

**BATTERY  
RECORDERS**  
Special feature  
(pages 13-21)

# TAPE

**RECORDING  
FORTNIGHTLY**

*NEW!*

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the greatest advance ever  
in battery portables



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- Two tape speeds
- Seven transistors
- Three constant-speed motors
- Uses standard dry batteries and standard tape

**41 GNS.**

INCLUDING MICROPHONE

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*FIRST AND FOREMOST IN THIS FIELD*

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WEDNESDAYS **1/6**  
8th March, 1961

## . . . and this is why we don't believe in "gimmicks"

FOR more than twelve years — longer, probably, than any other firm in the industry — we have been making Tape Recorders. But never have we aspired to produce the greatest number nor to cater for all sections of the market.

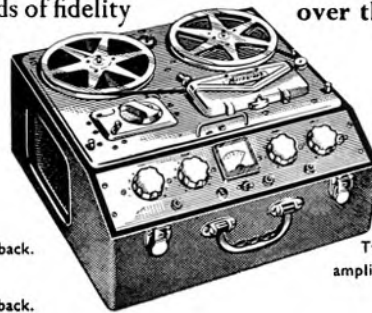
Ferrographs, in fact, are **not** mass-produced. Each is built with painstaking skill in a series of complicated operations that can only be carried out by experienced technicians dedicated to the pursuit of quality.

Long ago we foresaw that a time would come when many would expect the Tape Recorder to compete with — perhaps even to oust — the gramophone as a home entertainer. We have never shared this viewpoint. Because **Recording** has always been our business we have consistently and whole-heartedly directed our energies towards the attainment of the highest standards of fidelity in tape **recording** — realising full well that magnetic tape stands supreme as a recording medium.

The unrivalled reputation enjoyed throughout the world today by the Ferrograph is the direct result of this wise and logical policy.

We have no intention of introducing features into the Ferrograph for the purpose of competing with the gramophone. We believe that such developments as ultra-slow tape speeds, very narrow tracks and suchlike are 'gimmicks' that could, at the present state of the art, lead to a general lowering of performance standards in tape recording. We at Ferrograph refuse to make any such compromise with quality as would be inevitable.

Those who choose the Ferrograph do so because their quest is for High Fidelity—no longer playing time. We aim to give it to them without sacrificing any of the proved features that Ferrograph engineers have developed over the years—without recourse to extreme pre-emphasis, hum-bucking, short-life narrow gap heads or similar artifices.



### Series 4A

4A/N Two Speeds  $3\frac{1}{2}/7\frac{1}{2}$  i.p.s. Monaural Recording/Playback.  
**81 Gns.**

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Two Speeds  $3\frac{1}{2}/7\frac{1}{2}$  i.p.s. For use with external Hi Fi amplifiers and Loud Speakers. The all-purpose machine for Monaural and Stereo Recording/Playback.

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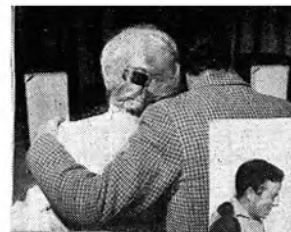
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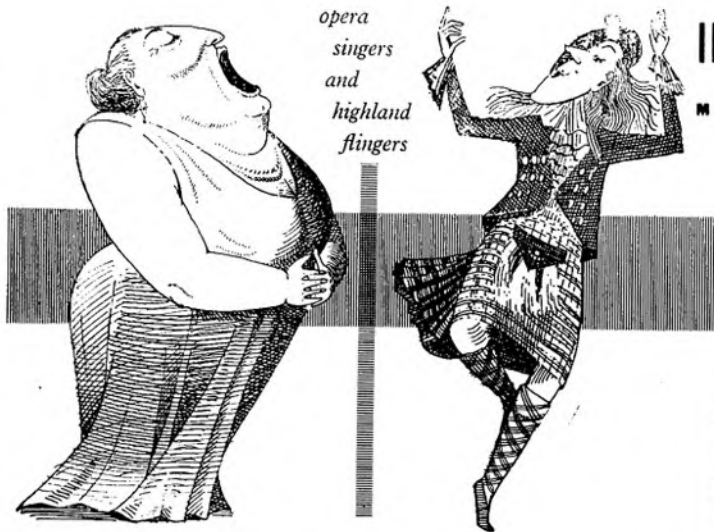
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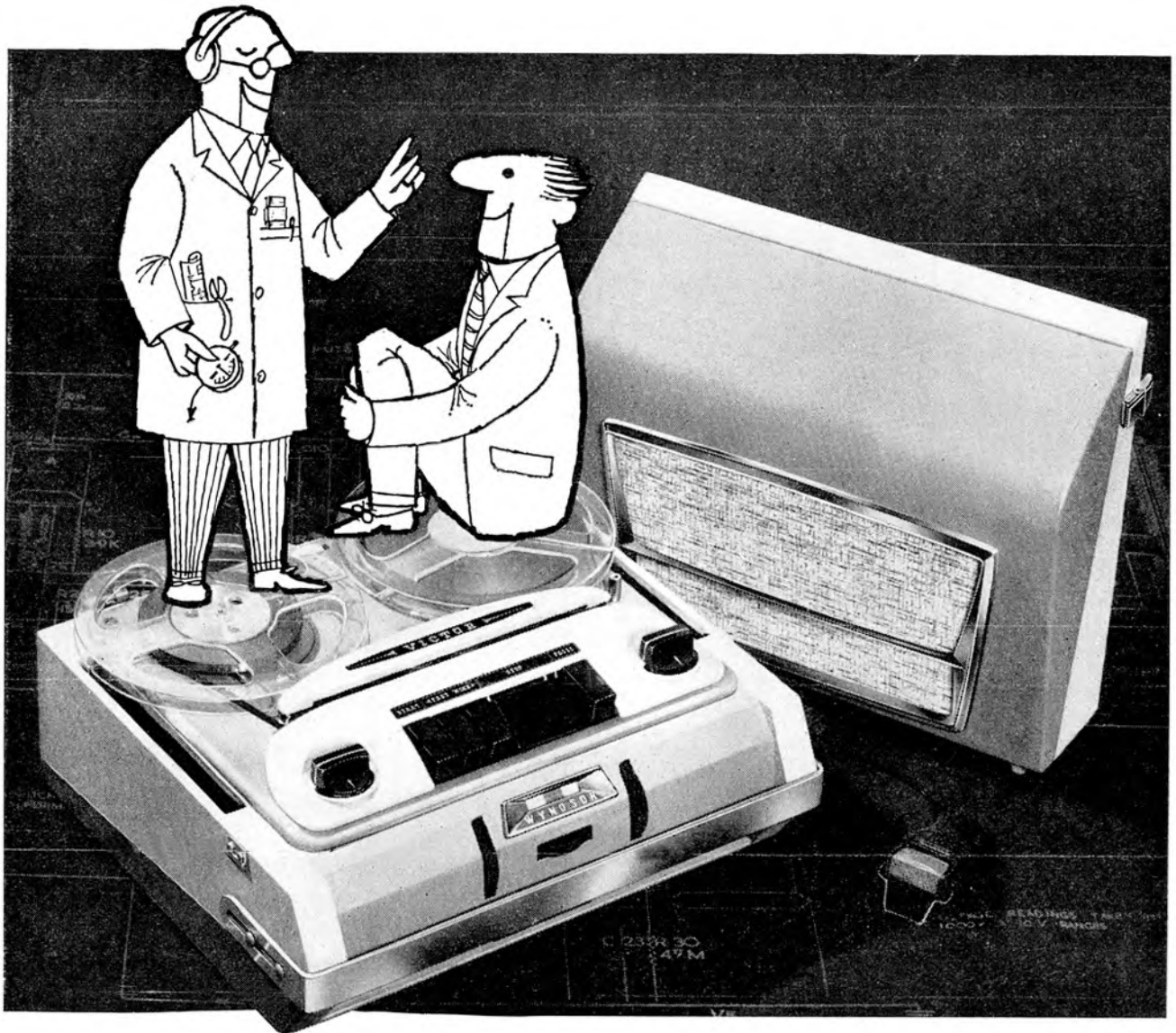
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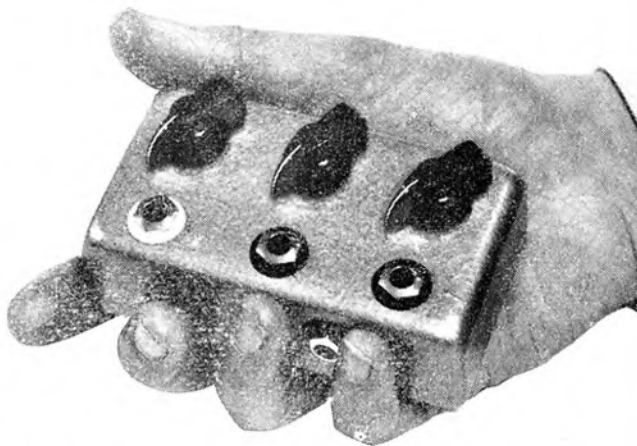
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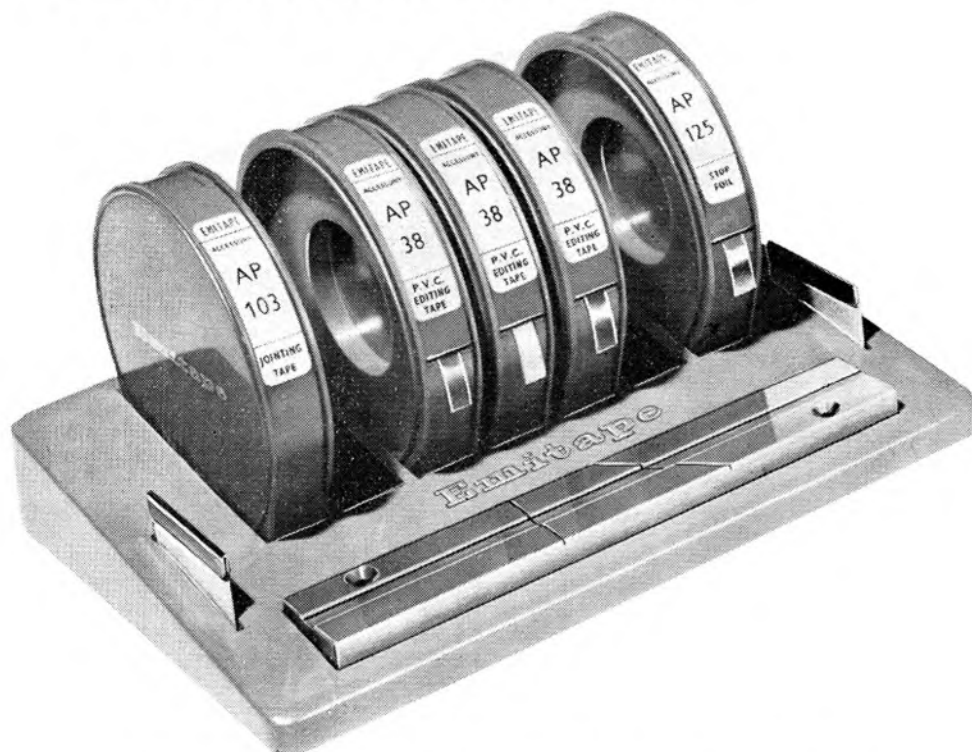


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stop foil

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**37/6**

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Vol. 5 No. 5 8th March, 1961

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# We take the view . . .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

**I**NFORMATION about Audio Fair exhibits is beginning to accumulate on my desk and in a month from now we shall be gathered at the biggest event of its kind yet held in Britain. There were 74 exhibitors last year and the organisers are confident of passing that figure this time.

Will the Fair see an upturn of business after the slacker times that some manufacturers experienced in the latter part of 1960? The signs are encouraging. I know that several of the "big boys" are planning expansion of production.

There are some interesting, and perhaps important, technical developments about to be announced: notably, a new machine that plays both tape and disc. The tape records business looks like getting properly established at last, as we report elsewhere in this issue.

Confidence is returning to those who were beginning to have anxious little doubts six months ago. A contributor to one of the trade journals has just offered an explanation of what really happened last year.

At the end of 1959 and early in 1960 there was an unprecedented demand for recorders and manufacturers could not meet it quickly enough. This unsatisfied demand

made itself strongly felt and may have led some people to over-estimate the potential. They expanded production lines accordingly, the backlog was cleared relatively quickly and retailers' shops became fully stocked in the early summer as customers' thoughts turned to other things.

Whether or not this is the right explanation, matters now seem to be righting themselves.

I hear from our correspondent in the United States that the trend there has been not dissimilar. An improvement is now signalled in two ways. Interest in transistorised battery portable recorders has suddenly increased, with new, popularly-priced models becoming available; the Americans, it seems, have been trailing us in this field, but now look like catching up quickly.

The second development is a more determined marketing of tape records by some of the bigger companies.

## B.A.T.R.C.

**T**HE British Amateur Tape Recording Contest preliminaries seem to be in full swing. As this year we printed the entry form

and rules in this magazine (instead of sending out an application), we do not have the same check as in previous years on the number of intending entrants. Our postbag, however, suggests another record. Competitors should keep well in mind the June 30 closing date—there are fewer than four months remaining.

One of the most encouraging features is the increased interest shown by schools. At least a dozen of them have taken the trouble to write to inquire or consult about particular points that have arisen in their planning of an entry.

The use of tape in school is now going ahead faster than at any previous time. It is in recognition of this fact that we now devote an article to schools activities in every issue.

Mr. Geoffrey Hodson, who edits this material, is undoubtedly the most knowledgeable man in Britain about tape recording in education, for he is now in regular contact with teachers all over the country.

More schools than ever will this year be going on organised holidays abroad and, if they possess a battery machine, it will give them a superb opportunity to make worth-while recordings. A special article on this type of activity will appear in our next issue.

## LAUGH WITH JEEVES



**"With my invention you can turn any tape recorder into a gramophone."**

## Oops!

**T**HE airliner was making a smooth and uneventful Atlantic crossing. It was nearing the coast of America when a voice came over the broadcasting system.

"Ladies and gentlemen," it said. "You are participants in a great, historic achievement. For the first time a plane is flying the Atlantic entirely automatically. There is no pilot on board. This message has been pre-recorded before leaving London.

"Please do not feel anxious. Vast research and infinite testing has taken place in preparation for this occasion; we should like to assure you that nothing, absolutely nothing, can go wrong.

"In thirty minutes we shall be landing at . . . landing at . . . landing at . . . landing at . . ."

# Mr. Wheatley's NOTEBOOK

LET us consider the kinds of trouble which may arise to upset your recording plans, especially when on site, and what you can do about them.

There are four main sources of technical trouble:

1. Failure of batteries.
2. Motor failures.
3. Mechanical faults.
4. Amplifier failures.

**BATTERIES**, whether wet or dry cells, should be tested regularly and certainly before setting out for an appointment. Few portable recorders have a meter as part of their design, so it is necessary to have a good-grade voltmeter for testing. It would be convenient to have a test point brought out from the battery itself. (just a + and - wire on insulated sockets) so that your voltmeter can be easily connected. The test can then be made with everything working and, in this condition, you will get a true impression.

Alternatively, you could have the voltmeter made up in a box into which you could slip the recorder battery when required, but in this case you should have an artificial load equal to the normal demand of the recorder.

With valve-operated recorders, there will be a high tension battery too. The rate of consumption from this is small and not nearly as likely to give trouble. Still, check it daily.

With transistorised recorders there is a hidden snag. You may think of them as very low volts and small current devices. So they are, but the driving motor will none the less be taking a heavy current—by comparison, that is.

Watch it; always get a spare battery in good time and have it with you always.

**MOTOR FAULTS** can cause complete stoppage, or speed variation. Check battery, make sure the motor can rotate, lift brushes, and inspect the commutator.

If dirty, black carbon deposit, a glass fibre stick, or fine-grade emery paper over a match stick will remove the dirt.

Unless you are experienced do not attempt to dismantle the motor. Modern high flux magnets, as used in the tiny motors used in portable

recorders, can be completely ruined unless special precautions are used to preserve the magnetic qualities during dismantling (or assembly). You are not likely to have such facilities, so always return such motors to the makers for attention.

**MECHANICAL FAILURES.** Obvious things—like a broken belt, so that there is no drive, or a slipping pressure roller, due to lack of proper tension, causing the tape to spill out or not take up—can be seen and located.

Less obvious causes, such as seized bearings or a broken bit of tape jamming the works, must be found and cleared.

An occasional spot of oil in the right place will help, a very small spot at that. Use a camel-hair brush to dust all pulleys, guides and head assemblies which attract the oxide dust from the tape, and atmospheric dust, too.

Wipe the heads with a fine, non-fluffy cloth, moistened with methylated spirit. Avoid the sticky tape ends so often used to secure the tape on new reels; clip them off at the start and use only the 3/16th tape specially made for jointing or you will find the gummy goo adhering to your head guides and rollers and this will cause the tape to snatch every now and again. This will make speech sound like an attack of hiccups and give music notes that no composer ever wrote.

Always make a test, or play a test tape, after any of the foregoing jobs.

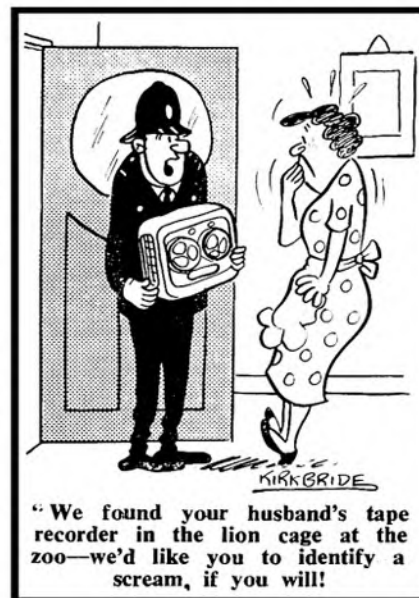
**AMPLIFIER FAULTS.** A number of possible faults and remedies here, but establish first: is it a recorder fault or is it replay? Or has the bias oscillator failed? Is the microphone beyond suspicion? Or is the change-over switch record/replay letting you down?

If the test tape plays satisfactorily and the amplifier sounds lively, but there is nothing on the tape when you record, suspect the bias; record a strong bit of speech (that should not be difficult!) and you may hear just grunts when you listen to this bit. A sure sign of bias failure.

Detailed investigation of all obstinate faults means work on the bench, with adequate test gear, but it is possible to get a recorder going on location if you keep to the rules about testing and checking before and on the job.

Whatever you do, when in trouble, don't panic. Proceed logically.

## A REGULAR FEATURE FOR BATTERY PORTABLE ENTHUSIASTS



### AS IT HAPPENED

AS with a camera, you must be alert for the unexpected or unusual when you go out with a portable recorder—and curious to pursue a "story".

Last summer I went down to a lovely beach on Anglesey and there, on the grass which grew almost to the water's edge, was something which immediately invited a recording.

Drawn up high and dry was a fine twin-screw motor vessel with a couple of chaps working round her. And the sail hoisted on her short mast was bright red and carried the large white letters I.R.A.

To anyone of my generation, I.R.A. prompts the immediate thought of the Irish Republican Army . . . and Ireland was only just over the sea there. But was it Island Racing Association? Or International . . . ?

With my Fi-Cord and microphone at the ready, I approached.

I asked if they would co-operate and explained my curiosity. They went straight into the story. They were on holiday from Staffordshire. "My father told me I'd have to do some explaining," the owner admitted.

"We've only just hoisted the sail to take the creases out when who should come along but someone from the BBC"—it was before my retirement last autumn.

He had bought the sail second-hand and didn't know there were letters on it until it was unfurled. But it made a nice little story on tape, for it was a luscious June day and everyone felt friendly and co-operative!

## PORTABLE ROUND-UP

*Some examples of battery recorder adventures*

### ABROAD . . .

First and most popular among amateur enthusiasts is the use of a recorder when abroad. Winston Sheppard of Blackpool, recently made a trip across the Atlantic, and among the sound pictures captured by his Stuzzi Magnette were his impressions of the view during a helicopter flight over some of the world's tallest skyscrapers, in Chicago; a mid-Atlantic telephone call from his ship to his wife in England; and the mighty roar of the Niagara Falls where he is seen in our photograph right.



### . . . and at HOME,

Guests arriving at a Food Fair in Leeds were greeted by this Master of Ceremonies (left) who recorded the announcement of their arrival on a Clarion. This novel system provides a way of overcoming the delay met recording the names of arrivals in a visitors' book, and another use for the recorder is chalked up.



### FOR BUSINESS . . .

A number of actors and actresses are using their recorders as an aid to the correct enunciation of their lines. Although it is normal to have a mains machine at home, this is the first time we have heard of a star taking his recorder on to the set. Above, Karl Mohner (right), star of "Sink the Bismark," and "Rififi" is seen with his Stuzzi Magnette discussing his latest part with Director James Hill, on the Shepperton Studio's set of "The Kitchen."

### . . . and PLEASURE

Jayasree Sen uses the telephone adaptor of the Clarion to tape a 7,000-mile phone call to her parents in Kamshedpur, India. Miss Sen intends to use the remainder of the tape to record personal messages from herself, friends and relatives in London, before sending the completed tape home to India.

**W**ITH 18 different battery portable recorders now on sale and the number of owners increasing rapidly every month, out-of-doors recording activity this summer will be on a record scale.

We are on the eve of a situation in which the battery portable will be as popular and as widely used as is the 35 mm camera.

This magazine has always given particular encouragement to this development, believing it to be of critical importance to the future of the hobby. It is four years since we published our first detailed survey of battery portables—only five models were on the market then, and two of them were advertised as dictation machines. In this issue we print a number of special articles for the battery portable owner, as well as an up-to-date catalogue of available machines.

## ANCIENT and MODERN

By Lord Ventry

**A** PORTABLE tape recorder can be of great value to the wandering journalist. This fact I found quite logical when in July 1958 I had to go to Germany to see a new airship, the Trumpf, and to report on her for *The Aeroplane*.

I arrived at Stuttgart with a Stuzzi, which weighed only 8 lbs., and my Leica camera, which is about one pound, and these I carried about with me all the time.

The Stuzzi immediately caused a lot of interest among German pilots and crews at the Flughafen Hotel and they entered into the spirit of the thing.

The airship was moored on a modern 30 ft. mast—a smaller edition of the mast we had at Pulham, in Norfolk, in 1920/21, which was over 100 ft. high.

How I wish we'd had a tape recorder in those days to record the interesting flights carried out from this mast by the airships R 33 and R 36.

Arriving at the Trumpf airship, I walked around her, using the Stuzzi as a verbal notebook. Going on board, I sat on the pilot's seat and, with the Stuzzi on my lap, described all I saw.

She did not fly on that day, because modifications were being made by representatives of Ballonfabrik, of Augsburg, Bavaria. Two days later, however, she did make a trial flight, and was piloted for the occasion by Herr Rienau, a pre-war airship pilot of great experience, though he had flown in an airship only once during the last twenty years.

We were at the aerodrome at 6 a.m., and being unable to fly with her, I settled myself on the grass and described the proceedings, using the 1½ ips speed.

Although the Stuzzi broke down just as the ship took off, I was able to have it repaired by one of the crew during the time the ship was up and

I was able to describe and record the landing.

Modern airships, to save gas, take off like aeroplanes, running along the ground. But Herr Reinau was not used

to this method of flying and the bottom plane hit the ground and was pulled along before take-off. I was afraid it might carry away, but the ship took the air in fine style.

The landing was equally interesting. In the old days airships usually came down to about 200 ft. from the ground and then dropped a long trail rope, which was seized by the landing party, who hauled the ship to earth. Today, however, an airship comes in at about 50 ft. with her two long bowguys trailing the ground; then the pilot

slows her down and these two ropes are seized by men in the landing party and she is soon brought to earth.

In the case of the Trumpf, she had been up for over an hour and so had burned a certain amount of fuel, which made her light. At the same time the hot sun, beating down on her envelope, expanded the gas and gave her more life still. As a result, when they slowed down the engines on approaching the landing ground the ship started to rise and it was impossible for the men on the ground to seize the ropes, although the propellers were put into reverse.

After another circuit, however, the ship landed by dropping the trail rope and she was then put on to the mast. While all this was going on I was sitting with the Stuzzi capturing it all on tape.

After the descent they all wanted to hear what had happened and were most interested. I was able not only to describe all the events but, at the same time, to record all the background noises: the hum of the ship's engines, the noise of the propellers when they were reversed and the shouts of the landing party. It was interesting to hear how little noise the ship made compared with aeroplanes and especially with a helicopter which was flying not far away.

On return home, it was easy to write an article, for I could listen to the whole proceedings and live it over again.



### TAPE TITTER

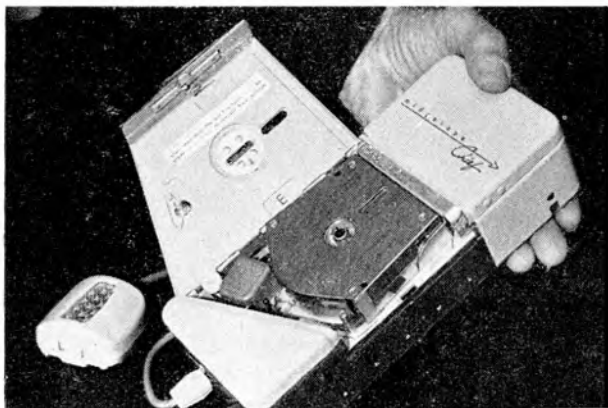
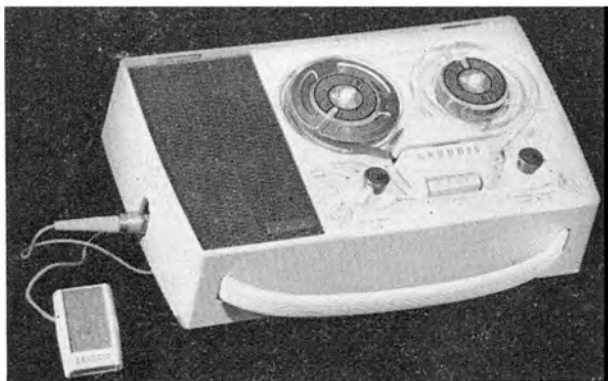


# PORTABLES ON PARADE

'Tape Recording Fortnightly'  
offers a complete survey of  
the battery portables at pre-  
sent available



From top to bot-  
tom: the Minivox;  
the Grundig Cub;  
the Mohawk  
Midgetape; and  
the Stuzzi  
Magnetite



FOR those who are interested in creative recordings—and we have always paid special attention to that type of reader—the battery powered portable is a logical and necessary possession. In the past, when certain effects were needed, it was often a case of moving the mountain to Mahomet when the amateur recordist brought his bulky equipment to the scene of the sound source. And not only was all this a cumbersome procedure. There was always the question of whether there would be a power point or not, or whether if it was a public occasion, the recorder would be too conspicuous.

Those days are now over. Recorders nowadays can be so small and compact that they can be used anywhere with the greatest of ease. A recordist at a public function, freed from the bugbear of the trailing flex, may collect his material as unostentatiously as a reporter with a notebook. Best of all he can roam quickly out of doors, wielding his microphone in places which would have been totally impossible a few years ago to all but the people who possessed expensive professional machines.

There have been quite a number of additions to the ranks of portables over the last 12 months, and interest has been growing. This is noticeable in our reports of club meetings and it was noticeable at the Radio Show last year when *Tape Recording Fortnightly's* stand was inundated with queries about this type of machine.

Apart from these factors, there are indications that many people find the portable useful in their work. With a microphone mounted in or near a coat lapel, the hands are left free for work while the information is recorded.

What points should be looked for in the selection of a portable?

## The important features

Size is possibly the most important detail. It is in this field that the dimensions and weight, which we invariably give for any recorder which appears on our "New Products" page, are most useful. It is a good idea to sketch out a rough, full-size drawing of the recorder in question if you are unable to inspect it first. This will give some indication of what it looks like. It will be noticed that some portables only just manage to achieve the category.

Quality will, of course, be an equally important thing to look for. If the intention is to collect sounds and to edit them into a feature tape (which will consequently be played back in company with sounds recorded under more ideal conditions) it is necessary that the original recording is as distortion-free as possible.

Speaking generally, the microphone is the only source from which any input is likely to come, and it should be a good one.

Extra facilities do not play such a large part in the selection of a portable as they do in the more normal type of machine. The main idea is to get the sound down as accurately as possible. It may be necessary to rewind by hand, for instance, since a fast rewind on electrical power would tend to drain the batteries.

The batteries themselves and the way they are employed also bear a little investigation. Are they chargeable? If not, how much will it cost in torch batteries? If they are chargeable,



# PORTABLES ON PARADE

how much is the charger going to cost, and how long will it take before the batteries are fully usable again?

Finally, when the time comes for the purchase to be made, an examination of the actual structure should be made. Remember, this machine is not going to operate in sedate splendour on a table for most of its life. Quite often it will be used in the open-air and it should be capable of shrugging off almost continuous rough handling. Sturdiness is a very necessary factor.

## MANUFACTURER'S SPECIFICATIONS

**Aerialite Trav-ler:** £30 9s.;  $3\frac{1}{2}$  ips; frequency response, 150-5,000 cps; output, 400 milliwatts; weight, 9 lb.; dimensions, 10 x 8 x 5 ins.; max. spool size, 3 ins.; loudspeaker, 7 x 4 ins.; Lustraphone LD66; facilities: pause control, monitoring, carrying case (£2 2s. 6d. extra), shoulder strap (3s. 6d.); mains converter unit (£3 15s.).

Aerialite Limited, Hargreaves Works, Congleton, Cheshire.

**Casian Trav-ler Professional:** £89 5s.;  $7\frac{1}{2}$  ips  $\pm$  1 per cent; frequency response, 30-12,000 cps  $\pm$  1 dB; signal-to-noise ratio, better than 55 dB; wow and flutter, better than .2 per cent; output, 1 watt; weight, 8 lb.; dimensions,  $10\frac{1}{2}$  x 7 x 6 ins.; max. spool size, 3 ins.; loudspeaker, 7 x 4 ins.; facilities: monitoring, record level control, meter.

Casian Limited, 37, Grafton House, Golden Square, London, W.1.

**Butoba M.T.5:** £72 9s.;  $1\frac{1}{2}$  and  $3\frac{1}{2}$  ips; frequency response, 50 cps; output, 1.2 watts; weight, 12 lb.; dimensions,  $9\frac{1}{2}$  x 12 x 6 ins.; max. spool size, 5 ins.; loudspeaker, 10 x 7 ins.; facilities: pause control, automatic stopping, safety erase, magic eye, rev. counter, tone control.

