single, double or four-track, mono or stereo.

Five lectures have been arranged for Saturday, April 23. At 10 a.m. Mr. Peter Ford, Honorary Historian of the B.S.R.A. will speak on "The evolution of stereophonic sound techniques." At 11.30 a.m. Herrman K. F. Juncke, of Telefunken, of Hanover, will deal with "Progress in tape recording."

In the afternoon, Mr. G. D. Browne, who has been largely responsible for the new Mullard technique, will describe it in a talk on "A new system of stereophonic broadcasting." That will be at 2 p.m.

At 3.30 p.m., Dip. Ing. Fritz Ph. Sippl, of Vienna, will lecture on "New microphone developments."

All these lectures will be at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, London, W.C.1.

In the evening, at 7 p.m., there will be a session on "Stereophonic sound in the cinema," given by R.C.A. (Great Britain) Ltd., in The Tower, Hammersmith Broadway, London, W.6.

On the previous day—April 22—Mr. James Moir will be speaking at the normal B.S.R.A. meeting on "Sound radiation from loudspeaker cabinets."

Registration for the course costs 5s. for B.S.R.A. members or 10s. for non-members and applications should be sent to S. W. Stevens-Stratten, Greenways, 40, Fairfield Way, Ewell, Surrey.

Latest news of the Audio Fair is that 74 firms will be exhibiting, including a number from overseas who will be present for the first time.

The Fair will be at the Hotel Russell, Russell Square, London, W.C.1., open to the public from Friday, April 22 to Sunday, April 24, from 11 a.m. to 9 p.m. each day. Tickets can be obtained from Audio Fairs Ltd., 22, Orchard Street, London, W.1. Send a stamped reply envelope.

A FAR CRY

MALAYA to England is a far cry, but the parents of Douglas and Mrs. Branch who are stationed in R.A.F. Butterworth near Penang in Malaya, heard the first cry of their grandchild only twenty days after the event, although 7,000 miles separates them—on tape. The message service was carried out by members of the R.A.F. Tape Recording Society.

TAPE TITTER



"This, Miss Jones, is the last Will and Testament of John Arthur Smithers, of Smith, Smithers and Smelby. . ."

(By courtesy of the Grundig Gazette)

Swiss recording enthusiasts plan international anniversary rally

THE Swiss Sound Hunters Club was founded in Berne exactly ten years ago, only a few weeks later than the similar organisation in France. About ten amateur enthusiasts met together at that time to start the organisation, with the declared aim of organising and encouraging all who are interested in recording.

Today the term "Sound Hunter" is well known, and its implications thoroughly understood, in Switzerland. The radio and the Press—and the members by their own efforts—have spread the name throughout the country.

At present the Swiss Sound Hunters Club includes about 600 amateur recording enthusiasts, organised in fourteen sections. It is governed by a Central Committee, with local committees to administer the different sections.

The various groups arrange technical surveys and courses for members, who are thus kept abreast of the latest developments in recording and reproduction techniques. A tradition has now been established that every Swiss club assembles weekly at a particular table in a favourite bar—the so-called *Stammtisch*.

It was an appeal broadcast by Radio Lausanne which gave the Swiss Sound Hunters Club its start. Since then, amateurs have been encouraged to submit their best work for inclusion in special transmissions from the Swiss state radio, Sottens and Beromünster (Radio Lausanne and Radio Berne).



A despatch from our Special Correspondent, FREDY WEBER

Sottens broadcasts this programme every other Saturday at 2.20 p.m., while Beromünster transmits occasional recordings from amateurs.

Radio Berne, however, has devised a very interesting method of co-operation with the Sound Hunters. At intervals it invites amateurs to undertake a definite recording task which it selects, and the resulting recordings are subsequently used in normal radio transmissions.

In these ways the enthusiasts in German-speaking Switzerland have been encouraged to collect sound documentaries and a regular two-hour programme of entertainment, known as "Switzerland on Saturday night," has been created.

The recordings which are submitted, with very few exceptions, are above criticism on the grounds of quality; the time is past when one heard buzzing noises and indications that the tape had stuck!

The most popular recorder among the Swiss Sound Hunters is one made in this

country—the Revox. The highest claims are made for this machine, which has three sound heads and, using a 2,400-foot spool of tape at 7½ ips, provides one hour's playing time for each track.

The Revox has a second speed (3½ ips) and we believe, with pride, that it is one of the best machines available to the amateur—it is used, also, in the radio studios. At the same time, the price is not beyond the reach of the individual enthusiast.

In fact, about 80 per cent of the Swiss Sound Hunters use a Revox. Other machines which are popular are made by Philips, Grundig and Perfectone.

All tape exchanges between members and radio stations are of recordings at 7½ ips on single track.

The sections of the Club at Neuchâtel and la Chaux-de-Fonds have their own recording studios, with equipment costing several thousand Swiss francs, and these are made available for recording to local organisations and industrial and commercial concerns.

The Berne section has built up three mobile recording units, housed in vans painted with the words "Sound Hunters." From time to time these units are employed on sound documentaries or to collect the music and distinctive sounds of the city of Berne. They are very considerably treated by the Police, even when they park in a way that offends against regulations, in order to secure the required results.

The Berne Sound Hunters also record each year a number of the courses taught in high school and these are sent, on tape, to a Bernese Lung Sanatorium in Montana, in the Alps. There the tapes are played back to students who are too ill to leave their beds.

The Swiss Sound Hunters Club has issued two commercial discs and a third, this time a long-player, will appear shortly. We do not wish to reveal yet what its contents will be; they will come as a surprise which, we hope, will interest all Englishmen who know our country.

Work in all the other sections of the organisation is on similar lines to the above. We are now arranging for our own technical instructor who will conduct tape recording courses in different towns.

Swiss folk enjoy contact with those of other countries who have similar interests and we propose, therefore, to celebrate the tenth anniversary of the Swiss Sound Hunters Club with an International Car Rally. The idea is to drive, during a weekend in June—the date will be announced later—through the most beautiful parts of Switzerland, meeting Sound Hunters and making recordings.

We hope, too, that our visitors will be brought into close contact with Swiss life and character.

NATIONAL CONTEST 1960

Have you requested entry forms for the 1960 British Amateur Tape Recording Contest?

These are now available and you may obtain yours by writing to Contest Forms, Tape Recording Magazine, 7 Tudor Street, London, E.C.4, enclosing a stamped addressed envelope.

SECRET TALKS ON TAPE STANDARDS

TAPE RECORDING MAGAZINE EXCLUSIVE

A TOP level conference is being arranged in the greatest secrecy by Europe's leading record firms to form a common policy for the development of tape. The object is to challenge the American lead in the field, by drawing up technical specifications which will form the operating basis in the foreseeable future.

The main problem to be solved will be playing speed—the choice is likely to rest between $7\frac{1}{2}$ and $3\frac{3}{4}$ ips, any other being unlikely. Thickness of tape, two- or four-track, and even reel sizes will also be included.

The meeting will be held somewhere in Europe sometime next month.

Those involved are said to be the engineering heads of five of Europe's biggest disc manufacturers, EMI, Decca, Philips, Deutsche-Gramophon and Teledec.

A similar meeting was held—also in great secrecy—about three years ago, to form a common technical policy for stereo discs. This was done, and eventually it was accepted in America.

The companies now hope that their tape specification will achieve similar recognition, as acceptance in the United States means the establishment of a world-wide standard.

NEWS IN BRIEF

A LEEDS lorry-drivers' pull-in cafe has provided a uniquely valuable service for customers, with the aid of a tape recorder.

Long-distance drivers record details of the weather and surface conditions on the roads they have just travelled.

Drivers going in the opposite direction can play back this information and so have an up-to-date "met" service.

The cafe is on the main Manchester road and the service is getting good use.

M.R. DUDLEY GLANFORD—"the fighting farmer"—of Windlesham, Surrey, was granted permission to use his tape recorder in court recently.

He was applying against Bagshot Rural Council's refusal to grant planning permission for 208 houses in 38 acres of his land. He stated that the Council is not building enough houses.

SPECIAL Concerts for the blind are being given at Olympic Sound Studios, just off Baker Street, London, on the first Sunday in each month. Angus McKenzie, an old friend of tape recording enthusiasts, to whom he is readily available for advice, is arranging these concerts at his studios for blind persons only, although, of course, their escorts are most welcome.

The concerts, 3—6 p.m., are part live and part stereo recordings. Refreshments are available. The studios are in Carton Hall, Carton Place, W.1.

THE exhibition at The Design Centre, Britain's showroom of well-designed products, includes at the present time several hi-fi items, including the E.A.R. portable stereogram, "Triple-Four," the Pye "Mozart" amplifier and "Mozart Companion" speaker, and a Whiteley Electrical Speaker unit D.

The Grundig Book, supplying the answers to every possible query concerning Grundig tape recorders, is now going into its sixth edition.

First published in September, 1958, the book went through three editions by the end of that year, and now creates a new publishing record for the Focal Press. It is available from Grundig dealers and the usual sources, price 12s. 6d.

U.S. bid for British stereo tape records market

PARIS

A HUGE new range of American pre-recorded tapes will soon be available on the British market. Probably before the Audio Fair, agreement will have been reached for three major London stores to handle the product of United Stereo Tapes. Other distributors up and down the country will be appointed later.

But the range—probably the largest in America—will only be stocked in four-track stereo $7\frac{1}{2}$ ips, and will be restricted because of the attitude of big British firms. Even so, it will make more material available than ever before, particularly in the pop, mood music and jazz fields.

United Stereo Tapes is a subsidiary of the Ampex Corporation and was formed in August last year. It is a marketing organisation for the tape products of 22 recording labels.

The member labels give their foreign licensees the right to decide whether the UST scheme will operate in a particular territory. The scheme is intended for a two-year period, but member firms may rescind the arrangement at any time.

Although most of the American repertoire has been cleared on the Continent, none of the labels connected with major British disc firms can be sold here. This includes top Rank's affiliates as well as those of EMI and Decca.

Of the 22 participants, eight labels at least will be sold in Britain. Among them is Audio Fidelity, notable for its exciting range of actuality recordings, as well as important jazz artists like the Dukes of Dixieland and Lionel Hampton.

Other artists who will become available, the majority for the first time on pre-recorded tape, include Josh White, Elsa Lanchester (as a singer), Chico Hamilton, Billy May and Buddy Bregman.

Included, too, is the 21-tape range of Concertapes. Altogether about a hundred

pre-recorded tapes will be available for the first time in Britain.

The scheme was outlined to *Tape Recording Magazine* by W. H. Holroyd, European head of Ampex International. He is based in Basle, where a stock is kept for supplying Continental dealers. The British base will be Ampex headquarters at Reading.

"We organised UST because we realised that equipment sales will be aided by a substantial amount of pre-recorded material being available, both in America and Europe," he explained.

"UST is purely a distributing organisation. Most firms record and package tapes and send them to us complete. In a few cases we do the recording and packaging for them at our Sunnyvale, California, headquarters.

"From Geneva, we have been supplying dealers sets of 30—including the 20 best-selling American tapes. When the European markets develop, we shall have a better idea of what is required for the markets over here and base our dealer sets on that."

UST is solely concerned with four-track $7\frac{1}{2}$ ips stereo tapes because Ampex believe that this gives the most acceptable standard in relation to the cost.

"Our fundamental thinking behind UST," Mr. Holroyd went on, "was to produce a tape that was better than a disc, but which cost no more.

"Nothing less than stereo was acceptable, because pre-recorded tape has its greatest advantage over disc only when stereo is involved.

"To sell it at the price of an LP disc, four-track had to be used. Technically, it is perfected. Our policy now is to encourage all manufacturers to supply four-track equipment as an optional extra with their models.

"Most of the leading firms in Britain and the Continent, as well as America, have agreed to do this. Now we have high-quality tapes ready for the use on their equipment."

Tape in the schools

Another pioneer service

The tape recorder has now taken its place as an essential aid in education. **TAPE RECORDING MAGAZINE** plans to recognise this significant trend in a practical way.

We were the first magazine to give active encouragement and assistance to the clubs in their formative period. We now propose to perform a similar service for schools which are pioneering the new tape techniques of education.

A special, regular "Tape in the Schools" feature page will henceforth appear regularly in **TAPE RECORDING MAGAZINE**. It will be edited by Mr. Geoffrey Hodson, who has organised the special courses on tape recording at the Rose Bruford Training College—courses which have proved immensely popular with school-teachers.

The frequency of publication will depend upon the volume of suitable news sent to us by teachers. All who have direct experience of recording in schools are invited to keep us regularly supplied with information.

We require short news items about day-to-day activities: discussions among teachers, problems encountered, decisions to equip more schools with recorders, interesting tape exchanges with overseas schools, adventures in preparing Contest tapes, and so on.

All items should be addressed to the Editor, **TAPE RECORDING MAGAZINE**, 7, Tudor Street, London, E.C.4.

For the most interesting item published in each *Tape in the Schools* page we shall award a five-inch reel of tape.

a Dorset school-master discusses

THE FOURTH R

WHAT is a kopje; a bundu; a sun-downer; and a P.K.? You may not know; but my class of 9 to 11-year-olds could tell you. The questions were posed by European children in Bulawayo, S. Rhodesia, on the most recent tape-recording that has come to us at Wimborne St. Giles School, Dorset.

