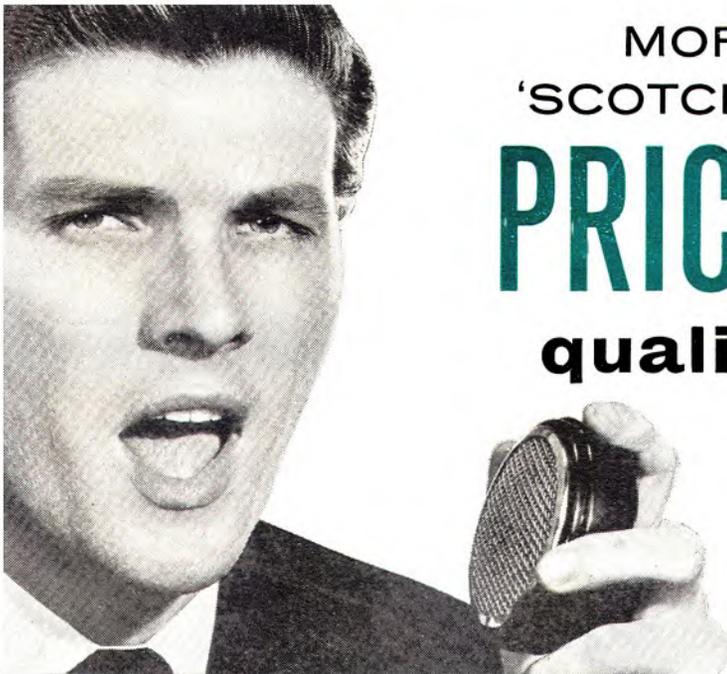


JULY
1957

1/-

TAPE RECORDING

AND REPRODUCTION MAGAZINE



MORE BIG NEWS ABOUT
'SCOTCH BOY' MAGNETIC TAPES

PRICES SLASHED

quality still supreme

27 shillings for a 7" reel (1200 feet)—that's all that 'SCOTCH BOY' 111A tape (acetate base) will cost you from 1st July; a saving of 8/-. At this price it is the lowest priced magnetic tape on the British market . . . and the acknowledged superiority of its performance will be maintained!

'SCOTCH BOY' 150 extra-play tape (polyester base) has come down to 50/- for a 7" reel (1800 feet), a saving of 4/-. With its superior polyester base this tape now costs no more than other long-play tapes. New improved manufacturing techniques have made these important reductions possible. Small-size reels of these two tapes are down proportionately in price.

Remember, whatever your recording need, 'SCOTCH BOY' offers you the widest range in Britain.

**'SCOTCH'
BOY** TRADE MARK

does the job BETTER!

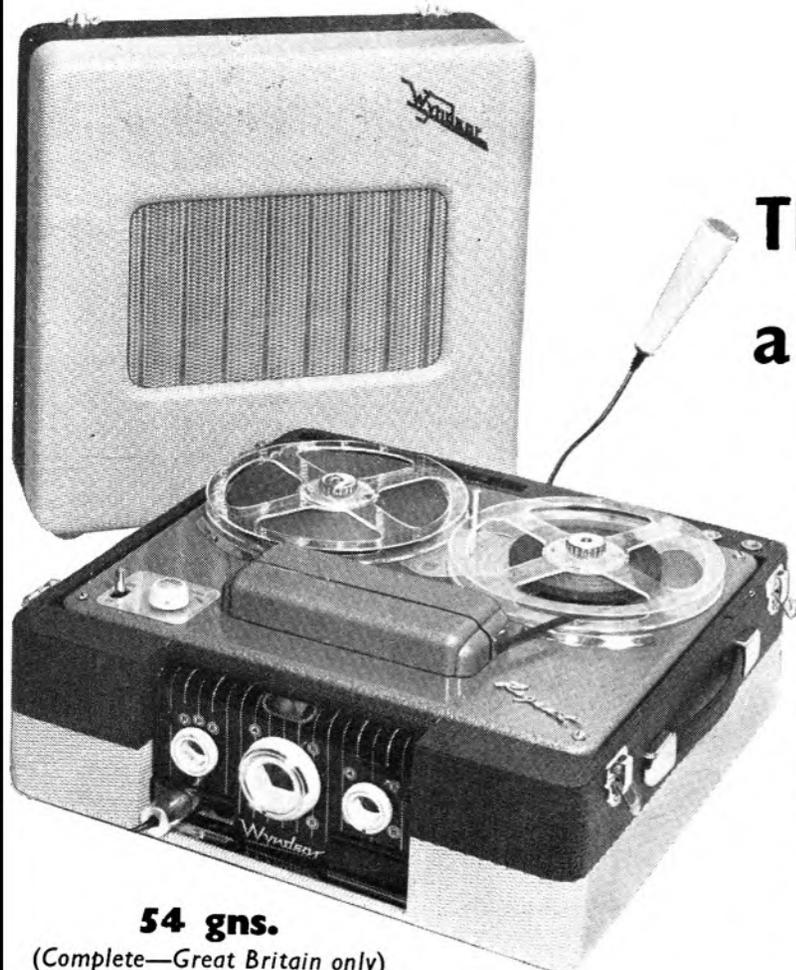
MINNESOTA MINING & MANUFACTURING COMPANY LIMITED
167 STRAND, LONDON, W.C.2, and BIRMINGHAM · MANCHESTER · GLASGOW
WORLD'S LARGEST MANUFACTURERS OF COATED PRODUCTS



BRITAIN'S ONLY PUBLICATION

DEVOTED EXCLUSIVELY TO THIS FIELD





54 gns.
(Complete—Great Britain only)

The real value of a tape recorder

If you asked us to say in just one word what was the real value of a tape recorder we would, answer—**ADAPTABILITY**. It is, above all, an active, creative instrument, depending very largely on its user.

In an age when so much entertainment is passive and receptive, here is something to use. For music reproduction, for producing home entertainment, for sound with a ciné camera; these are a few of its potentialities. That is why we summarise its value in one word—**ADAPTABILITY**.

That depends not only on the user; but also on the machine. Whether you are purchasing your first machine or progressing to a more elaborate recorder, we believe the advantages of the WyndSOR Regent to be pre-eminent.

"I feel that the manufacturers have, within the price range, produced an instrument capable of giving results representing a most satisfactory return for money spent." That is the opinion of the Technical Editor of *Tape Recording Magazine*. His reasons? Well look at some of the features alone. A ten inch elliptical speaker housed in a detachable lid. Sliding doors to protect the mixer units. An illuminated dial and colour change panel to ensure ease of operation. Supplied complete with the new Acos microphone Model MIC 39-1 and tape.

Further particulars may be obtained from :

MAGNETIC RECORDING COMPANY

Dept. T.M., 99 SHACKLEWELL LANE, LONDON, E.8. CLIssold 6427/8

TAPE RECORDERS

The right advice can be obtained from
the Specialist

**NO INTEREST
OR CHARGES ON CREDIT SALE**

Compare These Terms Anywhere

Write or Phone for Free Catalogue

Demonstrations Daily, Open All Day Saturday

FREE DELIVERY WITHIN THE U.K.



**RENOWNED FOR SPEEDIEST
MAIL ORDER DELIVERY**

TELETAPE

(Tape Recording Specialists)

**5 Avenue Parade,
Ridge Avenue,
London, N.21
LABurnum 6641**

Machine	Deposit	9 Paym'ts	Cash
ELPICO	£4.18.0	£3.18.0	38 gns.
PHILIPS	£4.19.0	£4.0.0	39 gns.
WALTER 303	£4.19.0	£4.0.0	39 gns.
VISCOUNT	£6.12.0	£4.13.0	42 gns.
ELIZABETHAN 56	£6.12.0	£5.6.8	52 gns.
SONOMAG	£6.12.0	£5.6.8	52 gns.
GRUNDIG T.K.5	£6.15.0	£5.8.8	53 gns.
WYNDSOR REGENT	£6.14.0	£5.11.2	54 gns.
ELON	£8.2.0	£6.6.8	62 gns.
ELIZABETHAN DE LUXE	£8.5.0	£6.13.4	65 gns.
TRUVOX	£8.9.0	£6.17.10	69 gns.
GRUNDIG T.K.8	£9.5.0	£7.7.6	72 gns.
GRUNDIG T.K.820	£12.15.0	£10.0.4	98 gns.

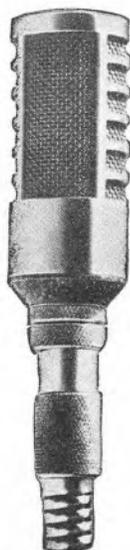
**ALL OTHER NEW MODELS SUPPLIED
SECONDHAND MACHINES ALSO AVAILABLE**

M8 RIBBON MICROPHONE

A high quality microphone with good output size only 1 $\frac{3}{8}$ x 3 $\frac{3}{8}$, with inbuilt transformer.

Mounted by three-pin plug and socket on flexible fitting with internal leads. The ribbon, although extremely thin, is secure against reasonable acoustic shock.

Usual output impedance 30 ohms. Other impedances available. Three Alcomax III magnets, Treble stainless steel protecting gauzes.



We also manufacture microphone stands, dynamic microphones, pressure loudspeaker units, straight and re-entrant horns.

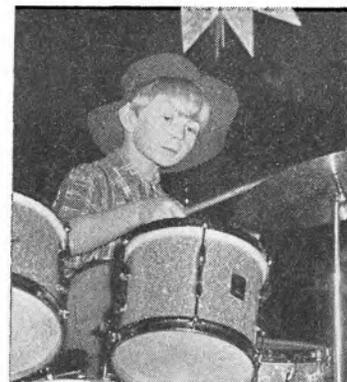
FILM INDUSTRIES LTD.

90 Belsize Lane, N.W.3

HAMPstead 9632-3 Telegrams: Troosound, Haver

this is a
BRIAN WORTH
photograph

- press
- advertising
- publicity
- fashion
- portraits
- colour

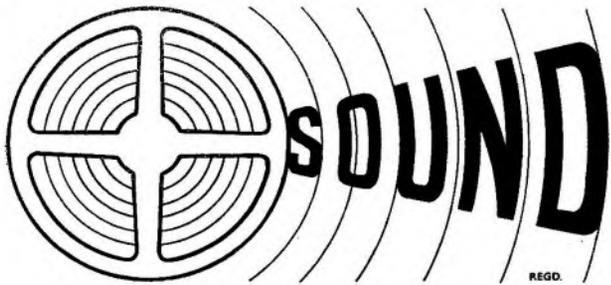


BRIAN WORTH

official photographer to 'Tape Recording'

26 GRAY'S INN ROAD, W.C.1
(CHAncery 8435 and PROspect 9370)

Years of trouble-free tape recording with this



investment

'chosen by people who know about
Tape Recording'

... only **55 gns**

Complete with desk microphone
and spool of LP tape

- 4 watts output
- 3 hours playing time

The Sound Tape Recorder now has 4 watts output with increased sensitivity. Completely automatic operation with instantaneous track reversal ensures tape is not handled. Positive tone range, volume and on/off switch in one easy-to-use control. Superb presentation in contemporary style suitcase.