Denham and Morley Limited, Denmore House, 175, Cleveland Street, London, W.1.

**Clarion Transitate:** £26 5s.;  $3\frac{1}{2}$  ips; frequency response, 200-6,000 cps; output, exceeds 1/50 watt; weight, 5 lb.; dimensions,  $9\frac{1}{2}$  x 5 x  $3\frac{1}{2}$  ins.; max. spool size, 3 ins.; loudspeaker, 2 $\frac{1}{2}$  ins.; magnetic microphone; available with Twinset ( $\frac{1}{2}$  watt amplifier, 7 x 4 ins. loudspeaker), £8 8s. extra. (Reviewed Sept. 1959.)

G.B.C. Electronic Industries Limited, 121/123, Edgware Road, Marble Arch, London, W.2.

**E.M.I. RE321. Models A and B:** £102 18s.;  $7\frac{1}{2}$  ips with frequency response of 50-5,000 cps (model A);  $3\frac{1}{2}$  ips with frequency response of 50-3,000 cps (model B); weight, 12 $\frac{1}{2}$  lb.; dimensions, 14 x 7 x 8 ins.; max. spool size, 5 ins.

**E.M.I. Minifon (wire recorder):** £62;  $13\frac{1}{2}$  ips; frequency response, 200-5,500 cps; output 1/5 watt; weight 2 $\frac{1}{2}$  lb.; dimensions, 7 x 4 x  $1\frac{1}{2}$  ins.; 2-hr. wire; crystal microphone; facilities: automatic stopping, rev. counter.

E.M.I. Sales and Service Limited, Hayes, Middlesex

**Fi-Cord:** £61 19s.; (dictating microphone), £69 6s.; (Gram-pan microphone);  $1\frac{1}{2}$  and  $7\frac{1}{2}$  ips; frequency response, 50-12,000 cps; weight, 4 $\frac{1}{2}$  lb.; dimensions,  $9\frac{1}{2}$  x 5 x 2 $\frac{1}{2}$  ins.; max. spool size, 3 $\frac{1}{2}$  ins.; facilities: monitoring, battery charger. (Reviewed June 1959.)

Fi-Cord Limited, 40a, Dover Street, London, W.1.

**Grundig Cub:** £27 6s.;  $3\frac{1}{2}$  ips mean speed; frequency response, 150-5,000 cps; output, 1/10 watt; weight, 5 $\frac{1}{2}$  lb.; dimensions, 11 x 6 $\frac{1}{2}$  x 3 $\frac{1}{2}$  ins.; max. spool size, 3 ins.; loudspeaker, 5 x 3 ins.; crystal microphone. (Reviewed December 2, 1959.)



The Clarion Transitate



The Fi-Cord



The Aerialite Trav-ler

(Continued on page 19)

particular politicians



insist on  
TRADE MARK  
**SCOTCH**  
BRAND  
*recording tape*



WORLD'S LARGEST SALES OF MAGNETIC TAPE

# PORTABLES on PARADE

(Continued from page 17)

**Grundig TK1:** £30 9s.;  $3\frac{1}{2}$  ips constant speed; frequency response, 80-8,000 cps; output, 250 milliwatts; weight, 8 lb.; dimensions,  $11\frac{1}{2} \times 7 \times 4\frac{1}{2}$  ins.; max. spool size, 3 ins.; loudspeaker, 4 ins.; crystal microphone; facilities: pause control, magic eye, safety erase lock, connection for external motor supply.

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

**Minivox B:** £38 17s.;  $1\frac{1}{2}$  ips; frequency response, 150-7,000 cps; output,  $\frac{1}{5}$  watt; weight, 9 lb.; dimensions,  $10 \times 9 \times 5$  ins.; max. spool size,  $3\frac{1}{2}$  ins.; loudspeaker, 3 ins.; variable reluctance microphone; facilities: superimposition, mixing, pause control, magic eye.

**Minivox C:** £43 1s.;  $1\frac{1}{2}$  and  $3\frac{1}{2}$  ips; frequency response, 100-10,000 cps; output,  $\frac{9}{10}$  watt. Other specifications as above, except for weight—9 lb.

Challen Instruments Limited, 1/2, St. Michaels Road, Brixton, S.W.9.

**Mohawk Midgetape T.R.400:** £129 10s.;  $1\frac{1}{2}$  ips; frequency response, 150-5,000 cps; output,  $\frac{1}{100}$  watt; weight,  $2\frac{1}{2}$  lb.; dimensions,  $8\frac{1}{2} \times 4 \times 1$  ins.; max. spool size, 3 ins.; loudspeaker  $2 \times 1\frac{1}{2}$  ins.; facilities: superimposition, monitoring, pause control, automatic stopping, safety erase lock, charge indicator, automatic dictation, volume control and conference input control.

Thomas A. Edison Limited, Victoria House, Southampton Row, W.C.1.

**Nagra 111B:** £293;  $3\frac{1}{2}$ ,  $7\frac{1}{2}$  and 15 ips; frequency response; 30-15,000 cps; weight,  $15\frac{1}{2}$  lb.; dimensions,  $12\frac{1}{2} \times 8\frac{1}{4} \times 4\frac{1}{2}$  ins.; max. spool size, 7 ins.; 3 inch monitoring speaker; facilities: mixing, monitoring, magic eye, CCIR and NARTB characteristics switchable at  $7\frac{1}{2}$  ips, alto level control.

Livingstone Laboratories Limited, Retcar Street, London, N.19.

**Recordette:** Price to be announced;  $3\frac{1}{2}$  and  $1\frac{1}{2}$  ips; frequency response, 100-4,000 cps; output, 200 milliwatts; weight,  $3\frac{1}{2}$  lb.; dimensions,  $7\frac{1}{2} \times 5\frac{1}{2} \times 2\frac{1}{2}$  ins.; max. spool size, 3 ins.; loudspeaker,  $2\frac{1}{4}$  ins.; facilities: safety erase lock, rev. counter, ext. amplifier socket, remote foot control, and earphone monitoring.

Denham and Morley Limited, Denmore House, 175, Cleveland Street, London, W.1.

**Steelman Transisape:** £55;  $1\frac{1}{2}$  and  $3\frac{1}{2}$  ips; frequency response, 150-7,500 cps; weight,  $6\frac{1}{2}$  lb.; dimensions  $6\frac{1}{2} \times 9\frac{1}{2} \times 2\frac{3}{8}$  ins.; max. spool size, 3 ins.; loudspeaker, 4 ins.; crystal microphone; facilities: safety erase lock, magic eye. (Reviewed Feb. 10, 1960.)

Telectronic Limited, 46/47, Frith Street, London, W.1.

**Stuzzi Magnette:** £61 19s.;  $1\frac{1}{2}$  and  $3\frac{1}{2}$  ips.; frequency response, 50-9,000 cps; output,  $\frac{3}{5}$  watt; weight, 8 lb.; dimensions,  $11 \times 8 \times 4\frac{1}{2}$  ins.; max. spool size, 4 ins.; loudspeaker,  $4\frac{1}{4}$  ins.; moving coil microphone; facilities: pause control, safety erase lock, magic eye and rev. counter. (Reviewed Sept. 7, 1960.)

**Stuzzi Magnette Studio:** £78 15s.;  $7\frac{1}{2}$  ips.; frequency response, 50-14,000 cps; other specifications as above.

Recording Devices Limited, 44, Southern Row, Kensington, London, W.10.

**Walter Metropolitan:** £57 15s.;  $3\frac{1}{2}$  ips.; frequency response, 50-9,000 cps; output, 2 watts; weight,  $17\frac{1}{2}$  lb.; dimensions  $17 \times 15\frac{1}{2} \times 5\frac{1}{2}$  ins.; max. spool size,  $5\frac{1}{4}$  ins.; loudspeaker,  $7 \times 4$  ins.; crystal microphone; facilities: superimposition, mixing, monitoring, pause control, safety erase lock, magic eye, rev. counter, tone control. (Reviewed on page 20, this issue.)

Walter Instruments Limited, Morden, Surrey.



Top right is the new Grundig constant speed recorder, the TK1. With a single speed of  $3\frac{1}{2}$  ips, it sells at £30 9s. Right is the Steelman Transisape, an American machine with two speeds  $3\frac{1}{2}$  and  $1\frac{1}{2}$  ips, retailing at £55.



Below it selling at £72 9s. is the latest of the Butoba range, the MT5. This has two speeds,  $3\frac{1}{2}$  and  $1\frac{1}{2}$  ips.



# Equipment Under Test

**T**HE Walter "Metropolitan" battery mains recorder is quite an achievement—full size, fully portable, attractive in appearance, and simple in operation; obviously the result of much care and planning. The case is leatherette covered; black for the body and light grey for the lid and bottom cover, and the metal fittings are gilded in the modern manner. (Whatever became of chromium, I wonder?)

A detachable, tubular, metal-and-plastic carrying handle completes the assembly, the whole weighing 17½ lbs., (less batteries, which are not supplied).

The overall dimensions are 16 inches wide, 15 inches deep and 6½ inches high. (The dimensions given in the handbook—14 × 13½ × 5½ inches, do not include the fittings.)

The lid is completely detachable, giving access to the main controls and the tape deck which has a cover plate of white plastic.

Two "Staar" low voltage motors are used. One to drive the record/

# THE WALTER METROPOLITAN

playback capstan, and the other, pivoted between the two spool spindles, provides the fast forward and fast rewind facilities.

## ACCESSORIES

The following are supplied with the recorder:—

*A detachable 8 ft. mains lead, with two-pin socket to fit the recorder plug, which is recessed on the right-hand side of the case.*

*A hand/desk type crystal microphone, in a black plastic case with gilded wire-mesh grille, with a 7 ft. lead and plug.*

*A plug for external loudspeaker connection.*

*A 3½ ft. screened lead with 3-pin plug on one end and wander plugs on the other, for connection to gramophone pick-up, or radio.*

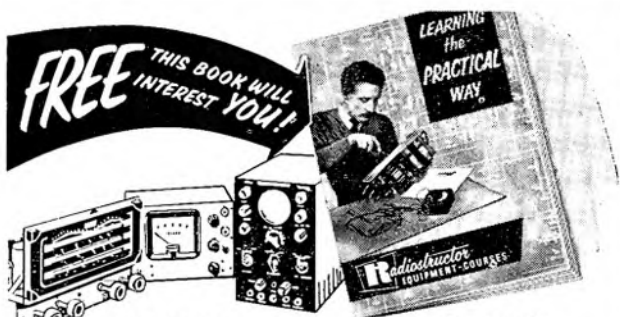
*A handbook, giving full operating instructions.*

*One spool of tape and empty spool.*

The 3-pin plugs, used for the microphone, etc., I found troublesome. Made of smooth, metal-lined plastic, conical in shape, with the pins on the base and cable entry at the apex, they are easy to insert, but difficult to remove. One's fingers slip off, and the tendency is to take a handful of cable and give a good heave-o, which is bad. A rougher finish would have improved matters.

## SUPPLIES

The recorder operates from A.C. mains, 200/250 volts or 100/125 volts, and is supplied ready for use on the former, one tapping on the mains transformer covering this range. (The live mains lead is moved to another transformer tap for 100/125 volts.)



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## TAPE RECORDING HANDBOOKS ADVICE ON BUYING A TAPE RECORDER

By J. F. Ling 2/- (2/6 inc. postage)

Designed to help the newcomer through the maze of technical terms, specifications and facilities found in manufacturer's literature, with a chapter on the important features to check during an actual demonstration of a recorder.

Available from: 7, TUDOR ST., LONDON, E.C.4.



**irish**



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WILMEX (DISTRIBUTORS) LIMITED St. Stephen's House, London S.W.1

## By ALAN BEAUTEMENT

For portable use, the machine operates from three Ever-Ready P.P.9 batteries, whose life will vary from a minimum of 10 hours playing time to a much longer period, depending upon the frequency of use and the volume level. (Transistors use more current when signal levels increase.)

The change-over from mains is effected by a switch on the right-hand side of the case. When this switch is in the BATTERY position, a shutter covers the mains input plug, so that accidental connection to the mains at the same time is impossible.

To fit the batteries, the rear cover of the recorder is removed, and a leaflet, fixed inside, gives the necessary instructions. But, electrically, there should be no difficulty, as the battery connections are non-reversible.

Mechanically, however, great care must be taken when fitting the battery nearest to the front. It is easy to trap the fragile screened lead from the record/playback head, which is not clamped to take any strain off the soldered connections to the amplifier panel, and these could very easily be broken. Incidentally, the rear cover is lined with metal foil to improve the screening. This should be treated carefully, as a torn piece could cause short circuits inside the recorder.

### CONTROLS AND TAPE MECHANISM

The main operations of the recorder are controlled by the well-known Walter "Joystick," a lever which is OFF at the centre of two right-angled slots. Moving the lever in the appropriate direction selects fast forward, fast rewind, playback and record, the last position being obtainable only when a safety interlock, beside the recording level indicator, is operated.

Movement of the lever is very positive, but fairly stiff. It needs holding firmly while the various selections are made.

A knob at the left front operates the on off switch and combined record playback level control. Just above this is the record level indicator, a valve which gives a glow like an exclamation mark, the point of the stroke approaching the dot as the recording level is increased.

On the left of the case is a control which adjusts the tone on playback, and the loudspeaker volume when recording. This control must, of course, be at zero when recording from microphone.

The actual tape mechanism follows the usual pattern, tape loading, etc., being carried out in the normal way, and a digital type revolution counter enables any point on the tape to be selected. Braking after selection is practically instantaneous.

Two small lever controls on the cover over the twin-track record/playback head, provide temporary stop and super-imposing facilities. The former disengages the drive mechanism and the latter swings the erase permanent magnet away from the tape, so that a new recording can be made without erasing the old.

The tape speed is  $3\frac{1}{2}$  ips and the maximum reel size is  $5\frac{1}{2}$  inches. Total playing time for double-play tape is three hours. The twin-track tape spools are inverted at the end of the first run to bring the second track into operation.

### AMPLIFIER

There are no warming-up delays with this amplifier, which uses seven transistors, and has an output of two watts to a 7 x 4 inch (6" x 3" cone) permanent magnet loudspeaker, mounted behind a sloping, gilded grille on the front of the deck. With the exception of the push-pull output stage, the amplifier is assembled on a printed-circuit panel, and is easily accessible for repair, under the bottom cover.

According to the makers, the frequency response of the amplifier only is 40 to 15,000 cps and of the overall recorder, 50 to 9,000 cps the signal-to-noise ratio being better than 40 dB.

Sockets are provided on the left-hand side of the case, for connecting the microphone and radio or pick-up input and outputs to external amplifier and external loudspeaker (3 ohms impedance).

The two inputs can be used simultaneously, but a separate level control must then be used on whichever one of the two is required to be at the lower level, as the internal control will alter both by the same amount.

By removing the tape spools, the recorder can be used as an amplifier

### MANUFACTURER'S SPECIFICATION

Mains supply: A.C. mains, 100-125 volts and 200-250 v, or 3 Ever-Ready-type P.P.9 batteries.

Speed:  $3\frac{1}{2}$  in. per second.

Max. reel size:  $5\frac{1}{2}$  inches.

Playing time: 3 hours max. (twin track— $1\frac{1}{2}$  hours each).

Amplifier: 7 transistors, 2 watts output.

Microphone: Crystal hand/desk type. Response: Amplifier only—40 to 15,000 cps. Overall equipment—50 to 9,000 cps.

Signal-to-noise ratio: Better than 40 dB.

Loudspeaker: 7 inches x 4 inches overall) permanent—magnet elliptical.

Inputs: Microphone, and radio/pick-up (high impedance).

Outputs: 3 ohm loudspeaker and external amplifier.

Makers: *Walter Instruments Limited, Morden, Surrey.*



only, when the "joystick" is set to the record position and the tone control is turned fully clockwise.

### PERFORMANCE

The recorder under review was supplied with a partly pre-recorded tape, containing a wide variety of material, from military bands and modern jazz, to express trains and seagull's cries, all of which were reproduced with satisfactory realism. The fidelity of these recordings, however, only serve to accentuate the short-comings of recordings made with the microphone supplied. They are fair, but can by no means be described as hi-fi, which is to be expected, as the microphone is not an expensive one.

There is a distinct lack of bass response and a rising treble, which is characteristic of these microphones, and although the manufacturers specify an overall response of 50 to 9,000 cps it doesn't appear to be a level one, although it is well suited to the clear reproduction of speech. There is, however, plenty of gain in hand on the microphone circuit and better ones can be used without modification of the recorder.

Recording from high impedance radio or gram sources gives quite satisfactory results, and no depreciation of performance is noticeable when recording from any source on battery supplies. Recording on mains and playing back on batteries, or vice-versa, produces no unpleasant effects, and, in fact, changing quickly between mains and battery supplies during playback gives no detectable change in pitch, although this may not hold if the batteries are almost exhausted.

Considering the design problems involved in a recorder of this type, the makers have succeeded in producing a very satisfactory, attractive and useful machine, which, in view of the robustness of transistors, should give a long period of trouble-free service, when handled with reasonable care.

The price is 55 guineas.

# TAPE IN THE SCHOOLS

GEOFFREY HODSON

## Questionnaires on tape course requirements

AN encouraging interest is being shown in the research on the use of the tape recorder in schools conducted by the National Committee for Audio-Visual Aids in Education. The Secretary of the N.C.A.-V.A.E. says that 2,000 questionnaires have already been sent out, with more to follow. Some replies came in by return of post.

Early returns confirm that training courses are urgently required both for instruction in the mechanical operation of tape equipment, and particularly for its imaginative use in education. When the research is completed the National Committee hopes to be able to advise on programmes for courses and to suggest suitable speakers.

If you are using tape in education may I urge you to co-operate in this scheme by writing to Miss Margaret Simpson, the Secretary, 33, Queen Anne Street, W.1 for one of the questionnaires. The Secretary would also be very glad to receive copies of programmes on any courses on tape recorders which you have organised or attended.

At a recent meeting the National Committee's sub-committee on tape recorders examined two technical papers on the basic requirements for tape recorders for schools. At its next meeting the sub-committee will discuss a possible pamphlet to be written in simple terms on this subject for the guidance of teachers.

## TAPE EXCHANGES

CONTACTS WITH SCHOOLS IN Toronto can now be arranged through this magazine. Send in details of your school: age ranges, boys or girls or mixed, size and speed of tape, and any other special points.

As an interesting sidelight the Canadian tape may not be recorded in the school but at a special Centre. We hope to publish further details later.

A REQUEST for gramophone records or tape recordings of adults speaking to children; for example, teachers to a class, parents to children, grandparents to grandchildren, etc., is made by the Deputy Principal of Bath Academy of Art, Corsham, Wiltshire.

Miss Isabelle Symond says that she is interested in the speed, tone of voice, age range of the participants. Ideas, tapes or records not on any particular subject, would be gratefully acknowledged.

Write to her at the Academy, please.

"HEREAFTER PERHAPS TO HAVE HAD IT RECORDED"

(Sneer, "The Critic," Sheridan, Act I, Scene I.)

GRADUALLY the amount of literature related to tape recording work is increasing, and the efforts of the National Committee for Audio-Visual Aids in Education (described in another column) to act as a clearing house for all related information are much needed. More magazines are printing occasional and even regular articles on tape in schools, and one is hearing of Training College and University Institute students writing theses on the subject.

It is becoming more obvious, also, that in the tape recorder we have the potential of the most creative aid that teachers have yet found. Used imaginatively—and this is the real clue—it is possible to find new uses all the time, and it is dangerous to say this or that cannot be done.

THIS point came home to me again recently when I read two articles by F. W. Bowen in The Schoolmaster (November 4 and 11, 1960).

He illustrated a very wide variety of approaches, but near the end fell in to what appears to me to be the error of feeling that all thinking on the subject was done by saying that no uses could be found for the machine in the teaching of formal English.

As it happens I had just been into a classroom where a headmaster—in despair it seemed—had turned to the tape recorder to help him teach the use of inverted commas to his D stream top juniors, who had one and all sunk without trace in the recent J.L.E. on that point—as well as in others, of course!

The tape machine was used with pin men drawings on the board and some simple dramatisation. We shall have to see if the teaching point really went home, but at the very least the children

edits the latest news — and comments

enjoyed the lesson and they were more animated than normal.

Another teacher has started an exchange scheme and she reports that as a result she has received an avalanche of written work and art. She particularly tried to avoid scripts, but the children's enthusiasm knew no bounds.

THESE two illustrations, which can be multiplied many times over, show that directly as well as indirectly formal English can receive a tremendous shot in the arm with the assistance of the tape recorder.

On the subject of tape drama, in the midst of a lot of common sense on the subject, F. W. Bowen took me by surprise by writing that if no record of seagulls or if no child were available who could give a passable imitation of those well-known radio play creatures, plays about the sea should not be attempted.

I have produced plays about Christopher Columbus, including extracts from the Louis MacNeice radio version, and did not miss seagulls. Agreed, my productions may not have been very good, but it is surely far too sweeping to rule out sea plays in the absence of seagulls, or to place too much emphasis on effects.

But having said that I do direct you to the F. W. Bowen articles to read and judge for yourselves, and in future weeks I shall keep adding to this bibliography I have started on the subject. I should be grateful for further notes from readers.

MORE information about training courses is coming to light. Next month I shall review the plans for half a dozen of these and give dates where known. Once more, I should be pleased to hear of any others. The ones I shall mention are to take place in Manchester, Kent, Surrey, Wales, London, and Middlesex.

## Fourth national tape recording course

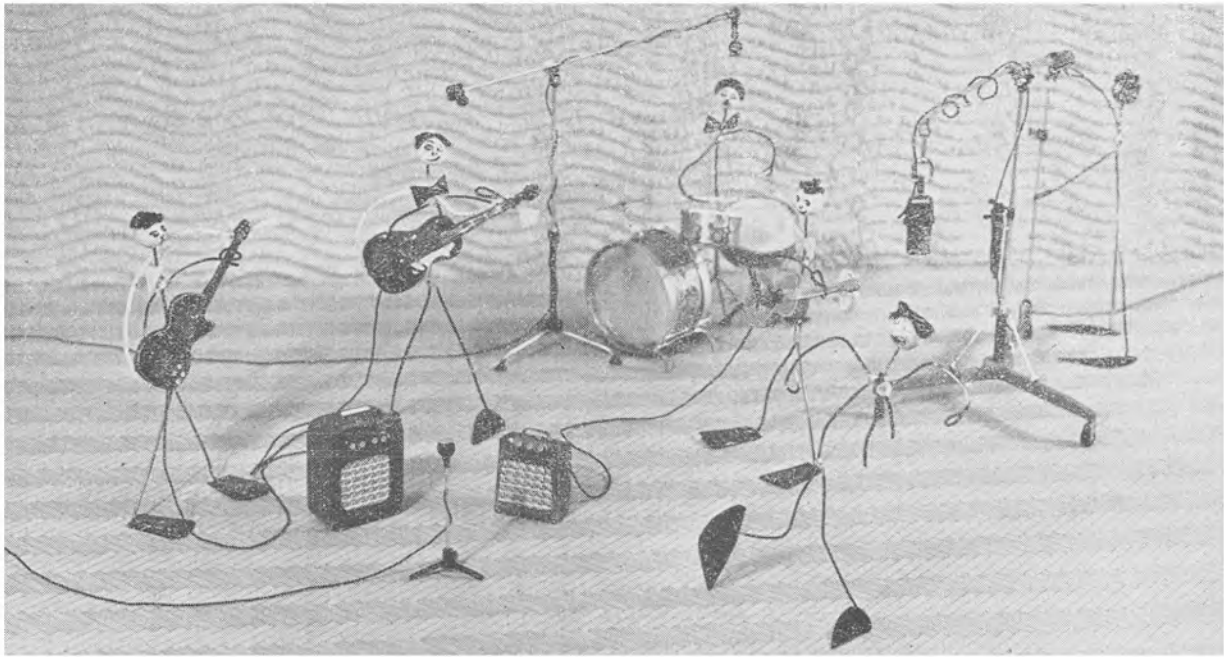
PLACES are filling up for the Fourth National Tape Recording Course at the Rose Bruford Training College in Sidcup, Kent, from April 10-15.

These six-day courses have proved tremendously popular in the past, because there has been plenty of equipment, sufficient tutors to give every student opportunity to discuss individual problems, and above all

excellent camaraderie between people from all walks of life who have tape recording as a common interest.

There will be a special session one evening for discussion of ideas for primary and secondary schools, as well as plenty of practice in handling tape equipment in a variety of circumstances during the whole of the course.

The majority of the tutors are BBC staff or ex-staff. They have a keen sympathy with the problems of the amateur so that even the most inexperienced can confidently expect to learn and enjoy.



## MICROPHONE POSITIONING

The second of an entirely novel series describing the problems faced by recording enthusiasts. With the help of models, representative problems of microphone placing will be created, described, and advice offered by NAOMI ARCHER.

**O**PPORTUNITY might knock at any time to ask you to record some of the amateur modern dance rhythm bands, rock 'n' roll groups, and "pop" singers, who are to be found in almost every town in this country. Most of these budding young artists seem to share one ambition, that is, to be auditioned by a record company, or broadcasting studio, and then to get into a "hit parade". Of course, this is just where the keen tape recorder owner comes in. With a little more than the usual equipment, there is a good chance to assist the young groups by making a record for them which must be suitable for playing under varied conditions, including dance halls, studios, juke boxes, and the like. Very few of these boys can afford the resources of a commercial studio.

In order to make an acceptable recording of this type of group performance, a mixer is a "must", for one reason a number of microphones are necessary to cope with the different sound levels of each artist's contribution. Thus a better balance can be achieved between the various instruments and the vocalist. For instance, as the amplified guitars are much more powerful than

the vocalist, this calls for careful mixing and blending with the other instruments for the final recording.

I like to allow a good hour or two in which to capture a few minutes satisfactory recording. We know how important is the mood of the artist, and amateur bands or groups, especially, feel disinclined to separate for microphone positioning. Albeit, if they *are* willing to disperse themselves at your mercy—and in my opinion they should not be distracted by many technical details—then some time spent in allowing them to warm up and become acclimatized to their new positions, will be richly rewarded.

During the practice session, test recordings and the necessary adjustments to microphone placings and mixer can be made before the final "take". Should the lads prefer to stay grouped, then possibly some improvising with absorbent shields around the microphones is needed to reduce stray pick-up from an unwanted source. Failure to do this could lead to a poor recording because of mike "blocking" or overloading.

The picture of the model set-up recreates the recording scene and has the advantage of showing more descriptive detail. (Any resemblance to those taking part, or to any living person, is purely coincidental!) Here can be seen the proximity of the small boom microphone to the drums and cymbals to give the recording the accepted "attack" on the

beat in this particular style of group playing. The three guitarists are using two amplifiers which are situated diagonally to the second microphone and some distance from the drums, an adjustable stand brings this microphone down to the level of the amplifiers—but more about this later.

Usually, the vocalist cannot put over the message quite so well by standing still, and little short of acrobatic turns have to be catered for at times! However, the mobile boom will facilitate "mic-following" while the recording is being made. An antidote which has been tried is to provide the vocalist with a hand microphone, but with most amateur performers the snag lies in the mis-handling tendency.

In this type of recording and once the balance is set, further adjustment of the recording level of each microphone is not generally necessary in small groups. Whereas, with large bands the precautionary turning down or fading out those microphones adjacent to musicians who are "silent" at that time, is carried out to reduce distracting noise such as whispering, or the handling of sheet music, etc.

As is known, picking-up by microphone from the loudspeaker is always a tricky business and the low-priced amplifier which is sometimes used with a guitar or any other instrument may be sadly limited in loudspeaker response. A direct connection arrangement may prove to be the answer.

I feel sure that those enthusiasts who do use a mixer for recordings of this nature will agree how, when once used, the unit becomes the backbone of better "tapes". More ambitious recordists will find that the addition of a little electronic echo can lend depth to his recording and proves attractive for "pops". Such an added facility could impart technical polish to a well-balanced production.

# FADING AND MIXING

There are many occasions where a second (replay) machine and a mixer are useful: indeed, for much serious work they are essential. One of the simplest uses to which this combination can be put is mixing background effects or music links into a programme. In the final article of his present series, ALEC NISBETT describes some of the problems that may be met during this process.

**I**F you adopt a convention whereby each scene of a play opens and closes with a fade, it's pretty obvious that in each case some sound is required for the fade to be made on and this usually has to be an unimportant throw-away line from one of the characters.

Dramatically this is a rather unpunchy

sort of construction—starting and ending every scene with a line which is deliberately weak—so ways are constantly being devised for getting round it. One of these shows itself up as the often repeated instruction “fade-out on laughter,” or some such. But this itself can become a cliché if over-used.

A much better way of closing a scene when you want to lose the fade-line pretty quickly is possible when you are using background effects.

As the scene comes to a close the speech is faded down and the effects are lifted to swamp the line. Then after the effects have been peaked for a few seconds, they, too, can be slowly faded out.



Similarly, a continuous background of sound may be used for a fade-in—such effects are very useful indeed for establishing new localities—and this, too, may be peaked for a short while, and then faded gently down as the dialogue is brought up.

Another way of handling a fade-in is to bring up speech and effects almost together. Here again the effects should be slightly ahead of speech, otherwise they may distract the listener's attention from the first words that he should be hearing. The more complicated the background effects the more likely it is that they will need to be established first, though the final decision will necessarily depend on the story.

In either case they will nearly always have to be dropped to a lower level behind the main body of the scene than they may be at

**The amplifier rack that goes with a Type 'B' deck—two groups of ten, plus a spare and changeover switch to each bank. Below these are relays and mains units**

the beginning or end. (The level may in fact have to be unrealistically low—this is one of the disadvantages of mono as against stereo, where the spread background can be much louder without interfering with intelligibility.)

Behind a long scene it is a good idea to vary the level of effects almost continuously—just enough to prevent the sound from becoming dull. When doing this, tend to have the backing lowest behind speech which it is important to “get over” in the plot, and loudest when dialogue is inconsequential, or there is reference to the backing sound, or when characters are pitching their voices against it.

(In any case actors should be encouraged to sharpen the tone of their voices, if in similar natural surroundings they would do so.)

