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INCORPORATING PRACTICAL TAPE RECORDING AND THE RECORDIST

Vol. 1. No. 8

MARCH, 1960

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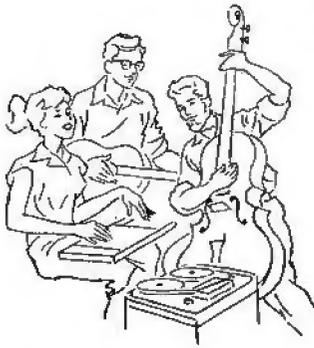


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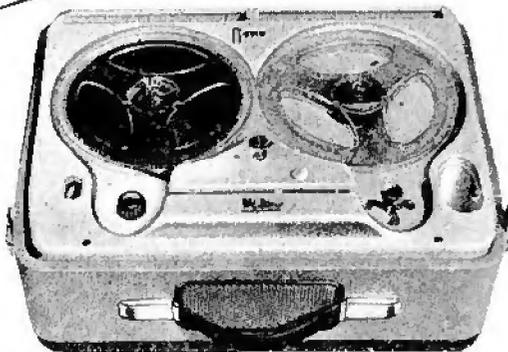
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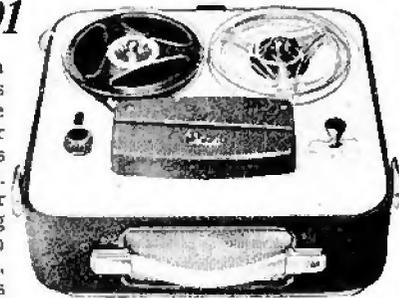
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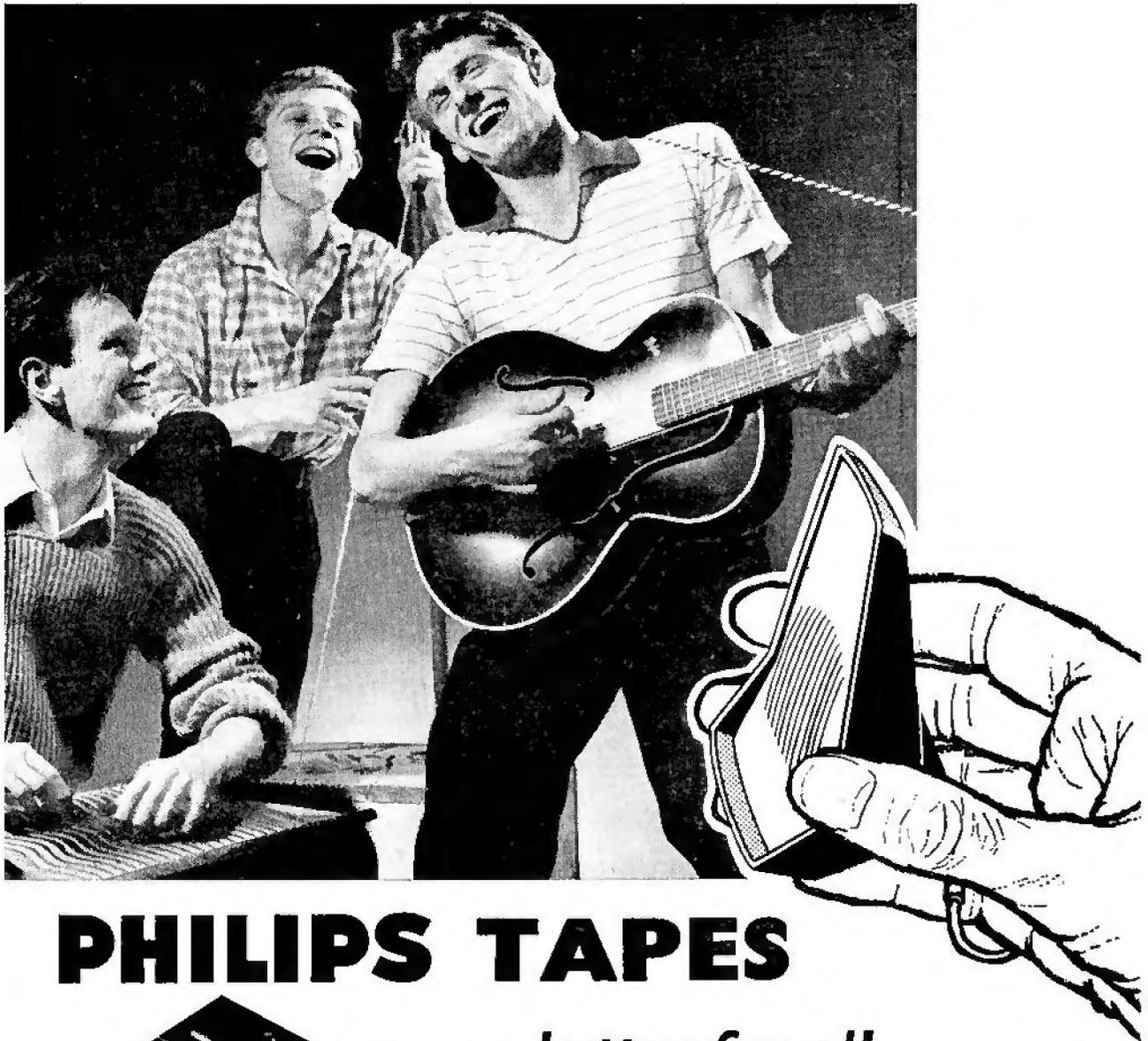