There are too many people directly and indirectly concerned with education who would dub the use of a tape recorder in the classroom as "just another unnecessary frill." I have discovered, however, that, far from decreasing the time spent on the basic subjects, the personal contacts initiated by an exchange of tape-recordings prompt children to work harder at their more formal lessons.

This is especially true when they are employing their out-moded "composition" lessons preparing booklets and letters to exchange with a friend overseas. Or, in an arithmetic lesson, they may calculate the cost of their breakfast, for example, to compare with that eaten by a boy or girl in Africa.

Scholastic aims aside, there are more urgent reasons for increasing the exchanges of tapes between schools in many lands. The chief of these is to introduce "a 4th R," to augment the three well-established ones; namely race relations.

The misunderstandings that so frequently arise between individuals or nations can usually be traced back to one basic cause—ignorance or misconception. The language barriers are not easily overcome at primary school level; yet, even so, a willingness to listen and to try to understand lays the foundation of right attitudes, at one of life's most formative stages, too: the impressionable years of childhood.

Indigenous music of a foreign people is an effective medium of individual or

group feeling. How many of us, for instance, know the stories of the Italian operas? Just to listen is almost to understand.

Language is not a serious difficulty in our tape exchanges. It is, rather, strange dialect to which our ears are unaccustomed. The Rhodesian schoolchildren are a cosmopolitan group; so it is not unusual to hear the English language distorted by the inflexion of, say, Portuguese.

Take Diamentino da Silva for example. He is an eleven-year-old boy from Portuguese East Africa. And if you find it hard to say his name (in full it is twice as long), it is "becawss dat's de vay it's spollid. So use your bren! Averybody got to loin som lengvidge."

Then there is Afrikaans which, when Anglicised, produces a sound that is more easily understood. What do they make of our Dorset dialect, for that matter! It all makes for variety; and learning is fun.

We have sent excerpts of our school carol service accompanied in church by a very fine organ. Parts of oral lessons and class-singing were also used; even the clink of collecting dinner money and giving out milk-bottles filled an odd corner on the tape.

Reading from one's diary, play-acting, telling of home backgrounds, and many other activities go to make the inter-school tapes fascinating, and rewarding; moreover, they provide steps towards better international understanding.

And, if you really want to improve your geography or general knowledge, here are the answers to the problems set at the beginning: (i) a hill or out-crop of rock, pron. "copy"; (ii) a dog; (iii) a party usually held on the veranda or "stoep"; (iv) abbreviation for "little room"—that's it, you have it—the lavatory!

A. T. P. COOPER

ANOTHER ARTICLE IN OUR SERIES ON TRAVELS WITH A TAPE RECORDER

FOR years I wanted a battery-operated, completely portable tape recorder, in addition to my two mains machines. About a year ago I decided to take the plunge, and I purchased the German Butoba. This machine, for the benefit of those who haven't seen it (and I've yet to meet a fellow Butoba owner) is quite a hefty chap, very unlike some of the battery portables which are now appearing in the shops.

It weighs about 20 lb., is as large as many mains recorders, and the motor has a clockwork mechanism running for about twenty minutes on one winding. This isn't the whole of the story, however, as the quality of recordings made with this machine at $3\frac{1}{2}$ ips) is really very, very good.

For months I used the Butoba at rather infrequent intervals—for a carnival, railway trains, a folk singer in a cottage without electricity, and so on—but it hardly seemed to be justifying its purchase, compared to the extensive use I was making of my mains machines.

Then quite recently three friends and I decided to spend a week in Dublin, and the Butoba became at once a very desirable item of luggage.

I expected to be parted from it at the plane, but was grateful when they didn't even appear to notice it. So I made my first recording of the trip during the flight, although practically all I had to described were the clouds we were flying over.

At the Irish Customs the recorder came in for a little attention, but, having satisfied the officials that my intentions were honourable, they gave it their blessing.

We found almost all the Irish people we approached with the recorder, ready and willing to talk to us. The one exception was a grand old lady of 87, who said she had had so many experiences in her life that she really didn't want any more new ones!

Many of our best recordings were never made, as I found that many times when I wished to use the recorder we had decided to leave it at the hotel (in view of size and weight). For instance, there was the ceremony of the blessing of the fishing boats, a coach tour with a wonderful sing-song on the way home, and a visit to the Irish Parliament when I hadn't dared to take my machine, but found, too late, that everything was so informal that it would probably have been welcomed (the House, of course, was not in session).

A. A. WALES

relates a fascinating story of tape recording in Dublin



"Feeling exactly as the Pied Piper must have felt, I carried the recorder, still playing, across the park, followed by a long stream of children who wanted to continue listening."

IRISH CEILIDH BANDS

I found the recorder and its short length of microphone lead a trifle overwhelmed when recording a number of people in a large room, but for interviewing individual people it was fine.

Then came my first chance to make really good use of the machine. We were invited to visit the Irish Club in Dublin, after it had closed for dancing, and here I made some fine recordings of the Ceilidh band and the violin-playing leader of the band. As during the whole of the week, we were given every possible help and encouragement.

The next day we took the Butoba up on the heights overlooking Howth, and made some seagull recordings which the B.B.C. might envy. We were also chased by seagulls (at least that's our story) when we climbed down too near their young; what's more, I have recordings to prove it! Later in the week, one of our party fell some way down these same cliffs, but I wasn't on hand to record his subsequent observations.

We were fortunate in being allowed to record inside a lighthouse, although technically this was one of our least satisfactory recordings. The acoustic properties of a lighthouse are not conducive to fine quality!

A recording which was much more successful was made on the spur of the

moment in the middle of Dublin. A new bandstand had just been completed on one bank of the Liffey. We were on the top deck of a bus, on the opposite side of the river. When we heard the sounds of Ceilidh music floating over the water, we just had to switch on the recorder and hold the mike out of the window. Result: a recording full of atmosphere, as the music blends with the many other Dublin sounds.

Towards the end of the week, we were taken to an open-air Ceilidh in one of the Dublin parks. These are officially sponsored, and go on all the summer. Here I was able to borrow a better microphone with a much longer cable, and I recorded most of the evening's entertainment from the luxury of a car seat. Mind you, I felt something like a goldfish, by reason of the faces of Dublin children which were keeping my activities under observation the whole time.

The recordings made at this event had given me great satisfaction. There were the pipers, the youngest Ceilidh band in the whole of Ireland, the traditional-style singers and dancers, and I mustn't forget the little eight-year-old boy who played the penny-whistle. During the proceedings, we were publicly welcomed over the loudspeakers (in both Gaelic and English), which gave us an even warmer

feeling towards our hosts. Then one of our party was asked to take part with his harmonica. Luckily for me, the recordings I made of him came out perfectly.

I found that any Dublin child, immediately he (or she) sees a microphone, has an irresistible urge to talk or shout into it. So I had no trouble in making recordings of young Ireland.

After the entertainment was over, I rather unwisely allowed myself to be persuaded to play back some of the recordings in the park. Time went quickly, and the next thing was a polite request from the park-keeper to clear the park so that he could lock up. Feeling exactly as the Pied Piper must have felt, I carried the recorder, still playing, across the park to the exit gate, followed by a long stream of children (and quite a few grown-ups) who wanted to continue listening.

We put the machine down on the Dublin pavement, and continued the recital, without exacting any apparent surprise from passers-by.

I came back from Ireland with a piece of my heart still in Dublin, two new tape pals, and several hours of recorded tape. Out of it all I expect to edit at least an hour's original entertainment in the form of a sound travelogue.

I RECALL hearing an ignoramus with a loud voice say years ago: "I never like to cut my tapes. Tapes that are cut are tapes ruined!" Such a remark, of course, shows a lamentable ignorance of the very foundation of tape techniques. Tapes can be improved by scissors or razor blade just as much as can be any long-haired, ragged-bearded youth—or, should we say, any cine film?

The film story as such is really made or created on the editing table. The same argument can apply to the tape which carries "sound pictures," and the beginner who avoids getting down to this job properly is missing much of the joy of his hobby.

This is not only a matter of excising unwanted words or pauses, such as the long wait when you may be listening for baby's first "Daddy" preceded by gurgles or rude belches! Most interviews contain some "Well" or "er . . ." or superfluous remarks better deleted, so that more force can be given to what is left.

Plays that are too long can be edited with the razor just as the MSS. can with a pencil. Dramatic sound effects can be cut off into effective silence, or brought in with equally dramatic suddenness; or a second of effective silence can be cut in. Those annoying "plops" when you forgot to turn down the volume before pressing the stop switch can be completely and cleanly deleted.

Later on, we hope you will take a still wider view of tape editing, rearranging whole sections, cutting in

EDITING and SPLICING TAPE

By Stanley Jepson

some sound effect or background noise. Those of you who, like me, use tapes for cine films, know how very helpless you feel if you cannot add a sequence to a film or delete something which has become outdated, simply because you think you are tied to an unalterable tape.

"Ah," I can hear you saying, now you have read so far, "this is all very well for those who use nothing but full track tape, like the BBC boys with those ten-inch spools which they gobble up at 15 inches a second. "My little machine takes twin track, so how can I cut it?"

Wait! This point will be taken care of towards the end of the article. Read on please!

SPLICING

It is time to talk about the technique of splicing; then we will discuss splicers.

I remember being well and truly misled a dozen years ago when buying tape in a London West End store. A handsomely dressed individual was showing me how to "join it."

He took two ends between left finger and thumb, both shiny side uppermost, cut through with scissors ("non-magnetic scissors, sir"—and I bought 'em), placed the oblique ends with shiny side uppermost in the little splicer, turned over the little pressure arms to hold down the tape, peered at the alignment with the profound air of a laboratory scientist, nodded his head to say they were well aligned, took a spool of three-quarter inch wide general-purpose adhesive tape, and placed it across the join, neatly ran a razor blade along the top and bottom grooves in the splicer, lifted the pressure arms, and rubbed the join with his finger-nail fastidiously, peered again, and lifted off the joined tape.

Holding it up, he smiled the salesman's bewitching smile and said: "Simple, sir, isn't it?"

I agreed, and for two years spliced merrily. How I wish the magnificent gent had used proper splicing tape, or at any rate trimmed just a slice off the edges of the splice.

For years afterwards my numerous tapes got neatly stuck together at the edges as the gum from the general-purpose tape oozed out. As the tape came off the feed spool it would drag (for several turns of the spool, for the ooze was deep as with the sea bed!) and my polite friends would look at my machine when weird patches of music interrupted the sweet melody.

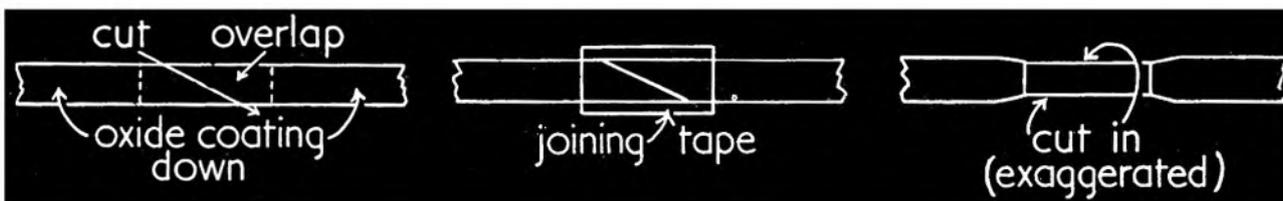
I spent happy hours thinking of the magnificent gent as I went through tapes, peeled off the now-very-sticky tape, wiped with carbon tetrachloride, dusted with best talcum powder, and re-made those early splices with proper splicing tape, made for the job, non-oozy, with hard adhesive.

Later on, in a Swiss shop, I found some Continental tape which was exactly the width of the quarter-inch recording tape. I started in with this until I found I was not very good at rolling on an inch of this without it finishing up over the edge of the tape; when it did I trimmed it with scissors.

By the way, my wife must have



The Emitape Accessory kit: Block, jointing tape and compound and six leader tapes



liked the look of the non-magnetic pair, so she "borrowed" them, and I finished up with a fine sharp pair of small Sheffield steel scissors which I periodically de-magnetised with my defluxer.

Now I use half-inch splicing tape from a large reel, put on *obliquely* over the 45 deg. cut, trimmed with a *sharp* razor blade in the top and bottom splicer channels, and sometimes finally trimmed with the scissors. If I want to feel professional, a dab of French chalk in the palm of the left hand is rubbed lightly over the join with the right finger and thumb!

From experiments, I find that a join at an angle of 30 degrees is almost as strong as at 45 degrees, but standardisation is good, and the cutting channel in splicers is made at 45 degrees. With broken tapes, I often hold in the left hand and scissor cut at 45 degrees by eye. In this game "neatness is all!"

WELDING

If you have a lot of splicing to do at once you may like to try welding the join, rather than sticking it down.

This employs the same principle as with film "cementing," where the base of the material is slightly dissolved and pressed or welded into contact with the other base.

When well made, such splices are almost invisible, and the system has much to commend it, even if a little messy at times.