Playtime Twin
with 2 speakers

- Non-auto Record Reproducer
- 2 matched loudspeakers
- High quality reproduction with balanced tone control

Here it is—the record reproducer you've dreamed about. Superb quality reproduction made possible by a specially designed amplifier with two MATCHED loudspeakers. 4 speed latest style turntable. Presented in smart two-tone leatherette case of contemporary design and extremely light weight (8-9 lbs)

Including Tax **17 gns.**

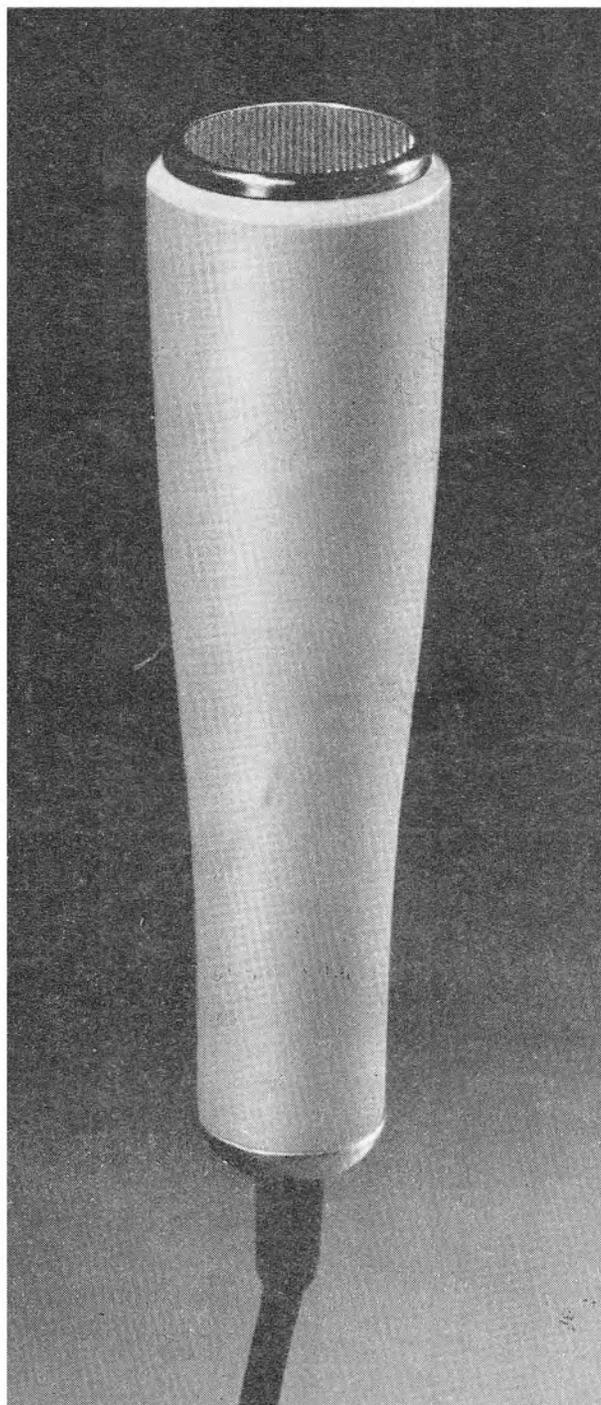
Coming soon ... **777**

Watch for details

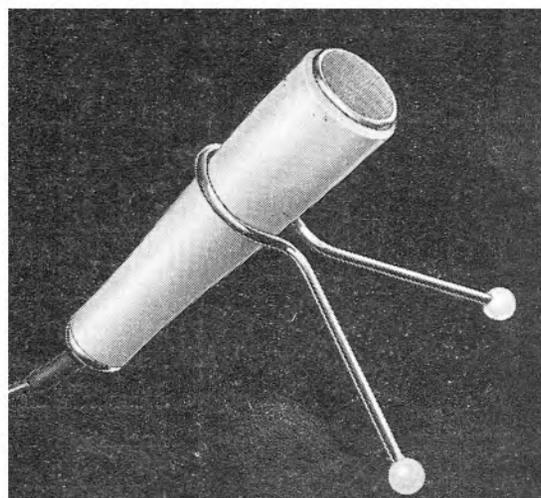
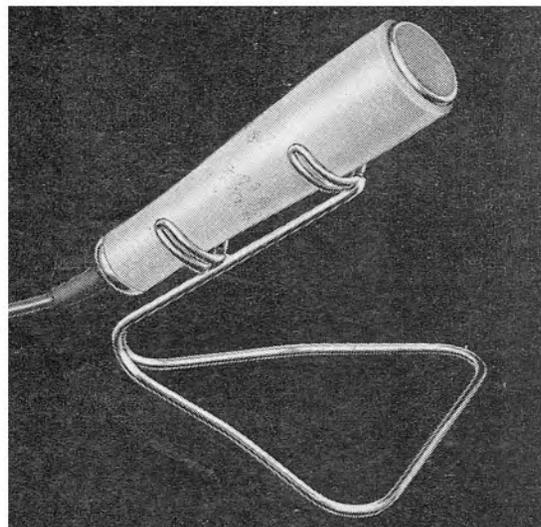
- Write now for full details of all these products

TAPE RECORDERS (Electronics) LTD
784-788, High Road, Tottenham, N.17.
Telephone: TOTtenham 0811-3.

A microphone by **acos**

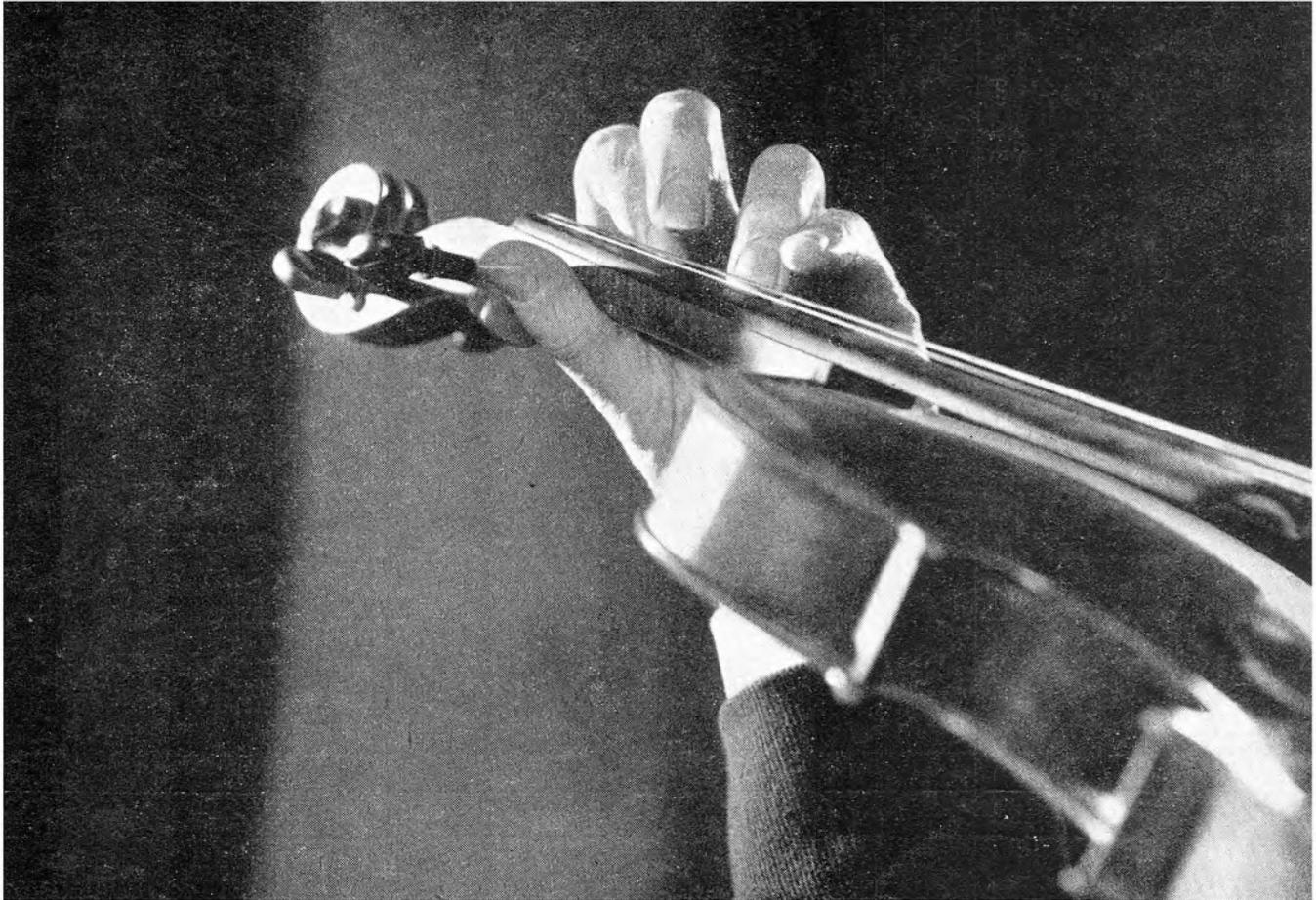


Held in the hand, or rested in one of the two attractive stands. Also available with neat floor-stand clip.



Model MIC 39-I for high-quality recording, public address, entertainment

COSMOCORD LTD. WALTHAM CROSS HERTS. TEL: WALTHAM CROSS 5206 (London subscribers please dial WA4 5206)



This is your life . . .

How have *your* musical tastes changed in the last five years? How many of your old favourites have been relegated to the lower shelves, played once a year, if at all? The music you enjoy is a mirror that reflects you and your changing tastes.

A Grundig tape recorder provides a very practical solution to the problem of changing tastes. A tape library grows with you and there is never any waste. A much-played Grieg can become a mint-fresh Rawsthorne for no more effort (or expense) than is required to fit the tape which holds the old recording and re-record the new on it.

With a Grundig tape recorder the world of music is at your feet. If music is your interest . . .

keep it alive with a **Grundig** TAPE RECORDER

TK 820/3D
PRICE 98 gns.
excluding microphone



GRUNDIG (Great Britain) LIMITED, Dept. TR1, 39/41 New Oxford Street, London, W.C.1
Please send me a copy of your illustrated booklet on the Grundig TK 820/3D

NAME

ADDRESS

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

JULY 1957.

Vol I. No 6.

*Published on the 20th
of each month from
426, Camden Rd., Lon-
don, N.7. Telephone :
NORth 3419.*

Associate Editors :

**IAN ARNISON
R. BROWN**

Technical Advisory Editor:

**E. SWAIN
A.M.I.E.E., A.M.Brit. I.R.E.**

Advertisement Department :

**178 Fleet Street,
London, E.C.4
Telephone: FLEet Street 0197**



*reporting on the home, office, factory, school, ciné,
amateur dramatic and musical uses of sound tape*

CONTENTS

THE EDITORS' VIEW

**PORTABLE BATTERY
RECORDERS**

**A special survey of
available models**

Pages 11-14

**GETTING THE ES-
SENCE OF SUMMER**

**Advice from a famous
radio producer**

Pages 16 & 17

**BRITAIN'S FIRST
AMATEUR CONTEST**

**More prizes donated by
the trade**

Page 9

**TAPE IN THE
CLASSROOM**

Page 15

**A VORTEXION
REVIEWED**

Pages 18 & 19

**NEW EQUIPMENT
THIS MONTH**

Pages 20 & 21

**NEWS FROM THE
CLUBS**

Page 22

Successful Partnership

WHEN THIS MAGAZINE first appeared at the beginning of the year, we announced our desire to work in close partnership with our readers and in fullest co-operation with the industry. We hope we have played *our* part; we now place on record our gratitude for the enthusiasm with which readers and industry have played *theirs*.

In the spirit of partnership, we now make a progress report.