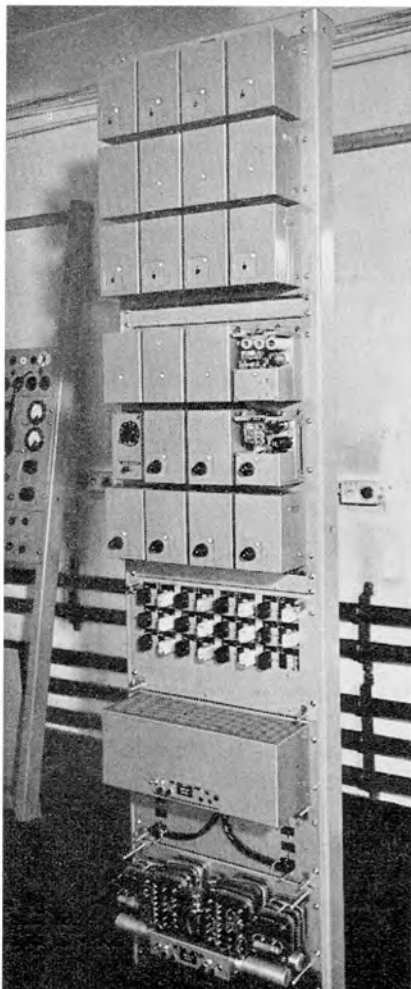
Effects can often be peaked as a bridge between two parts of the same scene: different conversations at a party can merge into and emerge from a swell of background chatter. In film terms this is the equivalent of a number of different camera treatments such as a slow pan or a tracking shot from one group to another; or one group moving off and another group on before a static camera.

Note how easy it can be, when attempting to visualise your scene, to imagine that you are being more precise in terms of movement than in fact you are. Fortunately it's not usually very important if the listener has an entirely different picture from you—and, on the whole, it's best to avoid situations which depend on exactly the same layout being in everybody's mind's eye. Nevertheless it is sometimes possible to be a little more precise and to give the impression of a tracking shot, by peaking effects and then gradually changing their content.



You can, for example, move from your general party chatter to a relatively quiet “balcony scene”; and the best way of doing this is by means of an effects mix.

The amateur should beware of over-use of background effects. Used for occasional scenes the result is to enliven a production. Used for every scene the result may be tedious—the more so if they are too loud. Some relief from distracting backings is necessary now and then. Don't be too “busy.”





As an alternative to the simple fade-out/fade-in technique that is the accepted convention for most radio plays today, music bridges can be used. For straightforward dramatic productions mood music is nowadays rather out of fashion, but suitable links are still used in plays where there is a strong element of fantasy, whimsy or pastiche (and, for that matter, in light entertainment), or where some binding element is needed for a programme which would otherwise be too fragmentary.

If the amateur really believes that music links are essential to his purpose (he should not use them without being quite sure—because it is much easier to lose tension and cheapen a programme this way than to enhance it) he can treat them in a way rather similar to the effects bridge which I have described above—except that he must have a clearer idea in advance of the way in which the music is to be brought in at the end of one scene and ended or lost in the next. Without great care this will sound untidy.



From my remarks it will be clear that my reply to the amateur's question, "What shall I do about mood music?" will be "Avoid it like the plague" . . . but perhaps that is a little strong! Experiment with it certainly, but do not use it for your competition tapes unless you are absolutely convinced of the rightness of your choice.

It's different when you're adding sound track to film, of course, but even here an effect of unutterable banality is terribly easy to achieve. Music as an integral part of a scene is, however, easier to justify . . . and to handle. The effect of a radio playing in the background (when the dialogue explains it!) or a band playing in a park; anything of this sort can often be used to give highly satisfactory results.

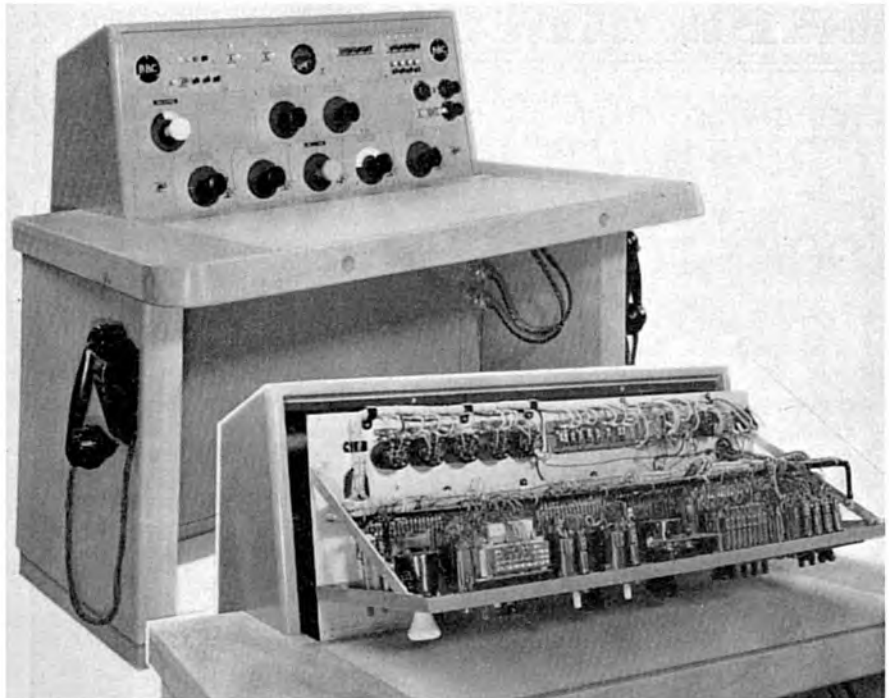
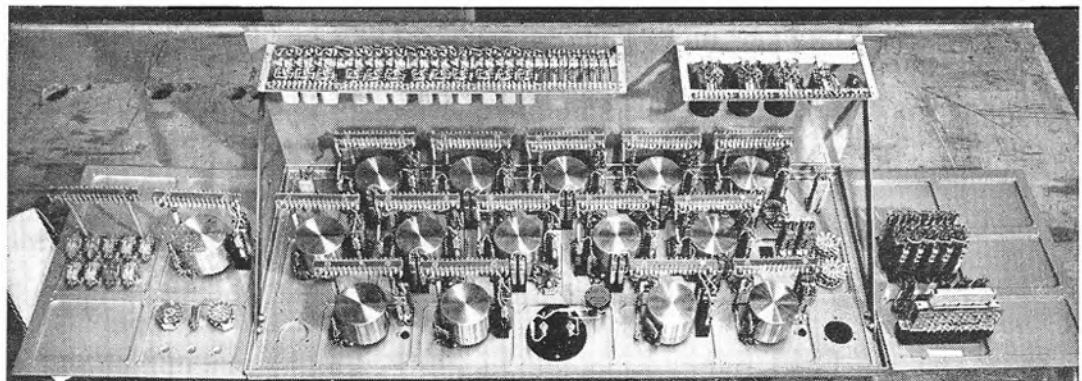
Now, in this and my two previous articles I have gone into a fair amount of detail, and it may seem from all this that a lot of careful planning and deliberation goes into each fade or mix that turns up in a dramatic script.

But, in fact, this is not usually the case.

When in a B.B.C. studio an experienced studio manager is mixing and monitoring under "professional" conditions, planning in fine detail is not necessary except in specially awkward or unusual cases. During a first run-through he will glance ahead to each fade, quickly estimate what is needed in the context, and "feel" it through. It will probably not be exactly right, but he will note anything out of the ordinary in some sort of shorthand form on his script:

BBC photographs

**How the desk is built up. The panel on the work-bench, showing the backs of the faders, keys, signal lights and switches. This, and the amplifier bay, are designed for a large general purpose studio—although even more faders would be necessary for a big band balance**



**Tailor made. Each BBC Type 'B' mixer is built up individually. It will exactly meet the requirements of the studio into which it goes—and it will be suitably equipped to deal with all the types of programmes which that studio is to be used for. Our photograph shows a normal front view of the control desk, and the unit open for inspection**

the level of a recorded effect perhaps, or the setting for the first words that are to be heard in the fade-in.

He may suggest an alteration to the producer: a few extra words written in for a fade, a slightly more definite spot effect at the start of a new scene, a small adjustment of an actor's distance from the microphone; or perhaps a "wave-out" at the end of a noisy crowd scene (to indicate to the actors that the scene has been faded right out and that they should be quiet, ready for the next scene to be faded in). Occasionally it may be necessary to go over the fade once again to check that the alterations have made the mechanics of the play smoother, but generally no further trial will be needed, other than in a final run-through.

In any case, my own feeling is that nothing should ever be too set prior to the recording or transmission: actors' emphases and levels may be substantially different on

the "take," as they let loose their final reserves for a performance.

And this is also my own attitude to a production: I do not attempt to achieve a perfect performance in rehearsal; I am always trying out small variations on what I have done before, noting details in my script, discussing points with the producer or the studio managers, playing in effects; and above all, listening and deciding what it will be best to do on the take.



But for work under amateur conditions, one's methods do have to be a little more calculated; and even then it will often be necessary to correct fades that didn't quite come off, or levels that were a little out, by copying and controlling portions of the tape afterwards.

Which provides another use for your replay machine!

# TAPE RECORDS

## The future looks rosy

TAPE records are right back in the picture. Several recently established firms are aggressively marketing new issues at regular intervals and there are indications that other recording companies will soon be in the field. This time it looks as if the tape record is really "off the ground."

It has been a puzzling period for tape enthusiasts these past few years. E.M.I. marketed some excellent tapes under the *Columbia* and *H.M.V.* labels, but suddenly seemed to lose interest about a year ago. Saga Records produced an impressive catalogue of tapes, but a re-organisation of its activities stopped further issues in recent months; we hear news from that sector can be expected shortly.

United Stereo Tapes were due to launch a big marketing programme of tape records last year, but we are still waiting for developments.

Meanwhile, however, the firm of **Bi-Tapes Ltd.** has been steadily making progress and its latest (February) catalogue lists an interesting variety of a score of tapes.

Most of them are light music pieces, recorded at  $3\frac{1}{2}$  ips (there is one at  $7\frac{1}{2}$  ips). The five-inch issues, playing

for an hour, are priced at 52s. 6d., three-inch issues, playing for thirty minutes, at 28s. 6d., and three-inch issues playing for 15 minutes at either 15s. or 12s. 6d.

There is also a foreign language series, each playing for eighty minutes and costing 69s.

Two of the most interesting tapes in the 15s. class are Fred Judd's demonstrations of electronic music, and another title that is likely to be of exceptional interest to our readers



Jo Douglas

is coming in the immediate future: a set of four three-inch reels in one pack containing sound effects. I understand that there will be no copyright problems about the use of these sound effects.

So far the only Bi-Tapes I have heard are the four titles in a similar pack of four three-inch reels produced for Christmas. One featured carols sung by the choir of Holy Trinity, Brompton, and the recording quality was all that could be wished. The other three consisted of speech only, so that studio demands were not heavy and judgment must be based on other criteria. The one that featured a well-known astrologer promising me (and all the other millions born under Leo) a tough couple of years ahead, while the Geminis were to have romance and the Cancers wealth, left me cold.

Nor do I rave about ghost stories—even at Christmas, but Miss Jo Douglas's recital of two tales was so brilliantly done that I give this tape high marks. It appears in the Bi-Tapes catalogue as a separate title, at 15s.

So does the fourth title in the Christmas series—two children's stories told by Kay Harvey.

One of these has just the right degree of melodrama to keep boys between six and ten tight in their chairs; the other will appeal to younger boys and to girls up to ten.

If you want to experiment with recorded tales for your children, this tape gives you the chance to do so at small expense.

R. B.

# THE ELIMINATION OF HUM AND NOISE

HISS is the most common internal type of noise and can be heard on many recorders when the gain control is turned to maximum. The hiss which is produced in the first stage of the tape amplifier is the most serious as this receives the full amplification of the remaining stages. The ratio of signal-to-noise is therefore fixed by the first stage and if a poor ratio is obtained, no amount of controls or amplification will improve it in later stages. Therefore, a well-designed first stage is essential and some of the more important factors will now be discussed.

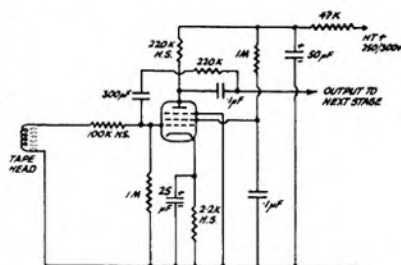


Fig. 1.—H.S.=High stability cracked carbon

Choice of valve is probably the most important single item controlling the signal-to-noise ratio, for a valve, designed for this type of application must be used. The Mullard EF86 is one such and is used in many recorders where high gain and low noise are required.

"Shot noise" is a type of valve noise and it is due to the random fluctuations of anode current in the valve. As electrons arrive at the anode they each produce a minute electrical impulse. If this impulse is amplified it will sound like a pebble falling on a hard surface, as there are many electrons involved, each adding to the

**Hi-Fi HARRY** by rich

"Have you met Mrs. Smith's new French maid yet, Harry?"

# E. A. RULE CONCLUDES HIS AUTHORITATIVE SERIES ON METHODS OF PREVENTING ELECTRICAL INTERFERENCE BY DEALING WITH THE PROBLEM MOST OFTEN MET IN TAPE RECORDING

THE FIRST TWO ARTICLES IN THIS SERIES WERE PUBLISHED IN OUR ISSUES DATED JANUARY 11 AND FEBRUARY 8

total noise in a random manner. The resulting noise is a loud hiss, but with good valve design, this type of noise can be kept to very low levels and can be ignored in most domestic recorders.

Another source of hiss is due to the current flowing through carbon resistors, and is called "thermal agitation noise." This can be greatly reduced by using special low-noise resistors, such as high-stability cracked carbon or wire-wound types. A typical circuit using the EF86 and low-noise resistors is shown in Fig. 1. The circuit has a negative feedback loop to provide CCIR frequency equalising for replaying standard pre-recorded tapes at 7½ ips. The signal-to-noise ratio is about -46 dB depending on the head used.

Yet another source of hiss is the recording tape itself, due in this case, to the random magnetisation of the tape. It can be caused in various ways but the most common is through using the tape with a magnetised tape head. For maximum signal-to-noise, all tape should be bulk erased before use and the tape head demagnetised. It should be noted that if a pre-recorded tape

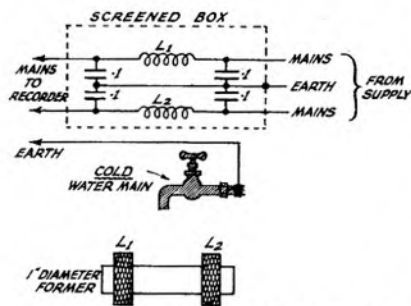


Fig. 2.—L1, L2 = 150 turns 20 SWG ENAM wound on one-inch former

is used with a magnetised head it will have noise added to it and *NOTHING* can remove it without also removing the recording.

Noise can be added to a tape in the recording process by electrical interference, external to the recorder, entering by way of the mains supply and being picked-up in the same manner as electrostatic hum. The precautions for electrostatic hum also hold good for electrical interference. In severe cases, however, some noise may still get on to the tape and one way to prevent this is to fit a mains interference filter in the power lead to the recorder.

A suitable circuit for a filter is shown in Fig. 2, but your local dealer will be able to fit you up with a ready-made item, which should not prove expensive.

When a switch contact is made and/or broken, a small spark is produced

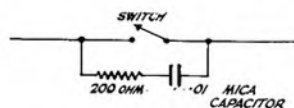


Fig. 3

and this can cause a "click" to be recorded. To prevent this a simple filter can be fitted across the switch contacts as in Fig. 3. The leads to the resistor and capacitor *MUST* be very short and connected as close to the actual contacts as possible. If the connections are even a few inches away the filter may not work. This type of filter works very well on tape motors and mains transformer switching. The capacitor must be at least 250 volts AC working, and the resistor can be a half-watt.

Much of the electrical interference can be reduced by connecting a good "earth" to the recorder. There are times, however, when this will increase the noise instead of reducing it, and the reason is that when an earth is used, it may be connected to other equipment as well. In a block of flats, for instance, the only earth may be the third pin of the mains plug. Fig. 4 shows how, in a block of flats, this

type of earthing can cause more noise than it reduces. On the top floor a motor (perhaps a drill) is producing interference, and the interference currents will flow down the earth lead and produce a voltage potential along it, relative to ground. If our recorder is connected into this earth system, some of this interference voltage will be injected into it.

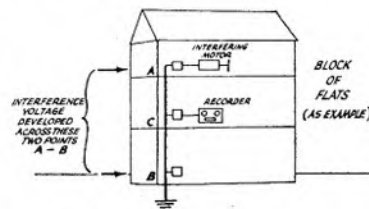


Fig. 4.—Part of the voltage between A-B is also between C-B and therefore is injected into the recorder

The cure is to use a separate earth for each piece of equipment as shown in Fig. 4a. A cold water pipe normally makes a good earth, but if possible, a copper rod buried in moist soil should be used. If the reader refers back to the section on earth loops he will see that interference from a common earth wire is caused by similar means.

A summary: Avoid earth and wiring loops, keep mains transformers away from tape heads and output trans-

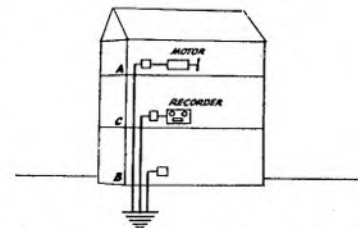


Fig. 4a.—Interference voltage across A-B no longer appears between C-B and is not injected into the recorder

formers, ensure good HT smoothing, screen all sensitive audio leads, twist heater wiring, use a mains filter and good earth, and use low-noise valves and components in early amplifier stages. If all these factors are put into practice your recordings will be many times clearer.

**I**N view of the virtuosity of modern advertising, as well as the not infrequent substitution of pious aspiration and downright false statement for fact in the advertisements themselves, the emergence of independent consumer-product testing and advisory bodies would appear to be a very desirable development.

However, it is essential that such bodies be fully aware of the responsibilities they carry, and that their findings and recommendations be *manifestly* backed by the authority and integrity of the laboratories and consultants employed by them. Further, it is essential that these laboratories be equipped for and accustomed to the investigations in question.

These requirements appear to have been overlooked by the Consumers' Association Ltd. in their survey of domestic tape recorders published in a recent issue of the Association's Journal *Which?*

C.A.'s product tests cover a very wide field, ranging from income tax and toilet paper to tinned salmon and, now, tape recorders.

We ourselves find it impossible to arrive at an unbiased opinion of income tax, neither are we competent to pronounce objective judgments on toilet paper or tinned salmon, being only in the situation, individually and collectively, of ordinary users; but we can reasonably claim to be not unknown as a test laboratories and consultants in the sphere of audio-electronics in general and tape recorders and amplifiers in particular, and we find it impossible to do otherwise than look with amazement and consternation at many of the statements made about these devices in the above publication.

Indeed, as some of our clients pointed out to us, if *Which?* is correct, then our own recommendations are open to suspicion.

Some action seemed called for, so we wrote to Mr. Brook, Director and Secretary of C.A. Ltd., asking for technical details of the tests and test gear. (Accurate testing and evaluation of tape recorders demands highly specialised knowledge and experience and considerable quantities of co-ordinated test equipment.)

To our surprise, his response was a categorical refusal to divulge the required information; and a subsequent telephone call received only the most evasive replies, even after we pointed out to him how farcical it was to claim authority in a report distinguished more—from the technical point of view—for periphrasis than objectivity.

However, we did manage to elicit the remarkable statement that, in any case, the published evaluations and tables were not necessarily based on the figures and reports submitted by C.A.'s own chosen laboratories and consultants! (It was difficult not to be reminded of Lewis Carroll's White Knight, who

"Was thinking of a plan to dye one's whiskers green.

And always wear so large a fan that they could not be seen.")

Even taking only one example each—the Ferrograph and the Wyndor—from the higher and lower price classes,

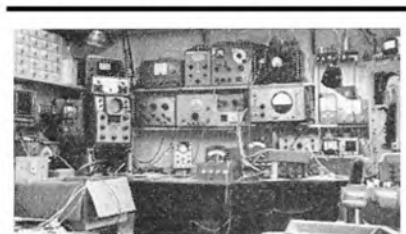
**T**HE controversy over the Consumers' Association investigation of tape recorders continues unabated and we publish below two views which deserve respect in view of the exceptional experience of the writers.

The first is by Mr. A. W. Wayne, Managing Director of Shirley Laboratories Ltd., of Worthing, a well-known firm of electronic and acoustic engineers and consultants. The accompanying photograph shows part of the firm's test bench and indicates the type of equipment needed to make accurate evaluations.

The second contribution is from Mr. D. Howard, Managing Director of Howard Tape Recorders of Bromley, a leading firm of tape recorder retailers.

**I** HAVE sold a thousand tape recorders for every one *Which?* tested.

With such a vast and technically complex subject as tape recorders,



renders the recommendations, in our opinion, utterly valueless.

In the case of the Ferrograph, the standard by which the trade judges most other domestic tape recorders, two of the evaluations are so contradictory as to be just plain stupid.

As for the Wyndor, the abysmally low rating, in comparison with the results of our own tests and trade opinion, was ridiculous. We place both these recorders at the very top of their classes; and we are happy to divulge all technical details to any interested parties. Here we must emphasise we have no connection with either Ferrograph or Wyndor, other than as competitors.

It is surprising that Consumers' Association Ltd., a non-profit making institution, with a yearly income of, we understand, over £200,000, and a very small paid staff, does not build and equip its own laboratories, so as to avoid having to make use of organisations operating under the cloak of anonymity.

obviously one can pick holes all over their report. But the truth is that there are a large number of models on the market which should not be there—at least, not until they have been modified so that they work.

Potential customers are too much at the mercy of maker's advertisements, which often give a false glossy picture of the product. It cannot be called dishonest advertising to beat your own drum vigorously, but a lot of the adverts I read are morally very near to it.

I welcomed *Which?* in theory; it was only in practice that it fell down and that is easy enough—most manufacturers fall down equally hard in trying to make a good tape recorder.

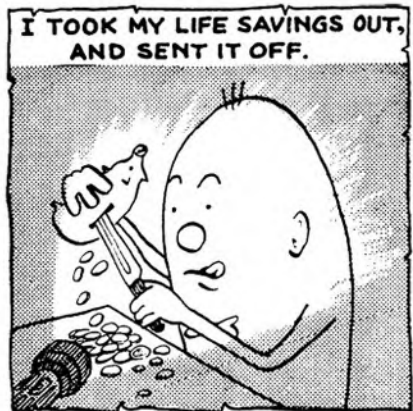
"One swallow doth not a summer make" and one bad or good recorder does not necessarily typify a production line of thousands of machines. If I buy an apple with a maggot in it, I should not stand up and say that all apples have maggots in them and, therefore, people should buy pears instead.

But when all the decks of a certain make that *Which?* tested, went wrong . . . ?

Of the 180 models available, I would not recommend half of them as good value for money. There are some I would class as junk.

I am no perfectionist. My only question before making a sale is: "will I end up making a profit?" Profit is a dirty word meaning happy customer. If I sell a machine will I end up with a satisfied customer, who will be glad to pay for it over a couple of years, or will I get it slung through my shop window?

After allowing a fair amount for



genuine servicing, etc., will I be left with a profit or will it all be eaten away by servicing the machine half a dozen times in the first couple of months, collecting and delivering it, changing it over for something else and finally by giving a discontented customer his money back?

This company's price list of recommended machines contains some glaring omissions; they are the well-known machines which we will not sell under any circumstances. Why lose a sale? Because we cannot survive without the good will of most of our customers, who at any one time owe us over £100,000 in outstanding HP balances. If they feel they have been sold junk, what chance do we stand of getting the money?

Admittedly, at least one machine of every make that we have ever sold has gone wrong at some time or another, but once the percentage of failures goes beyond a fair allowance, that machine is blacklisted for ever by us.

I would suggest that instead of criticising the *Which?* report the idea of independent testing should be carried further, so that the industry sets up its own test examining body; a body which would issue reports all could trust—I emphasise that word.

The biggest problem facing tape recorder expansion in this country (and so far the market has not even been tickled, let alone tapped) is not HP restrictions, Purchase Tax imposition or the Copyright Laws; it is quite simply "unreliability"—poor decks, shoddy styling and presentation, poor testing at all stages of production, lack of final "soak-testing."

Our tape recorder manufacturers are caught up in the vortex of one of the major sins of modern commercial life—they have to concentrate on the less important side of their products—advertising, too-low prices and "gilt"—because these are the first things a would-be customer notices, at the expense of the things that really matter—reliability, good basic design, testing at every stage, and the use of components having a 100 per cent safety factor beyond what is ever likely to be required of them.

This usually leads to the reply "The public only gets what it asks for." If the public is an idiot, it wants educating and protecting not pandering down to. If machines which on the surface offered everything including the kitchen sink were proved to be a bad buy in the long run, by the independent body I suggest, they would not last long on the market.

## LETTERS TO THE EDITOR

### "That go down to the sea in ships"

THERE is a large and growing number of tape recorder users in the Merchant Service today for whom the manufacturers do not seem to cater, and who have special problems in so far as power supplies are concerned.

The majority of ships have DC generators which supply 110 volts. Ships which have come into service in the last two or three years are 115 volts 60 cycle AC. At home most of us have 220/240 50 cycle AC supplies. So we must be able to operate our recorders on all three systems.

My method is as follows:—In DC ships I use a Vibrator Converter, and in 60 cycle AC ships I step up the supply with a transformer just enough to deliver

110 volts to my Vibrator Converter via a metal rectifier. At home I just plug into the mains in the usual way.

But what a lot of heavy junk I have to carry round with me! Why doesn't some manufacturer produce a wholly DC tape recorder and sell it (with a rectifying unit for the odd AC ship and home use) to seamen. Many more of us would own recorders if it were not for the additional cost of the other gear and the trouble of humping it around.

Incidentally, if anyone can think of a better way of dealing with the problem than that detailed above, I'd like to hear from him.

W. N. BISHOP-LAGGETT.  
London, E.C.2.

### 10s. OFF 7" REEL

THE thanks of all of us, I am sure, are due to Mr. Wetherill, of E.M.I., for supplying figures showing the increased cost of producing tape, referred to those of ten years ago.

Ten years ago: that is the point. The consumption of tape was then tiny in comparison with the present-day. Unless costs are related to the amount of tape sold, these figures have no real meaning. Costs have risen, in many if not all, industries, yet the price of some products has come down.

It is safe to say that the cost of labour, shown by Mr. Wetherill as having increased by over 70 per cent since 1950, is at least three times as high in the States. More firms compete for the tape market there. Yet tape costs only one-third to half what it costs here. That is the solid fact which needs explaining. I happen to know that the retail profit margin on tape is a very good one; but here again, the retailer could make more by selling more at a lower margin.

Why not knock ten shillings off a standard 7 in. spool of tape, and see what happens?

PETER D. TURNER.

Stroud, Gloucestershire.

### Anterio A. Angrella

IN a recent issue (January 25), we published a letter from Anterio A. Angrella of Cape Town, South Africa, seeking a tape contact in this country. A number of enthusiasts wrote to Mr. Angrella.

We have to report, with very great regret, that Mr. Angrella tragically lost his life in a swimming accident last month.

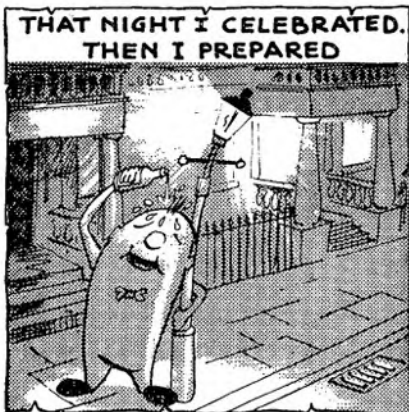
### 'DOWN TO EARTH'

I WOULD like to record my appreciation of your magazine. It maintains a very high standard indeed, and every article, review and comment, seems to have just the right touch of solid authority.

I wish you all continued success, and convey my sincere thanks for your interest and care for the "ordinary reader." It is easy to be "professional," but when technical achievement is treated in such a "down to earth" practical manner, as it is in the magazine we enjoy, I, for one, an extremely grateful.

RICHARD PHILBRICK.

Uxbridge, Middlesex.



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## LONG-LIFE LEAK-PROOF BATTERIES

IN our last issue we announced the introduction of the new Grundig TK1 battery operated portable tape recorder. One of the main features of this instrument is the use of "leakproof" batteries, manufactured by Alpha Accessories Limited, the same units that are recommended by E.M.I. for their RE321 professional instruments.

Retailing at 2s. each, these 1½-volt batteries, designated the Ray-O-Vac Industrial "Leak-proof" (illustrated right) Type 3LP, are specially designed for continuous heavy industrial discharge in battery-operated equipment, and are claimed to last over three times as long as similar batteries of the same size. Grundig claim at least twenty hours operating time.

Alpha Accessories Limited, Halifax House, 51/55 Strand, London, W.C.2.



## New Products

# FIRST DANISH RECORDER ARRIVES IN U.K.

ALLIED INTERNATIONAL, an established name in the general field of electronic design, recently entered the tape market with the announcement of the Movicorder, the first tape recorder to be introduced to this country from Denmark.

The new machine is a two-speed, 3½ and 7½ ips, stereophonic recorder operating on normal two-track standards. Two staggered half-track erase heads are fitted, plus separate stacked record and playback heads. Additional space for a four-track, playback only, head is provided in this highly professional machine which costs £253.

The quoted frequency response is 45-14,000 cps ±2dB at 7½ ips, and 40-7,500 cps ±2dB at 3½ ips. Wow and flutter is given as less than 0.15 per cent at the top speed, and signal-to-noise ratio as better than 50dB. An alternative model, 7½ and 15 ips, is available on request.

With accommodation for 7-in. spools, the Movicorder provides a playing time of just over two hours per track using double-play tape at the slower speed. Fast forward and rewind time is given as 85 seconds for 1,200 ft. of tape.

The host of facilities include superimposition, monitoring, echo chamber effect, and automatic tape-end stop. Other features are two built-in output amplifiers, a hysteresis synchronous capstan motor, and two VU meters.

Multiple superimposition is possible, and provision is made for recording from one track on to the other. The controls include separate recording gain controls for each channel; playback gain control, stereo balancer; and cue-playback switch. This final feature being used when either channel is being monitored.

Normal twin inputs and outputs are provided. The former comprises two pick-up or radio inputs (150 mV into 100K ohms); and two microphone inputs (2 mV into 1M ohm). The total output per channel is approximately 600 ohms. Two external loudspeaker sockets (8 ohm) are incorporated as the build-in 5-in. elliptical unit is only suitable for monitoring.