But I do not think you can use this with the popular polyester base—it is too hard and good to dissolve, apparently! Even for P.V.C. and Acetate bases you need different solutions (A.P. 77 for the former and A.P. 35 for the latter), so that if you have a variety of tapes this complicates welding.

Having cut the tapes, you place oxide (or dull) side up in the splicer and apply with the brush a little of the compound, and this will dissolve the oxide leaving the clear base for a short distance, say just under a quarter of an inch. Wipe it clean with a rag, apply some more to the cleared section, overlap, press into good con-

tact for a quarter of a minute—and there you are. Almost invisible.

SPLICERS

You cannot do without a good splicer. I have acquired three, and one is fixed on the edge of one of my recorders. This one is the simplest type I have seen, but very good. It is just a flat piece of machined brass with a well-bevelled slot the width of the tape, and a diagonal cutting slot. There are no pressure arms and the fingers are used while the 45 degrees cut is made—the razor goes through both tapes at once. The tape slot holds the tape down easily while the jointing tape is held across and cut top and bottom. When you get expert at placing the jointing tape neatly along the top edge of the tape lying in the slot, you will have only one edge to trim.

The handy Bib model is well known and can be recommended. I have the

THAT EXACT POINT

Finding the *exact point* at which to cut is, believe me, an *exacting* job, demanding patience at times. If you are excising a "plop" or an "Err..." and leaving the word intact you must mark the vital spot with precision with the yellow pencil.

If you are nervous and think you may ruin something irreplaceable, make a copy of the tape first on a second machine. If the second machine has faster speeds like 15 or 7½ inches a second, you will find the work easier. Cutting on a tape made at 1⅞ ips, for instance, is not to be recommended if you want precision, but if you copy the section to be edited to a tape moving at 15, or even 7½ inches a second, how much easier the work is! Then you can re-copy down to 1⅞ ips again for final cutting-in.

If you are the fortunate possessor



The new design of the Bib splicer allows easy access of the tape

original model, with arms placed so that you have to put the tape around the left one and below the right one; the design has now been changed so that there is no up-and-over business with the pressure arms, and the process is extremely simple.

I have also an Emitape jointing block, with a guillotine cutter of non-magnetic material, solidly made and most useful.

There are other splicers in the field; whichever you use, be neat and thorough, guarding against frayed edges, trimming away overlap, and ensuring good alignment.

One or two chinagraph pencils for making marks on the shiny back of the tape are essential. Yellow is a good colour, but I also have white and black for distinguishing purposes.

of an old-fashioned "open" deck along which you can move the tape by hand, you can easily identify and mark the exact points of cut. The little Fi-Cord portable, incidentally, has this facility.

With some machines you can make the work easier by removing the plastic top which covers the sound and erase heads, so that you can see where you are. By experiment you may also find that when you press the stop button the exact point on the tape will be at point X along the tape track, so mark this on the deck with your yellow pencil. This assumes, of course, that your reaction time twixt hearing and stopping, is constant! It may not be, so check on the yellow mark if you can by moving tape slowly along

(Continued on page 33)

TAPE TO DISC SERVICES

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

RENDEZVOUS RECORDS

(T. H. ADKINS)
TAPE TO DISC SERVICE
33 — 45 — 78 R.P.M.
S.A.E. to:

19 Blackfriars Street, Manchester 3
Phone: Rusholme 6868

RAPID

Recording Service

78's and L.P's from your own tapes.
Master Discs and Pressings.
Recording Studio
equipped with Bechstein Grand.
Practising studios
with or without accompanist.
Mobile Recording Van.
"Off the Air" Service.

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

TAPE TO DISC SERVICE

78's or L.P.

QUEENSWAY RECORDING STUDIOS

123 Queensway, London, W.2
Tel.: BAYswater 4992

Inquiries must be addressed direct to us

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, "Deroy" Sound Service, Little
Place, Moss Delph Lane, Aughton, Orms-
kirk, Lancashire. Tel.: AUG 3102

BUILDING A CLOCKWORK-BATTERY RECORDER

Third article in a series by Richard A. Margoschis

Trial and error in the deck assembly

HAVING fixed the position of the two spools and the capstan, it remained now to complete the arrangement of the deck and, although I had a rough idea of how I intended to do it, I must say that it developed bit by bit as various problems presented themselves. The final lay-out is shown in figure 2.

The position of the two Bradmatic heads, record and replay (and of these more later), was arranged so as to align their face with the face of the capstan. Care had to be taken, however, to see that the stems, which descend through the deck and the top motor plate, did not foul any working parts. (See photo).

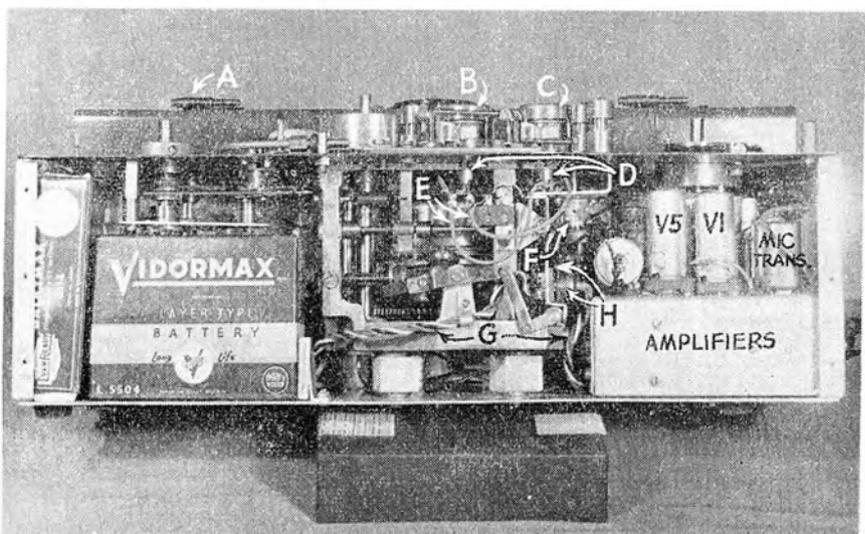
The two tape guides, A and B (Fig. 2) are set to present the tape to the face of the heads and at the correct height. They are fixed by 6 B.A. screws threaded into the deck and are drilled off centre; thus

revolving them ensures the tape just coming up to the face of the heads. This is satisfactory, as the tape will never pass the heads at high speeds. The tape guide C is necessary in order to direct the tape correctly around guide B, as the tape is reduced on the reservoir spool.

The pressure roller is mounted on a short arm, which is pivoted at point D, and is held against the capstan by the spring E. Some trial and error was necessary to find the correct tension of this spring, which is now just sufficient to stall the motor when the reservoir spool is held firm. A further tape guide F, a large diameter one as used by Bradmatic, guides the tape on to the take-up spool.

I now required some simple means of holding the rubber pinch roller away from the capstan when the deck was at rest.

The motor was already provided with a brake operated by a turning movement



4. DETAILS OF UNDER-DECK ASSEMBLY

A, lid hinge; B, replay head; C, record head; D, head stems; E, screened leads to—F, co-axial sockets; G, battery leads; H, plug and socket (4-way)

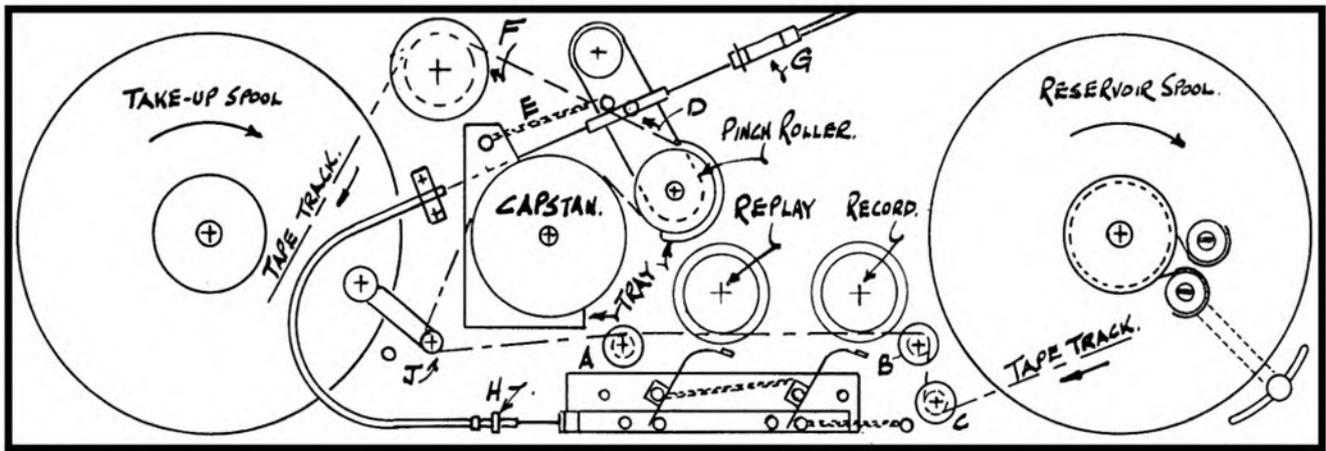


FIG. 2.

on a spindle, which terminated just below the motor winding point. (Photo 2).

To the spindle I fitted a lever, one end of which was connected to the arm carrying the pinch roller by means of a length of cycle brake cable, provided with adjustment at G. Means of adjustment is provided with the cycle cable, and it was a simple matter to adapt it for the purpose.

A second piece of cycle cable extends from the pinch roller arm and terminates at the mechanism which operates the pressure pads. This length is provided with its own adjustment at H.

The two pieces of cable are actually connected by a double-ended clip which spans the arm, the clip being attached to the arm by a 6 B.A. screw threaded into the arm far enough to leave the clip free to swivel, and locked by a nut underneath.

I found this much more simple to make than any arrangement of rods and it resulted in the downward movement of one lever causing the motor to start, the pinch roller to make contact with the capstan, and the pressure pads to fall against the heads.

The mechanism operating the pressure pads is quite simple and is a self-contained unit fixed to the deck by two 4 B.A. screws. Fig. 3 shows the arrangement.

Strip A slides on strip B and is loosely held by 4 B.A. screws 1 and 2, which are threaded into plate B and locked by a lock-nut below the deck. The two arms carrying the pressure pads are mounted on pillars C and D and are free moving. Pillars E and F are threaded into plate A and are adjusted to be against the projections of the pressure pad arms when the pads are against the heads.

When the cable pulls on the clip G, plate A slides over B and the pillars E and F cause the arms to swivel and lift the pads from the heads. Spring X helps A to return to position when the cable is released. Spring Y is fitted diagonally across the swivels of the arms and the tension on this spring alone determines the pressure that the pads apply to the heads. It is actually an adaptation of the method used on the Brenell Mark V.

I found that when the deck was at rest the tape tended to slip off the capstan and pinch roller, with the result that when an attempt was made to restart the deck the tape got badly tangled. This was eliminated by the provision of two aluminium trays, one beneath the capstan and one beneath the roller, thus making it impossible for the tape to slip off either.

I considered that it was now time to test the deck with some sound and so, after rough alignment, the heads were connected to the amplifiers of my Bradmatic recorder and a pre-recorded tape threaded up. When the deck was started, sound came from the speaker all right; but oh, that flutter!

I suspected that the motor governor was to blame. As the weights of the governor fly out they pull a spinning brass disc against a stop; this was of a hard fibre material and appeared to accentuate any imperfections in the surface of the disc, and so I replaced it by a small piece of foam sponge. This was a definite improvement, but flutter was still present in speech.

I then added the tape guide J in Fig. 2. This guide is mounted on a swivelling arm, the spindle of which passes through a bearing in the deck and has a similar arm underneath, this latter being attached to a light spring. As the tape goes around the guide it has to pull against this spring; it has a considerable smoothing effect and also holds the tape away from half the capstan. In fact, it eliminated nearly all the flutter.

Careful adjustment was also made to

the brake on the reservoir spool to apply the correct tension to that end of the tape.

With the aid of the Bradmatic amplifiers a signal was applied to the first head, played back from the second head, and pronounced satisfactory, considering that the heads were not yet correctly adjusted. When this recording was played back on the Bradmatic deck, however, an increase in speed was noted after about two and a half minutes.

This indicated that after that period of time the motor was beginning to run slow, due to the load on it, and it meant that it would require winding every two minutes; also that an indicator was necessary as to when that time had approached.

The motor was already provided with a mechanism operating a sliding arm, and obviously intended as such an indicator. I extended this arm and provided two small adjustable tappets at the end of it. Each tappet, in turn, comes in contact with a brass strip and completes a circuit connecting a small 4½ volt battery with an indicator lamp.

The first indicator, green, comes on after the motor has been running approximately one minute and the second, red, after two minutes; the appearance of the red light indicates rewinding is necessary.

In addition, the main start/stop lever of the deck breaks this circuit when in the stop position, thus preventing any waste of the battery, irrespective of the state of the motor.