Launching a magazine is no easy matter in these times. Our readers will have seen the reports that appear almost weekly of newspapers and magazines closing down, or in difficulties. We set out to swim against this tide and, in this sixth issue, we can proudly state that we have succeeded. The inevitable initial difficulties are behind us, the biggest problems have been solved, and we feel ourselves to be in smoother water, in which we may push ahead more rapidly. The effects will, we hope, become increasingly evident in the magazine in the next few months.

Circulation is growing steadily and at an encouraging pace. But we know there is scope for further increase, and we appeal to our readers to continue the efforts they have been making to enrol new readers.

Our readers are not passive. Nothing has been more striking than the enthusiasm with which they write to us. In the first few months, the letters came from the length and breadth of the British Isles. Now they are arriving daily from every corner of the world. We appreciate not only the compliments they usually contain, but even more the ideas that are put to us for consideration.

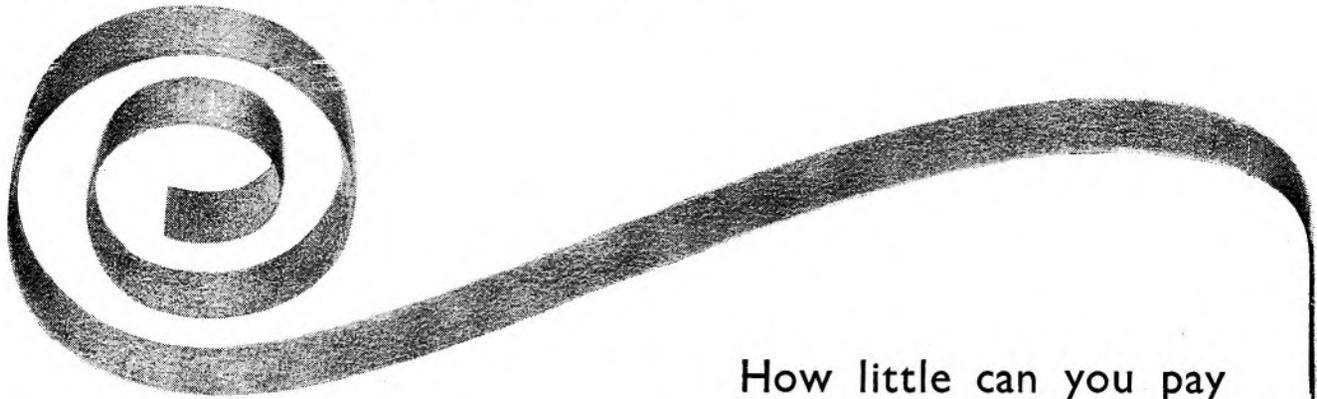
Manufacturers and the trade have rallied magnificently to support the first publication in this country exclusively devoted to tape recording and reproduction. If there were one or two doubters at the start, we believe they are revising their estimates now. This month we carry more advertising than in any previous issue—and we know that our advertisements are read with the same interest and attention as the editorial features.

We are grateful, too, to our contributors, who have set a standard that is unsurpassed in the field of specialised journalism today. The readiness to write of leading experts in various fields of tape activity provides further proof that this magazine is *needed*.

The newsagents, too, deserve our thanks, for they have played a vital part in building up our sales.

We have some bold plans for the future, details of which will be released in due course. We regard the development of this magazine as an adventure, and we hope that something of that feeling will be shared by all who read it. We look forward to their continuing partnership.

And for what they have done already, we say *Thank you*.



How little can you pay for a **good** tape recorder?

Sixty guineas? Fifty-five? Fifty? Stop guessing—here's a really good instrument for only *thirty-nine guineas*. It's the Walter 303 and people who've already tried it tell us we've got "a winner". With the 303 you can (1) build up your own record library of broadcast music; (2) record from discs or microphone; (3) record 'live' instrumental and vocal performances; (4) record and play back, rewind or reverse the tape, and erase—all with *one* control, the ingenious 'Joystick'. You can also connect the 303 to a radio or other amplifier for greater volume—but you won't often need to! Even *without* an extension loudspeaker the maximum volume on playback is great enough to fill a medium-size hall. Technically speaking, the Walter 303 has an output of 3 watts, a frequency range of 40—10,000 cycles, and a signal-to-noise ratio of -35db. It's housed in an attractive two-colour case and is easily carried from one place to another. The 303 is in the shops now. If you *do* have any difficulty, please let us know at once and we'll send you the address of your nearest stockist.



the new **Walter 303**

costs only **39 gns** complete with microphone and tape. Fully guaranteed. Easy payment terms.



READ ALL ABOUT IT!

Cut out and post this coupon or send a postcard.
WALTER INSTRUMENTS LIMITED 172 GARTH ROAD,
MORDEN, SURREY. Tel: DERWENT 4421
Please send me free literature on the new Walter 303

NAME

ADDRESS

National Tape Recording Contest

NOW THE ENTRIES ARE ROLLING IN

The date and the programme

It has been necessary to make a change in the date of the presentation of prizes and certificates to the winners and runners-up in the first British Amateur Tape-Recording Contest.

Will all readers please note that the programme is now being arranged for **FRIDAY, OCTOBER 25**. This is a day earlier than previously announced.

The closing date for the receipt of tapes remains as announced: **Saturday, October 5, 1957**.

Readers have still nearly four months in which to make their recordings, edit them into a programme of not more than 15 minutes, and submit them to **TAPE RECORDING MAGAZINE**.

*

The programme for October 25 is an exciting one. It will represent a milestone in the progress of tape recording in Britain.

TAPE RECORDING MAGAZINE is arranging a big social get-together for the evening.

The winners and runners-up will be present, and the panel of distinguished judges. So, we hope, will leading figures in the tape recording and reproduction world.

Admission will be by ticket and every reader of **TAPE RECORDING MAGAZINE** will have a chance to be present. Details will be announced later.

*

Earlier the same day, as a result of the generous interest and co-operation of **Electric and Musical Industries Ltd.**, the prize-winners and runners-up will be guests at a special luncheon in London.

They will see one of the **E.M.I.** artistes recording at the **E.M.I.** studios and will tour the factory at Hayes, Middlesex, where the famous "Emitape" is manufactured.

The first British Amateur Tape Recording Contest is creating a stir. There is widespread interest among home enthusiasts and in the trade. It is obviously going to become the first of an exciting annual series. Applications for entry forms and conditions are now arriving at **TAPE RECORDING MAGAZINE** offices. Every reader who thinks of taking part is urged to write immediately, so that we may proceed with arrangements with a firm idea of the number of competitors. Please send a stamped, addressed envelope and mark your application "Contest" in the top left-hand corner of the envelope.

As we have said before, no-one need be deterred from entering because of lack of experience of recording. The articles now appearing in **TAPE RECORDING MAGAZINE** tell you all you need to know.

All relevant factors will be taken into account in the judging; the fact that a competitor with a battery portable has been able to capture the *splash* of water under a paddle-steamer will not give him an advantage over someone who has shown ingenuity in recording the sound of the lawn-mower at work and the birds in chorus in a suburban back-garden.

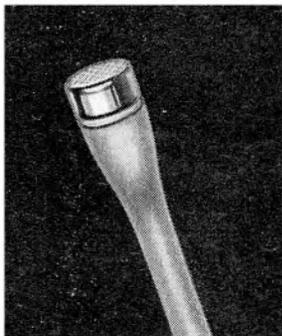
There are many ways of capturing the spirit of "Summer 1957" without taking your recorder farther than the nearest open window.

YOU can make a first-class 15-minute tape (though it may be shorter, if you wish) without difficulty. This is the most exciting challenge and the greatest opportunity you have ever had as a recording enthusiast.

Send for your entry form now.



And more prizes added



The Lustraphone LFV/H59

THE PRIZE LIST GROWS. IN ADDITION TO THE £10 CASH FIRST PRIZE ALREADY ANNOUNCED, THE CONTEST WINNER WILL RECEIVE £10 WORTH OF TAPE ACCESSORIES OF HIS OWN CHOICE.

AND A LUSTRAPHONE LFV/H59 PENCIL-TYPE MOVING COIL MICROPHONE WILL BE AWARDED AS A PRIZE TO THE SECOND BEST ENTRY.

CERTIFICATES OF MERIT WILL GO TO THE FIVE RUNNERS-UP.

The additional prizes are the result of enthusiastic support now being offered by manufacturers and the trade. As reported on the left, **Electric and Musical Industries** are arranging a full programme for the winners.

Now **Messrs. Howard Photographic, of Bromley, Kent**, have offered the £10 of accessories as an addition to the first prize.

And **Messrs. Lustraphone Ltd.** are giving their LFV/H59 microphone as a further prize. This is the mike used by Mr. G. Holmes Tolley when—as he described in last month's issue—he won a first prize in the International Amateur Recording Contest.

*** Always a Winner!**

EMITAPE

Hi-Fi

**MAGNETIC
RECORDING TAPE**

SUITABLE FOR ALL TAPE RECORDERS

SPECIAL FEATURES

- HIGH SENSITIVITY • ANTI-STATIC
- PRE-STRETCHED P.V.C. BASE
- FREEDOM FROM CURL
- LOW "PRINT-THROUGH" FACTOR
- METALLIC CONTACT STRIPS FOR "AUTO-STOP" P.V.C. LEADER AND TRAILER STRIP FITTED TO ALL BUT THE MESSAGE SPOOL

"88" GENERAL PURPOSE

"99" LONG-PLAY
50% increased playing time



TYPE No.	TITLE	SIZE	LENGTH APPROX.	PRICE £.s.d.
88/3 ★99/3	"Message" ..	3" dia. ..	175' 250'	7.6 9.6
88/6 ★99/6	"Junior" ..	5" dia. ..	600' 850'	1. 1.0 1. 8.0
88/9 ★99/12	"Continental" ..	5 3/4" dia. ..	850' 1200'	1. 8.0 1.15.0
88/12 ★99/18	"Standard" ..	7" dia. ..	1200' 1800'	1.15.0 2.10.0

★ LONG PLAY—50% increased playing time.

Both types of Emitape have identical magnetic oxide coatings and electrical characteristics.

* INTERNATIONAL AMATEUR RECORDING CONTEST WINNER
-- Mr. G. Holmes Tolley
USED EMITAPE

Full details of Emitape and accessories are available from your local dealer or:—

E.M.I. SALES & SERVICE LTD · (RECORDING EQUIPMENT DIVISION) · HAYES · MIDDLESEX · SOUTHALL 2468



BATTERY PORTABLE TAPE RECORDERS

A Tape Recording Magazine Survey

Five models at a glance

E.M.I. L2

50 to 7,000 c.p.s. at 7½ i.p.s. All-battery. Weight 14½ lbs. 5 in. spools. 98 guineas.

*

BUTOBA TPR2

A new German machine powered by a spring-motor and batteries. Built-in speaker. 1½ i.p.s. and 3½ i.p.s. 50 to 9,000 c.p.s. Weight 20 lbs. 5 in. spools. 78 guineas (with microphone).

*

BOOSEY & HAWKES "REPORTER"

A pioneer machine in this country, but no longer manufactured. Spring-motor and batteries. £59 with speaker. Price new.

*

DICTAPHONE "DICTET"

An American development, providing 60 minutes recording on standard tape at 2½ i.p.s. 200 to 4,000 c.p.s. Weight 2 lbs. 11 oz. All-battery. Not yet available here and price undecided.