Total harmonic distortion is given as 3 per cent at +6dB recording level (line input). The built-in monitor amplifiers provides 1.5 watts at less than 2 per cent harmonic distortion (1,000 cps steady tone).

Valve line-up includes five ECC81; four ECC83; two ECL82; and one ECC88. Two EC75 transistors; two B250 C75 and a B30 rectifier complete the circuitry. The power supply is 220v or 115v, 50 or 60 cycles, AC. Alternative voltages are available on request. Consumption is rated as approximately 165 VA.

The dimensions are approximately 18 x 16 x 6½ in., and it weighs 48 lb.

Allied International Company Limited, 59, Union Street, London, S.E.1.

## T.S.L. introduce sync. unit

TECHNICAL SUPPLIERS LIMITED recently announced a tape recorder synchroniser for use with all types of slide projectors.

Their "Synchrofo," makes it possible to couple a tape recorder to a remote control slide projector so that the slides are automatically changed when the commentary on the tape reaches a predetermined position.

Tiny strips of self-adhesive metal foil (synchrofoils) are fixed to the uncoated side of the tape, and as the tape passes through the Synchrofo, the foil bridges two contacts and completes a circuit connected to the unit.

It performs the same function as the electronic type of synchroniser in which a pulse is recorded on the tape, but with the following claimed advantages. Cost is only a sixth, reliability is vastly better; none of the recording space on the tape is used; operation is clearly visible and re-arrangements in the position of the pulse are easily made; and virtually nothing is added to the size and weight of the recording equipment.

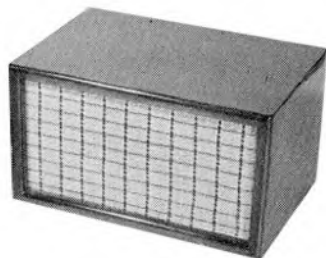
A full instructional unit for coupling the unit to the recorder is supplied. The Synchrofo retails at 47s. 6d., complete with forty synchrofoils, junction points and wire. Extra synchrofoils are available for 7s. 6d. a hundred.

Another recent announcement by TSL concerns their High-Q Flexette loudspeaker enclosure. This is a tiny unit, as the photograph on this page illustrates, measuring 11½ x 7½ x 6½ in. It is manufactured by the Lorenz loudspeaker factory in Germany. Quoted frequency range is 45-15,000 cps, and the power handling is given as better than 4 watts continuous or 8-10 watts peak. An 11,000 gauss high flux magnet is incorporated.

Special sockets, polarised for stereo phasing, are provided, and the maximum transfer efficiency input loading is rated as from 10 milliwatts to 8 watts.

Finished in medium walnut, veneered and polished to piano finish standards, the High-Q retails at £5 19s. 3d.

Technical Suppliers Limited, Hudson House, 63, Goldhawk Road, Shepherds Bush, London, W.12.



☆  
The TSL High-Q  
Flexette Loud-  
speaker enclosure  
☆

## Hints on recording

FROM time to time the Irish Tape distributors release small publications to the public. The latest of these booklets, dealing with magnetic recording tape and tape recording, has just been issued.

Described as being intended for the complete novice, the booklet first of all explains the recording idea and introduces the basic components, and then runs into a list of 14 "Do's" and "Don'ts." It is an ideal introduction for the newcomer, and is available from Wilmex (Distributors) Limited, 70C, St. Stephen's House, Westminster, London, S.W.1.

# News from the Clubs

A NUMBER of clubs still seem to be in some doubt as to the form the Club Section of the 1961 British Amateur Tape Recording Contest will take.

As for last year's the subject for this section is to be left entirely to the producer. There are only two provisos. The first is that the tape should not exceed fifteen minutes; and the second is that the tape submitted should be the work of a group of persons, not necessarily an organised tape club. Single entries are catered for in the other categories.

The closing date for entries is June 30. The judging for this unique contest, now in its sixth year, will take place during July and August, and the results will be announced during the period of the Radio Show. The *Amphlett Trophy*, awarded by the **Federation of British Tape Recording Clubs**, will be awarded to the club which in the judges' opinion produces the best feature tape.

An entry form was published in our January 13 issue, together with the complete set of rules and prizes. Further forms are available from 7, Tudor Street, London, E.C.4. Please mark envelopes "Contest."

There is now less than four months to prepare your entry, so it is advisable to start planning straight away.

The **Warwick and Leamington** tape recording course is still going strong. At their meeting on February 1, Trevor Gilbert, their vice-chairman, instructed on the workings of a recorder, and illustrated his talk with diagrams and practical demonstrations of two machines.

He was again in the chair at the February 15 meeting when he demonstrated crystal, moving-coil, condenser and ribbon microphones, giving convincing illustrations of the capabilities of each.

Brian Race and chairman Ken Wilkins also contributed to the course with their respective lectures on loudspeakers and mixer units.

The course is completely free, and an open invitation is extended to any enthusiast who would like to attend. Complete details are available from the secretary, Miss Eileen Jones, 26, Hampton Street, Leamington Spa.

**Dover** members have been trying their hand at recording a short play. At their January 23 meeting their initial attempts brought gales of laughter and proved to them that this is no easy task. Undaunted, however, they are now searching for new material to extend their activities in this direction.

At their following meeting on February 6 Mr. Frank Parrington, of Walter Instruments Limited, visited the club to demonstrate the Walter 505, and their

newest mains/battery model, the Metropolitan. Three new members were enrolled at this meeting, two of them from the R.A.F. Camp at Manston, near Ramsgate.

One of their latest ventures is to organise an old people's message service, from the Home at St. Margaret's Bay.

A pat on the back for John Baker of the **Plymouth** club who recently recorded a concert given by the Exeter Municipal Orchestra.

After the show he was approached by the xylophone soloist who wanted to send a copy of the recording to his son in the Antarctic. John complied, and on playback was congratulated by the conductor who informed him that the recording was the orchestra's best yet. Equipment used for the recording included an Elizabethan Escort mixer, a ball and biscuit and a crystal microphone.

For the second meeting in January a demonstration of short-wave radio recording was given by Mr. P. Campion, who illustrated programmes from Belgium, Holland, Yugoslavia and Russia.

Meeting again on January 25, members welcomed Mr. B. Wilson of B.A.S.F. Chemicals Ltd., who was present to demonstrate the B.A.S.F. *Magic Tape* film. Unfortunately the evening began not too well, for just before the show began the lights fused. With everything finally solved, the show began and Mr. Wilson treated the members to an encore by presenting a tape/slide show.

The following meeting on February 8 also suffered a minor set-back. This time, however, the tape being heard, a recording of a pantomime produced by the crew of H.M.S. *Raleigh*, broke half-way through the programme. All's well, etc., because it gave the members a chance to show their skill at jointing technique.

A number of interesting deviations have been found by members, not least of which is a challenge match between Mr. Ashby and the secretary. The duel is to see which member can first produce a tape under the title "Sewerage."

A rapid climb in membership has been recorded by the newly-formed **Cambirdge** society. With their inaugural meeting still fairly recent history, the club has acquired its twentieth member. This rapid rise has led to a re-shuffle of meeting nights, and it is proposed that as from April 5 the club will meet every Wednesday.

Latest activities of the club have included the recording of a tape to the **Brixton** club, and a general exchange of personal tapes for dubbing.

Their proposed hospital service has received enthusiastic comment from the Brookfields Hospital, and it is hoped to prepare the first programme soon.

A club emblem competition has been organised, and a 3¼-inch spool has been offered for the best design.

At their latest meeting, held on

February 22, a representative of Lustraphone Ltd. visited the club to demonstrate and talk about their range of microphones.

A visit to Dunstable was arranged for March 1, when members hoped to make some recordings of a Hammond Organ.

The **Rugby** members also began one of their latest meetings with tape playback. On February 9, the meeting was mostly given over to listening to a tape received by the society's American member Nelson Woerner from the Universal Tape Network in America. With commentary by the organisation's President, Larry Duhamel, the tape contained details of the Network's activities, membership and plans, and some enjoyable music. To follow, members listened to a tape received from the **Wakefield** club.

On the previous Friday evening, Mr. G. Dawson and Mrs. Vera Tilcock visited the Ladies section of the local Lodge to play a tape of local news, views and highlights compiled by themselves and Terry Davis. The visit was the first of an intended regular series, and it seemed to go down quite well with their hosts who voted it "better than television." Their next visit will be to the Men's section, and later on it is hoped to start a personal message service for the Lodge members.

Microphones—their types and applications, was the title of a lecture demonstration given by President John Buckler at the January 27 meeting of the **Leicester** club. After illustrating the designs of the various models, ranging from the carbon granule to the latest ribbon, and explaining the differing principles of operation, Mr. Buckler went on to give live demonstrations.

The following meeting, February 10, was devoted to portable battery recorders. Seven machines were on view and each was demonstrated by its owner. So that all the recorders present could be given an equal hearing, an amplifier and loudspeaker were set-up, and a recording of a local choir's rendering of the "Messiah," and a running (?) commentary by a cyclist, were played back. The "wow-free" recording of church bells, made on a Fi-Cord, were said to have "raised the eyebrows" of the portable sceptics.

After the interval the members were entertained to a talk on recordings and recording conditions in Rhodesia. This talk was presented by Ken Clements who has returned to Leicester after living in that country for many years. Main talking point among enthusiasts in Africa seems to be the inadequate after-sales service offered by dealers. This was said to account for the low sale of British machines.

Mr. Clements concluded his talk with a dazzling coloured slide show, including views of Victoria Falls. A film taken during his homeward voyage is promised for future showing.

The club has had to change its venue. In future alternate Friday meetings will be held at the Newarke Girls School, Imperial Avenue, Leicester. Their next meeting will be held on March 10. A change of secretary is also announced. Peter Starrie has relinquished his post to David Derbyshire, 69, Noel Street, Leicester.

(Continued on page 33)

## Classified advertisements

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

### SERVICES

Tape recorder need repairing? Then let London's Largest Tape Recorder Specialists do it for you, expertly and economically. Essex Tape Recorder Centre, 2, Maryland Point Station, Stratford, E.15.

FERROGRAPH 4 A/N's-808's, VORTEXION WVA, WVB, SIMON SP4, REFLECTOGRAPH A-B, etc., always in stock and ready for immediate delivery, as well as over 200 latest 1960 recorders at London's Largest Tape Recorder Specialists. The best, lowest H.P. terms, and finest selection of new and s/h recorders, from £18. Generous P/E allowances. Essex Tape Recorder Centres, 2, Maryland Point Station, Stratford, E.15, and 205, High Street North, East Ham, E.6.

Tape Recorder Service by L. Bishop, Ltd., 1708, Bristol Road South, Longbridge, Birmingham. Grundig Specialists.

### MISCELLANEOUS

WAL GAIN transistorised pre-amplifiers. Many applications, extra gain for Mics, Tape Heads, P-U's, etc. Mono version, £5. Stereo, £7 10s. WAL BULK TAPE ERASER, both tracks 8-in. reel erased 30 sec., £7 18s. 6d. WALTRAK transistorised oscillator, 1,000cps, indispensable for Service, £6 10s. Full technical literature sent, supplied through all leading dealers. Wellington Acoustic Laboratories Ltd., TRC Dept., Farnham, Surrey.

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

AT LAST—Tape Prices Down! As a result of an all-out effort to help our tape enthusiast customers we have arranged to distribute a top-selling American Tape at knock-out prices. All types, attractively boxed and fully guaranteed.

Reel		s.	d.
5 in.	600 ft.	STD.	16 0
5 in.	900 ft.	LP.	18 6
5½ in.	1200 ft.	LP.	23 6
7 in.	1200 ft.	STD.	25 0
7 in.	1800 ft.	LP.	35 0

post free

Let us supply ALL your tape requirements by return of post. C.O.D. 2s. per parcel extra. Dept. TR., Northern Radio Services (London) Ltd., 11 King's College Road, Swiss Cottage, London, N.W.3. Phone: PRImrose 3314.

Something to sell?—equipment for exchange?—looking for a job in the hi-fi tape field?—seeking a tape contact abroad?—tape-to-disc services to offer?—expert staff needed? A classified advertisement in *Tape Recording Fortnightly* will bring you quick results—cheaply.

### MISCELLANEOUS

Recording Tape. Save up to 30 per cent. Send for list. Also 50 secondhand Recorders in stock. E. C. Kingsley & Co., 132, Tottenham Court Road, London, W.1. EUS 6500.

*Do you use the telephone? If so you will find a Dektron Telecon the most useful of all your recording accessories. The Telecon is not just a novelty but a unit which you will use frequently for both family and business purposes. You will be surprised by its efficiency. Just stand it behind the phone (no connection is necessary) and both sides of the conversation can be recorded, or, if you wish, amplified and broadcast to listeners in the room. The price—only 27s. 6d. post free. To ensure delivery by return post write today to Dektron, 2, Westbourne Road, Weymouth.*

### PRE-RECORDED TAPES

Unique 40-page catalogue listing all makes, Mono, Stereo, 7½ and 3½ ips. Send 2s. 6d., refundable on first tape record purchased. Dept. 6, Teletape Ltd., 33, Edgware Road, W.2. PAD 1942.

Pre-recorded Tapes. German folk-music, also historical recordings 1933-1945. Send two 3d. stamps for catalogue: 74, Princesdale Road, London, W.11.

### TAPE-TO-DISC

TAPE TO DISC RECORDING. Microgroove LP from 27s. 6d., 45 rpm EP—20s., 78 rpm—11s. 48 HOUR RETURN SERVICE—FINEST QUALITY. S.A.E. for comprehensive leaflet to: A. D. Marsh ("Deroy Sound Service"), 52 Hest Bank Lane, Hest Bank, Lancaster.

Tape to Disc—All Speeds. Rendezvous Records. 19, Blackfriars Street, Manchester 3. Leaflet on request.

### FOR SALE

FOR SALE—EMI L/2A, Battery portable tape recorder. Recently overhauled, but running a little fast. Complete with carrying case for £50 o.n.o. Box 407, *Tape Recording Fortnightly*, 1, Crane Court, London, E.C.4.

TELEFUNKEN 85KL (list £83) and VORTEXION WVB (list £110), both practically unused, fully guaranteed, must sell. Accept £63 and £90 respectively. Box 408, *Tape Recording Fortnightly*, 1 Crane Court, Fleet Street, London, E.C.4.

## TAPE EXCHANGES

Tape recorder owners who would like to make contact with others of similar interests to exchange news and views by tape are invited to send their name, address, sex, age and special hobby or interest (but only one, please) for this special new section.

It will be assumed that all tape contacts will be made using a speed of 3½ ips, on half-track tape. If space permits, additional speeds, or track usage will be published. Maximum spool size only is given.

Frances F. (Miss, 27), 111, Breakspears Road, Brockley, London, S.E.4. Sport and theatre. Prefers three-inch reel exchanges.

Fung, I. J. (Male 27), 119, Tooting Bec Road, London, S.W.17. Classical music, particularly interested in exchanging "off-the-air" recordings of UK and USA concerts. 8½ inch spool. 3½ and 7½ ips.

James, Tony (23), 8, Tintagel Crescent, East Dulwich, London, S.E.22. English speaking Cantonese contacts wanted. 15, 7½ and 3½ ips. Seven-inch spools.

Morris, Ken (40), 50, St. Andrew's Crescent, Rugby. Spanish and Latin-American music. 5½ inch spool.

### SCHOOLS

Shoreditch School, Falkirk Street, London, N.1 (John Howse, Teacher). Mixed Secondary, with 1,500 pupils. Wide range of "recordable" interests and activities. English and French languages.

Tindale Street JM High School (R. P. Aston), 63, Sansome Road, Shirley, Solihull, War.

Send details to "Tape Exchanges," *Tape Recording Fortnightly*, 7, Tudor Street, London, E.C.4.

### B.B.C. "Sound" Programme

A magazine for radio and recording enthusiasts

6.40 p.m. March 13

(A repeat of the programme broadcast on March 5)

### QUESTIONS AND ANSWERS

Two regular listeners to "Sound" are invited to put questions to John Borwick and I. W. Jarman

"Sound" is broadcast on alternate Sundays at 2.40 p.m. on Network Three

The next new programme is on March 19



# News from the Clubs

(Continued from page 31)

A demonstration of the extra quality obtainable from a recorder using external speakers and a phase separating device was given at the February 1 meeting of the **South Devon** club.

In the chair was Peter Perry a record-engineer who had been brought along to the meeting by the club President Mr. Donald W. Aldous. Mr. Perry had with him two speaker cabinets that he had designed and built himself to show that for a modest outlay and with a little bit of time, the enthusiast could really do justice to his machine.

At the following meeting on February 15, chairman Gordon Furneaux demonstrated the Gramdeck, and Mr. A. S. Heather showed how to edit unwanted words and sounds from a tape by editing. The latter part of the evening saw members and guests joining together to record a short comedy play written by Roy Russell.

Their March 1 meeting was to include a talk and practical demonstration of the working of a tape recorder; and their next meeting, March 15, will include a demonstration by Mr. Woodward on combining tape and coloured slides.

The **Walthamstow** members have been out and about once more. On January 27, Sam Koster, Maurice Dudley and Ken Perks visited the Leyton Camera Club to see their photographic competition. They recorded the proceedings, including the judges comments, and a copy of this tape was heard by a Dublin Camera Club when they viewed the same photographs later that month.

A week previously a number of the members visited the Philips Record factory, for a complete tour of inspection. Their tour took in everything from automatic boilers (!) to stereophonic sound according to their report, and lasted until the "wee small hours."

Their outside activities diary is really filling-up, and they have dates booked as far ahead as June. On the tenth of that month the League of Friends are to hold a hospital fête at Comely Bank, and the club has been invited to organise incidental music, a public address system and, of course, the usual "record your voice" stand.

Meanwhile their indoor activities continue, and the second of their magazines on tape is now making the rounds. This is compiled from five-minute recorded contributions from members.

Described as a well-edited tape of live interviews, Peter Duddridge's tape "Do you believe in ghosts" was the highlight of one of the recent meetings of the **Cotswold** society. The producer had travelled throughout the Cotswold area asking this question and had been able to collect some most eerie tales.

An interesting follow-up to the playback was an editing exercise. For this, members copied the tape on their own machines and were then instructed to reduce the tape to half its original playing time.

Instruction on the use of a test tape followed. Access to expert technical knowledge and professional test equipment made their task easier, and members keenly checked the accuracy of their recorder's speeds. A Gaumont-Kalee wow and flutter meter was used to test speed stability. A Vortexion recorder,

after some seven years' hard use, was found to be still within the maker's specification at 7½ ips, and only slightly below at 3¼ ips.

The latest meeting of the **London** club, held on February 9, was concerned mostly with the judging of the club's internal competition. The competition is held every six months, and has two prize awards, most coveted of which is the MacManus Cup for the best overall tape. A second cup is awarded as an incentive to the member whose experience in the recording field does not exceed two years.

Michael Avel was awarded the top prize for his tape, based on the theme of a ghost train, which included some excellent dubbing of effects, and after much deliberation the second cup was awarded to Ron Tucker who produced a documentary tape on the work of the Salvation Army.

A change of venue has been announced by the members of the **Walsall** club. In future, they will meet at Blue Coat Schools, Springhall Road, Walsall.

Their forthcoming meetings are to include play recording, a talk on microphones, demonstration of recording technique using one of the Stuzzi machines, and a visit to a local audio studios. Prospective members are invited to contact the secretary, Mrs. J. Walford, 41, Mill Road, Pelshall, Walsall.

News of yet another club, this time being formed in the **Woolwich** area. The new society meets on alternate Mondays, their next gathering is on March 13, at The Armstrong Gun, Vincent Road, Woolwich. Details of the club are available from the secretary C. L. Hurst, of 12, Willrose Crescent, Abbey Wood, S.E.2.

CUT ALONG DOTTED LINE

## ADVERTISEMENT INQUIRIES SERVICE

*This is a special service for readers of TAPE RECORDING FORTNIGHTLY. 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..... issue of Tape Recording Fortnightly.</p> <hr/> <p>NAME.....</p> <p>ADDRESS.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;">March 8, 1961</p>	<p>I should like further information about the.....</p> <p>.....</p> <p>(product) mentioned on page.....of the..... issue of Tape Recording Fortnightly.</p> <hr/> <p>NAME.....</p> <p>ADDRESS.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;">March 8, 1961</p>	<p>I should like further information about the.....</p> <p>.....</p> <p>(product) mentioned on page.....of the..... issue of Tape Recording Fortnightly.</p> <hr/> <p>NAME.....</p> <p>ADDRESS.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;">March 8, 1961</p>
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# Tape-to-Disc Services

Leonard G. Francis presents—  
**SHEEN**  
**TAPE RECORDER CENTRE LTD.**  
*Specialists in Tape Recorders and Accessories etc.*

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 8 Station Parade, Sheen Lane, Sheen,  
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 Showrooms: PROSPECT 0985 10 a.m.—7 p.m.

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 Retail Price only. All leading makes stocked  
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 Specialists  
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 made from your own tape

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*When writing to manufacturers for information about new products, please mention that you saw it in "Tape Recording Fortnightly."*

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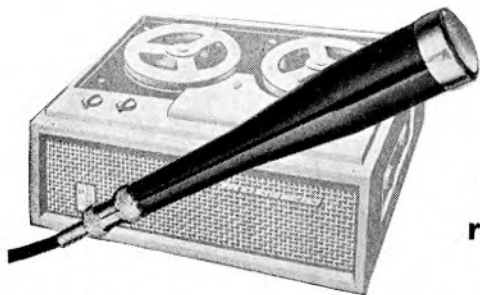
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FLAP A

FLAP B

# Grampian DP4



brings out the best in any recorder

Even the most expensive recorder will only give its best performance if a good quality, reliable microphone is used. In the DP4, with a uniform wide frequency response from 50 c/s to 15,000 c/s, Grampian have developed an outstanding, moderately priced instrument which will please the most exacting recordist. The DP4 is equally suitable for Public Address, Broadcasting, Call Systems, etc.

**OUTPUT LEVELS**

DP4/L low impedance: 25 ohms 86 dB below 1 volt/dyne/cm<sup>2</sup>.  
 DP4/M, medium impedance: 600 ohms 70 dB below 1 volt/dyne/cm<sup>2</sup>.  
 DP4/H high impedance: 50,000 ohms 52 dB below 1 volt/dyne/cm<sup>2</sup>.

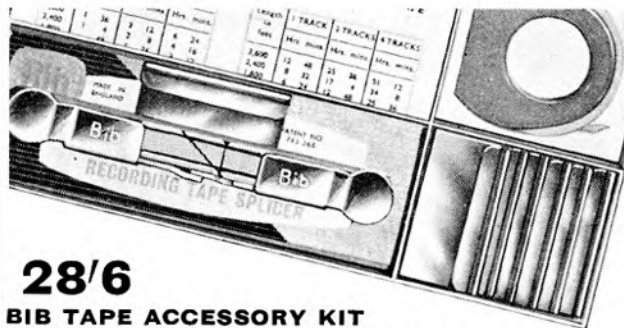
Retail Price: DP4/L complete with connector and 18ft. screened lead, £7 11s.  
 (Medium or High Impedance models, £1 extra).

A complete range of stands, swivel holders, etc., is available also.

A matching Unit (Type G7) can be supplied for adapting the microphone for a Recorder having a different input impedance, or when a long lead is required. Retail Price, £3 5s.

Write or telephone for illustrated literature

**GRAMPIAN REPRODUCERS LIMITED**  
 21 Hanworth Trading Estate, Feltham, Middlesex. FELtham 2657



**28/6**

**BIB TAPE ACCESSORY KIT**

**COMPLETE IN A STURDY BOX CONTAINS:**

- Bib Tape Splicer chromium plated on flock sprayed base, complete with cutter. May be mounted direct on tape deck. (Available separately 18/6.)
- Bib Tape Data Card. Provides playing times for standard, L.P. and D.P. tapes for 12 sizes of reels for 1, 2 and 4 tracks. Capacity of 6 sizes of reels for 3 types of tape. Performing times for 48 classical works.
- Reel of Splicing tape on dispenser.
- 6 Spare razor cutters.
- 24 Bib Tape Reel Labels.

**BIB TAPE REEL LABELS**

Self adhesive suitable for typing or writing. Packet of 24: 2/6d.

BIB TAPE REEL LABEL MULTICORE SOLDERS LTD	TITLE	REEL NO.
	COMPOSER	SPEED
	ARTIST	DATE
		DP — LP — SP

Available from your usual dealer; if in difficulty, send remittance to:

**MULTICORE SOLDERS LTD., Maylands Avenue, Hemel Hempstead, Herts.**

TA5135

# Tandberg SERIES 6 Stereo Tape Deck

**3 speeds 4 tracks 3 heads**

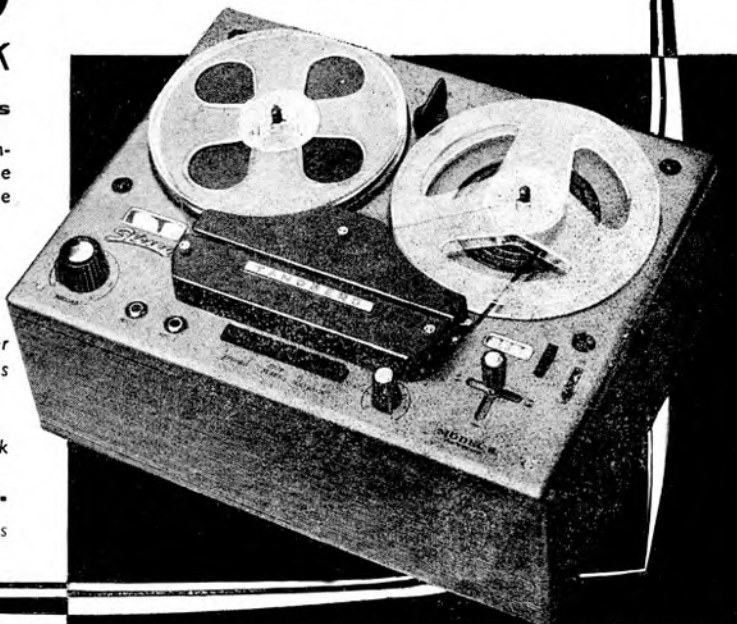
The Tandberg Series 6 is a "no compromise" instrument capable of delivering consistently fine "professional" quality when used with comparable amplifier and speaker systems.

**FEATURES INCLUDE:—**

- Free-Standing or Build-in Teak Cabinet
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**RETAIL PRICE 110 gns.**

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Every day on the farm BASF tape is passing the most critical of all tests for authenticity. As part of an intensive rearing programme, piglets are removed from the sow soon after birth, fed on special foods and given that 'at home' feeling by tape recordings of their mother's grunts. To convince a piglet the recording has to sound authentic. There are three reasons why BASF tape provides the sound that never fails to do so.

The first is its Luvitherm base which permanently holds the magnetic oxide in the tightest bond. The second is the oxide itself, made by a special BASF process to ensure magnetic stability no matter how long the tape is stored. The third is—'know-how'. BASF is the original magnetic recording tape. Today a vast reserve of more than 25 years experience and continued development keeps it ahead for authenticity. Whatever your recorder you can always be sure of registering its complete range of frequencies on BASF tape . . . always reproducing them . . . always obtaining Authentic Sound whatever and wherever you record.



**Magnetic Recording Tape**

**Standard · Long Play**

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**RECORDING  
TRAINS** pages  
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Special article

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**41 GNS.**

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The Zodiac is designed for the family who want a reliable tape recorder incorporating all the latest equipment

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Mixing - Track Control -  
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Complete  
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*An inexpensive column speaker constructed from a concrete pipe and fitted with a good 8" or 10" unit has attracted much interest and admiration because of its clean, open sound.*



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Complete kits of wooden fixtures are available including absorbent wadding and diffusing cone.

Price £3-15-0 for 8" model

Recommended 8" unit—8/145

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Recommended 10" units—W.10/FSB £12-9-10

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Prices include purchase tax.

Suitable concrete pipes can be purchased from builders' merchants at about 12/6d and 17/6d.

**Wharfedale**  
WIRELESS WORKS LTD

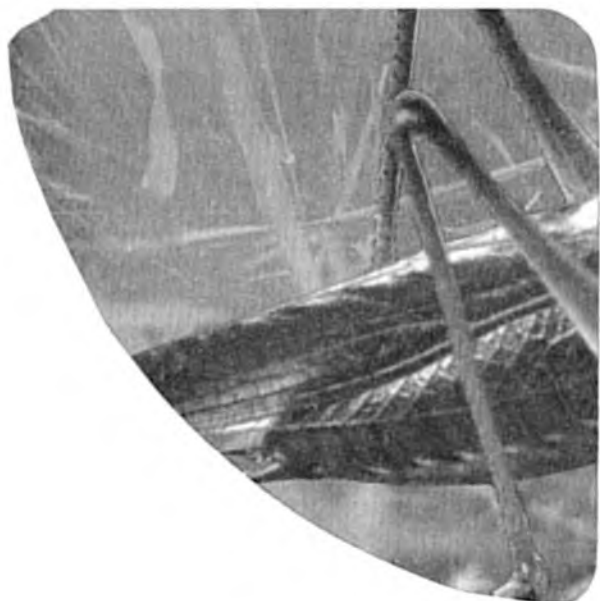
IDLE BRADFORD YORKS

Grams: "Wharfedel" Idle Bradford

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These pocket-sized guides to tape recording should find their way into the hands of every tape enthusiast. Definitely a **MUST** for the newcomer



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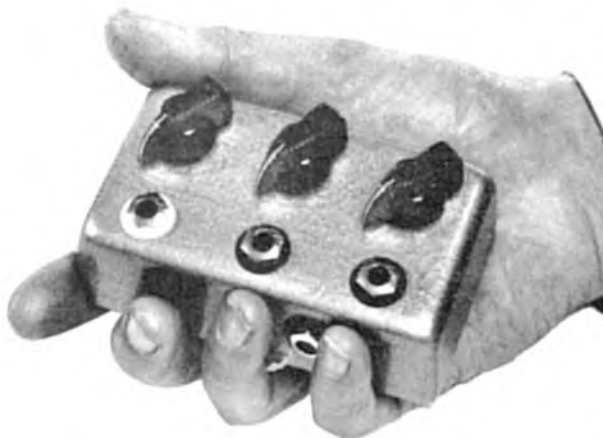
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A TAPE RECORDER IS A VERY FLEXIBLE MACHINE; ITS FACILITIES CAN BE GREATLY EXTENDED, AND ITS USES INCREASED, WITH PROPER ACCESSORIES. DEKTRON SPECIALISE IN THE PRODUCTION OF INEXPENSIVE ITEMS WHICH WILL DOUBLE YOUR TAPE RECORDING INTEREST AND ABILITY.