(To be continued)

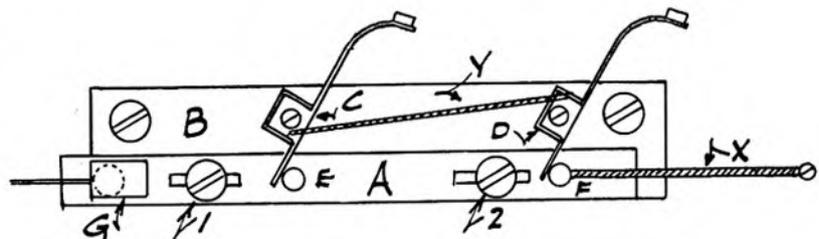
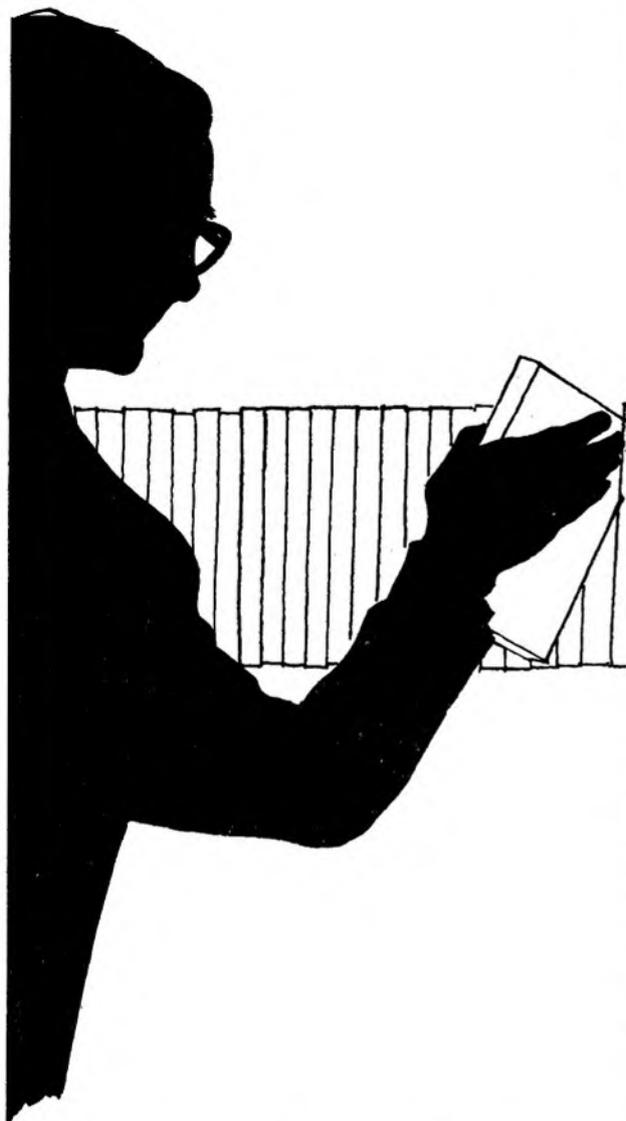


FIG. 3.



*Those who sell
recommend . . .*

SCOTCH
TRADE MARK
BRAND
recording tape



WORLD'S LARGEST SALES OF MAGNETIC TAPE

Sound Effects

I DEALT, in the issue before last, with the problem of location recording in a railway station; now, it is the turn of the coach station. The main difficulty here is that there is almost continuous traffic movement inside the station itself, which tends to emerge, on playback, as a rather monotonous "sound-wash" (like a water-colour in which the colours have run into each other), with hardly any individual characteristics at all.

As with most acoustical problems of this kind, where the sound-distortion is worst at the very spot from which the recording is to be taken, the safest answer is to compromise by meeting the trouble half way.

Choose a spot near the station entrance or exit and record from there. This has the effect of reducing the uniformity of sound to the minimum, yet picking up the sound of the coaches as they arrive and leave without the accompanying distortion produced in the interior. Also, the voices and footsteps of the passengers will register clearly for being recorded more or less in the open.

If you find that the result still sounds somewhat flat, try altering your position slightly by walking up and down for a few yards while still recording.

Don't wander deliberately into a crowd of people, though, or you'll most likely come up against a "sound-block." This will probably not only cut out all the station noises, but every other recognisable sound as well, leaving you with a yard or so of tape containing nothing more than a succession of completely unidentifiable shufflings and scrapings.

The "sound-block" is an odd phenomenon and responsible for quite a few poor results in sound effect work, often without the operator being aware of the cause. I shall be dealing with the problem a little more fully in a later article.

Indoors for the next location-effect, that of factory noises.

It depends, of course, on which type of factory you wish to represent. Some factory noises can be mocked-up on the work-bench although, unless done extremely well, they can sound very corny and hashed-up. In any case, a sustained machinery noise is difficult to achieve unless you are handy enough to be able to run the thing on an entirely mechanical basis.

I once recorded the ticking of a clock at double-speed, added an echo by re-recording, and the result was a passable imitation of a mechanical steam-hammer.

Chances of such easy success as this, however, are rare, and this particular one owed far more to luck than any natural cleverness on my part.

ALAN EDWARD BEEBY,

who has had long experience in devising and recording sound effects, continues his regular column of advice

If there is an effect you want, and which is causing difficulty, write to him for guidance.

Assuming that you have obtained permission to visit the factory during working hours, here are one or two pointers. If you are planning to use a mains recorder, check carefully on voltage supply and take a fair selection of plugs and adaptors with you; the wiring arrangements at some of the older factories have to be seen to be believed!

Choose one of the machines as your main feature, preferably one having a fairly slow operation motion. A quick action machine (such as sole-stitcher in a shoe factory) is quite useless as a main feature, registering simply as a sudden blast of meaningless noise.

There is no need to go right inside the room to make your recording. Having decided upon your feature machine, find the nearest exit and set your equipment up just outside the door. Now, instead of relying entirely upon the gain control, try opening and shutting the door by degrees until a satisfactory recording level is reached.

This is an old trick, known professionally as "muting," and cuts out quite a bit of the distortion which might otherwise be encountered by asking the recorder to cope with the full blast of the noise through an open doorway.

Acoustic conditions and machinery lay-out vary enormously in different factories, but there is one rule which may be applied in each instance, namely: "Don't try to put all the eggs in one basket."

Aim at one particular section of activity and be prepared to sacrifice the rest. Casting the microphone about in the hope of obtaining an all-in, panoramic effect is a waste of time, I assure you.

Such effects as this can only be achieved successfully by "field-mixing," and this is something far beyond the scope of the amateur in practice . . . and pocket!

Although tape recorders are less of a novelty nowadays, you are bound to attract *some* attention from the employees. Don't attempt to cash-in on this by asking an operative to ". . . work your machine when I drop my hand." Remember, they're not paid to waste the firm's time by playing "request-numbers" for your benefit!

One more thing. Should you be carrying any accessories such as spare leads, spools, mikes, etc., in a closed bag, you may well be asked to surrender this for inspection before being admitted to the building.

Some people tend to become quite indignant and even downright rude over this procedure, although there is really no need to be. Most large factories, especially those engaged upon Government projects, employ a Security Officer at the gate, and he is, after all, only doing his job.

And bombs have been ingeniously hidden in the most innocent looking parcels before now.



*Those who know
insist on . . .*

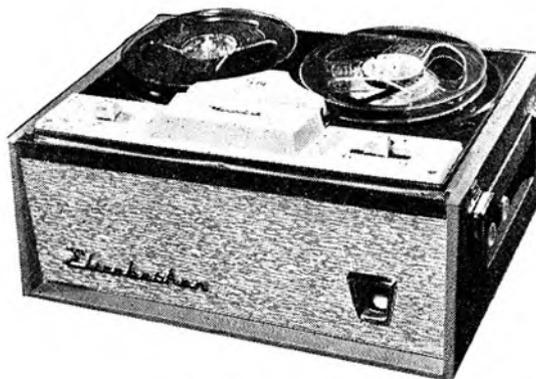
TRADE MARK
SCOTCH
BRAND
recording tape



WORLD'S LARGEST SALES OF MAGNETIC TAPE

Equipment Under Test

THE ELIZABETHAN AVON



★ By
F. C. Judd
A.M.Inst.E.

ESSENTIALLY a domestic class recorder with a family appeal, the Elizabethan "Avon" will be especially attractive to teenagers, who will find that this compact little machine has a variety of facilities and is easy to operate. The quality of reproduction is comparable with a good class radio receiver and, with its "through" amplifier, the Avon can be used as a record player or radio receiver. I tested this facility, via a simple medium wave transistorised tuner and a pick-up, with surprisingly good results.

The Avon is a single speed machine (3½ ips) and takes the Continental-sized 5¼-inch spool, permitting 90 minutes' running time per spool of LP tape, or 45 minutes with standard tape.

Operation of the deck controls is simplicity itself, requiring no more than the movement of a button-operated gate lever that selects re-wind or tape play/record, and a single button for locking on "record." Other controls, which are at the side, are for volume—common to both playback and record, and for tone, which is combined with the main on-off switch.

Inputs are provided for microphone or gram, and are common when recording, so that speech and music, for example, may be mixed. In addition to the input sockets, there are others, for monitoring headphones and for an external speaker.

On the subject of speakers, the Avon has an internal small elliptical type which lacks bass response but otherwise gives very passable reproduction. The over-

all quality would be improved considerably by using an external speaker (3 to 5 ohms) with a stronger bass response, so that the two combined would give a more balanced output.

The recorder is compact and housed in an attractively finished semi-contemporary-style case in green and grey leatherette.

A magic eye recording level indicator is fitted and the recorder is supplied complete with a crystal microphone, a spool of tape, spare spool, gram/radio connecting lead, spare plugs and clearly written instructions; in fact, one buys a complete outfit when buying an Avon.

Accessories, such as a telephone adaptor and monitoring headphones, can be obtained as extras from the makers.

TESTS

The Avon was tested for frequency response from the TBTI test tape at both the high impedance outlet and at the speaker terminals. A response test was also made, using the gram input through to the speaker, as shown by the curve of Fig. 1.

On tape, the bass and treble response falls away more rapidly, being 10 dB down at 60 cps. At the high frequency end, the fall-away may be compensated by lift from the tone control, which does increase the treble response by a considerable amount.

Hum and noise level was measured at -40 dB at nearly full gain, the hum content being a little higher than valve noise.

Quite a number of manufacturers are using double triodes as voltage amplifiers for their recorders, a practice which undoubtedly sacrifices quality of reproduction and low noise for higher gain, and helps in reducing the number of valves and consequently the price of the recorder.

No wow and flutter percentage figures are given by the makers, but performance in this respect is better than that of most of the lower-priced recorders, although the model subjected to tests did have some flutter effect for the first few feet of tape, which was presumably overcome by increasing tape tension as the tape began to fill the take-up spool.

Erase was found to be clean and left only the slightest noise on the tape, and if superimposing is required there is a link-plug at the back of the recorder which takes the erase head out of circuit.

Re-wind is fast and tape spooling is as good as, if not better than, on some of the more expensive machines I have tested, while braking is quick and shows no tendency whatever to tape spill.

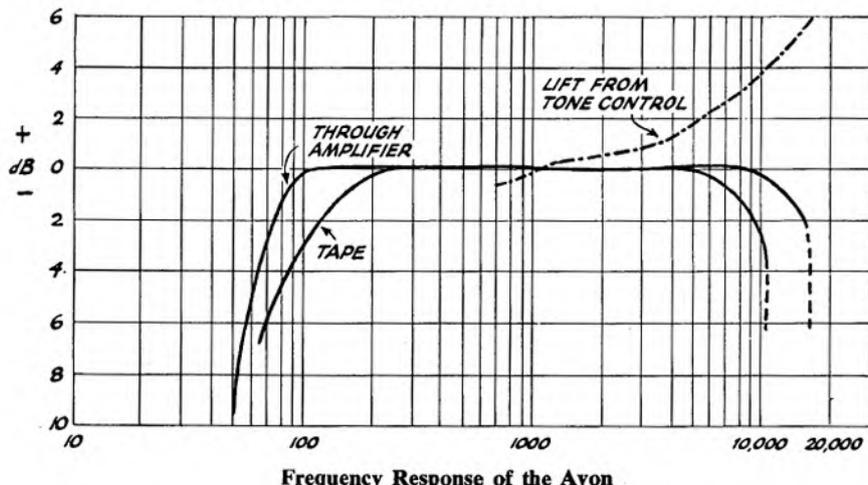
I examined the deck mechanism and amplifier unit, both of which are well constructed and protected against rust by passivated cadmium plating. Both deck and amplifier are quickly and easily removable for servicing. The head cover can be removed separately for tape-head azimuth alignment, for which adjusting screws are provided.

While, as I have said before, these lower priced popular recorders cannot be labelled "high fidelity," or be directly compared with those of the expensive domestic class, most of them are being produced with an acceptable standard of performance, which is better than that of recorders of a higher price range manufactured, say, two years ago.

I would say that the Avon is one of the few at the top of its price class, and it deserves full marks for its particular standard of performance.