*

E.M.I. "MINIFON"

140 minutes recording at 13½ i.p.s. on magnetic wire. Frequency response, 200 to 5,500 c.p.s. Weight 2½ lbs. All-battery. £67 10s. (microphone extra.)

ONE OF THE MOST striking features about reader reaction expressed to this magazine in the last few months has been the widespread desire for a wider choice of battery-operated portables.

The intelligent enthusiast, once he or she has fully exploited the ordinary recorder within reach of a power plug in the home, naturally wants to be out and about, collecting the sound impressions that can only be secured in the open air. Those who have cars can use power packs to operate standard recorders from the car batteries. But still the element of easy portability is absent.

What is wanted is a comparatively light, battery-operated machine which can be taken anywhere and giving sufficiently good quality to be used for any recording purpose.

Our researches show that there are only five machines coming in this general classification either on the market or due to appear here in the immediate future. These are detailed on the left.

Not all of them are designed for all-purpose recording work. The two midgets—the E.M.I. "Minifon" and the Dictaphone "Dictet," for example, are advertised as dictation or interviewing machines.

In neither case, with the Minifon because it uses wire and with the Dictet because of its non-standard speed, can recording be played back straight away on standard recorders. But the patient and well-equipped enthusiast may find it worthwhile securing with them recordings that he cannot contrive in any other way and then re-recording on a standard recorder.

The appearance in these pages of a new German machine, boasting most of the features which the average British tape enthusiast demands, is interesting. British manufacturers have achieved some first-rate pioneer work with battery-operated portables. The E.M.I. L2 remains one of the finest machines of its type in the world, as its popularity with professional users in many countries clearly demonstrates. There still seems scope for a British product for the popular market.

In the coming year, we anticipate that a good deal of experiment will be made by enthusiasts with the equipment now available and we plan to keep our readers fully informed. Those who use any of the machines described in this survey are invited to write to us about their experiences.

THE BUTOBA HAS ALMOST EVERYTHING —at a reasonable price

JUST arrived from Germany is a new battery-operated portable that promises to provide most of the facilities that tape enthusiasts have been demanding. This is the Butoba T.P.R. 2. Self-powered and self-contained, it can be used anywhere, and the manufacturers claim that it is constructed to stand up to the roughest conditions.

The Butoba is handsomely housed in a case measuring 15 x 12 x 4½ inches and the total weight is about 20 lbs. When put down for operation, half of the lid lifts off to reveal spools and controls; the other half contains the built-in speaker.

There are two speeds—1⅞ ips and 3¼ ips and, with the higher speed, the remarkable frequency response of 50 to 9,000 cps, plus or minus 3db, is claimed.

The Butoba accommodates up to five-inch spools and provides double-track operation, so that there is 80 minutes of recording time at the slower speed, or 44 minutes at 3¼.

The capstan is powered by a precision spring motor, operating for 22 minutes at 3¼ ips or for 40 minutes at 1⅞ ips. Constant speed is guaranteed, and the motor can be rewound while recording is in progress.

The power supply comes from one 1.5 volt battery and one 90 or 100 volt battery, or alternatively a converter with a 1.25 volt nickel-cadmium battery. But an eliminator can be connected with the recorder so that it can be powered from AC mains, thus conserving battery life.

Playback is possible either through the built-in speaker, or through an external amplifier, by use of a connecting cable.

The built-in speaker and the tape deck lying side-by-side, the Butoba presents a handsome face to the world



The machine has a multi-purpose head, providing recording, playback and erase facilities.

Four press-buttons control operation: stop, start, record and playback. Another button permits fast rewind.

Power output is rated at 0.5 watt.

There are two inputs for recording—one jack for microphone and another for recording telephone conversations or radio.

A magic-eye type control indicates recording level.

The machine incorporates a warning indicator monitoring recording time. The indicator scale constantly reads the working time left in minutes and, after 20 minutes operation, the black scale gives way to a warning red indicator that the spring motor needs rewinding.

A Lustraphone LD 61 dynamic microphone is included in the price of 78 guineas.

Our Technical Advisory Editor writes: "I have not yet had the opportunity to test this machine, but hope to do so in the near future. But the technical specification is excellent and the machine should meet a long-felt need.

THESE WERE PIONEERS

A GOOD deal of the pioneer work with battery-operated tape recorders was done by Messrs Boosey and Hawkes in this country and many of their machines are in use, though the firm has now ceased to manufacture them. As readers may have opportunities to purchase these machines second-hand, we give details here.

The first version appeared in 1951 under the name "Reporter," which was used throughout the later series. This was a recorder only, having no playback facilities, and the speed was 7½ i.p.s. Later, the standard model provided for playback through a headset, and there was a de-luxe model with a built-in speaker.

In 1953 there appeared the "Reporter Special," with 15 and 7½ i.p.s. speeds, and the "Travacorder," with a 3¼ i.p.s. speed.

All the machines are light-weight battery-operated but spring-driven recorders, measuring 14×7×6½ inches and

weighing 12½ lbs. In the interests of portability, some facilities were deliberately sacrificed: For example, fast rewind and automatic erasure.

All the models have full-track heads as standard, but purchasers were able to order half-track heads at an additional cost, so that some models in use have this feature. Recordings made on the "Reporter," however, can in any case be played back on any full-track or half-track tape recorder.

Five-inch spools are accommodated. The spring motor drives the capstan for eight minutes, but can be rewound during recording if it is done slowly and smoothly.

The "Reporter" uses two 67½ volt H.T. and two 1½ volt L.T. batteries and a life of 100 hours for the first and ten hours for the l.t. is claimed.

Frequency response for these machines is not quoted in the literature, but it is stated that any slight trace of flutter will

be quite imperceptible in speech, sound effects or background noise. To improve steadiness of speed to enable music to be recorded, a flywheel was available as an accessory.

A crystal microphone was standard with machines when sold.

The Boosey and Hawkes models were sold for use at 7½ and 3¼ i.p.s., as stated above, but were capable of adjustment over a fairly wide range to enable variation. A stroboscope was, therefore, supplied with them to enable accurate adjustment to be made.

When last available through the trade, the standard "Reporter" sold at £55 and the de-luxe model, with speaker, at £59.

Messrs Boosey and Hawkes deserve credit for some useful spade-work in making known the value of battery-operated recorders, particularly for recording bird-sound and for use with ciné equipment.

PROFESSIONAL USERS QUEUE FOR THIS MACHINE

The L2 has won world fame

THE EMI lightweight battery recorder L2 is one of the best-known and widely-used machines of its kind in the world and gives the standard required by professional users. It is, in fact the only tape recorder used by BBC reporters and commentators for on-the-spot reports. It is also used for data recording by government and industrial establishments, in research work, and for scientific and industrial purposes.

Its great reliability, allied to compactness, has made it a favourite with many important expeditions and for recording wild life, speech and music in many remote areas of the world. An interesting photograph on page 17 of this issue illustrates one such use.

The L2 measures 14×7×8 inches and weighs 14½lb, with batteries. It is housed in a wooden case, covered with green rexine. It uses 5-inch spools and is available in two models, giving speeds of 7½ or 3½ i.p.s.

It is intended that recordings should be replayed on other equipment, but separate recording and replay heads and amplifiers are provided to facilitate monitoring during recording and to provide for replay if desired. But no erasing facilities are provided.

The case lid has three windows through which the level meter and the amount of tape on both spools can be observed. A control panel provides sockets for crystal microphone and headphones, a pre-set gain control, a loudspeaker jack for replay purposes, and a meter switch to test batteries with the level meter.

This recorder is entirely battery-operated and uses ten U2 1.5 volt cells and two B101 67.5 H.T. batteries.

The U2 cells provide the motor supply and give an effective life of 90 operating minutes, if every 15 minutes of running time is followed by a similar rest period; or 45 minutes, if continuously operated. The H.T. batteries give an approximate life of 15 operating hours.

Changing of batteries is rapid, by removal of a detachable flap at one end of the case.

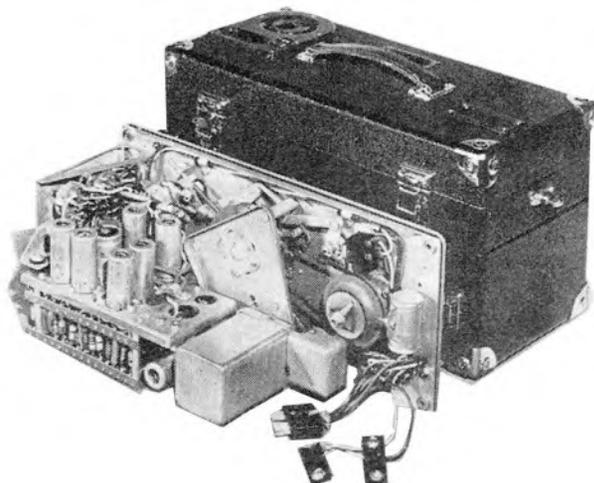
For those interested in technical performance, EMI supply the following information. With the 7½ i.p.s. machine, frequency response between 50 and 5,000 c.p.s. is within 2 db plus or minus of the response at 1,000 c.p.s. and between 5,000 and 7,000 c.p.s. within 3 db plus or minus.

Signal to noise ratio is better than 45 db (at 1,000 c.p.s.) unweighted, when replayed on high quality studio equipment. And wow is better than 0.25 per cent at 7½ i.p.s.

This machine sells at 98 guineas, complete with batteries. A canvas carrying case is available at £3 10s., headphones at £2 5s. and a variety of microphones at from £4 to ten guineas.



A general view of the chassis layout of the EMI L2



WATCH NEXT MONTH—
**News of exciting new equipment and
 important new regular features**
 —IN OUR AUGUST ISSUE

THE TWO MIDGETS

THE MINIFON pocket recorder marketed in Britain by E.M.I. is no bigger than a box of 100 cigarettes, weighs only 2½ lbs. but provides nearly 2½ hours of continuous recording at 13½ i.p.s., using magnetic wire.

If used in conjunction with a standard tape recorder, therefore, it would be necessary to re-record on tape. This is made simple enough, however, for the "Minifon" recording can be played back via an outside amplifier and speaker (or through an ordinary radio set).

The standard model provides frequency response of 200 to 5,500 c.p.s.

There is automatic erase, so that the wire can be continually re-used and playback is possible through the microphone, if desired.

The "Minifon" uses a 1.4 volt l.t. battery, giving 25-30 hours, a 30 volt h.t. battery, giving 150-200 hours, and a 12 volt motor battery giving 15-20 hours.



(Right) **THE MINIFON**

(Left) **THE DICTET**



THE DICTET is a light portable recorder looking rather like a camera. It measures 6 5/16 x 4½ x 2 inches and weighs 2 lbs. 11 ozs. It gives 30 minutes recording on each of two channels on standard tape, running at 2½ i.p.s. The fact that this speed is not used by standard tape recorders in this country means that re-recording would be called for.

Power is supplied by two 6 volt mercury batteries for the motor (20 hours life) and one 6 volt battery for the amplifier (40 hours).

Frequency response is 200 to 4,000 c.p.s. Automatic erase ahead of new recording is provided.

Playback is through the microphone or earphones.

This machine has been developed in the United States, but the Dictaphone Company are now considering production at their Acton works.



In this feature every month you can check

YOUR LOCAL DEALER

JOHN SHINN & SONS LTD.
Electronic Engineers

TOWN CENTRE, LEIGH, LANCS.

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

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

Pioneers in Tape Recorders since 1946

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

TAPE RECORDER HIRE SERVICE

Magnograph (Dept. TR)
1 Hanway Place,
London, W.1.