## 2 THE NEW IMPROVED MIXER-FADER

*With this mixer-fader you can blend together three separate input sources to produce a single recording. Items can be faded in or out in professional style. Skilful use of this instrument can save you hours of tedious editing work, too. Now available for either three microphone inputs or two microphones and one high level signal, e.g. radio feeder. Restyled and attractively finished in hammer green it represents outstanding value at 45s.*

## 3 THE MONITOR

It is of great assistance to know exactly what you are recording on a tape. This transistorised unit gives you full monitoring facilities. Used in conjunction with the mixer-fader, it acts as a pre-amplifier and gives you the essential basis of a home recording studio. The price is five guineas.

## 1 THE TELECON PICK-UP

This is a very simple, but highly efficient, instrument that enables you to record both ends of a telephone conversation and—if you wish—to amplify and broadcast it simultaneously to listeners in the room. It is of great value for family and business purposes. The pick-up is simply laid on a desk or table beside the phone and plugged into the recorder. The price is only 27s. 6d.



**DEKTRON, 2 Westbourne Road, Weymouth, Dorset**

Telephone : Weymouth 1987

## . . . and this is why we don't believe in "gimmicks"

FOR more than twelve years — longer, probably, than any other firm in the industry — we have been making Tape Recorders. But never have we aspired to produce the greatest number nor to cater for all sections of the market.

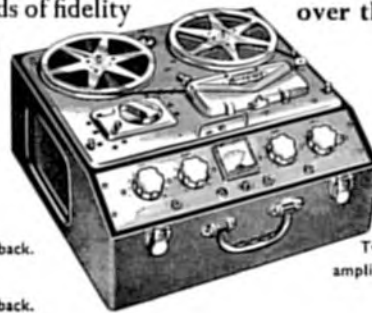
Ferrographs, in fact, are **not** mass-produced. Each is built with painstaking skill in a series of complicated operations that can only be carried out by experienced technicians dedicated to the pursuit of quality.

Long ago we foresaw that a time would come when many would expect the Tape Recorder to compete with — perhaps even to oust — the gramophone as a home entertainer. We have never shared this viewpoint. Because **Recording** has always been our business we have consistently and whole-heartedly directed our energies towards the attainment of the highest standards of fidelity in tape recording — realising full well that magnetic tape stands supreme as a recording medium.

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# TAPE

RECORDING  
FORTNIGHTLY

Vol. 5 No. 6 22nd March, 1961

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# We take the view . . .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

THESE are difficult, puzzling and challenging times for the music critics. I was fascinated to read the reviews they wrote recently of the twenty-minute composition by the Spanish composer, Roberto Gerhard, which was performed by the BBC Symphony Orchestra.

Gerhard has been a pioneer of electronic music and music concrete and this latest piece takes him forward a further stage in the voyage of discovery into these uncharted seas. The critics have had the greatest difficulty in keeping up with him.

Gerhard's latest composition, which he calls "Collages," combines orthodox orchestral music with music concrete, recorded on tape and delivered to the audience through four loud-speakers.

To the ear of one distinguished critic the result sounded like "the heavy rhythmic breathing of some monster" and later, like "a hostile, jeering mob."

Another writer detected "a succession of burps and plops and watery gurgles that call to mind nothing more uplifting than deficient plumbing."

Gerhard's reputation as a composer,

however, assured him of serious consideration of "Collages." The general opinion among the critics who grew up on sweeter fare was that these are too early days to reach conclusions; electronic composers, they hope, will learn to impose sterner self-discipline and so secure a fuller emotional and intellectual response from the listener.

## Two battles . . .

WHILE so much thought, effort and ingenuity goes into the creation of new sounds, other campaigners are busily engaged in reducing sound.

British Overseas Airways Corporation have announced that they will introduce, this spring, tape-recorded music and dramatic productions for passengers on their long-distance flights.

They are talking about "hi-fi." Ugh. . . .

The new system, designed, manufactured and supplied by Mec-Test, involves a small compact receiving set with plastic earphones. Programmes of light music,

short plays, and talks interspersed with "serious" commercials will be transmitted from a master tape recorder, controlled by the aircraft's steward, on a frequency suitable for inflight cabin use.

Choice of the two channels is given by press button, and a volume control is provided. Each channel gives twenty hours of unrepeated entertainment. The replay and control unit is supplied by Epsylon Industries.

B.O.A.C. intend to extend the service to all their aircraft, and to include programmes in foreign languages and for children.

There is at least one opponent of this new service. Mr. George Darling, M.P. for Sheffield, Hillsborough, wants the Minister of Aviation to prohibit it, in the public interest.

I do not, myself, see the objection to this development—provided travellers will be able to listen without in any way disturbing their neighbours. There are few things more boring than long-distance flying. One cannot eat and drink the whole way, and one does not always have a brilliant conversationalist sitting beside one.

I hope B.O.A.C. watch the advertising content closely. I wonder how big-business tycoons will react if they are fed with juvenile jingles of the kind we get on ITV—very often, no doubt, from the firms the tycoons direct!

## . . . against sound

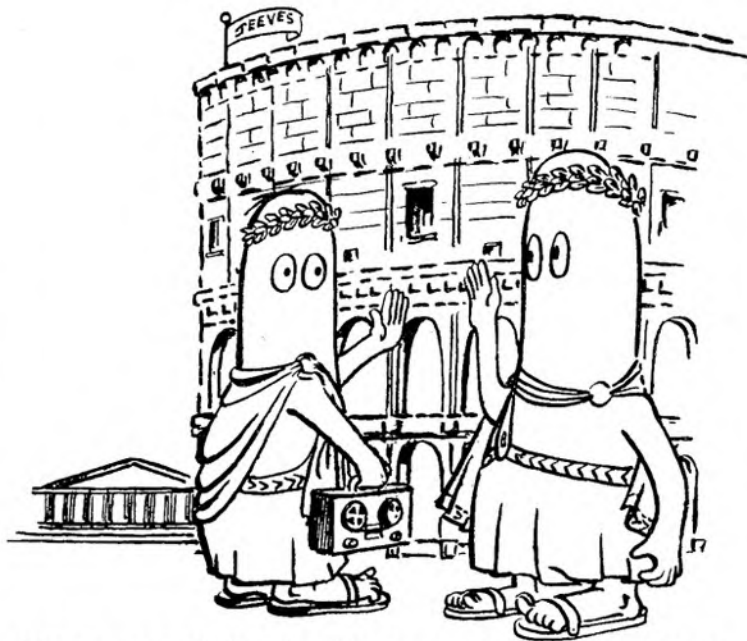
THE Emifair which is touring 76 towns in Britain this year—showing the latest scientific, medical and musical developments in the world of sound from the EMI Group of Companies—drew my attention to another battle *against* sound.

Detaching myself from the glorious sound produced by the stereo set-up on display, I examined the "selectones" which are now being used in noisy factories to cut out damaging high frequency sounds. I say damaging advisedly, for I am assured that constant noise of this kind can lead directly to permanent, partial or complete deafness.

Britain, it seems, is years behind many other countries in recognising this health hazard.

There are many other things in this exhibition which, while not directly concerned with recording or reproduction, should be of great interest to amateurs who are interested in the theory of sound: for example, an electronic stethoscope which magnifies the human heartbeat 100 times, so that four people can listen at once.

## LAUGH WITH JEEVES



"Ho there, Arthritis! Wouldst care to help me record, 'Life with the lions'?"

**MOSCOW'S** "Friendship University" claims to have more than 500 students from over sixty countries, mostly from the underdeveloped countries of Africa, Asia, and Latin America. Few of the students speak, on arrival, the language in which all instruction is conducted—Russian, and for the past few months they have been exclusively engaged learning the language.

The latest methods of teaching have been introduced as indicated by our photograph which shows students from many lands listening to tape recordings of Russian texts.



## IN BRIEF

**WHAT** happens when you dial 999 and shout FIRE? If you live in Manchester your call will be tape recorded. As soon as the receiver is picked up on the Emergency Line at the City Fire Brigade Headquarters the motors of a rack mounted tape deck start up and a recording is made of the conversation.

A special machine, designed and installed by Wearite, records the telephone conversation on track one and the G.P.O. speaking clock on track two (simultaneously). The recorder incorporates three amplifiers—two for the two tracks and one to feed a tape loop in a cassette.

The tape is changed each day (they have a tape for every day of the month) and the station Communications Officer spends part of the morning editing the previous day's tape and building up a "file" of persistent, malicious callers.

The number of false alarms has decreased since it became known that the calls are taped—which is a good thing, and shows once again how tape helps other people in their jobs.

**PUPILS** of St. Saviour's School, Bels-hill, Lanarkshire, run their own radio show! Two 14-year-olds, Anne Miller and Anna McCuskin, select items of news from the newspapers and re-write them so that even the youngest pupil can understand. They then record the programme on a tape recorder to correct any mistakes in diction.

Headmaster, Mr. Daniel O'Keefe, explained that he had decided to try the experiment to interest the pupils in what goes on in the world.

**IS** this the answer? A reader of a Scottish Daily has suggested in a letter to the editor one way to surmount the teacher shortage. His idea is to tape-record a full day's lesson; the programme could then be shown on TV or heard on sound radio by three or four classes at the same time.

A senior pupil or other responsible person could be in charge to see that the work was done.

**BY** installing rows of loudspeakers broadcasting tape recordings identical with the cry of a seagull when shot, Copenhagen Airport is to fight a plague of seagulls on the main runways.

The loudspeakers will be switched on just before take-offs and landings.

## THE WORLD OF TAPE • A NEWS ROUND-UP

### DON'T EXPECT H.P. RELAXATIONS

**THE** President of the Board of Trade, Mr. Reginald Maudling, recently gave "don't delay longer" advice to those who are thinking of buying durable consumer goods—the technical description for such things as tape recorders.

"The sharp decline in sales of durable consumer goods," he said, "has been considerably affected by the belief among the buying public that the Government

would soon do something to make things easier.

"Where expensive items like motor cars and washing machines are concerned it is so easy to defer a purchase for a few months, and if there is any chance of gaining some benefit from waiting people are clearly going to do so. The position we have reached now in hire purchase, by retaining the substantial deposit requirement while extending the repayment period, seems to me one both reasonable in economic terms and generally accepted as fair and sensible by the public at large.

"This being so manufacturers should be able to look forward to a period of stability without the danger of fresh abrupt changes. It is my hope that we have now reached a position which can remain steady for a good time to come."

In effect, he advised that it would be no good expecting any further relaxations in hire purchase arrangements.



## The Grundig book

**THIS** colourful and original window display is currently drawing the attention of passers-by to the Grundig Book at Grundig (Great Britain) Limited's New Oxford Street Showroom. Sixty thousand copies of this book, giving full details of all Grundig tape recorders, accessories and equipment have now been sold, and the Seventh Edition is in course of preparation.

Published by Focal Press Limited, the book is obtainable direct from the publishers, Grundig Approved Dealers and usual retail sources. The price is 12s. 6d.

# ALAN EDWARD BEEBY'S TAPE TALK

**I**N a recent issue, I gave details of two well-known firms whose business lies in supplying professionally-recorded sound effects. Now I want to describe my experiences in dealing with a similar firm (who must be nameless, more's the pity!) whose business-methods are somewhat puzzling, so to speak.

This is what happened in my case. I sent off an order for five effects on disc, each lasting for 30 seconds: a total of 2½ minutes playing-time. Back came a reply quoting me for a 12 in. double-sided disc, priced, in their own catalogue, at 32s. This, in itself, was puzzling, since on another page of the catalogue they advertise a disc containing effects with a total playing-time of three minutes which they appear to have accommodated quite comfortably on a 10 in. double-sided record costing only 29s.

Anticipating any "rat-smelling" on my part, they pointed out that the extra record-time was needed for "banding" between the individual effects.

Right, let's have a re-check. My effects had a total playing-time of 2½ minutes. A 12 in. double-sided disc has a total playing-time of seven minutes. Now, I may not be very bright in the upper storey, but I couldn't for the life of me see how "banding" space could swallow up 4½ minutes' playing-time on one record... unless the "bands" themselves were a full inch in width! This was hard enough to accept. But what I was certainly *not* prepared to sit down to was the fact that the original purchase price of the 12 in. double-sided item had suddenly and mysteriously jumped from 32s. to 2 gns.

So I wrote back to the firm querying the 10s. increase, asking them, quite politely, what it was for. Two days later, I received a most abrupt and unfriendly letter from the Boss himself, in which he professed to be confused over my price query (you can bet your sweet life, he was!) and demanded to know what I wanted the effects-disc for, anyway. No explanations or anything of that kind, mark you.

My reply set out the relevant facts and ended with a repeated request for an explanation of the extra 10s. The Boss did not answer my letter. He left it to another member of his staff to advise me that they had given all my correspondence careful consideration but, since they were a large commercial company, they could only supply effects-recordings to the Stage, Film and Television authorities, etc.

It ended: "We must decline your order with thanks, and terminate this unnecessary correspondence."

Unnecessary? Not so far as I was concerned. I have a funny, old-fashioned objection to parting with money without first knowing exactly what it's paying for. Surely, as a potential customer, I was entitled to ask for an explanation of something which I did not readily understand?

But, no. This firm apparently expects its customers to abide by the old shark-worthy rule: "Pay up, and shut up!"

Well, I've got news for them. There are not so many mugs about these days as they seem to think. There'll be even less when this little lot's published.

**T**HE series of articles on Sound Effects which has just ended its 12-month run continues to produce letters from readers, some asking if it is still in order to write for advice on the subject. Certainly it is. If you have any effects problems, just drop me a line c/o the magazine and I'll be only too pleased to help.

Watching a play on ATV the other evening, I had to spring quickly from my armchair five times to operate the volume knob on the set in order to avoid being deafened by the sudden "crash" chords of mood-music which were out of all proportion to the speech-level.

There's really no need for this, you know, ATV.

Many hundreds of amateur recording enthusiasts have successfully mastered the art of sound-balancing.

Like me to ask one of them to come along and give you a few tips?

**I** AM still receiving inquiries in connection with my recent proposal for the organisation of a Tape Library for Schools. Unfortunately, it was not found possible to get such a scheme underway at the time the suggestion was put forward, and the plan had to be abandoned.

However, I now understand that the National Committee for Visual Aids in Education have a similar project in mind, and one of the moving spirits behind the idea is Geoffrey Hodson, the Editor of "Tape in the Schools."

Anyone interested in the formation of such a Library is therefore invited to submit their views and suggestions to him, c/o "Tape Recording Fortnightly."

**D**O you know of any shops in your town which offer exceptionally good and efficient service to the tape recording enthusiast. If so, write and tell me about them and we'll feature the details in our new Star Shop Service Spot.

I should particularly like to hear from club secretaries, since efficient after-sales service is one thing that clubs look

for, and rely on, when purchasing new equipment, and their recommendations should prove well worth noting.

Let's begin with Northampton. My own recommendations are: "Audio-craft," 20, Kettering Road. Cryer's Radio, 222, Wellingborough Road, and H. G. Rapkin, 73, Wellingborough Road.

**I** SHOULD like to offer a tribute, well-deserved, I think, to Messrs. Grundig, in praise of the superbly-solid construction of their tape recorders. I'll tell you why. Some weeks ago, I went with Derek, a colleague of mine, to a nearby village hall to record a performance by one of Northampton's amateur concert-parties.

Owing to the fact that Derek's car was in dock at the time, we were obliged to use the town's bus service: a short journey of about half an hour.

Derek was carrying the microphone stand, spare tapes, extension leads and various other odd pieces of junk, and I lugged the Grundig TK30. With me, also, was Tess, my dog, who trotted happily alongside us, making herself useful by carrying a bundle of production scripts.

It was when we arrived at our destination that the accident happened. The bus stopped, and we rose from our seats. Tess stood obediently at my heels, waiting to follow me down the stairs. Derek went first. Carefully manoeuvring his luggage, he reached the bottom of the stairs; I was still at the top. Then he made the fatal mistake; he snapped his fingers for Tess to follow him.

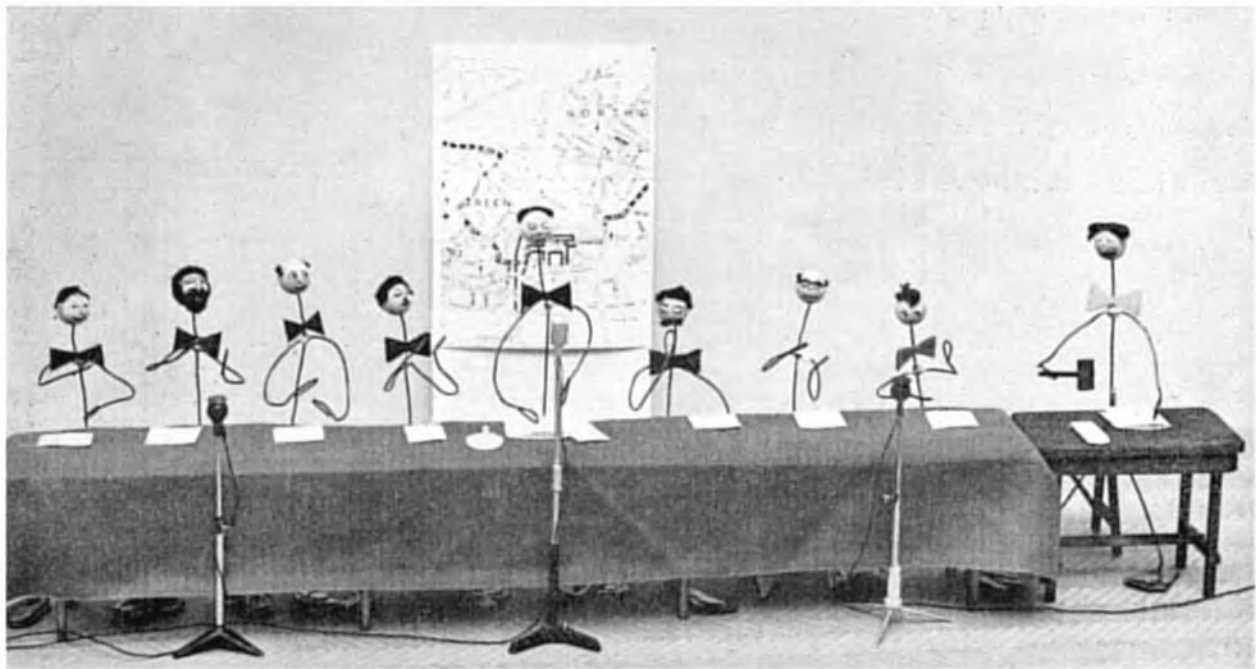
Now, a finger-snap to Tess, means by training, "Come on, hurry up!" And she did!

She rushed past me, slammed into my legs, I lurched... and dropped the Grundig down the stairs! It bounced... yes, bounced, on each step, hit the platform, rolled over twice, and landed with a sickening thud, smack in the middle of the road!

"Ye Gods!" breathed Derek, "That's torn it!" But he was wrong. At the village hall a few moments later, careful examination showed that nothing, repeat: nothing had been damaged inside, and the machine worked perfectly. Its sole injuries amounted to three fair-sized bruises to the outer casing.

Congratulations, Grundig. If that isn't "rough treatment," I'd like to know what is!

**"JUST WONDERING" DEPARTMENT.** Why does everyone, almost without exception, ask for the sound effect of a car crash? Why? Why? Why?



**NAOMI ARCHER** uses models to represent problems of microphone placing for the third article of an entirely novel series designed to create, describe and offer advice on microphone technique

**I**T is very tempting to sort out only the musical or dramatic sources for tape recording. Indeed, there seems to be a general tendency by some amateur recordists to avoid those "dreadful speech ceremonies." Maybe they are considered unsuitable material for the artistic or hobby-minded recorder owner and either "not-worth-the-trouble," or "too-easy-to-record-anyway."

What could be more worthwhile than making a recording which captures the emotional character, as well as the facts, whatever the material source?



It seems that the very nature of the word "record" implies an art in itself and deserves the careful choice of implements which any master of his art would advocate.

Since the aim is to record impressions in their entirety, therefore, a good microphone and a serious

## MICROPHONE POSITIONING

approach to microphone placing is necessary.

The models recreate a technique used for recording recent speeches of eminent local dignitaries. The occasion was an important one, because the record was to be kept in the town archives. The seated figures may suggest the unusual length of the speakers' table and how it was situated in relation to the auditorium; along the length of the conference hall—to the benefit, no doubt, of those who were seated in the back row!



Short of individual microphones, three—and two of them were omni-directional—served well, for not only did most of the dignitaries speak, but questions came from various members of the audience. The powerful-voiced Toastmaster was also catered for.

Very inconveniently, from the recordist's point of view, a large glossy map of the town was placed directly behind the principal speaker. The undesirable effects were clearly evident in the test recording and there was much re-positioning of microphones before the reflecting culprit could be mastered.

Thus, when the Chairman rose, he himself became the shield for his microphone, which had finally settled at about chest height.

The floor stands, which were preferred for this event, eliminated table noises and vibrations.

A ribbon microphone, if used too closely, will tend to accentuate the bass tones and spoil the voice character, but at the height suggested and some twenty-four inches distant, the main speech was recorded faithfully.

An interesting detail was that the microphone picked up some of the quieter verbal mannerisms which, it is understood, were not discernible even from the front row of the auditorium.

The occasion was a moving one and at times words flowed sensitively—a slight wavering, a catch of voice, a very soft sigh—these were the emotions lost to print but captured as only a microphone could in such circumstances.

The tape recorders and mixer were at work in an adjoining room at the end of 30 to 50 yard lengths of cable. Monitoring facilities were made available to the Press and other interested individuals who were unable to gain admission to the conference.

A crowded room and soft furnishings usually mean "dead acoustics" and this particular hall proved ideal for omni-directional microphones.



A further use for such microphones was found at another formal meeting, when the speakers concerned were seated at previously unknown positions. Again, due to the deadened room conditions, nothing was lost to the recording except, perhaps, the more personal impressions which can be gained with the close-microphone technique.

Inconspicuous and ideally placed microphones cannot always be contrived at major functions when famous personalities are present; one may be considered fortunate to place a microphone at all.

Sometimes a helpful attendant can be persuaded conveniently to move a table decoration to a desired spot for concealment purposes! Diplomacy is another facet of the recording art!

## There can be no question about the use of tape in the modern classroom

By D. A. HILL

*Teacher, and President of the Recording Unit of St. Christopher School, Letchworth, Herts*

AS a ratepayer myself I can sympathise with a columnist of *The Bucks Herald* when he objects to the Local Educational Authority paying the whole cost of tape recorders for its schools; I, too, would be happier to see the schools do something, at least, towards finding the money for this expense.

We part company, however, when he goes on to question whether there is any value at all in the tape recorder as an educational aid. Naturally no teaching aid, whether it be films or film-strips, chalkier chalk or bigger blackboards, or even, indeed, bigger and better and more ultra-modern buildings, can benefit any child in the land if not put to proper use by enlightened and imaginative teachers and local authorities.

We have had tape recorders here in our school for the past nine years (the first, which we no longer have, was an old second-hand machine given by a parent; the second was presented by some of our old scholars; the third has recently been bought by the efforts of our boys and girls). During this time they have proved their worth a hundred times over.

I remember, for example, how it was used for speech training, under expert guidance, by a boy with a speech defect; how it has helped young actors to perfect their delivery, enabled youngsters to hear their own voice and to "see" those short-comings in their speech which so often they cannot "see" in any other way.

It has provided an incentive for creative dramatic work, a whole class getting together to prepare and then write a script for a play which is finally recorded. Boys and girls have recorded poems they have written and these have been exchanged with poetry recordings made by children in other schools.

We live in a town, so exchanges of this kind with a secondary modern school in a rural area have proved most interesting and enlightening. The creative uses for the tape recorder in English classes are

*(Continued on page 24)*

## Introducing children to tape recording

# SCHOOL JOURNEY

An account of the adventures of a group of children who took a tape recorder on an educational holiday

By GLYN HARRIS

*Deputy Headmaster of a London School*

THIS is the story of a School Journey—47 nine- and ten-year-old children and three teachers spending a fortnight at Swanage in Dorset (during term time!) and learning at first-hand about life in town, village and seaside.

For a whole fortnight textbooks came to life, and lifeboatmen, factory workers, fishermen, museum curators, naval officers, lighthouse-keepers, swanherds and many more were seen by the children as real people, with real and valuable work to do. What a field for the tape recorder—especially with those rich and expressive Dorset accents to add colour to the tales told!

For the staff in charge of a School Journey, preparations begin many months before, for not only is there a great deal to be done on the "admin." side to ensure that the journey runs smoothly, but the programmes must be planned so that the educative possibilities are exploited to the full.

On previous journeys, the children had always done plenty of written work, in diary form, on the daily happenings, and this is obviously the basic and most valuable method of

recording their experiences in a way that encourages good written English, concise reporting, use of vocabulary, etc. However, for this particular exercise we decided that the tape recorder should help in this work of active learning.

We were fortunate in having three machines at our disposal, each with its own particular part to play. Our Grundig TK830 remained at school, and a Telefunken 85KL and a Grundig Cub battery portable (the latter loaned by a generous parent), came with us.

A hired coach took us from school to our hotel in Swanage, and the Grundig Cub captured the farewells of children, staff and parents.

During the journey the children recorded comments on what they could see from the windows, including an exciting description of the ride through historic Wimborne with its fine Minster. I wish I could have captured the comments of a group of Old Age Pensioners out for the day and enjoying a quiet "cuppa" outside a cafe, when one of my small charges deposited her breakfast with great aplomb between them and their view of the surrounding countryside!

We had planned our fortnight's journey so that long outings away from Swanage alternated with days spent locally—on the beach, at nearby beauty spots or meeting Swanage people.

Each day the Cub came out with us. The children interviewed all and sundry, including a Swanage policeman and the farmers at Dorchester market. Back-





**Left: Some of the children, taken by the author on the School Journey described on this page, make the most of available space during a visit to Dorchester Museum. Right: Jackie shows her friends the pig she nearly bought at a market auction**

ground noises such as church bells, sea birds, the aircraft at Hurn airport, the sound of the sea and the hub-bub of a cattle market were all taped for future use.

Back at the hotel the routine we followed was that each evening after our meal the children would settle down to write in their diaries about the day's happenings. During this time I would gather together in another part of the hotel a few children plus the Telefunken. Usually I had a group of about five or six children squatting round the tape recorder and they just talked spontaneously about what they had been doing that day. These unscripted, unedited and uncensored tapes were posted to the school and played back on the TK830 to all the children unable to be with us at Swanage. In this way there was a very real link between school and the party at Swanage.

At this point I think that it would be useful if I described in greater detail some of the more interesting recordings before explaining how these recordings were linked together and used on our return.

The talk given by the Swanage lifeboat mechanic was recorded in full, including his masterly opening. "Now I'll talk to you all day about the work of the lifeboat men, but if you touch any switches, press any knobs, interfere with any of the equipment, or if you talk when I'm talking, out you go!" This linked wonderfully with a child's spontaneous comment that evening as she recorded the message for school—"We visited the lifeboat house today and at first we were very frightened of the man because he told us he would throw us out if we touched anything, but he was quite nice really and his bark was worse than his bite!" We could have added that he was a born teacher.

At Hurn Airport, the Aerodrome Commandant himself came into the coach and talked to the children about the work of the airport. This made a delightful recording. So, too, did the talk given by the airport fireman and the stream of questions which followed. I only wish the tape recorder could have become a visual recorder to catch one small child, fresh from his introduction to brass rubbing at Christchurch Priory, assiduously rubbing the fine brass foot board of the fire engine!

One of the most amusing moments

came at Dorchester Market when a child watching an auction of pigs turned to comment with gesticulations on the quick rise of prices to her friend, and found herself being pointed to as the buyer of a fine fat piglet. She turned tail and fled and the tape recorder caught her anguished story in full.

Of course, the noises of the market were wonderful tape material—from the assortment of grunts, moo's, baa's, neigh's, etc., to the bell announcing the beginning of the auctions and the rich West Country voice of the auctioneer.

Dorchester Museum Curator held the children fascinated with his tales of Roman finds, and the recording shows why. He sparked off a wave of enthusiasm, and as I wandered around, with the children free to look around and make notes and sketches, I recorded their conversation and comments about the beautifully-displayed exhibits. Museums dull? You should hear these children's unscripted comments. In fact we had great difficulty getting them out of the place.

## TAPE IN THE SCHOOLS

In these four examples the co-operation of the adults was sought and gladly given, but we did have our disappointments. The noises of the Cheese factory were barred to us and Mr. Fred Lexster of Abbotsbury Swannery wouldn't allow his delightful Dorset voice to be recorded—this was a particular disappointment for me because his voice would have brought a wave of the real West Country to the children left in London's smoke. However, an assistant swanherd allowed himself to be questioned by the children so we had some "live" material to illustrate the children's own comments that evening.

Of course, a school journey does not end with the return to London. Work is started immediately on an exhibition. Pages of writing are completed, dozens of models and scores of paintings are produced. The whole journey is re-lived in word, model and paint, and all the creative instincts of the child are harnessed—inspired by this fortnight of purposeful holidaying. And, of course, this time we had the tape to help with reminders where the memory needed a jog.

There was more to it than that however. We felt we owed it to the parents to give them as full a picture as possible of this first experience away from the apron strings. We thought that the most effective way of doing this would be to produce an illustrated tape lasting about twenty minutes.

John Pack, whose photographs are illustrating these articles, took some 300 shots during the journey. We assembled a tape which blended the actual recordings made with the nightly "reports" sent from Swanage, and with so much tape available it was possible to do this without narration. One event just flowed into the next with the naturalness that junior children can bring to their oral reporting. After assembling the tape we had to match photographs to the speech and the photos were made into slides.

The parents came to the school one evening and we spoke to them about all aspects of the journey. We showed them the enormous amount of creative work produced as a result of the visit, and we played the illustrated tape, giving them a very real picture of their child's school journey.

To sum up the educational value of the tape recorder on this journey: It encouraged children to put their experiences into words as well as in writing; it became a means of communication—a very real liaison between the school and Swanage in a way that encouraged intelligent listening and concentration on the spoken word by the children left in school, and it formed subtle propaganda for parents.

So many children think of the sea-side in terms of fun fairs and amusement arcades. One boy's heartfelt comment, "I've been to the sea-side before, but I never knew it could be so interesting" might have encouraged parents to direct, stimulate and encourage their children's interests a little on their next holiday.