MANUFACTURER'S SPECIFICATION

Output power, 2½ watts.
Frequency response, 60-10,000 cps.
Power supply, 110-250v 50 cps. (Other voltages to order.)
Input sockets, one for high impedance mic, and one for pick-up or radio.
Valves, 12AX7, ECL82, EM85 and metal HT rectifier.
Recording sense, British standard.
Size, 14 × 10½ × 7¼ ins.
Weight, 16½ lbs.



When a recorder comes into the home, anything can happen!

JEAN ROGERS

describes

A REEL MISTAKE

THE thing arrived unheralded one wet morning about eleven o'clock. The delivery boy was quite unperturbed by my wide-eyed astonishment.

"What is it?" I asked, bewildered.

He walked in, dumped the package on the living room floor with an impatience that suggested I must be as empty-headed as I looked and left.

Closer inspection of the cardboard carton helped little. The original manufacturers' label had been partially ripped off, but the remaining portion offered no clue. The only other marking was a neat red label with white lettering, claiming that the contents were FRAGILE.

I racked my brains, trying to recall a remark of Bill's which would explain the mystery box, but as the day wore on, I became obsessed with the fact that the delivery boy had erred and that at any moment I'd be arrested for being in possession of stolen property.

That evening my husband arrived home a little earlier than usual, and actually looked pleased to see me. On these grounds alone, I knew something was afoot.

"Good evening, dear," he said, with enthusiasm which had been restricted to our pre-marriage relations.

This was too much. "A very funny thing happened this morning," I began, watching him closely as I brought forth two platefuls of steak pie and potatoes.

"Oh! What was that?" He didn't even look up. He just kept on tickling the ear of our Labrador, Napoleon.

"A silly delivery boy left a package here by mistake."

His reaction was so immediate that I almost dropped the plates. Even Napoleon looked worried. The poor dog had never seen his master so active before.

Bill jumped out of his chair and looked around anxiously. "Where is it?" After a deathly silence, he asked warily "You didn't send it back, did you?"

"No dear, I didn't, it's in the living room. Now sit down and have your . . ."

"Wait." He bounded out of the room, leaving me with my mouth agape. He brought the carton in and laid it down on a chair. He was pleased as a kid on Christmas morning.

"Ah, good old steak pie," he said, rubbing his hands gleefully, and sitting down at the table.

My curiosity was overwhelming. "Just what is the 'it' we both keep referring to?"

He gulped down a mouthful of onion and said, "Well, dear, it's like this. I bought a tape recorder." The accompanying dazzling smile was supposed to soften me.

"Why?"

"To make tape recordings."

"What of?"

He waved his fork about for a while as he scrambled for an answer. "You, me and perhaps the dog."

My fork paused in mid-air. "That should be fun; I'm sure Napoleon will be pleased."

"Now, honey, take it easy. It's the fashion to have a tape recorder these days. Everybody has one."

We ate in silence for a moment. I was angry, not because there was a tape recorder in the family now, but because it had arrived without my knowing anything about it. A woman likes to know about the things she'll have to spend the rest of her life with.

He cleared his throat. "I got it cheap. It was £50. I thought it would be a nice little surprise, dear."

"I suppose you know what you're doing," I said resignedly, "but it does seem rather a lot of money for a toy."

"It isn't a toy, Jean. We can even exchange tapes with lots of people in other parts of the world. Oh, there's a million things we could do with it."

I mellowed. "Well, why don't you open it up, and let me see what it looks like?"

He slit the carton open, hauled out the packing, then carefully withdrew the recorder. I must admit I was immediately taken by the pleasant two-toned box that lay in front of me. Bill opened the lid and invited me to inspect the contents. A series of knobs and switches stared back at me. He saw my blank look and pointed to the booklet explaining the operation.

"It's all in the book," he told me. "You'll get the hang of it in no time."

"Not me!" I exclaimed. "My place is in the kitchen. You're the electronics expert in this house."

From the sanctuary of the kitchen, I tried to ignore the ear-splitting screeches and occasional loud vibrating hums.

A week passed. By now I was sadly aware of the fact that I was sharing house and home with a complete stranger, who was oblivious to everything that surrounded him, except his precious tape recorder. I even had to face the rigours of television alone.

There came a time when I could stand it no longer. I switched off the TV set with a flourish, and in a fine even voice

told him, "Napoleon and I were thinking of leaving you, dear."

"Were you?" he answered with complete disinterest.

I will swear that our dog is human, though. At the mention of his name, he clambered to his feet, lumbered across the floor and flopped his body over my feet, looking up at me with a sympathetic expression.

I was moved.

Suddenly the stranger sprang into life. He switched off the recorder and sat back in his chair, looking pleased with himself.

"Well, at last, I've got it working well. I think I've got the hang of it now." He rubbed his hands in satisfaction, then broke off, "What's wrong, dear, why don't you switch on the TV?"

At last it seemed to penetrate. With a certain amount of shame he said, "I realise I've been a bit awkward these last few days, but you do understand, don't you? I know," he said suddenly, "let's do the town tomorrow night. We'll have dinner and take in a show. What do you say?"

He moved over and kissed my cheek affectionately.

"I say 'yes.'"

Next morning, looking forward to the evening's outing, I found myself humming lightly as I dusted my way around the house. Then my eyes rested on the booklet lying on his tape recorder.

"How to operate your Kenzat tape recorder," I read out, and studied the instructions until I found myself holding the microphone in my hand and the reels slowly revolving.

A dull frightening sensation hit the pit of my stomach, and I was strangely reminded of that far distant day in school when the teacher singled me out, and said in sepulchral tones "Jean Rogers, recite to the class, please, the piece of poetry you learned yesterday," and with shaking legs I rose to my feet and . . .

My daydreams were rudely awakened by our chiming hall clock. With the greatest difficulty in the world, and with continual reference to the instruction booklet, I restored the reels as near to their original position as possible.

Our night out was wonderful and beautiful, and Bill didn't even mention the fateful word "recorder" once.

How long would our new romance last?

As it turned out, it ended the following evening, when Mr. and Mrs. Jones were invited in for bridge. All went well until supper time when Bill casually mentioned his recent acquisition. The

(Continued on page 26)

When two speakers become a habit

MANY people believe that stereo is more a matter of evolution than of revolution, and the theory is a good one. It applies not only to equipment but also to the listener.

After years and years of associating the sounds of reproduced music with the loudspeakers from which they emerged we were at first vaguely disturbed by the fact that, in the case of stereo, this was no longer true. We are predisposed to believe that what we are used to must be right, and it takes us a long time to get to like a new situation, even if we are intellectually convinced that it is an improvement.

Stereo Notes

Many of us have now reached the point where the sound no longer seems to belong naturally to a loudspeaker but to the space between two of them. Instead of being a little worried by the lack of identity between the sounds and the speakers we have developed an underlying preference for this state of affairs, to the point where single-speaker reproducers are slightly resented.

We find, in consequence, that monophonic recordings are acceptable through two speakers but not quite satisfactory any more through one. The best way I can describe it is by saying that when I hear a voice through one speaker I find myself imagining that the owner of it has been compressed and boxed up inside the speaker. There is a real sen-

sation of relief when switching over to dual channel and hearing the singer or speaker unconfined in mid-air.

In the equipment sphere the law of evolution is tending to apply in the sense that stereo takes over, in many cases, when items of mono equipment fade away.

After listening to stereo demonstrations, and thinking things over, thousands of music lovers have come to the firm conclusion that the future certainly lies with two-channel reproduction. And this remains true in spite of the fact that a good proportion of them have not yet bought a single item of stereo equipment.

One by one they will come to the conclusion that an amplifier or a pick-up has done sufficient service to warrant the change, and the thing will be done.

The change-over could take place all the sooner if the individual enthusiast could overcome the nagging fear that much better things will be available a bit later on. The only contribution I can make is to venture the opinion that as far as amplifiers, speakers, turntables and tape decks are concerned the rate of improvement should be no more than normally constant from now on. In the case of stereo pick-ups and stereo heads, we should have a much wider choice of high-quality work in a year or two and possibly one or two fundamental improvements. I am quite sure, however, that anyone who buys the best that is now available in this field will not regret it later. Only the mediocre will, I think, look antiquated by the standards of 1962.

D. W. GARDNER.

"Stereo and Hi-Fi as a Pastime"

DOUGLAS GARDNER'S new book, *Stereo & Hi-Fi as a Pastime* (Souvenir Press, 15s.) sets out to give an understanding of stereophonic recording and reproduction to the non-technical user. The text is written in a very readable manner, and the author has skilfully bypassed many difficult technicalities in a way which will be no detriment to the person who only wishes to obtain the best from his equipment, while at the same time whetting the appetite of those beginners who feel inclined to pursue the subject further. For the latter, a useful bibliography is included at the end of the book.

The relationship between stereo and high-fidelity reproduction is clearly outlined in the first chapter, while the second chapter gives a simplified account of the principles of stereo reproduction. Stereo disc and tape follow, each giving an insight into the recording as well as the reproduction of two channels.

Probably the most practical chapter is that dealing with loudspeakers, for here the owner learns how to experiment with loudspeaker positioning until optimum results are obtained. In this chapter the author also gives guidance regarding the selection of loudspeakers, pointing out that it is not necessary to buy the most

expensive in order to achieve good stereo.

Information is given about amplifiers and pre-amplifiers, and useful hints are given about buying equipment, either in parts or as a whole. The section on stereo broadcasting covers several possible systems, including the Percival—but not the Mullard, details of which had not been released when this book was published.

Methods of overcoming the problems of installing stereo in the home are considered at length, and tips are given on how to look after your records.

Music and drama are greatly enhanced when transmitted and reproduced in stereo, and a chapter devoted to these subjects provides much useful behind-the-scenes information. An appendix of recommended stereo recordings should help those who are as yet unaware of the wide variety of symphonies, orchestral, jazz, operatic, and other recordings available. Finally, a second appendix of technical terms will help readers to follow any semi-technical literature on the subject of stereophonic sound.

Summing up, it is felt that anyone who can afford even modest stereophonic equipment cannot afford to be without this helpful book.

C. L.

Hi-Fi HARRY by Rich



"105 guineas and you can't think of anything to say!"

MAGAZINE DIGEST

In this column we draw attention to items published elsewhere which may be of particular interest to readers.

High Fidelity (American): "The coming break-through in tape," an interview with Dr. Peter Goldmark, Director of C.B.S. Laboratories.

The Tape Recorder: "Sound and cine—making a cue tape."

Hi-Fi Tape Recording (American): "Wow and flutter"—cause and effect; "Adding sound to Todd-AO"; and on a smaller scale, "Add sound to your 8mm films."

All the above are issues dated March.

A Reel Mistake

(Continued from page 25)

Joneses were suitably impressed, so, of course, my hero began to explain the intricacies of his recorder.

With sheer delight he informed us that we were to hear a recording of a symphonic piece.

Somehow, I sensed that something was amiss, yet I couldn't put my finger on it. The recorder started up, but instead of the 100-piece symphony orchestra all that issued forth was a nervous giggle followed by a shy, quavering voice, which I ashamedly recognised as my own:—

*"By the shores of Gitche Gumees,
By the shining Big-Sea-Water
Stood the wigwam of Nokomis
Daughter of the Moon Nokomis
Dark behind it rose . . ."*

Three faces registered stark astonishment and one by one they turned to stare at me. I sat stupidly with a teapot in my hand. Then I said the only thing I could possibly say under the circumstances.

"More tea, anyone?"

New Products

A New Recorder Microphone

A VERY WIDE RANGE of the well-known AKG microphones from Austria is now being marketed in Britain. The latest model is the dynamic cardioid D. 11N illustrated on this page. This has only just been released.

Although suited for all electro-acoustic systems, this microphone has been specially designed for use with domestic recorders.

It has a built-in bass attenuation switch, which can help to reduce excessive reverberation pickup. The cardioid pick-up pattern means that sound from undesired directions is attenuated.

The microphone incorporates a folding table stand. It works at high relative humidity, which means, for example, that even close speech for 24 hours at a time would not destroy the diaphragm.

Frequency range is quoted at 80 to 13,000 cps. There is a miniature three-pin plug and impedance is 200 ohms at pin three, approximately 45,000 ohms at pin one, and ground at pin two.



The microphone case is made of scratch and impact resistant polystyrol and is coloured light beige at the front and dark beige at the back.

The price has yet to be announced.

Politechna (London) Ltd., 357 Euston Road, London, N.W.1.

A "voice" for slot machines

A TAPE-PLAYBACK UNIT has just been marketed which is specially designed for putting into slot machines to say "thank you" to the customers.

Officially, it is described as being for use in conjunction with vending machines, safety or exhibition devices and point-of-sale displays.

A cassette gives 45 seconds' playback at 3½ ips and the recording can be made on any standard machine. A punched hole in the continuous tape loop allows a circuit to be completed between messages, and so stops the device.

A remote control then permits the next playback when another customer appears. A counter can be provided to keep check on the volume of trade.

It is obvious that a device of this kind would also be suitable for a variety of exhibition uses. The price is £50 9s. 3d., plus £2 2s. for the counter.

R. J. Comyn Ltd., 10 Gloucester Mews West, London, W.2.

When writing to manufacturers mention that you "saw it in Tape Recording and Hi-Fi Magazine."

SHURE BRING U.S. MICS TO U.K.