Tel.:
LANgham
2156

TAPE TO DISC SERVICE STD & LP

'in the dark'

regarding **TAPE EQUIPMENT?**

Why not avail yourself of the higher standard of technical service offered by Dept. T.R.

NORTHERN RADIO SERVICES

11, Kings College Road, London, N.W.3 Phone: PRI 3314

We will supply and advise on all worthwhile Recorders, Decks, Tape Amplifiers, Pre-amplifiers and associated High Fidelity equipment.

OF SPECIAL INTEREST

Our own 'SYMPHONY' de luxe
Tape Recorder at 49 gns.

IN STOCK NOW

The Collaro latest Mark IV Tape
Transcriber with Rev. Counter at £22.
The Collaro Tape Pre-amplifier to
match at £21.

Send two 2½d. stamps for our Bargain Catalogue

"TAPE RECORDERS ONLY"

ALL POPULAR MAKES, CASH OR TERMS

Service and Guarantee implemented on all machines, including Grundig, without returning to the manufacturers.

TAPES Service spares

DIXON'S ELECTRONICS

227 OXFORD ROAD, MANCHESTER, 13

(Telephone: ARDwick 4269)

A schoolmaster, H. A. PARKS, writes about

THE outstanding claim that can be made for the tape recorder as a classroom aid is that it is versatile. Added to this, it can be brought into operation quickly and with the minimum of what I will call "technical preparation." These two attributes make it a very useful tool in the teacher's hands.

The child of today lives in such a stimulating and exciting environment that he is a different teaching proposition to his parents. Somehow, the teacher has to make the pupil's time in the classroom compete with the multifarious attractions that inevitably surround him outside. Please do not misunderstand; this is no plea for all "sugar" and no "pill" in our educational methods. I want hard work from my pupils and as much practice at and attention to the "3 R's" as I can get into the all-too-short time at my disposal. At the same time, one should turn one's hand to any aid that will help to give purpose to the work.

In this article I deal only with the mock newsreel, which I have found exceedingly useful for livening up and giving variety to the English course.

With a class of thirteen-year-olds I ran a series of lessons dealing with news broadcasts, just at the time of the Hungarian debacle. Teachers should always be ready to adapt plans so as to exploit the great event.

The tape recorder was used at the end of the series of lessons, and it was used partly as a bait. We discussed types of news items and the first lesson was over before we had completely mastered the selection and division of news items into categories—Local, National, International and Sporting (though, of course, the last was easy enough).

The next English lesson was devoted to writing imaginary or real news accounts as compositions, in the conventional way. These were marked and discussed, and praise and criticism given by the teacher and by inviting the children to comment upon each other's work. The exhortations—"Think what this will sound like on the tape," or "Will this sound exciting or interesting?" or, again, "Will this sound as if the account is really being given while the incident is taking place?" Of course, this is somewhat artificial, but it does make the children think about the points raised and they do really use their imaginations.

At this stage a problem emerged. How could we maintain the interest of all the members of the class, and, at the same time, stretch them to the limit of their attainment? Let me say at this point that I believe there is a place, and an important one, for uninhibited effort at expression in which the difficulties of spelling, writing and grammar are allowed to take a "back seat" for a while. Certainly this is so with the average and less gifted pupils. It was also a foregone conclusion that quite a number of the children simply could not produce imaginative reports suitable for recording. Despite this, they must be given the opportunity. This problem caused me considerable thought and the final solution was in group work.

The class was divided into five groups. One dealt with



NEWSREELS LIVEN UP THIRTEEN- YEAR-OLDS

each of the news item categories mentioned above, while the fifth was responsible for general arrangement and announcing. Each group had a leader, who acted as chairman, and the aim was to produce suitable news items and draft reports. They were given a very short time to decide upon the nature of the event or incident and then they tried to write their drafts. In some cases each child wrote independently and in others two or three combined, with one acting as scribe while the others, made suggestions. There appeared no outstanding advantage either way.

What was important was that every child in the class was really trying to get as much done as possible in the short time allowed. At this point I deliberately hurried them on. The results were, in many cases, poorly written and the spelling and grammar had marks of distinct originality! But out of the turmoil came some remarkably imaginative accounts. Budapest was the main inspiration, but the netball match against a neighbouring school, which was fresh in the memory, also formed the basis of a good draft. Our games mistress and her opposite number from the other school were both impersonated and interviewed. The report from Budapest made it possible to give the duller children useful sound effects work.

While the news reports were being written, the group responsible for announcing and general arrangement had two tasks. First they had to work out the order in which the reports should be made and then they had to practise

(Continued on Page 23)

DENIS MITCHELL, one of Britain's most able producers of on-the-spot tape features for radio, writes the third article in our Contest series **making a feature tape**

GETTING THE ESSENCE OF SUMMER ON TAPE

A TAPE feature—like a poem, or a play, or a picture postcard—is simply a means of communicating with other human beings. Obvious enough: but the techniques of recording and editing are so fascinating that it is all too easy to forget that it is the end-product that matters, and that the end-product has got to arrest and hold the attention of people who have, perhaps, never even seen a tape machine, but who probably own a television set!

If your feature is an honest distillation of your own experience of summer in this bulging green salad called Britain, then I think you are communicating something

worthwhile which will hold people's attention. If, however, it is just a conventional collection of summer sounds mixed with other people's platitudes, then I suspect that it may be a bore and I can only hope that your tapes get tangled!

I don't have to remind tape addicts that they are not, basically, setting out to *write* a programme. A writer puts down on paper words which are, say, the essence of some remembered incident. But a tape man is out to capture the incident itself, as it happens. Afterwards, quietly, he arrives at *his* essence by editing.

I would advise you not to spend too much time planning your feature. The great thing is to get out and about with your machine. You will find that the recordings you make will completely alter your initial plan and will dictate the final shape of the programme. And this is as it should be. I certainly don't think that you ought to start by writing a script.

There is no set method, no golden rule for making a tape feature. But you may find this possible order of events helpful:

1. Decide what sort of programme it is going to be, what you intend to convey.
2. Think of people you might interview, and of sounds and places.
3. Start recording, and go on recording. Aim to get at least ten times as much material as you can use.
4. In between trips, listen to the tapes you have made. By this time, the programme will have started to take shape in your mind.
5. Start thinking about music, if you intend to use any.
6. Get down to serious editing.
7. Finally, write a linking script, if there's got to be one. Make it as short as possible—eliminate every unnecessary word.

Music can help the programme very greatly, but don't ever use it merely to fill a gap. Use it sparingly. As a general rule, fade music gently in under the preceding speech or sound. Personally, I wouldn't use commercial recordings for this particular fifteen-minute programme about summer. For one thing, there are possible copyright difficulties and for another, it would be more enterprising to persuade a musician friend (a guitarist, for

(Continued on opposite page)

"GETTING THINGS TAPED.."

... is another way of putting "knowing how and why". And that is our particular claim, for we are specialists in tape equipment, and, naturally, our stock and technical knowledge is wider than is held by the ordinary dealer. Whether your field is Bach or Brubeck, Gielgud or Goonery, we can show you how to get the best from them all.



The Elizabethan De-Luxe

A truly HI-FI instrument with 3½w. undistorted output, employing the Collaro 3-speed transcriber. Amplifier to preferred characteristics for pre-recorded tapes. Tone control, variable top cut and boost in playback. Mixing facilities for separate mic. gram. and radio inputs.

Complete with HI-FI mic. and 1,800ft. long playing tape, etc. **65gns.**

The Collaro Tape Transcriber used in the Elizabethan

is available in other portable recorders from 52 gns. Also available for HI-FI enthusiasts or use with their own amplifiers in attractive new forms with tape and volume controls and mixing facilities. From 34 gns.

COME AND HEAR IT—or write now for details.

**MICROPHONES
TAPES · SPEAKERS
AMPLIFIERS
F.M. RADIO
GRAMOPHONES
RECORDS**

If its 'SOUND'—we have it!

QUALITY MART

8 Dartmouth Park Avenue, London, N.W. 5 GULliver 1131
Tufnell Park Underground (16 mins. Charing X.) or bus 27, 134, 137

IT'S EASY FOR YOU

Readers seeking to put on tape the essence of Summer will find their task much easier than that of the members of the French Himalaya Expedition shown here. They took along an E.M.I. portable when they set out to conquer the giant Makalu peak and they did much of their recording in sub-zero temperatures. But they came back with valuable recordings of scientific and technical data and some interesting interviews with Sherpa members of the Expedition, like those shown here.

example) to compose special music. Or you might decide to use a folk song as a theme. ("Long, Hot Summer Day," for example, or "Blow the Wind Southerly"). Single notes or chords or strumming can be used very effectively, too—as Chekhov, for example, used them in *The Cherry Orchard*. Music can also be used in conjunction with sound effects: try, for example, marrying the song "Oh! Mr. Porter, what shall I do?" to the chugging of a train.

When you get down to the linking narration, remember that you are writing spoken English, not written English. Avoid the formal phrase like poison; put nothing down that doesn't come easily to the tongue. If it is at all possible, speak the narration yourself. A plummy, polished voice isn't necessary or even desirable. The great thing is simply to sound like a human being and not a waxwork.

I expect that you will interview and record a number of people for use in your feature. To my way of thinking, this is the most interesting and rewarding part of recording work. You will find that the English language is a living, changing thing; you will discover people, who will talk honestly and movingly and amusingly. By way of illustration, let me quote just one or two sentences from some tapes I have recently made.

"She's as secret as the sewage, that woman."

"It's all clean consumed and eaten-up by the sea."

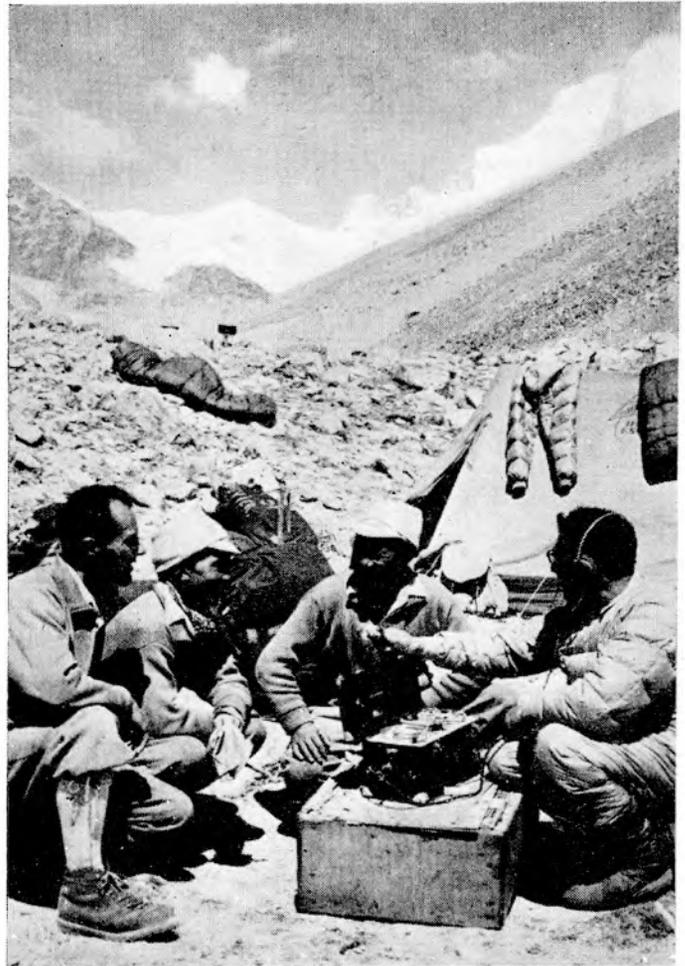
"I bar weddings and funerals and collars—I don't like fresh company."