This, then, has been the story, or part of it, of one school journey on tape. I hope it may encourage others to let the recorder work for them, not only on full-scale journeys like this, but on day visits to local places of interest.

Finally, a word of caution: It is important to keep in mind that the machine is merely a means to an end, which is to help and encourage children in their development. It must never become all important—in education this is the place reserved for the child!

particular politicians



insist on  
TRADE MARK  
**SCOTCH**  
BRAND  
*recording tape*



WORLD'S LARGEST SALES OF MAGNETIC TAPE

THE transmission of sound waves can be much more readily understood if it is compared with the behaviour of ripples caused by the disturbance of a still pool of water. It was shown last time that sound is radiated by means of particles oscillating about a fixed position producing a change in pressure. This is a movement along the axis of the piston producing the sound and it therefore gives rise to "longitudinal waves."

The essential difference between sound and water waves is that the movement of the particles producing the ripple is in the vertical plane. This is readily observed when a party of small boys tries to retrieve a ball from a pond. Their stones make mighty splashes but the ball just bobs up and down! So it is that we are able to make use of a water analogy to assist in the understanding of the transmission of sound.

What are the properties of that we are trying to illustrate? Said quickly they sound rather like the long string of legal terms of the lawyer in "Die Fledermaus"; namely, reflection, refraction, diffraction and superposition, or interference.

The small ripples are usually produced in a tank, and by using either a vibrating bar or a point, we may have either straight or circular ripples. It is convenient at this point to define a *wave front*. This is a line joining points of equal amplitude in either a plane or spherical wave, and of course in the case we are considering, is simply the crests of the ripples. *Reflection* can be observed when a series of ripples, in being reflected from a surface which it strikes obliquely, passes through the incident wave. This also illustrates the principle of *superposition*, which is that two series of equal waves will not destroy each other but their effects will be combined.

If the maxima of one series coincide with the minima of the other, they will cancel, and if the maxima or minima coincide then the result will be an increase or a decrease in the level at those points. A set of ripples generated at the focus of an ellipse can be shown to produce an equivalent set converging on the other focus. The points where the surface of the water is stationary are called *nodes* and the points of maximum movement are called *antinodes*.

The case of *refraction* is not easy to illustrate. This is the change in direction of a wave front at the boundary of two media in which a wave travels at differing velocities. Waves travel

# THE NATURE OF SOUND

**P. R. MILTON** *has been closely linked with the design and production of loudspeakers for some years. In this series of articles he discusses fundamental points on the general subject of sound and electroacoustics*

## Part Two: SOUND WAVES

faster through deep water than through shallow water and refraction can be observed by the sea shore when a line of waves is bent by a shelving beach, so that the crests are parallel to the shore. Refraction can also be produced by causing ripples to pass over a submerged object. If the object is a lens, giving varying depth, then the ripples will be focused above it.

*Diffraction* is a very important phenomenon. If a series of straight ripples passes through an aperture it will be bent at the edge of the aperture and emerge as a divergent wave front. The narrower the aperture is made, the more will be the divergence.

These simple experiments can be performed in the bath and should afford the potential Acoustic Archimedes a considerable amount of amusement.

Let us now relate these analogies to acoustic phenomena. The echo is the first example of a reflection which springs to mind. This may seem a bit far from our field of study but it does illustrate the fact that the "other" voice is in fact an acoustic image at an equal distance behind the reflecting surface.

The important thing is that the dimensions of the reflector should be large compared with the wavelength of the sound wave striking it. A multitude of echos produced by the many reflecting surfaces in a large

building gives rise to the effect known as reverberation.

Refraction is chiefly observed out of doors. There are two main causes, wind and temperature. We will consider the case of wind refraction first.

The velocity of wind is less close to the ground than it is at a height of a few hundred feet, because of the effect of friction. Sound emanating from a source on the ground moves upwards into a medium which is itself moving at a rate which varies according to height. The upper part of the wave front has a higher velocity than that nearer to the ground, and in maintaining a virtually plane front, the wave is bent towards the ground. The radiation which would otherwise have been lost upwards is recovered and we have the effect that sound carries better downwind.

The table in the last article illustrated that the velocity of sound in air increases as the temperature increases. Consequently in the early hours of the morning when the temperature of the air at the ground is lower than in the strata immediately above it, the wave front is bent downwards as before. During the daytime, the reverse conditions obtain and this negative temperature gradient bends the waves upward. The effect of the wind of course, complicates this to a certain extent.

The principle of superposition is borne out daily. We would certainly be in difficulties if the sounds from the instruments of the orchestra cancelled each other out! Nodes and antinodes are to be found in a room when a steady bass note is being played.

(Continued on page 24)

Queries on any of the elements of acoustics are invited from readers. Points raised will be discussed in future articles.

LOOKING back over the last few weeks of my diary I'm surprised to see how most of my notes relate to things that haven't yet happened. Forgive me if that sounds a little bit Irish, but I'll explain.

On a certain date towards the end of January my husband ordered some new equipment. It's all very special and professional looking and shudderingly expensive. It's also subject to a long delivery delay from the manufacturers, so I keep coming across untidy notes in his handwriting. "Three weeks to go. . . another fortnight . . . won't be long now." Lastly, a cryptic, "Blast them!" Needless to say, we're still waiting.

Then there's our own private "Audio Fair" which takes place in a very few days now. This is a show which my tape club is putting on as part of an L.C.C. exhibition, and it's



# My Diary

given me some idea of the work and effort which must go into the real thing at the Hotel Russell in April.

We only have two rooms to worry about, one with a "static" display of recorders and equipment, and in the other we are to have full-scale demonstrations of mono and stereo recording and playback. So far the club committee has talked endlessly into the small hours and as usual my coffee production has been strained—literally—to capacity. By the time you read this it will all be over, but I'll tell you about it next month.

I was very pleased to have a long talk with Mr. Wilmond, sales manager

of Simon Equipment Ltd., manufacturers of the SP4 and the Simon Minstrelle—an honest-to-goodness woman's machine if ever there was one. I shall have more to tell you about the Minstrelle in the near future.

Lastly, I see I have a date with a woman officer in the Salvation Army who uses a tape recorder extensively in her evangelical work. We do get about, don't we?



This charming young lady is one of a group of beautiful women who are currently appearing in AKG publicity material. The microphone, for the technical minded, is a condenser C30A (cardioid or omni-directional), specially designed for use in film studios

## Recording Anyone?

It's not that I object to tape recording, In fact I find that it's exceedingly rewarding As a hobby, or even as an occupation. What drives me up the wall is the intensive preparation. The frequency signal for measuring Wow And the marking tape that tells you NOW Is the time for making monitor checks, And the mud and spaghetti for sound effects, That editing thing and the scissors and glue, The spare jack plugs and the marvellous new Mixing device and the pick-up connection— No, we can't start yet, the heads need inspection. If only we had a bulk eraser We'd spend less time locating the place or The number on the counter—which we never know— Where those certain words are that have to go. We've got the pliers and the chisel and file. We may get going in a little while, As soon as we sort out a few more wires And note what the book says on pre-amplifiers, As soon as those cars and motor bikes cease— (Perfect recording needs absolute peace) Now—at last—perhaps we can try To get on the level with that evil green eye— But what's this! No reaction! No, nothing has gone— With so much to remember I forgot to switch on.

LILLIANNE BEARMAN

## CHILDREN'S CORNER

WHEN I was a little girl I used to live in Canada. That's a very long way away and my home was in a place that had lots and lots of snow every winter. We children used to love to go out and play in the snow, but when we had to stay indoors we used to like to play with puppets. Have you ever seen a puppet? I'm

sure you have on television, even if you haven't got one of your own.

Some, called marionettes, are like little dolls with strings on their arms and legs, aren't they? There is another kind that fits on your hand just like a glove. They call those "glove puppets."

If you could find an old glove you could try to make one. Don't forget to give him two little hands on the end of his arms and a funny face!!

Once you have one or two puppets just think what fun you could have

if you recorded a little play and then made the puppets perform the actions as you listen to the tape again. If you did it very well it would be like a real theatre! It's a long time since I was your age and we didn't have tape recorders then, so my friends and I had to speak our parts as we made our puppets move.

If your Mummy and Daddy do have a recorder you could have much more fun with their help. If I was you I should ask them if you could please try!

# Make way for the

# LADIES

Personality of  
the month.—3

Miss JACKIE JOY

A new regular  
monthly feature

Edited by  
Vivienne Gooding

I COULD not suppress a tingle of excitement as I looked up at the illuminated "Stage Door" sign behind the famous Windmill Theatre in London. Thinking of the brilliant cavalcade of entertainment stars whose first steps through this very doorway led them to the dizzy heights of their profession, I felt very insignificant as I inquired in a voice that could not have been more than a whisper for Miss Jackie Joy, singing and dancing star of the Windmill show.

"She's expecting you. If you don't mind going up the stone stairs she'll meet you before you get to the top."

The stone stairway spiralled up and up and up. Up past mysterious corridors, up past an open landing through which I caught a glimpse of stage lights and shirt-sleeved electricians and then up higher still until a voice from above called:

"Hello there! You're being initiated into our first trade secret. We girls go up and down these stairs so many times every day we don't have to worry about our figures. Not much, anyway!"

A few more protesting puffs brought me face to face with Jackie Joy.

I don't quite know what I expected her to be like. Vaguely I had imagined heavy make-up, a daring dress and a stagey manner. Instead, I found I was talking to an intelligently human young lady wearing less make-up than I sported myself for the occasion and dressed in a thoroughly conventional jumper and skirt.

She told me how she started singing in public when she was only eight years old and how she started at the Windmill when she was fourteen, to be forcibly ejected by the management the very next day when her age was discovered—she had exaggerated just a little when she applied for the job! However, five years later the theatre was only too glad to have her back and there she has stayed ever since.

Did you think that life in show business was easy? Jackie lives with her parents in Essex, and to do that she has to leave home before 10 o'clock in the morning and doesn't get back until midnight, having performed in no fewer than six complete shows in between. That's not my idea of a rest cure.

But it was this very hectic pace of theatrical life that first interested Jackie in tape recording. Part of her job is to prepare material for her solo spots in the show, and that she found a perpetual headache until she bought a little Sound Belle. Now she records her musical accompaniment, takes it home, rehearses, edits and cuts until she has exactly the right style and timing to suit the show.

No, she doesn't record for fun. To her, recording is very much part of her business life. How else could she decide just how best to run smoothly from one number to the next? How else could

she always carry her entire programme around with her? One of the reasons she bought this particular machine was that it was just the right size to fit into a voluminous hand-grip which travels back and forth to work with her every day. When she first casually told me that she slipped her machine into her handbag so that she could carry it about I had visions of something really startling in the way of tape recorders, but, of course, there are handbags and handbags, aren't there?

As we talked on I discovered that her life is ruled by a very complicated timetable which sometimes allows her to have alternate days off, but at others requires her to rehearse for a new show whilst her present one is still running. Naturally, I wanted to know what she liked to do for relaxation.

"To tell you the truth," she answered apologetically, "I'm afraid that very often I persuade my boy-friend to take me to a dance. . . ."

Jackie has her work, without which she couldn't live, her parents and her boy-friend of whom she is very fond. But she did confide in me that she has one other little weakness. Of all things she fills odd moments of the day by knitting the most delightful toy poodles. Dozens of them. And she knits them for fun and then gives them away. Well, well!

As I walked out into Great Windmill Street I felt strangely elated. I had not only got the information I was after but I think I had also made a new friend, and none of it was as I had imagined it would be a couple of hours earlier. But then that's life, isn't it?



## "The easiest thing in the world"

I WONDER how many of my lady readers noticed a new feature which appeared in *Tape Recording Fortnightly* recently. Under the heading, "Tape Exchanges" recorder owners who wished to exchange tapes with others of similar interests were asked to supply their names and address for publication.

The list of fourteen names and addresses appeared in the February 8 issue, but I noticed there wasn't a single lady amongst them, nor was there in the next list a fortnight later.

Now I don't believe that the modern miss is as shy as all that, but I do think that she is perhaps inclined to underestimate the pleasures and advantages to be had from tape correspondence. Even if you regard a tape recorder as a mechanical horror (and I know most of you don't) I can assure you that a personally recorded message is very much more personal, not less.

It's the easiest thing in the world to make really good, firm friends in this way. I should know because one of my tape pals recently travelled nearly seven thousand miles just to see me. Mind you, she had a look at a few of the other sights too while she was here. . . .

So if you've never had the experience of exchanging tapes like this follow the instructions carefully under the title "Tape Exchanges," on page 32 in this issue and then sit back and wait for the tapes to shower through your letter box. But don't blame me if, like the sorcerer's apprentice, you find you've started something you can't stop!

## TAPE QUOTES

"OFFERED, Hoover Mark II washing machine. Good condition. Wanted, tape recorder."—Elizabeth Allen's Swop Shop, "Woman's Mirror." And the very best of luck to you, madam!

"RUBY MILLER, still the gayest of the Gaiety Girls and preposterously young at 71, is dictating the second volume of her autobiography into a tape recorder."—Londoner's Diary, "Evening Standard." And the best of luck to you too, Miss Miller.

## NEW BOOKS

### Hi-Fi: Functions, and factors for installation systems

Installing Hi-Fi Systems by Jeff Markell and Jay Stanton. Gernsback Library Inc. New York. 3.20 dollars.

Jeff Markell, a hi-fi furniture designer, and Jay Stanton, an audio engineer, have combined to produce an unusual but informative American book on the subject of hi-fi. The first half explains the functions and components of all sections of hi-fi systems. The book then goes on to examine the different factors—both acoustic and aesthetic—which govern the installation of high quality sound equipment in the home.

Some of the details given might seem a little abstruse to non-American eyes (there is a chapter on the construction of different sorts of houses) but there is no doubt that such information is necessary for the person who wants good equipment and also wants it to look right.

The 224 pages are crammed with a variety of excellent illustrations and in particular, the pages on acoustics cover an exceptionally wide field.

### Do you want to play the bagpipes?

THE well known Scottish piper, Pipe-Major Donald Ramsey, is teaching Americans to play the bagpipes by post—on tape from his shop in Stirling!

Pipe-Major Ramsey led the Edinburgh City Police Pipe Band to victory in the world championship in 1950 and was in the news in 1957 when in tackling a fleeing gunman he was critically wounded.

He emigrated to San Francisco for health reasons, and news of his skill preceded him. He was soon the recipient of scores of letters from Americans wanting to learn to play the bagpipes, and during the years he was in San Francisco he coached three pipe bands and ran two evening classes a week.

Pipe-Major Ramsey received so many requests from people who wanted to learn to play that he couldn't attend each one personally. Then he hit on the idea of tuition by tape recorder. Pupils played over a piece and sent the recording to the Major who listened to it; recorded his comments and after adding a fresh lesson in turn posted back to them.

Returning to Scotland last year, the Pipe-Major became manager of a new bagpipe and kilt-maker's shop in Darnley Bow Street, Stirling, and has now over a hundred pupil pipers in America taking his tape-recording courses.

H. Burrell-Hadden

# BUILDING A STEREO MIXER

IN the last article in this series, the layout of the mixer sub-unit and the microphone pre-amplifier unit were described, and it was hoped to round off the series this time with an article describing the main frame assembly. However, one or two points may have been missed during the general description and so this article will be concerned with tying up the loose ends.

In addition, further development has taken place on the pre-amplifier chassis for the monophonic "spot"

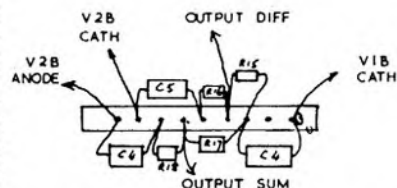


Fig. 1.—Sum and difference tag strip for mixer sub-unit

channels with pan-pots, and it was thought worthwhile to describe the new development.

Some points about the mixing sub-chassis may need some clarification. It will have been apparent when reading the previous two instalments that some components, shown on the circuit diagram, did not appear in the later published layout diagram. The particular components in question, referring to the mixer circuit diagram, are R8, R8A, R9 and the sum and difference network R15-R18, as well as C4 and C5.

It was originally intended that all of these should be mounted on the main sub-panel carrying all the con-

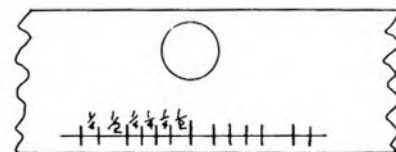


Fig. 2.—Extra wiring holes. Mixer sub-unit

trols, and R8, R8A and R9 will still be so mounted. The other components have now been fixed on a tag-strip mounted on the side of the chassis underneath, between the two valve holders. A layout diagram of this tag-strip appears in Fig. 1.

An omission was also made from the two diagrams showing drilling dimensions for the sub-chassis. All the holes positioned but not given a diameter are in fact clearance size for 6BA screws, although not all of them will of course be used for screws; some of them will take connecting wires. In view of this, care should be taken that no sharp edges are left after drilling.

In the case of the mixer chassis unit, the inclusion of the sum and difference components described above, means that the two holes marked 1 inch from the left hand end of the chassis will need to be moved. These holes are intended to take a length of tag-strip on top of the

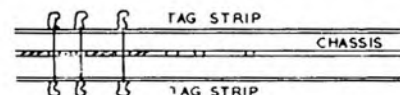


Fig. 3.—Extra tag strip. Mixer sub-unit

chassis, carrying power supply connections and output leads, and the only change necessary on the mixer chassis is to drill it to the same dimensions as the pre-amplifier in order to accommodate more tags.

Four more 6BA holes should be drilled in the mixer chassis to carry the leads to R8 and R9, their positions being shown in Fig. 2. A  $\frac{1}{8}$ -inch diameter hole with a rubber gromet should be drilled in a suitable position to carry the output leads from the sum and difference network to the tag-strip on the top of the chassis. This should complete the detail of the mixer unit.

If desired, for ease of subsequent connection when the units are

# BUILDING A STEREO MIXER PART SIX: FINAL CHECK-UP BEFORE ASSEMBLY

assembled on the main frame, a second length of tag-strip of the same size as the main tag-strip under the chassis, can be fitted over the chassis, over the holes shown in Fig. 2, and corresponding tags connected together. Fig. 3.

We turn now to the pre-amplifier circuit and consider the stereo pre-amplifiers first. The circuit shown in Fig. 2 of the January 25 issue shows one half of the pre-amplifier pair, and the three outputs will be joined in the final main frame assembly stage to provide sum and difference outputs which will be fed to the gain control.

It was originally intended to balance any slight difference in gain between the two halves by making R18 a variable control on the panel. However, this did not seem very satisfactory, and the final method is to omit R18 and to split R2.

In one pre-amplifier chassis of the pair R2 will become 1500 ohms (R2A) and 470 ohms (R2B). In the other chassis of the pair, R2 will be re-

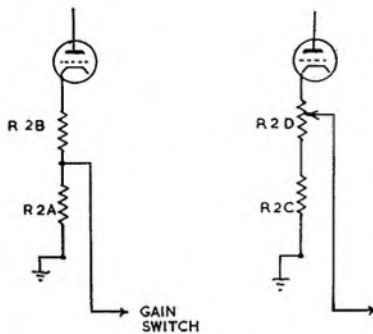


Fig. 4.—Modifications to first stages of stereo pre-amp unit

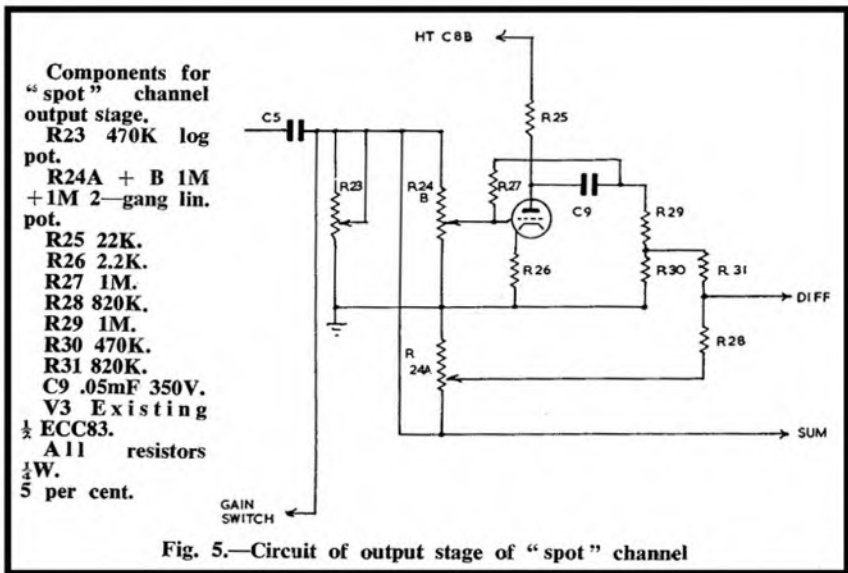


Fig. 5.—Circuit of output stage of "spot" channel

placed by R2C, 1.2K. ohms, and R2D a 1000 ohms potentiometer which becomes the balancing control and is mounted on the panel (Fig. 4).

We will now consider the microphone pre-amplifier for the monophonic "spot" channels.

It was originally intended that the single pre-amplifier chassis should be followed by two stages, similar to V2B in Fig. 2 of the January 25 issue, in order to provide the necessary sum and difference networks. Further development has shown that this is not necessary and some saving can be made. The new circuit diagram of the final stage of each spot channel is shown in Fig. 5, and the layout in Fig. 6.

Referring to this diagram, C5 is the same as before. R23 is the channel fader mounted on the panel, R24A and R24B, a two gang control, is the pan-pot. The problem was how to derive sum and difference signals from the two outputs of the pan-pot. Since these two outputs both originate from R23, R24 merely splitting its output into two related parts, it is quite obvious that the sum of these two outputs is in fact, the output of R23. All that now remains is to provide circuitry in order to obtain the difference signal.

In the case of the stereo unit the phase change was provided by means of a valve and this is done again. V3 acts as a phase changing amplifier whose gain is reduced to a low value by the feedback network C9, R27. This also ensures that the gain of the stage will be independent of the valve characteristics.

It is not possible to reduce the gain to unity by this method, since R27 would become so low that signal from the grid would leak through. Instead, R29 and R30 form a potentiometer reducing the output by the required amount. R28 and R31 are the two adding resistors and the difference signal is taken from their junction.

The changes in the output stage of the unit, described above, means that the negative feedback circuit for the switched gain setting control cannot be taken from the cathode of the final stage as in the stereo units. This is conveniently now taken from the top of R23 and makes for a very short connection as the gain setting switch

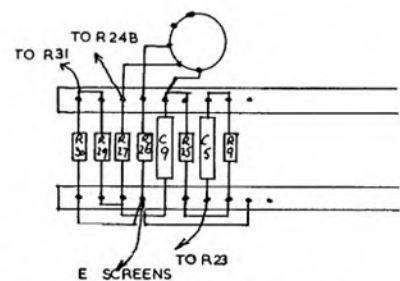


Fig. 6.—Layout of output stage of "spot" channel

is close by on the panel. The feedback is taken to the cathode of the first stage as before, R2 in this case remaining as shown in the original circuit diagram.

It is hoped that this article may have cleared up any points of uncertainty remaining and leave the way clear for the final assembly and setting up.

# ***Now is the time to record those sounds that may soon disappear for ever***

**T**HE days of the steam locomotive are numbered. This is the era of the diesel and electric trains. This state of affairs has not gone unnoticed by a keen railway enthusiast named Peter Handford. Way back in 1954 he realised that it would not be very long before many of the familiar railway sounds would disappear for ever.

Since Peter is also a professional sound recording engineer, with his own company, Transacord Ltd., he set to work with Ferrograph to record as many steam locomotive types as possible before they were withdrawn.

This was a formidable task and it has occupied every spare moment of Peter's time for the last five or six years. It involves, not only a lot of travelling and long hours, but also plenty of night work. Conditions for recording are more favourable then, although a little chilly during the winter months.

It is already too late in many parts of the country to record successfully, because of the infiltration of the diesel locos. These have a habit of standing in stations with their engines idling,

## **JOHN ALDRED interviews the greatest authority on train recording in this country**

thus ruining any chance of recording. Other forms of interference are aeroplanes, weather, and strong winds, all of which can be equally frustrating.

But before any recordings are attempted, a study of the local topographical conditions is made. The position of embankments, cuttings and bridges can sometimes cause a blockage which upsets the continuity of sound reaching the microphone.

Peter Handford's favourite mic is the Standard 4021 Moving Coil, sometimes referred to as the "ball and biscuit." A windshield is almost always necessary, as well as an assistant to move the microphone round as the train passes by. Nowadays, recordings are made on an E.M.I. TR51, using a 12-volt battery and converter, or on an E.M.I. L2 in difficult locations. Since 1958, however, most recordings have been made in two-

track stereo, using a Ferrograph 88, with a pair of matched A.K.G. Dynamic microphones.

All original recordings are made on L.P. tape, either at 7½ or 15 ips, and these are re-recorded on to a final master at 15 ips, using standard tape. This high tape speed ensures the minimum loss of quality over several transfers, and facilitates editing as well.

Although recording trains was a venture started for amusement only, it was not long before Peter decided to issue his recordings on gramophone records. Starting with just two 78 rpm labels, he has just recently issued his fifteenth 10-in. L.P.

Each record deals only with one particular engine, line, or district, and contains excerpts drawn from over 600 reels of recorded tape now in the Handford collection. These reels cover



**G**UITAR-PLAYING John Allison and his brother Bob won a talent competition organised by Stuzzi last year, and were awarded a recording test as part of their prize. As a result of the successful test, they were selected for the recent BBC Song For Europe programme.

Their song, "Are You Sure," took first place and was automatically chosen to represent Great Britain in the Eurovision Song Contest being held in Cannes this month.

## **BATTERY RECORDER CONTEST**

**YOU MAY NOT HAVE THE EQUIPMENT FOR FIELD RECORDING AS DESCRIBED ON THIS PAGE—BUT YOU MAY HAVE A BATTERY PORTABLE RECORDER. IF SO, YOU MUST SEE OUR NEXT ISSUE WHICH WILL CONTAIN AN ANNOUNCEMENT OF AN EXCITING NEW CONTEST ORGANISED BY STUZZI TAPE RECORDERS AND THIS MAGAZINE.**

*If you own or have access to a battery portable tape recorder, YOU may win a holiday in Paris.*

**Full details in our next issue—on sale April 5th.**



*Peter Handford has been recording trains for over six years and has collected some of the finest recordings on this subject. Right, he is seen on location with his EMI TR51, and below, surrounded by his equipment in the studio*

travelling on board and lineside recordings made all over Britain, as well as in Spain, France, Germany, Austria and Italy.

It takes two to three weeks of continuous work to sort out these excerpts and transfer them on to a final tape. Then details of the contents are compiled and checked in preparation for the disc cover. The actual cutting of the master disc is carried out by associates in Birmingham who specialise in this work. After a trial pressing has been approved, further discs are ordered in batches of 100.

Intrigued by the fact that there should be a market for these rather specialised recordings, few of which are to be seen in the shops, *Tape Recording Fortnightly* asked Peter Handford what happened to all his records.

"They go mainly to other railway enthusiasts, via mail order, and quite often to railway employees themselves, especially loco crews," he explained. "Some people also use them in connection with their model railway layouts."

*Do you ask the driver for any co-operation when making recordings on a station platform?"*

"No, never. I have found to my cost that this is very bad practice, resulting in recordings which are far from natural, even if they are spectacular," said Peter.

"Even a sudden hiss of steam can upset my recording levels for a train leaving the station. But I do talk to the driver beforehand when I intend to travel on his train, so as to get some idea of what he intends to do at key points along the line where I wish to record."

*"Where do you record from aboard the train?"*

"Either in a reserved compartment near the front of the first coach, or in the guard's van behind the tender. Occasionally I travel on the locomotive footplate."

It was in the guard's van one day, travelling from Doncaster to King's Cross on a special train, that Peter found himself speeding along at a mere 115 mph! The stereo recording he obtained has yet to be made into a gramophone record.

"All my work," says Peter, "depends on the very valuable co-operation of British Railways, who keep me informed of various engine movements. I also obtain their permission before wandering on to railway property to secure lineside recordings."

And Peter does not have to travel far



for that, since the main line from Marylebone is just at the bottom of his garden!

A typical week-end's recording starts on Friday evening, after a normal day's work, dashing to catch the night train to Carlisle. Saturday is spent actually recording, and the next night travelling home again. Sunday is taken up with answering mail order inquiries, and then it's back to more mundane work on Monday morning.

*"What advice can you give our readers who may wish to record trains for themselves?"*

"Just make sure of two points. Do NOT place your microphone too close to the track, and keep your volume down to avoid overload. There is quite a peak of sound as the train actually passes. Then, providing you have at least a

schoolboy's knowledge of railway operational procedure, coupled with endless patience, there's absolutely nothing to it."

Transacord's Trains are now used by the B.B.C., who have a standing order for all records issued, and British Railways themselves take a keen interest in Peter Handford's work. Most of his customers are very appreciative of the efforts made in this sphere of authentic railway effects, and often write or call to say so personally. Loco crews like to drop in for a chat when they have some time to spare between runs, and they listen to the latest recordings of their own engines.

But Peter is still waiting to find out which driver gives an appreciative Toot Toot on his whistle at 2 a.m. as his night express passes the Handford garden!

**Y**EARS ago, I had worked at Pont Kenfig, and I knew that the village square would be occupied, that bright morning I returned, by the old, retired miners, looking for a gossip.

The bus from Bridgend rumbled to a stop, opposite the post office.

"Pont Kenfig Square!" the conductor announced. This was the village in which the poet, Gorseinon Philips, had spent his life; now, ten years after his death, I had returned, with my tape recorder, to find out more about him. This might even be worth a book, or long-playing record, I thought optimistically as I left the dusty, red bus. A grey-bearded man, half concealed behind the morning newspaper that he held, peered at me.

"Good morning," he said. "Lovely day, isn't it?" A visitor to the village was always worth a conversation. "Is that a camera?"

"No," I replied. "It's a tape recorder."

"Oh," he said, as if he had known that all the time. "Aye, we often have people up from the N.C.B. to photograph the pit."

He nodded towards the colliery. "Are you from the N.C.B. then?"

"I used to work here once," I explained. "At the Co-op. But I moved away, to England."

The grey-bearded man folded away his newspaper.

"Well, fancy that," he smiled. He turned his head and called to a group of men standing in front of the Station Café. "This gentleman is from England, boys."