SHURE BROTHERS, well-known American manufacturers of microphones, high-fidelity pick-ups and electronic components, have entered the United Kingdom market. They have appointed Mr. J. W. Maunder, of 95 Hayes Lane, Beckenham, Kent, as their representative in this country.

Initial marketing plans include Shure's Custom Dynetic Stereo Cartridge and the firm will be represented at the 1960 London Audio Fair. Retailers and the public will be able to gain first-hand impressions of the new components at a display booth (No. 43) and a demonstration room (No. 322).

TRIX "EVEREST"

IN OUR ISSUE dated February 24, the price of the Trix "Everest" was quoted at 44 guineas. It is, in fact, 49 guineas.

The new tapes

IRISH BRAND

MORE MAGNETIC recording tape of American manufacture—the well-known "Irish" brand—is now available in Britain. It is to be marketed in four grades: 195 Standard Play, 211 Professional, 601 Long Play, and 724 Double Play.

The 195 Standard tape has a cellulose acetate base.

The oxide coating was very even on the specimen tape. There was no curling of the edges and the tape wound very nicely from reel to reel.

Frequency range was about the average for standard tape. This particular type of magnetic tape will suit most tape recorders and should meet the requirements of many home recordists.

211 Professional magnetic tape also has a base of cellulose acetate. The smooth surface of this particular tape, together with the use of a good plastic base, gives a more constant sensitivity, and a low noise level.

Frequency range extended beyond that of the 195 standard tape, on all the machines used. No faults were to be found with this tape.

The 601 long play has a Mylar base. This material is very flexible and makes intimate contact with the record/replay head. Using a moderately-priced tape recorder using fixed bias, a frequency range of 50-12,000 cycles at a tape speed of 7½ ips was obtained; at 3¼ ips it was 60-8,000 cycles, ± 3dB.

Good braking systems are required when using 601 long play Mylar-based tape, or tape stretch may occur.

The 724 double-play has a Tensilised Mylar base, which provides added strength. I cut off three inches of tape and tried to break it by hand—unsuccessfully.

Although this tape is extra thin, it does not stretch easily.

One advantage of double-play tape, of course, is that long orchestral works can be recorded without a break, when 7-inch reels are used.

Frequency range was about the same as that of 601 long-play tape. The oxide coating was even and clean.

Summing up on these tapes of American Irish brand, I would say that they are well made and are clear of pinholes—the cause of drop-outs, which are unrecorded signals due to imperfection of the coating of oxide.

Thin tapes have a tendency to curl, caused chiefly by solvent attack in manufacture. No curling was to be found with either 601 or 724 Irish brand tape. All four tapes were free of splices or joins of any kind.

Cellulose acetate is hygroscopic and should be stored in room temperature of 60-70°F.—this applies to the 195 and 211 Irish brand.

Reels supplied with Irish tape have centres with three indentations—on all of these tapes, marks were to be seen on several layers. To obviate this, I suggest leader tape be used at both ends of the tape.

G. P.

USING A BALANCED MIC CABLE

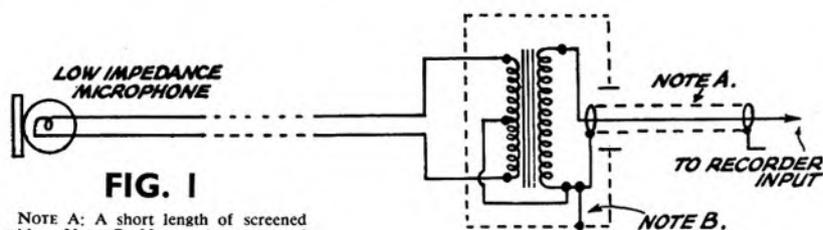


FIG. 1

NOTE A: A short length of screened cable. NOTE B: Not to be connected if transformer is mounted on chassis (see text).

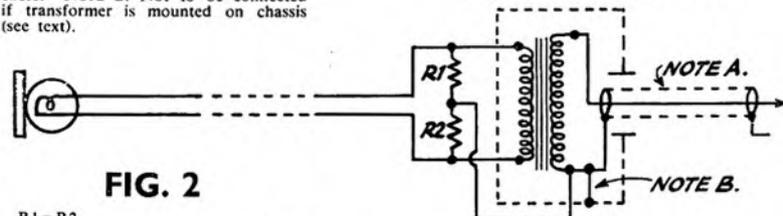


FIG. 2

$R1 = R2$.
 $R1 + R2 = 10 \times$ microphone impedance (approx.).

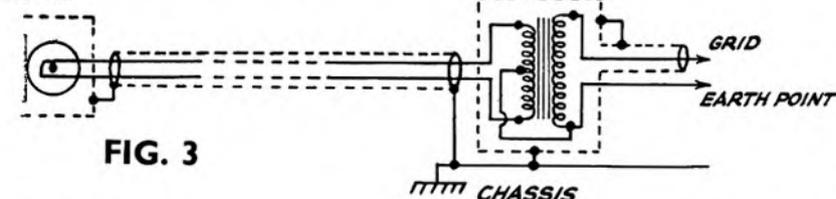


FIG. 3

THERE is a growing desire among tape recording enthusiasts to record sounds from greater distances than are permitted by the usual length of microphone cable. It is well known that any increase in the length of a crystal microphone cable is usually undesirable, due to losses caused by the extra capacitance. A low impedance microphone must, therefore, be used with an impedance matching transformer at the recorder end of the cable, if it is desirable to record at some distance from the sound source.

It is, perhaps, not so well known that if the transformer is of the balanced to unbalanced type* the expense of screened cable need not be incurred, since ordinary twin insulated wire can be used instead.

In theory, hum should not be picked up if the low primary winding

We have customers in . . .

Leicester, West Drayton, Lewisham and Preston; Chichester, Sheffield, Bristol and Grimsby; Edinburgh, Carlisle, Plymouth and Leeds; East Grinstead, Ebbw Vale, Hitchin and Southall; Orpington, York, Bridgewater and Ventnor; Dulwich, Hanley, Redhill and Burntoak; Rugeley, Biggin Hill, Leigh-on-Sea and Salisbury; Brentwood, Purley, Ashton-under-Lyne and West Hartlepool; West Wickham, Innerleithen, Ilford and Aintree; Sanderstead, Gorleston-on-Sea, Liverpool and Middlesbrough; Nottingham, Bexleyheath, Croydon, Tredegar, Dalton in

Furness, Thetford, Rainham and Bradford; Leamington Spa, Cheltenham, Loughton and Birchington; Spilsby, Chorley, Derby and Barnsley; Alford, Chessington, Woodford Bridge and Sevenoaks; Feltham, Southampton, Kendal and Tonbridge; St. Helens, Doncaster, Watford and Bromley; Richmond, Cheadle, Corby and Warlingham; Bexhill, Hemel Hempstead, Sydenham and Bromsgrove; Arborfield, Gravesend, New Ferry and Beckenham; Canada, Australia, Ceylon and Hong Kong!

WHY NOT WRITE FOR DETAILS NOW
 OF OUR RANGE OF TAPE RECORDERS

TAPE RECORDER SERVICE CO.

95 Beckenham Lane, Shortlands, Bromley, Kent.

RAVensbourne 6119

Arthur H. Strange offers advice to those who want to use a microphone at a distance from their tape recorder

of the transformer is perfectly balanced and centre tapped to the tape recorder input earth (Fig. 1).

In order that the balance to earth be maintained, the case of the microphone, if it is metallic, should be isolated from either connection.

If, however, a balanced transformer is not available, an electrical centre tap can be created, by connecting two resistors of equal value in series across the primary, taking the centre point to the tape recorder input earth. To avoid any marked shunt effect of these resistors their total value should be chosen to be about ten times the microphone impedance (Fig. 2).

It should be noted that if the transformer is mounted on the chassis, the pot or metal screening can should derive its earth from the fixing point. This is not necessarily at the same AC potential as the input earth.

In conclusion, mention must be made of a professional method used for connecting a low impedance microphone (Fig. 3).

The screening can which encloses a balance transformer is mounted on, and in contact with, the amplifier chassis; this is positioned and orientated for minimum hum pick-up. The microphone is connected via a balanced and screened cable. A screen in this instance ensures a reduction in pick-up.

Should any out of balance exist, it also conveniently earths the metal microphone housing to the amplifier chassis.

The output from the transformer is fed to the amplifier input circuit, the earth connection of which will be located at a particular point on the chassis.

** Our technical Advisory Editor adds: A balance-to-unbalance transformer normally has an electrostatic screen between primary and secondary windings. This screen must be earthed to the common earthing point.*

New Products (Continued)



PROTECTION

THIS SMART waterproof cover, designed to give complete protection to tape recorders, has recently appeared on the market. It is made from rubberised canvas in a variety of colours, including navy, wine, tan, grey and bottle green with white contrasting pipings. The base is reinforced and on the side is a handy zip microphone pocket with a name panel.

Covers are already available for Grundig, Telefunken, Elizabethan, Wyndson, Philips and Fi-Cord machines, and a full range for the remainder is in preparation.

Prices vary for the size of the recorder, commencing at 19s. 6d. for a Fi-Cord to £3 17s. for a Grundig TK60.

A. Brown & Sons Ltd., 24-28, George Street, Hull, Yorkshire.

CHITNIS ANNOUNCE TWO STEREO MODELS

CHITNIS ELECTRONICS LTD., who recently announced their two German-manufactured recorders KM22 (2-track) and the KM33 (4-track), have now added to their range two stereo models from the same country.

The new machines, designated KMS44 and 55, are two- and four-track respectively, use Bogen high-performance heads, and are identical in appearance to their predecessors, except for the addition of control knobs for stereo operation. These are situated on the front of the control panel, adjacent to the magic-eye level indicator.

Standard left-to-right tape transport is incorporated and, by depressing the left-hand button, track one (top) is brought into operation. The right-hand button brings track two into use, for monaural recording. The operation is the same on the four-track model, and in both cases stereo is provided by depressing the buttons together.

As in the earlier models, each machine has two speeds, $3\frac{1}{2}$ and $1\frac{7}{8}$ ips, and the quoted frequency responses are 30-16,000 cps at $3\frac{1}{2}$ ips 30-10,000 cps at $1\frac{7}{8}$ ips, both ± 3 dB.

Wow and flutter is given as better than 0.12 per cent, the signal-to-noise ratio as better than 55 dB unweighted. There is a built-in $8\frac{1}{2}$ -inch elliptical loudspeaker, providing monitoring facilities, and a second speaker is incorporated in the lid, with a 14 ft. extension lead. Facilities for mixing and superimposition are provided. Other features include pause control, safety erase lock, separate bass/treble controls, rev. digital counter, and automatic stop switch. Separate inputs are provided for microphone, radio and pick-up.

Maximum spool size is $5\frac{1}{4}$ in., rewind

speed $2\frac{1}{2}$ minutes. Overall dimensions of each machine are 14 x $12\frac{1}{2}$ x 8 in. The weight is approximately $19\frac{1}{2}$ lb.

A dynamic stereo microphone with table stand, and a spool of tape is included with each machine and both retail at 87 guineas.

Chitnis Electronics Ltd., 1, Long Acre, London, W.C.2.

Time Switches

NORTHERN RADIO SERVICES now stock Venner Time Switches for use with tape recorders. They will switch the current on and off at pre-set times. The cost is £5 9s., plus 2s. 6d. for postage and packing.

Alternatively, there is the Venner Process Timer, which switches the current on or off after the lapse of a pre-set period of time up to four hours, irrespective of the hour of the day when the timer is started. This costs £7 19s. 9d., plus 2s. 6d. for postage and packing.

With these units, of course, it is possible to record programmes transmitted while one is away from home. The Time Switch can also be used for switching on and off lights and heaters.

Northern Radio Services (London) Ltd., 11 Kings College Road, London, N.W.3.

Stolen

WYNSOR RECORDING CO. LTD., report that one of their "Victor" tape recorders, serial number 9781, has been stolen. Any information on this machine should be forwarded to them at 2, Bellevue Road, Friern Barnet, London, N.11.

TAPE RECORDING AND HI-FI
MAGAZINE ADVICE BUREAU

MARCH 23rd, 1960

News from the Clubs

IN our December 30 issue we published a report that the International Federation of Sound Hunters had announced an international drive to supply the U.N.E.S.C.O. (United Nations Educational, Scientific and Cultural Organisation) Sound Library with sound recordings of distinctive national regional or local colour.

The **Federation of British Tape Recording Clubs** undertook to organise Great Britain's contribution and in their recent newsletter they appeal for more recordings to be offered for the first batch.

The closing date is March 31, and there is not much time left. Contributions may be sent individually or collectively by clubs and have to be accompanied by special forms which are available from the Federation Secretary, Alan Stableford, 9, Normandy Terrace, London, E.16.

The newsletter goes on to point out that after the purely business meeting of the Member-clubs of the Federation, in the Russell Hotel on June 11, a reception and tape recording "conference" has been arranged to which will be invited representatives from manufacturers, tape organisations and the National Press, as well as leading personalities in the sound recording and reproduction field. Alan Stableford would like to hear if your club intends sending a representative so that he can have some indication of the numbers to expect.