"When the sun shines both sides of the hedge."

"I've had a good life—I've had the run and the course of the country."

Here are one or two points that I have found useful to bear in mind when interviewing people:

1. Where possible, record them in some place where they will feel at home, and at ease.
2. Before you start recording, talk as much as you like. When you start recording, talk as little as possible.
3. Don't be in a hurry. You will often find that people have a preconceived notion of what you expect them to say: let them get this off their chest first, then steer them round to the subject you are interested in.
4. You will find that people don't often say very much worth hearing in the first two or three minutes . . . they've got to get themselves warmed up. Have patience.



5. If you use a stand mike (and don't want a two-sided conversation), you will find that it is a good idea to stand well away from the mike and the subject, and to move freely about the room whilst the person is talking. In this way, and in many other small ways, you can help the interviewee to forget his mike-shyness. Because you are standing some distance away, it also has the effect of making a quiet-voiced person speak up.
6. Suppose you meet someone in, say, a dance hall, whom you want to interview. Don't record him in the hall if the band is playing—otherwise you will have continuity and copyright problems on your hands. Record him in a quiet place, and also make a recording of the general atmosphere in the dance hall without music: then mix the two together at leisure.
7. In all cases where there is any background noise, behind the voice you are recording, make a tape of the noise alone. You will be surprised how often this comes in useful.
8. Apart from general atmosphere recordings (say, of men selling ice cream, or porters shouting on a railway station and so forth) never ever record people without them knowing that you are doing so.

TAPE RECORDERS REVIEWED

THE VORTEXION

SOME manufacturers of tape recorders appear to lay the greatest stress on the "first sight" appeal of their instruments, while others adopt a more conservative approach founded on supreme confidence in the technical excellence of their products. The fact that this recorder finds its place within the latter category is not intended to be in any way deprecatory of the appearance of the Vortexion product.

The equipment, which is covered in black leatherette, is completely self-contained, and has a detachable lid. The complete unit measures $8\frac{1}{2}$ x $22\frac{1}{2}$ x $15\frac{1}{2}$ inches and weighs 49 lbs. The layout of the recorder is very convenient and does not call for criticism: the tape deck is on the right-hand side of the unit and the amplifier and associated controls on the left.

The amplifier has four main controls: (a) volume control, which operates on record and playback; (b) treble control; (c) bass control. Both (b) and (c) operate during the playback process only. The remaining control is a three-position switch giving either the playback position of a choice of two record positions, depending upon which input socket is engaged.

★

Situated just above these controls is a micro-ammeter, which is used for setting the bias value and also as a recording level indicator. Both the value of the bias and peak permissible recording level are determined by the manufacturer at the factory for each individual recorder and the values are marked inside the lid of the equipment. The control for bias adjustment is conveniently fitted at the top left-hand corner of the amplifier section, and is used to compensate for low mains or ageing valves. A mains adjustment panel is also provided on the front panel of the amplifier unit, giving three positions: 205, 225 and 245 volt taps.

On the left-hand side of the case, four jack sockets are provided; two of these are low impedance microphone inputs, both balanced, one for two wire connection and the other for two wire and screen. The use of the balanced input enables very long unscreened twin lines to be employed without spurious pick-up. Both these inputs are fully loaded by 8 micro-volts; the third socket is a

high input impedance and is fully loaded by 17 milli-volts, across half a meg-ohm. This would be the feed point for a crystal pick-up, microphone or radio input. The fourth socket is a 15 ohm output to an extension loudspeaker; insertion of a jack in this socket automatically mutes the internal loudspeaker. This socket can be used either with a speaker or low impedance headphones for monitoring purposes.

On the right-hand side of the case is fitted a mains on/off switch, a three-pin mains input socket and an octal socket from which, by means of an octal plug, a 30 milli-amp H.T. feed and one and a half amperes at 6.3 volts can be supplied to a radio feeder unit. The total power consumption of the complete unit is 107 watts (57 watts for the tape deck and 50 watts for the amplifier).

This recorder incorporates the "Wear-ite" tape deck manufactured by Wright and Weare, which employs three motors and provides speeds of $3\frac{1}{2}$ and $7\frac{1}{2}$ ips.

THE MAKERS

**Vortexion Ltd.,
257-263 The Broadway,
Wimbledon, London,
S.W.19**

This deck accommodates up to 1,750 ft. reel of tape and gives a playing time per track of 45 minutes at $7\frac{1}{2}$ ips or 90 minutes at $3\frac{1}{2}$ ips.

Twin track facilities are provided by reversing the spools, the recording sense being in accordance with C.C.I.R. specification—top track with tape moving from left to right. The controls for the tape deck, situated on the left-hand side, comprise a large four-position rotary switch for record, wind-back, wind-on, or playback. When any one of these positions has been selected, the tape is set in motion by pulling the starter lever; it is held in position by a solenoid supplied with approximately 30 m.a. D.C. Once a particular operation has been selected, it is not possible to select any other position on the rotary switch without first depressing the stop-button which short circuits the solenoid, thereby

This month we review a more expensive machine. Because this is equipment for the connoisseur who is likely to have expert knowledge, the review is rather more technical than is customary.

switching off the motors and applying the brakes to the reels.

This deck is also fitted with an automatic brake, so that if during the record or playback process the tape is allowed to run off the reel, the deck will automatically switch itself off. The same thing applies, of course, in the event of tape breakage, although this contingency must be considered unlikely. The automatic brake does not, however, operate during the wind-back and wind-on operations, but as both these operations take something less than one minute, it is unlikely that the machine would be left without supervision for this period.

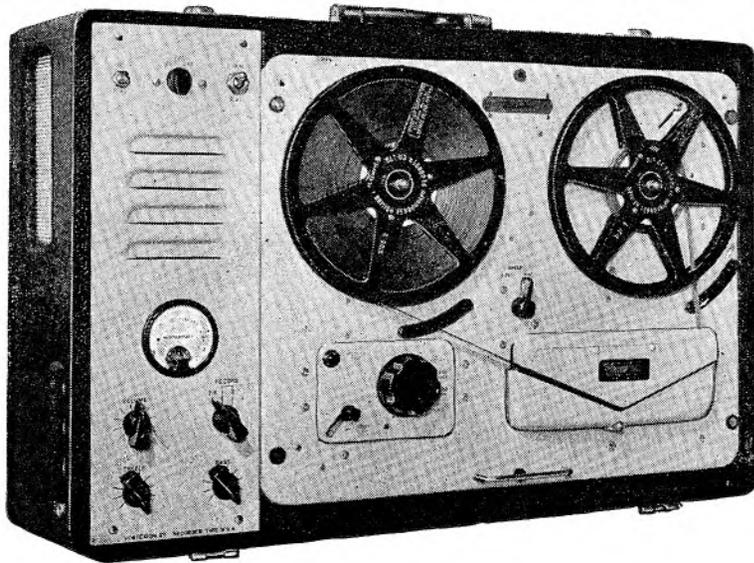
★

Change of tape speed is carried out by a two-position switch situated in the centre of the deck. Operation of this switch, with the tape at rest, brings one of two rubber-rimmed idlers into contact with the fly-wheel and one portion of a stepped pulley on the capstan motor spindle. Coupled to this knob is a switch which enables simultaneous changeover of the equalising network for correction of response.

The tape loading is extremely simple, as the spools are held rigidly on the spindle by means of spring-loaded clutches. To remove a spool, it is only necessary to deflect a small projection on top. The free head of the tape is quickly and easily secured to the empty spool by a spring-loaded clip.

The tape wound very easily, no matter what operation was engaged, but it was rather disconcerting to note the manner in which the tape scored the small banana-shaped tape ramps over which it passed to and from the spools. The manufacturers have, however, assured me that this is quite in order but that a small improvement is being made on future models and at the same time a rev. counter is being fitted.

The tape is transported over the head by the constant speed capstan, in association with the pressure roller. It is kept under tension by only partially energising the magazine motor, thus providing torque in opposition to the direction of tape travel. It is claimed that the wow and flutter is less than 0.2 per cent of $7\frac{1}{2}$ ips, while the long term speed stability is better than 0.5 per cent at 50 c/s mains input.



THE SIZE
Overall dimensions :
 $22\frac{1}{2}'' \times 15\frac{3}{4}'' \times 8\frac{1}{4}''$
Weight 49 lbs.

The deck employs two heads; an erase head, having an impedance of 350 ohms at 53 kc/s., and a high impedance record/playback head, having an impedance of 12 kil-ohms at 10 kc/s. The heads are fully screened, both electrostatically and magnetically. The switching for both the erase head and the record/playback head is carried out by the mains selector switch, arrangements being made to subject both heads to a decreasing supersonic voltage so that substantial demagnetisation of the heads is obtained. Tape location is facilitated by calibrated scales situated below supply and take-up reels.

★

As soon as the stop button is depressed, when the playback or record position is engaged, the pressure roller is immediately moved clear of the capstan, the supply to the motor is cut off, and the brake applied to the reels. Separate brake adjustments are provided for both spools so that any out-of-balance in the braking system can be cured. The result of any such out-of-balance would be either tape spill-over, or the subjection of the tape to undue strain. On the machine reviewed, braking was excellent and there was not trace of spill-over.

There is a pause control, which enables the tape to be instantly stopped without stopping the motors. This is done by pushing the pressure wheel away from the capstan, thus removing the drive to the tape. The torque of the take-up spool motor is not great enough to overcome the frictional force due to pressure pads, etc., plus the counter-torque of the supply reel motor, so the tape comes to an instant stop.

The amplifier and oscillator unit contains a total of five valves, plus rectifier. The inputs from the two low impedance

input sockets are fed to the grid of a pentode (EF86), the output being taken from the anode to position 2 on the record/playback switch. The input to the high impedance radio/gram socket does, however, by-pass this first stage and is taken direct to position 1 on the record/playback switch. The output from this switch is taken to the volume control potentiometer, the centre tap of which is fed into the grid of another EF86. The output from this stage is, in turn, fed into the power output stage (EL84). Negative feed is employed from the anode of the power stage to the cathode of the output driving stage. Whether the output goes to the internal elliptical loudspeaker or to the recording head is determined by the large rotary switch on the tape deck to which the electrical connections are linked.

If it is desired to monitor the recording, low impedance headphones or a loudspeaker may be connected to the external loudspeaker socket. This recorder does not provide any mixing facilities.

The oscillator stage also utilises a pentode (6BW6) and uses a slightly modified form of the Hartley circuit. The H.T. is supplied by a valve rectifier (GZ30).

When the playback position on the selector switch is engaged, the pre-amp already mentioned is replaced by another, also employing an EF86 and incorporating the tone control circuits. These are therefore not operative during the recording process, so that the optimum frequency response is recorded on the tape irrespective of the setting of these controls.

The first direct recording tests were made using a ribbon microphone. Now I, along with most other people, consider that a fundamental requirement from any recorder making a claim to fidelity of reproduction is that known voices should be instantly recognised. My first test, therefore, was quite a simple one, and consisted of getting friends to make short speech recordings at both $7\frac{1}{2}$ and $3\frac{1}{2}$ ips. It is to the credit of this very fine recorder that there was not a single instance when the speaker was not instantly recognised by those to whom the voices were familiar.