I was a little embarrassed, but at least one of them might have known Gorseinon Philips. Some of the men drifted nearer.

"Mind you, England isn't so far away as it sounds, is it?" my companion continued. "But when you've lived here all your life . . . well, even Cardiff seems a great distance from us."

"I'm interested in a poet that lived here once," I explained.

At this, the other men drew nearer.

"Poet is it?" piped a small fellow in a check suit. "Plenty of poets in Kenfig!"

**Just Mike, entering the recording contest, finally gets down to the actual production. But first he day-dreams . . .**

# Recorded for Posterity

"That's Willie Watkins," said the grey-bearded man. "He's something of a poet. Won last year's Eisteddfod at the Workmen's Hall."

"I've got one of my poems in my pocket," Willie smiled, searching through the papers, packets and boxes in the recesses of his jacket.

"Willie works at the pit-head baths, but he's on the sick list at the moment. Had mumps—at his age!!" The grey-bearded man shrugged his shoulders. "Sheer carelessness. Mind you, he does write good verse. Why don't you ask him to read one of his poems to you?"

The village poet needed no invitation. He stood on the wooden public seat near the railings and began to read from a piece of paper, in a thin, penetrating voice. I decided to record this souvenir of my return visit to Pont Kenfig, and, having started the machine, held the microphone towards the gesticulating Willie Watkins.

"It's no use saying it in Welsh, Willie," a gruff voice remarked. "The gentleman's from England."

"Oh," said Willie, pausing. "English translation."

And he said some words that appear lifeless in print, yet, at that moment, echoed the quality of that valley's experience.

*"Life is like the water that falls in torrents  
From the hills about the valley in shadow,  
Rushing from the heavens to the darkened rivers  
Black with coal, and sweeping to the sea."*

*So man runs through life, his source above him,  
Caught in the restless tide of manhood:  
But never in the river of experience  
Can he forget the mountains to which he would return."*



**T**HE men—now numbering about twenty—applauded the poet, who blushed, and jumped from the seat. I stopped the machine.

"That was wonderful," I said. "Have you had any work published?" Willie Watkins laughed.

"Who'd be interested in my poetry?" he said. "Pont Kenfig is full of poets. There were seventy-four entries for the poetry competition in last year's Eisteddfod."

"What about Gorseinon Philips?" I asked, remembering the reason for my visit. "Now, he was a good writer, wasn't he?"

"I don't think I've read any of his work," Willie reflected. "Any of his books in the Workmen's Library?"

"He lived right here in Pont Kenfig!" I cried. "He was well known in England—and America. He wrote poems about the hills. . . ."

"Everybody does that," Willie said. "It's like a hobby here—or a disease! Mr. Protheroe, in the Post Office, probably knew him. Mr. Protheroe knows everyone!"

He wished me good-day, and the man walked up the hill towards the



billiards room at the Institute. Only the grey-bearded man lingered behind.

"Mind you," he sighed. "Since we've had the television here, poetry has suffered. Willie's lucky—he can't afford it. I used to do a bit of writing myself once, then my wife insisted that we have the television. She loves Westerns, mind, and it keeps her out of mischief. I suppose. But it's not very good for poetry. You need peace and quiet for a good verse. . . ."

"Have you ever heard of Gorseinon Philips?" I inquired.

"Can't say that I have. Of course, it might have been someone else writing under an assumed name. You see, we look down on people that make money out of writing. It's a gift, not to be used for selfish ends."

"But his poetry made plenty of people happy," I protested.

"Including his publishers, I suppose." The grey-bearded man followed the others, now turning the corner of the hill.



**T**HE Postmaster, Mr. Protheroe, was more helpful. A small, bright, beaming, bespectacled man, he welcomed me as if I were some long-lost relation, now united.

"Come into the back room for a cup of tea," he invited. "My sister can look after the shop."

The room at the rear of the shop was small and bright, like Mr. Protheroe himself. From the depths of an old, comfortable, antimacassared chair, I told him the reason for my errand.

"I wanted to record some personal recollections of Gorseinon Philips," I explained. "He was a very fine poet."

"We've had some very talented people in Pont Kenfig," Mr. Protheroe said in a soft, Welsh voice.

"So I understand. But did you know Gorseinon Philips?"

"Oh, yes, of course I did." I began to unstrap my recorder, but my host held up his hand. "What I tell you must be in complete confidence. Not many people know as much as I do."

He offered me a plate of crisp,

home-made biscuits.

"Not that it matters now," he continued. "I suppose the truth will have to come out one day. You see, there was quite a lot of poverty here in Pont Kenfig; most of the men were unemployed."

"One day, Richard Gorseinon had a wonderful idea. He suggested that all the men should write some poetry, and try to get it published. Poetry doesn't usually make much money, of course, but it gave the men something to think about."



"So they elected Richard Gorseinon and Hugh Philips as the editors of the book, which contained all the best poems. They sent the book to a publisher, and, to their amazement, it was accepted. As you know, the book sold very well, and all men here shared the proceeds. And since none of the men wished to be known by name, they invented the name of Gorseinon Philips, and pretended that he really existed. Even thought up a life story about him."

The Postmaster chuckled, recalling the invention of the great poet.

"We pretended that Gorseinon Philips was something of a recluse, and avoided any receptions in his honour. Mind, we never expected the poetry to be so successful. We had to write poems all the year round to keep up with the demand!"

"Well," he concluded, "things became easier for the men. Work came to the valley, and it was agreed that the whole business had gone far enough. The men here don't like to make money out

of poetry, you know. So we announced the death of Gorseinon Philips on January 20th, 1951."

"But I came all the way from Leicester," I gasped, "to record the memories of people that knew him. I was even thinking of writing a book about him."

"You've done better than that," Mr. Protheroe said, smiling. "You've recorded the voice of the author of Gorseinon Philips' best work."

He pointed to my portable machine. "I did see you recording Willie Watkins, didn't I?"

"Willie Watkins?" By this time I was too astonished to do more than repeat the name. "Willie Watkins?"

"He's no mean poet," Mr. Protheroe stated. "Though I've a fancy that Ben Rhys may win the Eisteddfod next year."

"But why doesn't Willie Watkins get some of his work published?" I said. "He could be famous!"

"I don't suppose anyone on Pont Kenfig wants any more fame than that of winning the Eisteddfod at the Workmen's Hall . . . people have different ideas of success, you know."



**L**ATER that afternoon, I caught the bus back to Bridgend.

The conductor, a friendly man, winked at me.

"They're a lot of liars in Pont Kenfig, sir," he informed me. "Nice people, but terrible liars. They've got a reputation for it."

"Really?" I said. "Then tell me, have you ever heard of a poet called Gorseinon Philips?"

The conductor looked either side of him, then spoke in a subdued voice.

"Of course I have."

I started the recorder quickly, holding the microphone towards the conductor.

"Of course I have," he continued.

"As a matter of fact, he was my eccentric uncle. He lived in a caravan pulled by a cow. He used to write his poetry on the back of all the unpaid bills he had. He was a marvellous man, mind . . . I don't suppose anyone knew Gorseinon Philips as well as I did. . . ."



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## The nature of sound

(Continued from page 15)

Points in it can be found where the sound is louder than at others. A diagram could be drawn showing points of equal pressure amplitudes, which would then indicate the presence of standing waves.

We come next to the diffraction of sound. The effect is used in some loudspeakers to improve the spread of sound by placing a slotted baffle in front of the cone. There are several drawbacks to this idea, however, not the least of which is the fact that standing waves are set up between the cone and the baffle.

When sound waves leave the loudspeaker, certain of them, depending upon the wavelength, are diffracted by the edges of the baffle on which the loudspeaker is mounted, and by the edges of the cabinet. The interference patterns thus set up can alter the frequency response of the unit and so special cabinets have been designed in an effort to overcome this problem.

It is very important to have at least a working knowledge of the behaviour of sound and the first two articles in this series will prevent a lot of definitions from interrupting the main theme later on.

In the next issue I shall be dealing with the decibel, since this appears in many disguises throughout the science of acoustics. Meanwhile, may I wish you happy bathing?



"When I joined the march I thought the sign was a tape reel."

## Equipment Under Test

# MARCONIPHONE

# MTR/1

**T**HIS is another tape recorder using the now familiar Collaro "Studio" Tape Deck. In this case the deck mechanism is provided with an interlock to prevent accidental erasure of a recorded tape, and the two control knobs to the left and right of the tape machine control respectively the selection of record or

play, and the selection of the three speeds  $1\frac{7}{8}$ ,  $3\frac{3}{4}$  and  $7\frac{1}{2}$  ips.

Two further controls are provided, a volume control which is combined with the on/off switch, and a tone control. Two inputs are provided, one for recording from radio at high impedance and the other for a high impedance microphone.

## TAPE IN THE SCHOOLS

(Continued from page 12)

only limited by the ingenuity and imaginativeness of the teacher who uses it.

As a French teacher myself, I have made extensive use of this aid over nine years. There can be no doubt of its value for language teaching at any level: for the individual pupil who needs some extra help it can offer unlimited practice in improving pronunciation by imitation; this method can also be used in class; it is surprising how helpful it can be to a student of a language to read into a microphone, for it is often only by hearing himself actually speaking that he can be persuaded of the errors he is making.

Extra help with dictations and with the stories for reproduction can also be offered in this way to individuals or groups who are approaching examinations. Play-reading can now go one step further and ends up as a polished recording after extra practice in class, willingly undertaken. More and more French voices can be offered to our pupils, instead of the teacher's alone. Here again the opportunities are tremendous and their educational value incontestable.

Everybody has heard of so-called "tape-sponding" (a ghastly word) and no one can deny that links with schools and individuals abroad can play a valuable part in education. It is quite surprising how such links can be lived up with the use of the tape recorder when there are lively minds at work at each end. We are in touch with schools in Germany, France and the Soviet Union,

these representing the three main languages taught in our school.

In the really keen school the presence of the tape recorder will lead to the forming of a recording club like our own St. Christopher Recording Unit.

Here again the possibilities are boundless: recordings for hospital patients, for blind folk, entertainment on tape for old people's homes, these are just a few of the ways our young people help others.

Our own Unit has also gone out making programmes about the expansion of our town, about the youth of today, about accidents in the home; we have recorded air shows, traction-engine rallies, go-cart races, veteran car rallies, views on our local take-over bid; we have recorded school plays, local concerts and a score of other activities; and all this has taken our young member out and about, visiting local personalities, mayors, town councillors, headmasters, fire-chiefs, finding out about local conditions and opinions by interviewing passers-by in the streets. And we feel we are only just beginning to tap the vast educational possibilities of this medium.

"No educational evidence," Sir? I can see little educational evidence for spending astronomical sums on fabulous new school buildings if they are still to have classes of 45 and more, with no chance for the individual child to receive proper attention. And if these supermarket schools are then to be run by incompetent teachers and local authorities, what about my rising rates then?

No, give me smaller classes, in sound schools (they really *don't* need to be used as competition grounds for ambitious architects), taught by keen and able teachers, with the help of modern teaching aids (including tape recorders). Then perhaps I shall pay my rates with a smile!

## By H. Burrell-Hadden

The microphone provided with the machine is an Acos crystal type, and space is provided for stowing this and the mains lead in compartments inside the cabinet.

The record/playback amplifier is a well designed unit consisting of three valves and a magic eye level indicator. The loud speaker is a 7 x 4 inch elliptical type mounted facing upwards at the front of the cabinet. An output is provided at high impedance to feed a high fidelity amplifier, this output being controlled by the volume control. Under this condition, the loud speaker in the recorder is still live, a feature which, as the instruction book says, is useful for monitoring the programme when the external amplifier and speaker system is remotely situated. However, when this is not the case this loudspeaker could be a nuisance and some form of switch to enable it to be turned off would be an advantage.

Following my usual practice when reviewing a new machine, the first thing I did with the MTR 1, was to make a music recording at all three speeds. On playing back these first recordings it was evident that something was wrong. A rhythmic thumping was audible throughout each recording, the frequency of the thumping depending on the recording speed. Clearly, something was wrong with the capstan drive. On investigation it was found that the rubber idler wheel in the drive system was not running correctly, and a simple adjustment of its set screws soon put matters right. A further series of recordings was then made and satisfactory reproduction resulted.

The usual frequency response tests were made, first on replay with a pre-recorded tape at 7½ and 3½ ips, measurements being made both on the loudspeaker output and the high im-

pedance output. In this condition the response was within the makers tolerance from 200 to above 12,000 cps at the faster speed, but there was a rise of 6dB at 60 cycles on both outputs.

At 3½ ips the response was well within the specification at both ends of the spectrum, in fact it was substantially flat as high as 8,000 cps and down to 40cps. This is better than the makers claim, their quoted figures being 60-5,000 cps.

The record/play characteristic was then measured and at 7½ ips was found to be well within the manufacturers tolerances. At 3½ ips the bass end was well within tolerance but the high frequency fell off slightly earlier, the -6dB point occurring at 4,000 cps, a thousand below that specified by the makers.

At 1½ ips no standard replay characteristic exists, and so record/play measurements only were made and the makers specification was again met with ease.

The signal to noise ratio was measured at 1,000 cps assuming the tape to be fully modulated with the magic eye closed and was found to be -48dB, again within the manufacturers tolerance.

Wow and flutter were insignificant at 7½ ips, but progressively more perceptible on instruments such as piano at the slower speeds.

The microphone supplied with the machine, though an inexpensive crystal model of limited frequency response, is quite good enough to enable some very good recordings to be made.

The appearance of this machine is



very good indeed. The case being covered in a hard-wearing plastic material, quite pleasing to the eye. The dimensions of the unit are somewhat unusual being approximately 18 inches square and 6½ inches deep. This shape arises because of the unusual mounting of the loudspeaker, which as mentioned above faces upwards instead of out of the side of the cabinet as is more usual. The weight at 28 lb. makes this unit reasonably transportable.

I can recommend the MTR 1 as good value for money at its purchase price of 42 gns.

### MANUFACTURER'S SPECIFICATION

Frequency response: 60-10,000 cps at 7½ ips; 60-5,000 cps at 3½ ips; and 60-2,500 cps at 1½ ips.

Signal-to-noise: -45dB referred to maximum output from fully modulated tape at 1,000 cps.

Output: Low impedance, 3 ohms.

Power output: 2½ watts for 10 per cent distortion at 1,000 cps. 3 watts maximum output.

Mains consumption: 85 watts.

Replay Wow and Flutter: 0.15 per cent at 7½ ips.

Dimensions: (Overall) 18 in. deep, 17 in. wide, 6½ in. high.

Weight: 28 lb.

Mains voltage: 200/250V., 50 cycles. AC.

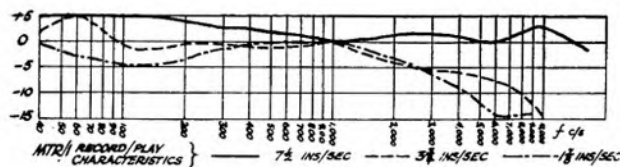
Loudspeaker: 7 x 4 in. elliptical.

Rewind time: 65 seconds for 1,200 ft., 45 seconds for 800 ft.

Inputs: Microphone, 1.5 mV; Radio 150 mV.

Valves: ECC83, ECL 82, EM84, C3B rectifier.

Makers: The Gramophone Company, Hayes, Middlesex.



Left: Frequency response of the Marconiphone MTR/1.

## THE PROBLEMS OF THE THIRD SPEAKER

**T**HERE are some audio technicians whose work we watch very closely because their conclusions tend to be those that take us further forward on the voyage to perfection, although at the same time they may force us to alter our direction to a greater or lesser degree.

Their job, like that of any other scientists, is to pass on the news of their discoveries, regardless of whether it could prove to be pretty inconvenient to act on them. Stereo came, with its call for two speakers instead of one; and slowly but surely people are coming to accept the extra unit, aided by the follow-up work of loudspeaker designers who have been doing their best to make quarts of sound come out of pint-size cabinets.

What, then, should we think of Hugh Brittain's work on the use of a third speaker and the subsequent announcements by the General Electric Company of their three-speaker system "allowing the same stereo effect to be heard from any point of the room"?

In the first place, I think, we must be objective, like the technicians themselves, and welcome any improvement that can be demonstrated regardless of the domestic difficulties the system might threaten to involve us in. If fear of initial complications ever came to be a reason for ditching an awkward modification at birth then progress would be over for ever. Let us have the truth, whatever it may be, and set about ironing out the complications afterwards.

In this particular case I think that one of the important aspects may be that the



An impression of a three-speaker system by the General Electric Company

improvement aimed at is not so much in pure quality of stereo sound as in the availability of the best possible stereo over the whole room. In other words, the domestic sacrifice, if it is made, is in exchange for greater mobility and the accessibility of first-class stereo to a lot of people at once instead of just a few. This is certainly a less agonising choice than one which involves the prospect of missing the top quality altogether.

I can also detect several rays of light if the move towards three speakers develops. It would seem that the positioning of the speakers should become less critical. As a result, the advantage of building speakers into walls and bookshelves would become pronounced. Faced with the absolute necessity for making speakers unobtrusive, we could end up in a more satisfactory position than that represented by the toleration of two conventional units.

## TAPE SCHEME FAILS TV TEST

**T**HOUGH described by Sir Miles Thomas as "a most humane and praiseworthy idea," an Ilford tape enthusiast's project of a sound news magazine for the blind was considered a poor commercial proposition by three judges in the *Daily Mail* Get Ahead Contest last month.

Mr. Walter Gillings, of 115, Wanstead Park Road, Ilford, who produces *What Goes On Here* on tape as a voluntary service to Ilford Blind Welfare Association, appeared on BBC television in the second heat of the competition, which offers over £7,500 in prize money.

During the programme, Mr. Gillings was questioned about his plans for *Blind Bulletin* after a film had shown him and his son, Ronald, making their tape recording of local news and presenting it at Fellowship House, Ilford, where blind people were seen listening to their monthly magazine on tape.

*Daily Mail* editor, Mr. W. Hardcastle, asked if the radio would not be a better medium for *Blind Bulletin*. Mr. Gillings disagreed, explaining that the tape recording he would issue was primarily intended to be played over at social centres where blind people assembled, though it would also be available to individual blind people with tape recorders.

He told Sir Miles Thomas he needed the prize money to buy the equipment to make copies of the recording for distribution to his subscribers.

Sir Miles Thomas applauded Mr. Gillings "laudable idea," but had doubts about the commercial application. Mrs. John Profumo (Valerie Hobson, the film star), another of the judges, felt the idea was not commercially practicable, that one of the established organisations for the blind could do it with greater effect.



## SOUTHERN DEALER EXPANDS TO NORTH

**A** GLASGOW showroom has been opened by Recording Machines Ltd., the Portsmouth and Southampton dealers, who specialise solely in tape recorders and dictating machines.

They are noted in Hampshire for stocking tape recorders to suit every budget and every taste—from the small "pocket notebook" recorder to the giant-sized stereophonic machine, and have trained technicians on hand at all times to service and deal with faults in any machine.

The official opening ceremony was carried out by Scots singing star and TV personality, Kenneth McKellar, who is pictured right (second from right) shortly after presenting a Philips tape recorder on behalf of the firm to Mrs. M. Forrest, Secretary of the Association of the Parents and Friends of Spastics. With them in the photograph are left: Mr. Neil Ross, Chairman, and Mr. Charles Ford Sales Director of Recording Machines Ltd.

# New Products

## PRICE CUTS IN ELIZABETHAN RANGE

A NEW tape recorder—the Popular de Luxe—is to be added to the Elizabethan range and big price cuts are to be made on two machines in the current range.

Selling at 24 guineas including tape, spare spool, microphone and radiogram connecting lead, the new machine is designed to come into line, visually, with the other machines in the range and its two-tone rounded cabinet is similar in styling to that of the FT1 and FT3. It weighs 18½ lb. and measures 15 x 11½ x 6½ in.

Fitted with a BSR Monardeck deck with a speed of 3¼ ips, it incorporates volume and treble cut tone control, inputs for microphone, radiogram and telephone attachment, external speaker socket, safety record interlock and magic eye column recording level indicator. An accessory compartment is included in the cabinet.

Operating on a mains voltage of 200-250 AC only, the circuit includes 12AX7, ECL82 and EM84 valves giving 2½ watts output through a 7 x 4 in. high-flux elliptical speaker.

The frequency response is given as 60-8,000 cps.

The price reductions will be made on the Elizabethan FT1 and FT3 recorders.

The prices of these two machines have been cut with effect from March 6. Elizabethan are introducing a rebate scheme for the benefit of retailers and wholesalers who hold stocks of the two machines at the old prices.

The FT1 has been reduced from 39 to 34 guineas; and the FT3 from 55 to 45 guineas.

A four-track version of the Elizabethan Major is to be introduced, at the same price, 65 guineas.

*Elizabethan (Tape Recorders) Ltd., Bridge Close, Oldchurch Road, Romford, Essex.*

## LOOK OUT FOR THESE MACHINES

ROBUK ELECTRICAL INDUSTRIES LIMITED announce that 21 of their RK3 tape recorders were stolen recently. The following are the serial numbers of the missing recorders.

1015; 1041; 1105; 1148; 1161; 1184; 1207; 1326; 1488; 1496; 1557; 1618; 1654; 1714; 1842; 1845; 1853; 1862; 2092; 2301; 2385.

Should any dealer be approached for service or spares for any of these machines, it would be appreciated if information could be passed immediately to Robuk Electrical Industries Limited, 559/561, Holloway Road, London, N.19. Tel: ARChway 1022.

Right: The new Popular de Luxe



## Now you can record stereo on the Simon Minstrelle

BUILT-IN facilities for stereophonic recording are featured on the new four-track version of the Minstrelle by Simon Equipment.

Their modified recorder now has a plug-in connection for a matching, combined recorder and stereo amplifier. Either or both Minstrelle units are available in sapele mahogany table cabinets or with Armoride Spanish blue hide portable cases without additional cost.

As with the earlier twin-track version, the Minstrelle 4 uses the Garrard 3¼ ips tape deck with the magazine loading feature. Features of the new model include superimposition on all four tracks; full monitoring and tone control; straight-through amplifier; and a built-in crystal microphone.

With this new model, it is possible to playback existing twin-track recordings and add two more tracks without losing the original signal.

The Minstrelle 4 retails at £43 1s.; and the 4S stereo amplifier at £23 2s.

*Simon Equipment Limited, 48, George Street, Portman Square, London W.1.*



## NEW MIXER UNIT

NEWS of a new tape mixing unit is provided by Electronic Ades (London) Limited who manufacture the Tape Mixing Ade.

This is a compact unit housed in a 4 x 3½ x 1½ inch plastic box, operated by three switches, and claimed by the



makers to effect endless permutations of composite recordings as required.

Standard jack plug sockets are incorporated in the Mixing Ade, illustrated above, which retails at five guineas.

*Electronic Ades (London) Ltd., 6, Alpha Road, Teddington, Middlesex.*

## LONG-PLAY MINIFON

E. M.I. have introduced an improved and longer-playing version of the Minifon P55L pocket-size battery-powered wire recorder. The new model provides a recording/playing time of five hours.

*Office Equipment Division, E.M.I. Sales and Service Limited, Hayes, Middlesex.*

Left: The new Danish recorder recently announced by Allied International. Full details of this machine, the first to come from Denmark, were given in our issue dated March 8.

# WE DO NOT WISH TO BE HARD ON AMATEUR CLUBS

## Letters to the Editor

WE note that a large amount of space was devoted, in the February 22 issue of *Tape Recording Fortnightly*, to copyright matters and in particular to the activities of this Society. We trust that you will give a hearing to this reply on behalf of the copyright owners we represent.

As you rightly point out in "News from the Clubs," the Copyright Act, 1956 (in Section 2) forbids the unauthorised recording of copyright music, whether or not the recording is meant to be played in public. This rule applies whether the recording is to be made live or indirectly.

It is no answer to state, as the Federation of British Tape Recording Clubs do, that clubs do not record copyright music for any reason other than to demonstrate equipment or to teach recording techniques. Our comments on this are, firstly, that licence is required before copyright music may be recorded for these purposes; and secondly, that several clubs do in any case indulge in other activities, such as making up recorded request programmes, which cannot be said to be recordings made for purely technical reasons.

We do not think that any self-respecting amateur wishes to claim an unlawful privilege simply because he is an amateur. The composer depends, for his livelihood, on payment for the use of his work—in fact, his private property—whatever the nature of that use. It is no more permissible to make an unauthorised use of someone else's skill and labour than it is to steal a diamond ring, or a spool of tape, from a shop.

In case there is some legend that this Society wishes to be hard on amateur tape recording clubs, it should in all fairness be acknowledged that we are always willing to grant licence to any club in consideration of an annual fee which is, as no one could reasonably deny, merely nominal.

B. W. PRATT.

*Secretary, Mechanical-Copyright Protection Society Ltd.*

## IS THIS FAIR TREATMENT?

IN the last issue of *Tape* (February 22), we read of the middle of present-day copyright laws, and also of the behaviour of the Mechanical Copyright Protection Society. I feel that too few people realise what a ridiculous state of affairs actually exists at the moment.

My friends and I hope to enter a tape in the 1961 Competition. We wished to include, as a background effect, a short sequence of "Who's Sorry Now?" as sung by some villagers in a pub. I contacted the publishers of the song, who

readily gave their consent for this use of the song free of charge, but told me that I had also to get permission from the Mechanical Copyright Protection Society.

I went to their head office, where an official also told me that he could not see why there should be any charge in this particular case.

However, the Secretary of the Society, instead of confirming this, ruled that although this was going to be a background noise, of non-professional people singing, and in fact would only last for about *ten seconds*, the fee would be 10s. This figure seems to have been decided quite arbitrarily.

Is it surprising, therefore, that such attitudes antagonise amateur tape recordists, and make them wish for a new look at the Copyright laws?

PATRICK TUCKER.

*Sevenoaks, Kent.*

## CONTACT IN GERMANY WANTED

I HAVE only recently been introduced to your fine magazine, and feel that you may be able to help me contact some German tape enthusiasts.

I wish to contact some relatives in Germany, and would like to have details of any club or individuals over there, that would be willing to pass on tapes.

My recorder operates at 3¼ and 7½ ips, and I will undertake to reply to any three-inch reels the same day and return them by airmail. Cards and letters will also be more than welcome.

ANDREW TIMKO

*2300, Lake Avenue,  
Elyria, Ohio,  
U.S.A.*

## ON BUYING REELS OF TAPE

### *The voices of two dealers*

OUR name is not unfamiliar to you as dealers in tape recorders only. Very rarely do we burst into print after reading your columns.

It is impossible, however, to refrain from commenting upon two items in Mr. A. E. Beeby's "Tape Talk" recently.

Firstly, the dealer who had no call to stock 7 in. DP tape was not a tape recorder specialist, neither had he any experience of the trade.

Secondly, the one who perpetrated what almost amounts to a fraud wants dealing with by his customer, the quickest way being for the customer to write direct to the manufacturers of the machine and get him crossed off the list of suppliers.

It is surprising today how many people buy off dabblers rather than go to a reputable firm, the concluding moral being an obvious one.

A. DIXON.

*Dixon's Tape Recorders, Manchester.*

YOU called at the wrong shops Mr. Beeby. We have carried double play tape in all sizes up to and including 7-inch since it was introduced. We stock BASF and EMI in full range.

We must admit, however, that we do not sell very much and, frankly, I cannot

see the advantage of it. At 7½ ips a standard-play is long enough for most musical works—certainly a long-play 7-inch tape is.

Furthermore, double-play is very fragile, and on a 5¼-inch spool extremely difficult to handle once it has been unwound. It seems impossible to rewind it as tightly as it was wound originally, with the result that the outside turns keep falling off the reel when one is trying to thread the tape through the recorder sound channel.

O. V. WADDEN.

*Director, Wadden & Hill Ltd.,  
Hounslow, Middlesex.*

I WAS interested in your note in this week's *Tape Talk* (February 22 issue) with regard to the reader who bought the 35s. 5-inch pre-recorded spool.

While one cannot do anything but sympathise with him, it is clear that he has never sent to America for 7-inch spools of Stereo tape at \$11-95 cents and received a half-full spool with a maximum playing time of 15 minutes. England is not the only place where you are taken on.

A. CAMPBELL GIFFORD.

*Barnet, Herts.*

Have you an idea, a complaint, or a bouquet to hand out?  
Write to us about it. Letters not for publication should  
be clearly marked.



# Letters to the Editor

## More kind words

I HAVE a Cossor CR1602 recorder, and was so keen to learn the correct applications of tape recording that I purchased the first book I saw on the subject. This cost me 7s. 6d., and was a waste of money.

My next effort was a copy of *Tape Recording Fortnightly*—more like the thing. . . .

D. R. WALKER.

Glasgow S.4.

I SHOULD like to express my appreciation of such a fine magazine. After buying only one copy, I immediately placed an order for a year's supply and I have not been disappointed.

D. J. McCURDY.

Wigan, Lancs.

. . . I enjoy your magazine tremendously and only wish it was weekly.

ROGER STEVENSON.

Roe Lane, Southport.

## “The law limits my right to expose certain machines as rubbish”

WITH regard to the letter from Sqdn. Ldr. F. Westcott (*February 8 issue*); I feel that, as one of the *Tape Recording Fortnightly* reviewers, I must point out that a machine is judged on (a) does it meet the manufacturers claims? and, (b) is it value for money? It is with the first of these that I wish to deal.

When I state in a review a tape recorder “meets all the claims made,” I mean just that and no more. The point is this: when, for example, a claim for frequency response of, say, 40-15,000 cps is made, providing that the machine does in fact reproduce those frequencies, then it “meets the claims.” There is no reference as to how “flat” the response is and, although quite often the output at the extreme is too low to be of any value, it meets the claims and cannot be condemned on those grounds. If a reference is added (“plus/minus 3dB,” for example), a test is made to see if it conforms; a graph is then made and published with the review.

Another example concerns power output. Hardly ever is a figure for distortion given; if, therefore, the recorder reaches the claimed power it cannot be condemned, whatever the distortion may

be. If, however, a figure is claimed, then it is checked and the results given in the review.

The answer to all this is for the customer to read the manufacturers specification and the review, if any, most carefully and to note if reference figures are quoted. If a recorder is good enough for the manufacturer to “shout about,” he will: what is *not* stated in a specification may be more important than what is. Manufacturers of repute will always send FULL specifications when asked to do so, and they are your guarantee, because they are in “black and white.”