Although the Secretary of the **West Middlesex Club** was not able to be present at their January 14 meeting, he was at least present in spirit. In his latest newsletter, H. E. Saunders, describing how a business appointment in Paris led to his absence, pointed out that he wished he had had a portable recorder with him—"the sounds of the night ferry are very intriguing," he wrote, "especially when you're trying to get some sleep."

Those who were able to turn up were treated to a demonstration of Freddie Westcott's new Grundig TK60. Incidentally my apologies to Mr. Westcott, I understand I recently attributed to him a decade more than is actually true.

Attendance at the Annual Social of the club on January 28 was rather disappointing, due mainly to the weather. Glyn Mason and his music supplied the music for the evening, but the planned cabaret suffered a set-back through one young lady having been collared by her local dramatic group. She has atoned, however, by persuading the amateur actors to produce a one-act play for the tape club, so that members can have some practical experience dubbing sound effects.

Edited by

FRED CHANDLER

Their February 11 meeting began with a demonstration by Peter Woodford-Ward, of his new EMI TR51. Afterwards Mr. Saunders displayed his oscilloscope and with the aid of Ken Phipps' Brenell Mk. V entertained members with a demonstration of the sound waveforms. The lights were turned down as an aid to concentration and the only complaint came from the ladies who wanted to know when Mickey Mouse came on.

A fortnight later 31 persons attended to hear Bill Elliott explain how microphones operate. He gave a convincing demonstration of the differing reproductions of a bunch of keys, as produced by the various instruments. His "know-how" was accepted when he presented a tape of church organ music recorded with a crystal microphone. He was introduced to the meeting by two members of the Southall Sound Club, the group formed to aid the aged and infirm by relaying tapes to distant friends and relations. The Middlesex members have promised they will make their recorders available to local folk in an endeavour to spread this worth-while service.

Another well-attended meeting was held by the **Edinburgh club** at the beginning of last month, after an advert had appeared in a local paper. Over seventy persons went along to the meeting and heard of the widespread tape correspondence exchanges enjoyed by members, and learnt something of the many and varied ways the club exploits the tape recorder.

The meeting had been thrown open to the public to show the people who had bought recorders in a first flush of enthusiasm that the possibilities of tape recording are countless. The publicity sought by the club was well-earned and has been rewarded even further by the reports of the meeting in the local papers.

The **Ilford and District club**, formed in January, is also taking great strides to make itself known to the area. Already they have received nearly 150 column inches of space in the newspapers covering the surrounding district. They are fortunate, in this respect, in having the former Editor of the *Ilford Recorder* as a member, but even so it shows what can be done as far as publicity is concerned.

The club's first project is to produce an "Our Town" documentary which will be presented to the municipal archives. For this they will approach local sporting and entertainment personalities, business and local council officials; visit coffee bars and jazz clubs to record impressions of today's teenagers; and generally collect snippets of sound to put Ilford on tape.

They appeal to anyone with material suitable for such a tape or ideas to further the project, to contact the Secretary Jeff Langley at 4, Clifton Road, Newbury Park, Ilford, Essex.

To accommodate these plans they are increasing meetings to a weekly basis. Alternating at their newly acquired meeting rooms (see forthcoming meetings panel), they will have demonstration and club business meetings on Fridays and practical recording sessions on Thursdays.

"More to it than meets the ear" was the agreed comment following the attempts made by the **Warwick and Leamington Club's** play-reading section to record an extract from the play *She Stoops to Conquer*. Several attempts were made before the task was completed in a final run-through taking four-and-a-half hours.

Members have been active in other directions, one of which was by way of a visit to a local cinema to see the projection equipment used for the film *Gigi*. They were able to make a close examination of the actual film, with its magnetic tape attached, and of the screen with its battery of speakers.

Another section of the club is busy compiling the material gathered by Chris Barnacle and Terry Draper at the marathon jive session held recently in Leamington. An edited version of the interviews and general atmosphere of that evening will eventually be put on to disc, and a copy given to the Riverside Youth Centre.

The Society joined forces with the Lillington Cine Group and visited the Birmingham Commercial Film Studios at Erdington. They saw the recording rooms, studios and editing rooms used by the Midlands television network and completed the evening with a private showing of an American film of the industrial uses of tape and cine.

Bill Kemp, President of the **Chesterfield Society** explained the principles of transferring tape to disc during his demonstration of a disc-cutting machine at their February 29 meeting. Members examined the intricate mechanism of the equipment and afterwards saw Mr. Kemp transfer a tape he had recorded himself on to a disc. The following meeting, March 21, saw Harry Marshall and Eric Taylor demonstrating their personal equipment.

The A.G.M. of the **Bournemouth and Poole club** was held on February 9, and the first item on the agenda was the re-election of the standing officials. Nine visitors were present to hear Secretary Hedley Jones talk of the 100 per cent increase in membership during the past year, and of his hopes for a sustained increase in the year ahead.

Future activities were outlined and these are to include a series of lectures by Tape Recorders Ltd. of Westbourne, starting with the maintenance of recorders. Competitions, practical exercises and social visits, together with demonstrations by manufacturers give promise of an active year.

The Technical Manager of Lustraphone Ltd., Mr. Pontzen, was present at the meeting and inaugurated the manufacturers' demonstrations with a presentation of his firm's equipment. Ranging through the Lustraphone products, he

completed an entertaining evening with a recording session using a stereo microphone.

Members are very keen to start tape exchanges with other clubs, and invite any clubs with similar ideas to contact Mr. Jones at 42, Poole Road, Branksome, Poole.

The **Staffordshire Society** are to have an open meeting on April 5. Highlight of that evening will be the visit of Mr. Wilson of F. A. Hughes & Co., who is to give a talk and show a film on the manufacture and properties of tape.

Membership of the society has risen to 24 and, after a long search, a regular meeting place has been found. Fortnightly meetings are now held in the White Lion, Lichfield Road, where at the first of these, on March 1, the finished tapes in their competition for a three-minute tape entitled "Winter," were judged. The following meeting, March 15, was devoted to a talk on frequency response, with a demonstration of an audio signal generator.

Birmingham Club members had a "home-test" in the true sense of the word, when Mr. N. Field, of Norfield Electronics Ltd., placed a Norfield Recorder at the club's disposal recently. A number of members had the machine at home for a minute examination, and the reports of comments were given to the manufacturers when the recorder was returned. "Mr. Field has shown a brave spirit, lighting a match so near to a powder keg," said Secretary Dennis Brown.

The club has just had its first birthday and claims fifty "all paid-up" members. A full programme is being developed for the coming year. Interested enthusiasts are invited to contact the Secretary at 133, Pool Lane, Oldbury, Birmingham, for details of membership.

Eight men and one lady found their way to the Star Hotel, Parrack Street, Gravesend early last month for the inaugural meeting of the **Gravesend Tape Recording Club**. The landlord of the pub, a tape enthusiast himself, had kindly made available his premises to the man responsible for the inauguration of the club, Mr. E. P. Herbert.

A TK35, TK20, Grundig Cub, Regentone and a Reflectograph were on show for the evening and after the initial discussions of the form the club should take, Mr. Coping used his Reflectograph to present a programme of effects including space music and interpretation of *Sparkie* and his echoing voice.

The club welcomes tape exchanges and is especially keen to receive advice from older clubs. Mr. Herbert can be contacted at 39, St. George's Crescent, Gravesend, Kent.

A group of enthusiasts met in **Dover** on February 11 to discuss the formation of a club in that area. A local newspaper provided some publicity for the meeting, but at the moment I have no news of the outcome. The person responsible for arranging the meeting is Mr. G. R. Newey, 2, Westcliff Cottages, Westcliff, Near Dover, whom interested persons should contact.

FORTHCOMING MEETINGS

BIRMINGHAM: Every Monday at the White Horse Cellars.

BLACKPOOL: Every Wednesday at 173, Church Street.

BOURNEMOUTH: Alternate Tuesdays at the Civil Defence Centre, Holdenhurst Road. (Next: April 5.)

BRIGHTON: Every Tuesday at Fairlight School, Pevensey Road.

CHESTERFIELD: Every 3rd Monday at the Yellow Lion Inn, Saltergate. (April 11.)

COVENTRY: Alternate Thursdays at Rotherham's Social Club. (March 31.)

CRAWLEY: 1st and 3rd Mondays in month at Southgate Community Centre.

EDINBURGH: 1st Tuesday and 3rd Sunday at 23, Fettes Row, Edinburgh 3.

GRIMSBY: Alternate Tuesdays at the RAFA Club, Abbey Drive West, Abbey Road. (March 29.)

GRANTHAM: Weekly. 1st week, Wednesday; 2nd, Monday; 3rd, Thursday; 4th, Friday, at Grantham Technical College, Avenue Road.

ILFORD: Alternate Thursdays at the RAFA Rooms, Cranbrook Road, (April 7), and immediately on Fridays at the Pioneer Market Committee Rooms, Ilford Lane. (April 1.)

IPSWICH: 1st Saturday at the Arts Gallery Committee Rooms, High Street.

LEEDS: Every Thursday at the Hope and Anchor, The Calls, Leeds 1.

KEIGHLEY: Alternate Wednesdays at the South Street Sunday School Rooms. (April 6.)

KETTERING: Alternate Wednesdays at the Rising Sun, Silver Street. (March 30.)

LONDON: 2nd Thursday at the Abbey Community Centre, Marsham Street, S.W.1.

LUTON: 2nd and 4th Tuesdays at 17, Dunstable Road.

MANCHESTER: Every Saturday, 6 p.m., at 20, Naylor Street, Hulme, Manchester 15.

NOTTINGHAM: Alternate Thursdays at the Co-operative Educational Centre, Broad Street. (March 31.)

WEST MIDDLESEX: 2nd Thursday at the Co-operative Hall, Station Road, Hampton, and 4th Thursday at St. George's Hall, Lancaster Road, Southall Broadway.

LONDON

Hi-Fi Consultants and Dealers

STUDIO RECORDING AND
DUBBING FACILITIES
Studio A, 40 ft. x 40 ft.

TAPE TO DISC
professional standards

**OLYMPIC SOUND
STUDIOS**

Carton Hall, Carton St., London, W.1
Tel.: HUN 1635

Agents for SAGA ★ Dealers in CQ Audio
Records and Tapes ★ Equipment



**YOUR LOCAL
DEALER**

*In this feature you
can check your nearest
dealer who is a hi-fi
specialist giving expert
attention to tape equip-
ment.*

NORTH-WEST

YOUR NORTH-WEST DEALER ENTHUSIASTS

SIMON

THE SUPREME RECORDER FOR THE
CONNOISSEUR. SEND FOR FULL
ILLUSTRATED SPECIFICATION AND
TERMS TO **SHINNS Ltd.**

(20 years Recording and Service experience)
TOWN CENTRE, LEIGH, LANCs.

Branches:- "Melody House," Hallgate, Wigan.
"Melody House," High St. Bangor, N. Wales.
"Melody House," Culcheth, Warrington.

Free demonstrations within 60 miles but
NO MAIL ORDER

WADDEN & HILL LTD.

or

AFTER SALES SERVICE

The words are synonymous

44, HIGH STREET, HOUNSLOW

Telephone: HOU 1736

Branches at: Isleworth, Feltham and
Boston Manor

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 STREET
Coventry 60913

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 SYSTEMS

The HOME MUSIC Shop

8 Deansgate
MANCHESTER
(Near Grosvenor
Hotel)



SPECIAL OFFER — *Half-a-crown to* *find a ready buyer or a willing seller*

IF YOU HAVE SURPLUS EQUIPMENT YOU WISH TO SELL, OR IF YOU WANT TO BUY ITEMS SECOND-HAND, YOU WILL GET RESULTS BY USING OUR CLASSIFIED COLUMNS. TO PROVE THE POINT, WE ARE OFFERING READERS A SPECIAL RATE UNTIL APRIL 19th NEXT—2s. 6d. FOR UP TO TWENTY WORDS IF YOU USE THE FORM BELOW

Classified advertisements

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.

SPECIAL OFFER! SAVE 11 Gns. Stella-Philips Tape Recorder. Three speeds with moving coil mike. List 63 gns. **OUR PRICE** 52 gns. or Terms. E. C. Kingsley & Co., 132, Tottenham Court Road (corner Warren Street), London, W.1. EUSton 6500.

One-tenth Deposit—Three Years to Pay! All makes stocked, let us quote you. Simmon of Halifax. Paul Simmon, 35, Northgate, Halifax.

TAPE RECORDERS. Large selection of used models, most as new with Three Months Guarantee. Part exchanges with Cameras, Binoculars, Radios, etc. Good quality Recording Tape at competitive prices. Cooks Store, 159 & 187, Praed Street, W.2 (both opposite Paddington Station). PAD 6464.

Tape Recorders, players, radios, etc. (modern) wanted for cash. Callers or particulars Cooks Store, 159 & 187, Praed Street, W.2 (opposite Paddington Station). Tel.: PAD 6464.

D.B. Meters, F.R. Flat plus or minus half dB connect across L/S terminals. Instructions supplied. 59s. 6d., P. & P. 2s. Professional tape 17s. 6d.—1,200 ft., P. & P. 1s. Boxes 1s. extra. Olympic Sound Studios, Carton Street, W.1.