By

E. SWAIN

A.M.I.E.E., A.M. Brit. I.R.E.

T.R. Magazine Technical
 Advisory Editor

The speech test was repeated using a crystal microphone and the high impedance input socket, but it was found necessary to talk very close to the microphone, and in fairly loud voice, in order to obtain a reasonable level of recorded signal; the quality of the reproduction, nevertheless, remained very good.

Next, using the ribbon microphone, direct recordings were made of an organ and piano, the music played being carefully chosen fully to test the capabilities of the recorder. The reproduction, which was very good on the internal loudspeaker, became quite outstanding when played back on a Goodman Axiom 150 housed in its correct reflex cabinet. Recordings were then made using the signal direct from Collaro transcription pick-up, and it is very doubtful whether anything was lost, compared with the signal from the pick-up being played directly through a high quality amplifier to the speaker.

Now, in order to check the very low figure quoted by the manufacturers for the wow content, I put a sustained 2,000 c/s note on the tape at $3\frac{1}{2}$ ips and played it back at both $7\frac{1}{2}$ and $3\frac{1}{2}$ ips, at the same time watching the output on the screen of a cathode ray oscilloscope. The results obtained gave no reason to doubt the manufacturer's quoted figures on the wow content.

THE PRICE
£92 8s.

The maximum power output of the amplifier was checked and this gave a figure of just under 4 watts output, using a sine wave input, before distortion became visible on the screen of the cathode ray oscilloscope.

A check on the frequency response of the amplifier showed that it was more than adequate to deal with the frequency response of 50-12,000 c/s claimed for the head.

The hum on playback was quite negligible, even at maximum volume. The noise due to the motors was quite small, but even so it was found that care had to be taken not to place the microphone too close to the recorder, otherwise motor noise was discernible in the background of the recording.

The inevitable conclusion is that this is a very fine instrument indeed. The designers' desire was to produce for the domestic market a recorder capable of producing recordings of a professional standard, and in this they have undoubtedly succeeded.

NEWS FROM MANUFACTURERS

**GRUNDIG ANNOUNCE
4-CHANNEL MIXER**

A GOOD mixer unit extends the versatility of a tape recorder beyond belief—it is probably the biggest single step towards a full studio-type recording set-up.

By plugging in several microphones or other sound sources and “mixing” them, the most professional effects may be obtained. In recording drama, for example, actors can group themselves around one mike, another can be used for manual effects, while pre-recorded effects and music requiring no mike can be introduced direct through another input.

The engineer can thus introduce sound effects, cross fade from one mike to another, can sustain dialogue over music, fade out or fade in, and adjust volume as desired.

Tape enthusiasts have frequently complained that they have not been adequately catered for in the past with mixer units.

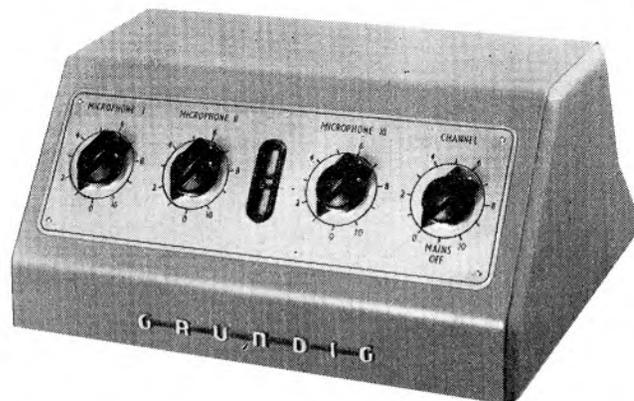
Now Grundig announce a most attractive model, the GMU 3, priced at sixteen guineas.

It is an electronic device incorporating a pre-amplifier and magic eye recording level indicator. It has monitoring facilities. And it provides inputs for three microphones and one additional channel.

The unit is mains-operated and can be used with all past and present Grundig recorders and with most high impedance microphones.

Technical footnote: The valve line-up is ECC-83, PCF-80, EM-80 plus selenium rectifier.

This photograph shows the compact design and attractive lines of the new Grundig GMU 3 mixer unit.



**New Acos hi-fi crystal
stick microphone**

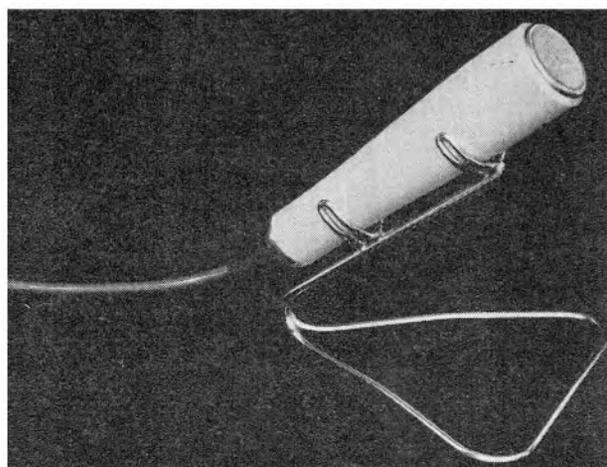
MESSRS. COSMOCORD LTD. announce the first-ever high fidelity crystal stick microphone—the Acos MIC39-1, priced at 5 gns., complete with desk stand and presentation box. It is beautifully styled as a hand, desk stand, or floor stand unit and, at the same time, it is engineered to the highest professional standards.

Introduction of a heavy die-cast liner in the case eliminates the possibility of hum pick-up due to hand capacity effects, and the use of 8ft. of special noise-free cable improves screening and greatly increases signal-to-noise ratio.

Overall length is 4½ inches and maximum diameter only 1½ inches. This microphone has been specially designed for hi-fi recording, public address work and amateur transmitting.

There is a range of seven other Acos mikes which are familiar to all experienced tape recording enthusiasts. They include the MIC16, with substantially flat response from 30 to 10,000 c.p.s. and remarkable non-sensitivity to vibration or shock; the MIC28 lapel microphone; the VP1 high-sensitivity miniature vibration pick-up for use with musical instruments; and the MIC35-1 general purpose hand microphone, costing only 25s.

The ACOS MIC39-1, a new high-fidelity crystal stick microphone produced by Cosmocord.



**THE
SONOMAG PORTABLE**



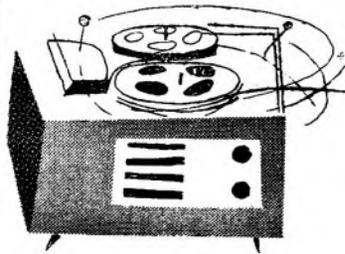
Offers the greatest value per pound spent. Incorporates the latest Collaro Mark III twin track, 3-speed deck, sockets for microphone and radio with mixing facilities, socket for external speaker, high-fidelity jack, etc. The price includes, spare reel, Collaro Studio microphone and 1,200 ft. tape. Leaflet (or demonstration) on request.

Price 52 gns.

SONOMAG LTD 2 St. Michael's Road,
Stockwell, S.W.9
Telephone: BRI 5441

TAPE TITTER

We announce this month a new regular cartoonist, whose work will henceforth appear exclusively in **TAPE RECORDING MAGAZINE**. Alastair MacMurdo is a tape enthusiast, as well as an artist. He will sign his work "Alastair." His first contribution, below, demonstrates his keen, rather irreverent sense of fun.



RADIO MIDGET

Here comes a midget battery radio receiver that is no larger than a camera and will go into your pocket briefcase or handbag. It is the German all-transistor "Peggie," marketed here by A. Prince Industrial Products Ltd. at £29.

It is available in a real leather case in grey, brown or red, is handsome in appearance, and claims high performance.

The actual dimensions are 6 × 3½ × 2½ inches and the weight 1 lb. 9 ozs., including a battery giving about 100 working hours.

NEW PHILIPS GIVES 6 HOURS RECORD

PHILIPS announce this month the introduction of two new models, to replace the previous "Recordergram" and "Recordergram Major." The larger machine, now known as the AG8108, provides recording speeds of 7½, 3½ and 1½ inches per second and, at the lower speed and using long-play tape, this permits six hours' recording on one 7-inch spool.

A frequency response of 50 to 3,500 cps is claimed at 1½ ips, with 50-8,000 at 3½ and 50-15,000 at 7½ ips.

The AG8108 is a twin-track machine, in a grey washable plastic carrying case with a removable lid. It weighs 30 lbs and is supplied with a moving-coil microphone, 1,800 feet of long-play tape, and take-up reel.

AUTOMATIC STOP

Except for tone and volume, all controls are push-button operated. There is a built-in revolution-counter, a tape interrupter button allowing for intermittent stop/start of tape, a "magic eye" level indicator, and automatic stop at end of reel.

There is a 5-inch built-in speaker, with sockets for an extension speaker, and provision for playback through an external speaker or radio, or for feeding

a high-fidelity amplifier. A connecting cable is supplied for recording directly from radio or gramophone pick-up.

The recorder measures 15½ × 13 × 8 inches and costs 62 guineas.

The smaller model is the AG8109, a re-styled and more elaborate version of the "Recordergram," selling at the same price of 39 guineas. The six-position main control knob operates amplifier, fast-wind, fast re-wind, playback, recording, and on/off switch.

The two new Philips recorders: the AG 8108 on the left and the AG 8109 on the right.

There are separate controls for tape interruption, recording volume, playback volume, and tone.

The machine takes 5-inch reels and operates at 3½ ips. Frequency response is put at 60 to 8,000 cps. There is a built-in 6 × 4 inches speaker and sockets for an external speaker. Facilities are provided for mixing speech and music, and for monitoring.

The case is of wood, covered with grey washable plastic, with a removable lid, and measures 14 × 13 × 7½ inches, supplied with tape, reels and a crystal microphone. The weight complete is 23 lbs.

FREE LIST

of all Leading Makes of
TAPE RECORDERS
Part Exchanges — H.P. Terms

HOLDINGS OF BLACKBURN LTD.
39-41 Mincing Lane, Blackburn



Classified advertisements

Rate—Sixpence per word (minimum 5s.); Trade, ninepence per word (minimum 10s.); box numbers, one shilling extra. Payment with copy.

ATTENTION! Our famous "ADAPTATAPE" pre amplifier is now fitted to the COLLARO MK. IV Tape deck and now incorporated push pull oscillator, complete with power pack 40 gns. Easy terms and full specification on request. SOUND TAPE VISION. The Tape Recorder and Hi-Fi Specialists, 71, Praed Street, London, W.2. (PAD, 2807).

COMPREHENSIVE 78/LP Tape to Disc Recording Facilities. Rendezvous Records, 19 Blackfriars St., Manchester 3.

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

"BUTOBA" portable. As new £60, with microphone, batteries, lead and tape. Box A.10.

TAPE TO DISC SERVICE

78's or L.P.

QUEENSWAY RECORDING STUDIOS
123, Queensway, London, W.2.
Tel: BAYswater 4992

TAPE RECORDERS
HIRE - SALE - REPAIRS

TAPE TO DISC RECORDING

Microgroove L.P. (30 mins.)
25/-, 78 rpm. 12/-

S.a.e. for leaflet: Deroysound Service (A.D. Marsh), Little Place, Moss Delph Lane, Aughton, Ormskirk, Lancs.

B.A.T.R.S.

(The Incorporated British Amateur Tape Recording Society—British Tape Pals)

Personal membership 17s. 6d. for 1957. Affiliated membership for public bodies £1 1s.