Much as I would like to expose certain machines as rubbish, the law limits my right to do so and my only recourse is to refuse to review them. The fact that a tape recorder is reviewed at all means that it has, at least, the minimum requirements or qualifications.

As a guide to the non-technical reader, I am preparing an article which will explain the terms used in specifications and which will give the standards normally expected for domestic recorders.

E. A. RULE.

London, E.4.

## Britain in sound

I THOUGHT that you might be interested in hearing of some recent activities in the field of Sound Recording and Allied interests. During the past ten years or so I have presented a large number of lectures, in the form of travel talks illustrated with slides, to many different organisations in the Midlands. These talks have been presented mainly to Women's Institutes, but Boys', Girls', Youth and Men's Clubs have also been included.

I was in a bit of a spot recently when one Women's Institute asked me to visit them again, for I found that they had heard all my talks and seen all my films. I decided to experiment on them.

All my talks cover the British countryside and I decided that instead of taking them around the country with pictures I would see if I could do it successfully in sound only. On giving more thought to the matter I realised there was a wider potential, why not cover the many ways that a tape recorder can be used, for surely many of the audience, or their families, would own such a machine.

From my library of sounds, somewhat limited but fast expanding, I made up a special tape which included a wide variety of sounds. Sounds from city and countryside, birds, singing and harp music, and a few mystery sounds to illustrate how sounds can be changed.

With a certain amount of trepidation I faced an audience of some 30-40 ladies.

Whereas I normally lecture in semi-darkness and am able to get the feeling of the audience from sounds, I was now able to see their faces! Sometimes I had my doubts but it certainly went down very well. Under the title “Sounds we have Enjoyed” it has been presented four times this winter and it seems likely to be asked for again.

Reactions were really quite interesting and a surprising number of questions were asked on each occasion both about equipment and how the sounds were obtained. I have to admit that several people told me how much they had enjoyed it “as a change,” but they preferred the pictures. They were chiefly elderly people and possibly associated me with pictures anyway.

You will realise that this is by no means a recorded lecture—the various sounds are linked by “off the cuff” narrative, and this I regard as essential in order to deal properly with various audiences. We have read a lot lately about recording lectures to go with sets of slides—I can think of nothing worse, it gives no tolerance for the type of audience and my experience is that that is essential.

If there is any demand for it I would be prepared to visit clubs with the lecture mentioned above.

RICHARD A. MARGOSCHIS.

Atherstone, Warwickshire.

## V.I.Ps PEOPLE IN THE NEWS



The Acos microphone manufacturers plan to give live stereo demonstrations and compare them with recorded sound at the forthcoming Audio Festival and Fair. Mr. Arthur Wayne, concert pianist and broadcaster, who is also well known in the electronics field as the designer of the Shirley Laboratories' TWA 1515 amplifier, kindly agreed to co-operate in these demonstrations, and he is seen above rehearsing at the Cosmocord Studios.

# TAPE RECORDS

## SPECIAL TAPES FOR CHILDREN

JUST at the moment we seem to be getting more tape records carrying speech than music. The technical problems of recording are, of course, more easily handled with speech and a little belatedly—the recording companies concerned with disc have demonstrated that there is a market to be tapped.

But it should not be made too easy.

There are undoubtedly some subjects that are best rendered by a dramatic voice alone—poetry, for example. It would be fatal to add sound effects of the shore behind a voice reciting one of Masefield's sea poems.

Fairy tales, it seems to me, are at the opposite extreme. They are, by nature, fantastic, freed from realities of place and time—and voice.

Their impact can be greatly increased by the use of effects and these do not need to be natural—*music concrete*, skilfully used, can be highly effective. Some of the most successful tapes I have ever heard were amateur productions of Thurber stories treated in this way.

These thoughts have been stimulated by the first four tapes produced by *Fairy Tapes* (60/66 Wardour Street, London, W.1.). These are 600-ft. recordings at 3½ ips, carried on 5 in. spools, and they cost 29s. 6d. each.

Sixteen immortal stories from many countries have been recorded and each tape carries four, as follows:—

1. The Snake Charmer; Sadko; The Giant's Stairs and Alenushka and Her Brother.

2. Alibaba and the Forty Thieves; Snow White Rose Red; The Tinder Box and The Loving Dragon.

3. The Fisherman's Story; The Ugly Duckling; Hansel and Gretel and The Little Bear's Xmas.

4. Lazy Molly; The Enchanted Horse; The Little Goose Girl and Bottle Hill.

Miss Melanie Scott reads the stories in the best BBC Children's Hour style—brisk, no-nonsense, isn't-this-fun?

I have no doubt that children between six and ten will love them; the limited experiments I have been able to make suggests that these tales that have thrilled generations of children all over the world when whispered by a mother at the bedside are no less magic (perhaps more so?) when delivered by a disembodied voice in a tape recorder cabinet.

But I would still like to hear one of these tapes with music and sound effects judiciously blended in.

D.B.

Are the bad old days over?

*I*N our last issue we discussed the way in which tape records had been launched by manufacturers—and received by the public—in this country.

*We expressed the view that the sales drive that has now been launched by the firms in this field is likely to mark the final and complete acceptance by the public of the idea of tape records.*

*Striking confirmation of this view comes from Mr. Richard T. Sherren, the Managing Director of Bi-Tapes Ltd.*

*He writes:—*

**T**HE difficulties in the manufacture of tape records are such that few venture into the field; only one of the "giant" companies of Great Britain has attempted to do so. At the present time only three independent companies of any size are producing on a noteworthy scale.

But these three are beginning to note a rapid improvement in prospects. Two or three months ago, slave machines were lying idle and staff were clicking their heels in boredom while stocks mounted on the shelves. Now business has accelerated to the point at which rapid expansion of equipment is needed and engineers have barely time to stagger into bed.

*This is a pointer, but it does not yet indicate universal acceptance of tape records as a medium of home entertainment.*

For every tape recorder owner who makes regular use of his machine on both playback and record, there must still be many who have hidden their machines away in some dark corner once the novelty has worn off: Isn't it possible that they just have no idea that it is possible to buy tapes of music, stories and languages?

Who is to blame—the manufacturer or the retailer? In my opinion, both.

The manufacturer because, in the past, he left a great deal to be desired in the way of quality and publicity and the way deliveries to the retail outlets were handled.

The distributor, because he was often reluctant to handle something still in the pioneer stage, a fault shared by the



Miss Melanie Scott

retailer who, in many cases, was too busy selling refrigerators, bicycles, records, torch batteries, and all the other paraphernalia of the average provincial and suburban electrical dealer.

Now that quality of pre-recorded tapes has been improved there is more incentive for a break-through in distribution. The retailer has lost many opportunities to exploit sales of tape recorders by sales of tape records.

The retailer is now adopting a more progressive attitude, and many are taking dealerships for the various tape labels. Reluctance in the past to exploit has delayed the day of tape records. Now it seems the bad old days are nearly over. There is more advertising, and more people are aware of the advantages of this form of music-making over any other.

It has become practicable to produce a great variety of interesting material on tape; big names are being attracted and new names are being made through the medium of tape records.

We aren't yet out of the wood; there are bogeys still lying in wait, inaccurate theories that have still to be dispelled. For instance, the one that good-quality reproduction is impossible at 3½ ips . . . and, let's face it, the majority of popular machines are geared to this speed.

My own output is almost entirely at this speed, and we have proved, with our latest releases of orchestral music and piano solos, that there need be no depreciation of sound quality at the slower speed.

The theory I find most amusing, in a grim sort of way, is the one that one must expect a complete collapse in business in the summer months. On holiday, out of doors or in the home, at parties, even in the car or on a boat—anywhere you want to go, you can take your tape recorder and your tape records with you, with no risk of breakages or the inconvenience of cumbersome discs.

Summer slump? Phooey! It exists because it is believed to exist. The answer is to create a demand all round the year with a high-quality product.

# News from the Clubs

A NUMBER of suggestions that may prove worth following up by other clubs were discussed at the January 12 meeting of the **West Middlesex** club. The suggestions, made by the special programme committee, seem to be ideal for those clubs who are looking for ideas for further activities.

The first concerns one of the most popular exercises held by clubs—competitions. The West Middlesex members provisionally decided to adopt a scheme to institute an annual contest between groups within the club. These groups would be split up into geographical sections. The members living near each other would then have the opportunity to meet on non-club nights if required. The prize would be a Cup which would be held for a year by the winning team.

As the Club covers such a large area this geographical distribution of groups could be extended to a division of at least three teams, each with its own distinct sector. Each of the teams has at least one member with a battery portable recorder. This is a point worth noting for those other clubs wishing to follow this scheme.

The actual contest would revolve around certain listed sounds, with as many as possible obtainable only by field recording. The teams would be made to incorporate a minimum number of these sounds which would have to be woven into a story or narrative.

The second scheme adopted at the meeting asked for a short period to be set aside at each meeting for questions and suggestions. These could be answered and discussed for the benefit of all concerned. I think it would be worth setting a time limit to such a scheme.

Members also asked for an evening to be set aside for checking and vetting members' equipment. Head and azimuth alignment and adjustment seems to be a common problem for some members, and the opportunity to have machines tested and, if necessary, adjusted would be most welcome.

The third item, which could well be accepted by other clubs, was a decision to spend part of the club funds for extra equipment. Although this has been done before, the novelty of this scheme is the distribution of the money.

The idea is to select a member who needs an item of equipment and to help

him in the purchase financially. This only on the understanding that the equipment should be readily available for club use. In this way both the member and the club would be getting the use of the item very reasonably. This would be ideal for any club which has no permanent accommodation wherein equipment can be kept for club nights. Normally a particular member is made responsible for certain items, but this system would do away with the question of who looks after what.

A start has already been made. The club helped John King, one of the younger members, to purchase a loud-speaker system. The new set, by Heathkit, was used for the first time at their February 23 meeting, and everyone seems satisfied with the arrangement.

Those then are the three suggestions that clubs may be able to adopt, and I shall be pleased to hear of any success achieved by clubs along these lines. Any further suggestions are of course always welcome.

At their following meeting on January 26, the West Middlesex members were given a stereo demonstration by member Stanley Mace. He used home-built equipment based on the Brenell Mark V deck to which he had fitted Bogen two-track stereo heads. This equipment is housed in three separate cases: deck and pre-amps; power amps; and speakers; and the whole is designed to lock together for transit purposes—a creditable achievement, the envy of many present.

To follow, Messrs. Poland and Shephard of Challen Instruments Ltd. demonstrated the Minivox recorders. After these had been put through their paces, Mr. Shephard exhibited an experimental model using the Model C two-speed deck and a four-channel transistorised mixer.

Following the suggestions listed above, chairman Ken Phipps and Dave Lloyd used a Cossor double-beam 'scope, a Heathkit audio generator, a power output meter and "a lot of enthusiasm" when they carried out sample tests of the frequency response of a Brenell Mark V at their February 9 meeting. The same machine was later fitted with an extra replay head and pre-amp and a test run was made through a Heathkit stereo pre-amp unit.

Ken Blake's tape/slide show "North Sea Saga" was the main attraction at the February 23 meeting. This London club member's epic account of his adventures on a Grimsby trawler runs to some eighty 35 mm. colour slides and was "extremely enjoyable" according to his hosts. Regular readers may recall Mr. Blake's story which was published in our October 19 issue last year.

The "Saga" was followed by a demonstration of the recently announced Grundig TK1 battery portable recorder. This was shown by Phil Mead, who is the Manager of one of the Musicraft shops. Played back through its own speaker, the TK1 sounded "reasonable",

and when played back on Ken Blake's Vortexion it was clear to members that a high proportion of the available frequencies were all on the tape.

The club suffered a minor setback when they heard they were to lose the use of the Southall meeting rooms for the March 23 meeting. However, secretary "Sandy" Saunders quickly set to organising a substitute meeting place and secured the use of the Committee Rooms of the Community Centre in Bridge Road, Southall. The meeting will be devoted to a demonstration by Zonal Film Facilities Ltd. who manufacture the perforated tape used by KGM for their Cinecorder.

Comparisons of machines have also been a feature of the **Rugby** club meetings. At their latest on February 23, Mr. G. Dawson took along one of the real old tape recorders containing the Laine deck (circa 1949). This was set up alongside the Simon SP4.

Both models were dismantled and the complicated mechanism of today in the fully automatic Simon recorder, seemed unbelievable compared to the Laine deck. The difference in sound qualities were then heard, proving the lasting quality of the old recorder if nothing else. Pity this is not a feature of many of the modern models.

After the customary quiz tape, provided on this occasion by Mr. R. Goodman and won in a tie by Messrs. Davis, Wilkinson and Tilcock, the secretary, Mike Brown, announced plans for a coach trip to the Audio Fair.

The first hospital service tape of the **Cotswold** club was recently played at St. Paul's, Cheltenham. Edited and introduced by Peter Duddridge and Peter Turner, the tape consisted of recordings ranging from a monastic choir, youth orchestra, and folk-jazz group, to a Cotswold comedian, and included interviews with local people about their hobbies and activities. Chairman John Yeates and Clifford Benn toured the hospital with the tape, and afterwards recorded comments and suggestions made by the patients.

Peter Duddridge followed up this practical start by presenting a tape to the Sunnyside Home for Old People at Cheltenham. His tape *Just Yours* contained messages, recorded in the homes or relatives, and requested tunes.

Technical instruction is not being neglected, and the most recent in this line, a talk on hum and noise, was given by member Colin Wilson.

A change of secretary is announced. John Miles' place has now been filled jointly by Peter Duddridge and Peter Turner. All correspondence should be addressed to Mr. Turner at Cave Cottage, Oakridge Lynch, Stroud, Glos.

At the latest of their meetings, on March 6, the members divided into three parties and went into Cheltenham with battery recorders to record interviews. Fi-Cord, Stuzzi, Magnette and Phonotrix recorders were in use and the members pounced on any passer-by with a host of pre-arranged questions. Some typical examples included *Do you want your milk delivered on Sundays?* and *Have there been too many X certificate films in town lately?*

One party penetrated a pub, another kept to the streets, and the third tried

(Continued on page 33)

## Classified advertisements

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

### SERVICES

Tape recorder need repairing? Then let London's Largest Tape Recorder Specialists do it for you, expertly and economically. Essex Tape Recorder Centre, 2, Maryland Point Station, Stratford, E.15.

FERROGRAPH 4 A/N's-808's, VORTEXION WVA, WV.B, SIMON SP4, REFLECTOGRAPH A-B, etc., always in stock and ready for immediate delivery, as well as over 200 latest 1960 recorders at London's Largest Tape Recorder Specialists. The best, lowest H.P. terms, and finest selection of new and s/h recorders, from £18. Generous P/E allowances. Essex Tape Recorder Centres, 2, Maryland Point Station, Stratford, E.15, and 205, High Street North, East Ham, E.6.

GRUNDIG sales/service in your area: High Wycombe phone 457, Newbury phone Thatcham 3327, Wallingford phone 3083, Orpington, Kent, phone Orpington 23816, New Malden phone Malden 6448, Watford phone Garston 3367.

### MISCELLANEOUS

WAL GAIN transistorised pre-amplifiers. Many applications, extra gain for Mics, Tape Heads, P-U's, etc. Mono version, £5. Stereo, £7 10s. WAL BULK TAPE ERASER, both tracks 8-in. reel erased 30 sec., £7 18s. 6d. WALTRAK transistorised oscillator, 1,000cps, indispensable for service, £6 10s. Full technical literature sent, supplied through all leading dealers. Wellington Acoustic Laboratories Ltd., TRC Dept., Farnham, Surrey.

EASYSPLICE TAPE SPLICER — PATENTED & GUARANTEED makes tape splicing simple, easy and accurate. 5s. P. & P. 6d. EASYSPLICE, 30, Lawrence Road, Ealing.

### PRE-RECORDED TAPES

Unique 40-page catalogue listing all makes, Mono, Stereo, 7½ and 3¼ ips. Send 2s. 6d., refundable on first tape record purchased. Dept. 6, Teletape Ltd., 33, Edgware Road, W.2. PAD 1942.

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

**Something to sell?—equipment for exchange?—looking for a job in the hi-fi tape field?—seeking a tape contact abroad?—tape-to-disc services to offer?—expert staff needed? A classified advertisement in Tape Recording Fortnightly will bring you quick results—cheaply.**

### MISCELLANEOUS

Do you use the telephone? If so you will find a Dektron Telecon the most useful of all your recording accessories. The Telecon is not just a novelty but a unit which you will use frequently for both family and business purposes. You will be surprised by its efficiency. Just stand it behind the phone (no connection is necessary) and both sides of the conversation can be recorded, or, if you wish, amplified and broadcast to listeners in the room. The price—only 27s. 6d. post free. To ensure delivery by return post write today to Dektron, 2, Westbourne Road, Weymouth.

A BINDER is the ideal way of keeping your copies of *Tape Recording Fortnightly* clean and ready for easy reference. Available, price 14s. 6d. (post free), from 7, Tudor Street, London, E.C.4.

### TAPE-TO-DISC

JOHN HASSELL RECORDINGS. Tape/Discs. All Speeds. CCIR Studio, 21, Nassau Road, London, S.W.13. Riverside 7150.

Tape to Disc—All Speeds. Rendezvous Records. 19, Blackfriars Street, Manchester 3. Leaflet on request.

TAPE TO DISC RECORDING. Microgroove LP from 27s. 6d., 45 rpm EP—20s., 78 rpm—11s. 48 HOUR RETURN SERVICE—FINEST QUALITY. S.A.E. for comprehensive leaflet to: A. D. Marsh ("Deroy Sound Service"), 52 Hest Bank Lane, Hest Bank, Lancaster.

### FOR SALE

NEW PHILIPS 4-TRACK TAPE RECORDER AND FOUR TAPES. 12 MONTHS GUARANTEE. £50. REV. L. COTTER, ST. PATRICK'S, ROCHDALE.

Lustraphone Transistor Mixer: 4 channels, 3 low impedance inputs: £12. Conway, 29a, Kent Road, West Wickham, Kent.

All in perfect condition. Grundig TK35, £55. Grundig 4-channel mixer, £9 10s. 2 Grundig dynamic microphones, £4 10s. each. 2 Grundig condenser microphones, £3 each. Other accessories. Two Wharfedale W3 loudspeakers finished in walnut only two months old, £29 10s. each. A. S. Mackenzie-Low. Phone: Bexhill-on-Sea 3922.

Stuzzi Battery Tape Recorder "Magnette." Two speeds, Microphone and all accessories as new. £47. A. S. Mackenzie-Low. Bexhill 3922.

## TAPE EXCHANGES

Tape recorder owners who would like to make contact with others of similar interests to exchange news and views by tape are invited to send their name, address, sex, age and special hobby or interest (but only one, please) for this special new section.

It will be assumed that all tape contacts will be made using a speed of 3¼ ips, on half-track tape. If space permits, additional speeds, or track usage will be published. Maximum spool size only is given.

Cox, Ian (21). The Bungalow, Welcome Hill, Kings Langley, Herts. General interests. 3¼ ips. 5¼-in. spool.

Francis F. (Miss, 26), 111, Breakspears Road, Brockley, London, S.E.4. Sport and theatre. Prefers three-inch reel exchanges.

Fung, I. J. (Male 27). 119, Tooting Bec Road, London, S.W.17. Classical music, particularly interested in exchanging "off-the-air" recordings of UK and USA concerts. 8¼ inch spool. 3¼ and 7½ ips.

Grimmond, Edward A. M. (33). 29, Abbey Court, Upper Park Road, Camberley, Surrey. Photography. Contacts in France particularly welcome. Prefers 3-in. spools.

James, Tony (23). 8, Tintagel Crescent, East Dulwich, London, S.E.22. English speaking Cantonese contacts wanted. 15, 7½ and 3¼ ips. Seven-inch spools.

Morris, Ken (40). 50, St. Andrew's Crescent, Rugby. Spanish and Latin-American music. 5¼ inch spool.

Spring, H. A. (Male). 16, Newquay Avenue, South Reddish, Cheshire. General interests. Contacts home or abroad. 1½ to 15 ips. 7-in. spools.

### SCHOOLS

Norwood Green J.M. School. Please contact J. Spicer (Miss), 20, Greenford Avenue, Southall, Middlesex. 300 pupils "exploring this fascinating field."

Raons County Secondary School. Raons Road, Amersham, Bucks. (Mr. Owen.) All speeds 1½ to 15 ips. 7-in. spools.

Shoreditch School, Falkirk Street, London, N.1 (John Howse, Teacher). Mixed Secondary, with 1,500 pupils. Wide range of "recordable" interests and activities. English and French languages.

Tindale Street JM High School (R. P. Aston), 63, Sansome Road, Shirley, Solihull, War.

Send details to "Tape Exchanges," Tape Recording Fortnightly, 7, Tudor Street, London, E.C.4.

# News from the Clubs

(Continued from page 31)

members of the Theatre and Arts' Club. The parties returned to base to compare notes and concluded the evening with the thought that the BBC had nothing on them when it comes to snappy interviews.

Some last minute activity by members of the **Ilford** club prevented a few red faces recently. The secretary received a letter from a Wakefield drama group requesting sound effects of a London tube station that were required within eight days for a rehearsal. Unfortunately the letter was not read until after it had been lying in the club's post box for nearly a week, and only two days were left for the effects to be recorded.

Dave Bolton was quickly galvanised into action and proceeded with a **Fi-Cord** to Baker Street Station. The results obtained when played back were not quite satisfactory (more haste, etc.), and the next day Ken Hartman repeated the process. He had more success, and rushed home to edit the tape into shape.

Dave meanwhile dispatched a telegram to Wakefield to explain that the tape would miss the rehearsal, but was being posted that day.

They have since heard that the tape was indeed a success, and Des Bullard, leader of the group sent his thanks and a gift of tape for the club.

The club's own exploration of the recorded play field is rapidly gaining momentum. A cast has been selected, and theatrically they are well under way. The technical side is lagging a bit, however. Some investigation into this aspect nearly ended in tragedy when someone accidentally spilled beer into Ken Hartman's **Fi-Cord**. I have no note of Ken's reaction when, as he laid yards and yards of tape on the floor to be cleaned of alcohol, he was asked if he used Bass tape.

An editing exercise was the highlight of one of the recent meetings of the **West Herts** club. For the occasion the members were split into two groups and each set about editing an identical tape in the form of a request programme prepared by chairman John Grainger. He

had added many unwanted sounds, and the contest was set to decide which team could remove the superfluous sounds in the shortest possible time.

Each member of the team was allowed to make only one cut and splice before passing on to his colleague. This way each person was able to have practical experience in handling splicing equipment. An Irish and Metro splicer were on hand to join the unwanted sections which had to be properly stored before the tape could claim to have been completed.

The teams finished equal on the time basis, but it was decided that the tape handled by Jack and Dennis Hill, Bob Scarborough and Peter Holloway contained the least faults.

Their following meeting, on February 8, saw the visit of Mr. Wilson of **BASF Chemicals Ltd.** He talked about the history and manufacture of magnetic tape and presented his film *The Magic Tape*. This was followed by a slide show.

John Grainger and Jean Stern visited the Old Folk's Homes in Watford, to present their tape programme *Highlights of 1960*—produced from extracts of recordings made by members last year.

A few staunch members of the **Southampton** club recently recorded a pantomime at the Royal South Hants Hospital. Initial progress was not so hot, but when they had recovered from two or three blown fuses everything settled down and the recording session was highly successful.

The whole project was carried through on a grand scale, with equipment including Vortexions (yes, plural), Simon ribbon microphones and **Fi-Cord** portables.

The larger machines were set-up in the Dispensary, and the battery machines were taken by two members into the audience to record a narration, and the comments of the audience. They even secured an interview with the Mayor and Mayoress of Southampton. Members are now busily editing the tape which will be replayed to the patients.

Future plans of the society include a hospital tape service, and a play with a part for every member (some forty of them). The club has a dearth of lady members, so to balance the play, a recruiting campaign is now in progress to encourage the fair sex away from the television and knitting.

Membership of the **Walsall** society is slowly growing, the latest addition being a Walsall airman who is stationed in Aden. He learned of the club's existence through a local newspaper and is obviously making preparations for his return to Blighty.

Chairman Mr. R. Medford, recently gave a talk on tape exchanges. A number of the ideas he put forward are now being put into practice by the members whose latest venture is a contact with the **Harrow** club.

There seems to be some confusion regarding the **Stoke Newington** club. Following a letter received from a supposed member of the club we published a report in our January 25 issue that it had been amalgamated with another club. I have now heard from Edward Horne who states that the Stoke Newington club is in fact still very much alive. Prospective members are invited to contact him at 53, Londesborough Road, London, N.16.

## CLUB MEETING DIARY

Is your club included in this list? If not, send details, on a postcard please, including date of the next meeting.

**ACTON:** Alternate Fridays at the King's Head, Acton High Street. (Mar. 31.)

**BATH:** Alternate Wednesdays at 35, Green Park, Bath. (April 5.)

**BETHNAL GREEN:** Every Friday at Shoreditch Tabernacle, Hackney Road.

**BIRMINGHAM:** Every Monday at the White Horse Cellars, Constitution Hill.

**BLACKPOOL:** Every Wednesday at 173, Church Street.

**BOURNEMOUTH:** Alternate Tuesdays at the Civil Defence Centre, Holdenhurst Road. (April 4.)

**BRIDGWATER:** Alternate Tuesdays at Erio's Radio, West Street. (April 4.)

**BRIGHTON:** Every Wednesday at Fairlight School, Pevensey Road.

**BRIXTON:** Alternate Tuesdays at the White Horse, Brixton Hill, S.W.2. (Mar. 28.)

**CAMBRIDGE:** 2nd and 4th Wednesdays at the Mitre Hotel, Bridge Street.

**CATFORD:** Every Friday at St. Mary's C.E. School, Lewisham, S.E.13.

**CHESTERFIELD:** Every 3rd Monday at the Yellow Lion Inn, Saltergate. (April 10.)

**COTSWOLD:** Every 3rd Thursday at the Theatre and Arts Club, Cheltenham. (Mar. 23.)

**COVENTRY:** Alternate Thursdays at Queens Hotel, Primrose Hill Street, Coventry. (Mar. 30.)

**CRAWLEY:** 1st and 3rd Mondays in month at Southgate Community Centre.

**DARTFORD:** Every 4th Tuesday at Dartford Public Library.

**DOVER:** Alternate Mondays at The Priory Hotel. (April 3.)

**DUNDEE:** Alternate Mondays at The Salvation Army Hostel, 31, Ward Road. (Mar. 27.)

**EASTBOURNE:** Alternate Saturdays at Hartington Hall, Bolton Road. (April 1.)

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

**ENFIELD:** Alternate Wednesdays at Bust Hill Park School, Main Avenue, Enfield. (Mar. 29.)

**GRANTHAM:** Weekly. 1st week in month, Wednesday; 2nd, Monday; 3rd, Thursday; 4th, Friday, at Grantham Technical College, Avenue Road.

**GRIMSBY:** Alternate Tuesdays at the RAFA Club, Abbey Drive West, Abbey Road. (Mar. 28.)

**HARROW:** Alternate Thursdays at St. George's Hall, Pinner View, North Harrow. (Mar. 23.)

**HUDDERSFIELD:** Fortnightly, alternate Thursdays and Fridays at the Congregational Church Schoolroom, Great Northern Street. (Mar. 24.)

**ILFORD:** Every Tuesday at the RAFA Rooms, Cranbrook Road.

**IPSWICH:** Fortnightly, alternating Fridays and Saturdays at the Art Gallery Committee Rooms (Mar. 25) and the King's Arms Hotel, Cornhill. (April 7.)

**KEIGHLEY:** Alternate Wednesdays at the South Street Sunday School Rooms. (Mar. 22.)

**KETERING:** Alternate Wednesdays at the Rising Sun, Silver Street. (Mar. 29.)

**LEEDS:** Every Thursday at the British Legion Club, Albion Street, Leeds 1.

**LEICESTER:** 1st and 3rd Friday at Bishop Street Reference Library.

**LONDON:** 2nd and 4th Thursdays at the Abbey Community Centre, Marsham Street, S.W.1.

**LUTON:** 2nd and 4th Tuesdays at Flowers Recreation Club, Park Street West, Luton.

**MAIDSTONE:** Alternate Thursdays at the Corn Exchange. (Mar. 30.)

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

**MIDDLESBROUGH:** Every Tuesday at 130, Newport Road.

**NOTTINGHAM:** Alternate Thursdays at the Co-operative Educational Centre, Broad Street. (Mar. 30.)

**RUGBY:** Alternate Thursdays at the Red Lion, Sheep Street. (Mar. 23.)

**SOUTHAMPTON:** 2nd and 4th Thursday at The Bay Tree Inn, New Road.

**SOUTH DEVON:** Alternate Wednesdays at the Man Friday Cafe, Torwood Street, Torquay. (April 5.)

**SOUTH-WEST LONDON:** Every Wednesday at Mayfield School, West Hill, S.W.18.

**STAFFORD:** Alternate Tuesdays at The Grapes, Bridge Street. (April 4.)

**STEVENAGE:** Alternate Tuesdays at the Tenants' Meeting Room, Marymead. (Mar. 28.)

**STOKE NEWINGTON:** Every Wednesday at 53, Londesborough Road, N.16.

**WALTHAMSTOW:** Alternate Fridays at 26, Church Hill, E.17. (Mar. 24.)

**WARE:** 2nd Tuesday at The Old Brewery Tap, High Street.

**WARWICK:** Alternate Wednesdays in Room 18 of the Royal Leamington Spa Town Hall. (April 5.)

**WEST HERTS:** Fortnightly, alternating at the Cookery Nook, Watford (Mar. 22) and Heath Park Hotel, Hemel Hempstead. (April 5.)

**WEST MIDDLESEX:** 2nd Thursday at the Railway Hotel, Station Road, Hampton, and 4th Thursday at St. George's Hall, Lancaster Road, Southall Broadway.

**WALSALL:** Every Wednesday at 113, Lichfield Street.

**WEST WALES:** 1st and 3rd Thursdays at The Meeting House, New Street, Aberystwyth.

**WEYMOUTH:** Alternate Wednesdays at The Waverley Hotel, Abbotsbury Road. (April 5.)

**WINDSOR:** Every Thursday at The Royal Adelaide Hotel.

**WINCHESTER:** Every Friday at The Ship Inn.

**WOOLWICH:** Alternate Mondays at "The Armstrong Gun," Vincent Road, Woolwich. (Mar. 27.)

**YORK:** Every Monday at 11, Southlands Road, off Bishopthorpe Road, York.

Unless otherwise stated, meetings start between 7 and 8 p.m.



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