Repairs to all makes! Estimates free! Efficient, reasonably priced servicing by the people who know Tape Recorders. Howard Photographic, 218, High Street, Bromley, Kent. Ravensbourne 4477.

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

TAPE RECORDER need repairing? Let the specialists do it for you at an economical price. See page 6. **ESSEX TAPE RECORDER CENTRES.**

JOHN HASSELL RECORDINGS. Tape/Discs. All speeds. CCIR Studio, 21, Nassau Road, London, S.W.13. Riverside 7150.

WAL . . . meet us at THE AUDIO FAIR from 21st to 24th April inclusive. Wellington Acoustic Laboratories Ltd., Farnham, Surrey.

New Tape Recorders for private disposal. Grundig TK20—38 gns. TK 30—60 gns. Harting Add-on unit—40 gns. Simon SP4—80 gns. Dumville, 69, Viceroy Court, London, N.W.8.

WAL GAIN transistor pre-amplifier £5. **WAL GAIN STEREO** Transistor ERASER, cleans a reel in 30 secs. £7 18s. 6d. Ask your dealer for details or send to us for full descriptive leaflets. Wellington Acoustic Laboratories Ltd., Farnham, Surrey (6461 or 4961).

Grundig TK 60 Stereo Tape Recorder—New, two mikes, leads, tape. £125 o.n.o. Terms. VAL 3705. 54, The Drive, Ilford, Essex.

TANDBERG TAPE RECORDERS. Stereo (twin matched amplifiers), 3 speeds, 7½, 3¼, 1½. Precision built to professional standards. Complete with microphone, carrying case. Weighs only 27 lb. List price over £120. Mint condition, will accept £70 o.n.o. Phone: day Mitcham 8206, evening Pollards 3313. 1, Pollards Hill South, Norbury, S.W.16.

Tape Recorders' mechanical parts cleaned and serviced. Collection and delivery. Reasonable charges. S.A.E. details 157, Lyndhurst Drive, Hornchurch, Essex. Dependable.

Sale — First three volumes "Tape Magazine" except April 1957, but extra June 1958. Postage, etc., add 3s. 6d. Offers to C. Ford, 3, Aller Park Road, Newton Abbot, Devon.

Grundig Cub Transistor Battery Portable for hire: £3 3s. per week. Book now for your holiday. BM/DNKD, London, W.C.1.

Grundig TK 830/3D twin track. Press button operation, three speakers, two speeds. Perfect condition. **BARGAIN,** £69. Phone: Smokeleys 2605.

Radiogram Cabinet, walnut, 3.75 ohms 10 in. speaker and tweeter optional, suit Hi-Fi equipment. Offers. 9, Pickford Hill, Harpenden. Tel. 3931.

Tape Recorder, "Tape Recording and Hi-Fi Magazine" from first issue. For Sale. What offers. Scrutton, 560B, Dereham Road, Norwich, Norfolk.

Ferrograph early series 3AN, 7½ ips, 3¼ ips. Immaculate, best offer over 55 gns. Also Simon Cadenza Mic. Best offer over 6 gns.

Ferrograph 2 A/N. Excellent condition, £55. M. D. Cooney, 47, Beech Avenue, Eastcote, Ruislip, Middx. Field End 7528 any evening.

Wanted Stuzzi Magnette Tape Recorder. Must be complete and in good working order; must be cheap. Cash waiting. E. G. Jones, 66, Merwell Road, Flixton, Lancs.

Baird Tape Recorder. List price £73, inclusive. Unused. Offers. KEN 5220.

Simon SP2 £45 o.n.o. Ferrograph 4/AH as new £75. Goodsell Stereo II pre-amp £20 o.n.o. R.C.A. Power Amplifier £19 o.n.o. Knights, 98, Handford Road, Ipswich, Suffolk.

For Sale: Ferrograph. Series 4 A/N. Practically brand new. Guaranteed. First offer £65 secures. Reply to Box 337.

CLASSIFIED ADVERT — SPECIAL OFFER

I enclose postal order for 2s. 6d. Please insert as follows

Name..... **Address**

Trade announcements not included. Box number extra

Editing and Splicing Tape

(Continued from page 19)

the sound head; operating the pause control often enables this to be done by hand.

Another useful tip is to use a much slower speed when *finding* these points for marking before cutting. Even half the speed of recording is a help; words and noises are identifiable—when you grow used to the change in speed!

For major editing operations proceed methodically. Scissor-snip all cuts at 45 degrees and make an arrow on the start end with the yellow pencil, so that when you put it back again it will not play backwards! Keep excised portions in a box until you are sure you do not want them again, then you may splice them on a small spool, and erase for future use.

If you are taking out or inserting tape to match up with film, consider lengths of each. Measure tape along a small tape-measure pinned to the edge of the table, reduce to seconds, and equate with film at one foot for

2½ seconds (16 mm. at 16 fps, double this time for 8 mm.).

There are clever folk who can edit a tape without much cutting. They use copying from one machine to another, plus super-imposition with variable erase. But timing is a problem. The idea is not practicable for short sections.

TWIN TRACK PROBLEMS

Now for the readers who have twin track recordings. Of course, if you do not value the return track you can just erase this and proceed with your cutting.

But supposing you have something on the return track you do not wish to cut? Make a copy on another machine, then you are free to cut and re-copy on the original half-track.

Go to it, and realise the full creative joy of building up a tape with all manner of bits and pieces. Think it out first, feel like an architect planning a house.

Good splicing and editing to you.

Index to Advertisers

Audio Fairs Ltd.	6
Cine Camera	34
Cinesmith Products	6
Cosmocord Ltd.	3
J Deroy Sound Service	20
J Dickinsons of Pall Mall Ltd.	8
J Dixon's Electronics	34
J E.A.P. (Tape Recorders) Ltd. Front cover	
J Essex Tape Recorder Centres	6
J F. A. Hughes & Co. Ltd.	36
Gramophone Co. Ltd.	2
Grundig (Great Britain) Ltd.	10
Hi-Fi Developments Ltd.	31
Howard Photographic	9
Magnegraph	20
Minnesota, Mining and Manufacturing Co. Ltd.	22 and 23
Modern Techniques	4
Olympic Sound Studios	31
Perth Radios Ltd.	35
Psycho-Tape Institute	8
Queensway Recording Studios	20
Rapid Recording Services	20
Rendezvous Records	20
R. E. S. (Coventry) Ltd.	31
Shinns Ltd.	31
Simon Equipment Ltd.	5
Tape Recorder Centre Ltd.	7
Tape Recorder Service Co.	28
The Recorder Co.	8
The Service Co.	35
Wadden & Hill Ltd.	31
Wharfedale Wireless Works Ltd.	4

.....CUT ALONG DOTTED LINE.....

ADVERTISEMENT ENQUIRIES SERVICE

This is a special service for readers of TAPE RECORDING AND HI-FI MAGAZINE. It enables you—without cost—to get fuller information about those products in which you are particularly interested. Fill in one coupon below for each inquiry, writing in your name and address in each case. Then cut out the whole of this half-page, following the dotted line, fold as indicated, and post to us.

<p>I should like further information about the.....</p> <p>.....</p> <p>(product) mentioned on page.....of the</p> <p>..... issue of <i>Tape Recording and Hi-Fi Magazine</i>.</p> <hr/> <p>NAME</p> <p>ADDRESS.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;"><i>March 23rd, 1960</i></p>	<p>I should like further information about the.....</p> <p>.....</p> <p>(product) mentioned on page.....of the</p> <p>..... issue of <i>Tape Recording and Hi-Fi Magazine</i>.</p> <hr/> <p>NAME</p> <p>ADDRESS.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;"><i>March 23rd, 1960</i></p>	<p>I should like further information about the.....</p> <p>.....</p> <p>(product) mentioned on page.....of the</p> <p>..... issue of <i>Tape Recording and Hi-Fi Magazine</i>.</p> <hr/> <p>NAME</p> <p>ADDRESS.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;"><i>March 23rd, 1960</i></p>
---	---	---

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

CINE CAMERA

the sparkling new magazine for all
8mm. film makers

2/- monthly

First 68 page issue April 1960

on sale March 19th

ORDER YOUR COPY NOW

Each issue will be packed with expert know-how and show-how, vital facts and guidance for beginners, stimulating ideas for established cine users, and news and features for all.

Shoot and succeed with 'Cine Camera'

CUT ALONG DOTTED LINE

POSTAGE
WILL BE
PAID BY
PRINT AND
PRESS
SERVICES
LIMITED

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

BUSINESS REPLY FOLDER
Licence No. ND 922

THIRD FOLD HERE

SECOND FOLD HERE

FLAP A

NO POSTAGE
NECESSARY
IF POSTED
IN GREAT
BRITAIN OR
NORTHERN
IRELAND

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.

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

NO INTEREST CHARGES — DEMONSTRATIONS — SMALL DEPOSIT

BRENELL 3★

A well designed, constructed and finished machine—gives only perfect reproduction
Deposit £4. 13. 0
12 monthly payments of £4. 13. 0 **£60. 18. 0**



GRUNDIG TK 20

An extremely popular recorder, simple to operate, easy to carry, ideal for family use
Deposit £4. 4. 0
£54. 12. 9 12 monthly payments of £4. 4. 0

TELEFUNKEN Magnetophon 76 K

Four-track selection gives playing time of 12 hours 40 minutes from one 5½" DP Tape. Two speeds and frequency response of 30-16,000 cps at 3¾ ips and 30-9,000 cps at 1½ ips. Transistorised pre-amplifier stage. DC heating of valves. Simultaneous playback of two tracks.
Cash Price £67. 4. 0
Deposit £5. 12. 0. 11 Monthly Payments **£5. 12. 0**

Hear the SPECTONE

The Most Astounding Value **£51. 9. 0**
Deposit £4 1s. and 12 Monthly Payments of **£3 19s.**

THE VERDIK

is yours for **£3. 10. 0** and 12 Monthly Payments of **£3. 12. 8**
Cash Price **£47. 5. 0**

The finest recorder for price and quality. Send for details

BRENELL MK 5

For Reliability and Performance
Cash Price **£67. 4. 0**
Deposit **£5. 12. 0.** 11 Monthly Payments of **£5. 12. 0**



ELIZABETHAN AVON

This remarkable machine offers amazing results for all home entertaining
Deposit **£2. 10. 0**
£28. 7. 0. 12 monthly payments of **£2. 7. 0**

The new **PERTH**

CLARISSA

tape recorders

Elegant carrying case with olive green spanish hide finish, gilt fittings and a cream plastic front. Easy portability. Highest quality components. Three speeds (7½, 3¾ and 1½ inches per second). Maximum playing time of four hours. Tape spools up to 7" diameter. Wow and flutter better than 0.15 per cent at 3¾ ips. Full mixing and superimposing. Unit construction gives easy accessibility and servicing. Separate compensated inputs for microphone, gram/radio. Extension speaker socket with automatic muting of internal speaker. Dimensions: 18" x 13" x 7".

CLARISSA MK 1 price 42 gns.

Frequency response up to 10 kes. Magic-eye. Full-range tone control. Large high-flux speaker giving 3 watts undistorted output. Complete with crystal microphone and 1,200 feet recording tape. Weight 23 lb.

CLARISSA Twin de luxe MK 2 price 56 gns.

Frequency response virtually straight line from 40-12,000 cycles ± 3dB. True aural monitoring through separate built-in amplifier channel gives studio grade recording under all conditions. Independent bass and treble controls. Special "grain-orientated" transformer and Mu-metal screening for maximum hum-level suppression. Large bass speaker unit with matched Tweeter unit ensures finest quality output, 4 watts. Complete with dynamic moving coil microphone and 1,200 feet recording tape. Weight 26 lb.

made exclusively by

perth



EASY TERMS AT YOUR DEALERS

Send for illustrated folder to: **PERTH RADIOS LTD., MARTEN HOUSE, 39-47 EAST ROAD, LONDON, N.1** Clerkenwell 2413-4

In recording circles throughout the world, enthusiasts vie with each other to get the most natural sound from tape. Authenticity is however most important when tape recording is the tool of scientific research. Anthropologists

Authentic Sound goes round the world



in Africa thus require a recording tape that not only captures the fleeting sound of tribal song for leisure study, but also retains it despite the destructive effect of sun and sand. BASF Magnetic Recording Tape is made to do just this. It has a base of Luvitherm, the tough, flexible plastic which permanently holds magnetic oxide in the tightest bond; and the oxide itself is made by a special BASF process to ensure magnetic stability no matter how long the tape is stored. This outstanding tape can be used in all climates for every type of recording. BASF is the original recording tape. A vast reserve of more than 25 years experience and continued development keeps it ahead for authenticity. On BASF tape you can always be sure of registering your recorder's complete range of frequencies...always reproducing them... always obtaining Authentic Sound whatever and wherever you record.

Insist on
the tape with
the Luvitherm base



Magnetic Recording Tape

**Standard • Long Play
Double Play • Editing Sound**

F. A. HUGHES & CO LTD 4 STANHOPE GATE LONDON W1