All subscriptions include a copy of TAPE RECORDING MAGAZINE monthly by post

Details from

E. YATES, General Secretary,
210, Stamford Road, Blacon,
Nr. Chester, Cheshire

NEWS FROM THE CLUBS

New link with BATRS

THE Council of the BATRS has decided to regard TAPE RECORDING MAGAZINE as the house journal of the Society, and subscriptions are being adjusted so that all members get copies of the magazine as part of the Society service.

This means that new members joining between now and the end of 1957 will pay a subscription of 17s. 6d. to cover the period to December 31st. Affiliated membership for public bodies will be one guinea. As from January 1st next the annual subscription will become 25s. 6d., or £1 10s. for affiliated public bodies.

All these rates include copies by post each month of the TAPE RECORDING MAGAZINE. For those who have already taken out postal subscriptions to TAPE RECORDING MAGAZINE for this year, the subscription to December 31st will be 10s. 6d.

Full news of the Society's activities will continue to be published each month on this page. In addition, we shall publish as from this month a list of all new members joining the BATRS, and this will replace the quarterly supplements which the Society has hitherto published.

News of the BATRS and names for inclusion in the monthly list cannot be received direct from readers, but must be sent in the first instance to the BATRS General Secretary, Mr. E. Yates, at 210, Stamford Road, Blacon, near Chester.

The Society hopes to continue its bulletin-on-tape monthly until the end of the year, and bi-monthly thereafter.

The BATRS is now established as an incorporated, non-profit-making organisation. Mr. Francis K. Oliver, of Birkenhead, has been named assistant distribution manager for the bulletin-on-tape and has joined the Council. The other members are: Sir Mark Dalrymple, Mr. Yates, Mr. J. M. Baird, Mr. Frank Micallef, Mr. E. E. Payne, Mr. A. Lovell and Mr. D. Scotney.

First annual BATRS snapshot contest opens on July 1st and runs until September 31st. All classes of snaps from 3½ x 2½ to postcard size, may be entered. One entry per member.

All snaps must have been taken during this summer or this year's annual holiday. No hard and fast rules; simple snapshots likely to prove most effective; three prizes.

We shall publish each month on this page the names of new members of the BATRS. Ages are given in brackets, followed by recorder speeds. The follow-

ing have joined during the past month:—

David F. Roberts, 39, Spring Lane, Olney, Bucks (20), 3½.

Albert H. Donhou, 19, Cripsey Road, Farnborough, Hants. (34), 3½ and 7½.

Ivor Lloyd, Ty Maen, Bagillt, Flints. (37), 3½ and 7½.

Raymond J. Burroughs, 110, Downton Road, Penhill, Swindon (27), 3½ and 7½.

Sydney Roberts, 8, Florence Street, Latchford, Warrington (35), 3½, 7½ and 15.

Jack A. Saunders, 28, Jephson Court, Studley Road, London, S.W.4 (37), 7½.

Robert E. Smith, 38, Davenant Road, Oxford (23), 3½.

Mr. and Mrs. W. P. Kemp, 9, St. Mary's Avenue, Shenfield, Essex (32 and 26), 3½.

Donald Parkinson, 118, Peel Hall Street, Preston, Lancs. (27), 7½ and 4.8.

John P. Mouncrieff, 21, Gayfield Square, Edinburgh 1 (31), 3½, 7½ and 15.

Harry Nowak, 1115, Elbridge Street, Philadelphia 11, Pa., U.S.A. (40), 3½ and 7½.

Mr. and Mrs. A. P. Richards, 93, Boston Road, Bristol 7 (56 and 39), 3½.

George E. Wheeler, 137, Banstead Road, Carshalton Beeches, Sy. (48), 3½ and 7½.

Trevor Davies, 25, Crewdson Road, Stockwell, London, S.W.9 (53), 3½ and 7½.

Albert Chapman, 31, Dulwich Village, London, S.E.21 (68), 3½.

Lionel B. Parsons, Flat 1, 97, Hamilton Terrace, St. Johns Wood, London, N.W.8 (40), 3½.

Reginald A. Mullis, 18a, Border Road, Sydenham, London, S.E.26 (36), 3½ and 7½.

Alan G. Freestone, 184, Beverley Drive, Edgware, Middlesex (27), 3½ and 7½.

Macdonald T. P. Black, 20, Whitehall Street, Dundee (31), 3½ and 7½.

Reginald C. Smith, 4, Oakfield Road, Unton Heath, Chester (43), 3½, 7½ and 15.

William J. Rawle, 12, Glenfield Road, Darlington (38), 3½ and 7½.

Weymouth Toc-H Hospital Broadcasting Service, Eric R. Walbrin (secy.), 350, Dorchester Road, Weymouth, 3½.

LETTERS TO THE EDITOR

THE nominal dubbing fee to which Mr. John Aldred referred in his article in your May issue ("Magnetic Recording for Home Movies") related only to 10 inch records. There was a higher charge for 12 inch records.

Fresh rates have recently been negotiated and came into force as from April 1, as follows: (a) for private use and club showings not open to public, 7s. 6d. per title per 10 inch record side and 10s. per title per 12 inch record side; (b) for uses as above and, in addition for club and national competition shows, open to public, and other amateur-convened shows, 12s. 6d. per title per 10 inch record side and 17s. 6d. per title per 12 inch record side.

The difference between (a) and (b) is charged if the increased usage is arranged later.

So far as I am aware, amateur clearance of Chappell & Co. records can be arranged only through this Institute.

Yours,

LESLIE M. FROUDE.

Hon. Secretary,
Institute of Amateur Cinematographers,
Epsom, Surrey.

NEWSREELS LIVEN UP THIRTEEN-YEAR-OLDS

(Continued from Page 15)

suitable introductions for each news item. They had to visit each group and get personal details about the one chosen to give that group's report.

At last we were ready. Every child in the class had taken part in the preparation of the reports or in the arrangements for announcing and linking the items one to another. We had one or two practice runs, and a final exhortation to speak clearly and more slowly than usual. Then we went through the whole programme without stopping. The reward followed. We sat back and listened to the results of our labours.

There was one thing left to do. We discussed the recording and decided who had spoken best, which report was the most exciting or interesting, and why it was so. Looking back on a term's work with these thirteen-year-olds, this series of lessons stands out as one in which there was keen interchange between teacher and taught, and a readiness to put real effort into the task. It added variety to the English course, and this is always a help—particularly with this age group. For once I did not mark the final product (except the attempts made at the beginning of the series, which were done in the exercise books). I belong to the "mark-everything-brigade" usually, but I felt this was the place for an exception.

Summing up, this was a class effort in which the natural leaders led, and the rank and file followed willingly and interestedly.

WE HAVE THE LARGEST SALES IN ENGLAND

WHY? AS THE ORIGINATORS OF NO-INTEREST TERMS WE GUARANTEE UNBEATABLE, UNEQUALLED TERMS—BEST YOU CAN GET, WHETHER YOU BUY FOR CASH OR H.P.

These include 2/6d. in the £ deposit, 9 months to pay the balance of the retail price, **NO EXTRA CHARGES**; 2 years H.P.; free insurance policy; 12½% interest paid on your deposit; free delivery anywhere in the U.K.; part exchanges; free demonstrations in your own home; etc., etc.



25 machines on permanent display in our showrooms—compare them side by side. Open all day Saturdays. Mail-Order Specialists with thousands of sales all over the country.

Write, phone or call for free brochures:

HOWARD PHOTOGRAPHIC

(Dept J.) 190 High Street, Bromley, Kent (RAVensbourne 4477)

Make sure of your copy NOW

TO YOUR NEWSAGENT:

Please supply
TAPE RECORDING
AND REPRODUCTION
MAGAZINE
monthly until further
notice.

Name.....
Address

TO T.R. MAGAZINE

Rolls House Publishing Co., Breems Buildings, London, E.C.4

Please post TAPE RECORDING AND REPRODUCTION MAGAZINE to me each month. I enclose postal order/cheque.

- 14s. for one year (post free)
 7s. 6d. for six months (post free)

Name.....
Address

PLEASE POST FREE SPECIMEN COPIES TO THE FOLLOWING FRIENDS, WHO I THINK MAY BE INTERESTED:

.....
.....
.....

Vortexion



The above recorder uses a synchronous capstan motor and for use on 12 volt car battery a 50 c/s \pm 1 cycle 230 v., 120 w. power supply unit is available.

T.R.G.10 MINIATURE AMPLIFIER AND VERSATILE PRE-AMPLIFIER. A modern miniature amplifier, measuring only $4\frac{1}{2}$ x 5 in. over front panel and projecting $10\frac{1}{2}$ in. to the rear. Uses C core transformer material to obtain low external magnetic field and has less than 0.1% harmonic distortion at 10 watts output. The amplifier response is level 15 c/s to 50,000 c/s. within 0.2 db. The 3-valve pre-amplifier will operate direct from recorder heads with correction networks for difficult tape speeds and switched inputs are provided for radio, microphone and gram with correction for all recording characteristics.

"SUPER FIFTY WATT" AMPLIFIER. This heavy duty amplifier is available for long life under arduous conditions. The normal life being 5,000 hours without valve change.

FOUR CHANNEL ELECTRONIC MIXER

An Electronic Mixer for four 30-50 ohms balanced line microphones or special to order. Normal output 0.5 v. on 20,000 ohms but 1 mW., 600 ohms balanced or unbalanced is available as an alternative.

The 3-CHANNEL MIXER and PEAK PROGRAMME METER is similar to the above but is fitted with a meter reading peak signals with 1 second delay time and calibrated in db's from zero level 1 mW., 600 ohms to +12 and -20 balanced or unbalanced output by means of switch.



Full details and prices of the above on request

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

Telephones: LIBerty 2814 and 6242-3

Telegrams: "Vortexion, Wimble, London"

TAPE RECORDERS and AMPLIFIERS

★ The total hum and noise at $7\frac{1}{2}$ inches per second 50-12,000 c.p.s. unweighted is better than 50 db's.

★ The meter fitted for reading signal level will also read bias voltage to enable a level response to be obtained under all circumstances. A control is provided for bias adjustment to compensate low mains or ageing valves.

★ A lower bias lifts the treble response and increases distortion. A high bias attenuates the treble and reduces distortion. The normal setting is inscribed for each instrument.

★ The distortion of the recording amplifier under recording conditions is too low to be accurately measured and is negligible.

★ A heavy mu-metal shielded microphone transformer is built in for 15-30 ohms balanced and screened line, and requires only 7 micro-volts approximately to fully load. This is equivalent to 20 ft. from a ribbon microphone and the cable may be extended 440 yds. without appreciable loss.

★ The 0.5 megohm input is fully loaded by 18 millivolts and is suitable for crystal P.U.s' microphone or radio inputs.

★ A power plug is provided for a radio feeder unit, etc. Variable bass and treble controls are fitted for control of the play back signal.

★ The power output is 4 watts heavily damped by negative feedback and an oval internal speaker is built in for monitoring purposes.

★ The play back amplifier may be used as a microphone or gramophone amplifier separately or whilst recording is being made.

★ The unit may be left running on record or play back, even with 1,750 ft. reels, with the lid closed.

CP20A AMPLIFIER. This standard amplifier for extreme tropical use will operate from 230 v. A.C. mains or 12 v. car battery and give 15 w. output for a consumption of 5.5a. Inputs for 3 ohms balanced microphones, M.I. P.U. and Cr. P.U.