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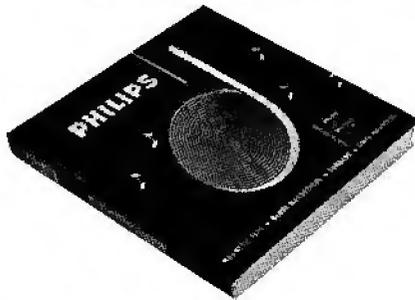
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- (1) To act as a central organisation for enthusiasts wishing to "Tapespond" throughout the world.
- (2) To assist in every way possible the advancement and enjoyment of Tape Recording and its many facets.
- (3) To act as a liaison link between Manufacturers, Dealers and enthusiasts.
- (4) To advise and answer members' queries.
- (5) To keep readers abreast of the times with new ideas and equipment in the fields of Tape Recording, Hi-Fi, Stereo and Recordings.

The "Amateur Tape Recording" magazine is published monthly for the AMATEUR and is supplied free to full members of the British Recording Club.

It contains : —

- (1) Club News.
- (2) "INTER - TAPE" for enthusiasts wishing to "Tapespond" throughout the world.
- (3) Articles of general interest to the AMATEUR.
- (4) Members' letters.
- (5) Questions and answers.
- (6) Reviews of equipment.

**THE BRITISH RECORDING CLUB
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To THE SECRETARY, THE BRITISH RECORDING CLUB,
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Dear Sir,

I am desirous of becoming a member of The British Recording Club. I now enclose my membership fee of 1 guinea (21/-), which includes my annual subscription to the "Amateur Tape Recording" Magazine.

Name..... Date.....

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Make of Tape Recorder used..... Size of spool.....

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At what speed..... Occupation.....

With what part of the world do you wish to "Tapespond"??

amateur TAPE RECORDING

Incorporating Practical Tape Recording and The Recordist

Vol. 1 MARCH, 1960 No. 8

THE OFFICIAL MAGAZINE OF
THE BRITISH RECORDING CLUB
INCORPORATING
THE BRITISH TAPE RECORDING SOCIETY

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E.C.4.
FLEet Street 7732/2110
Manchester Office
GARWOOD PUBLISHERS LTD.,
Hadfield, Manchester.
Tel.: Glossop 3315 or
Didsbury 6890.
Midlands Office:
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An Associated-Rediffusion operator with an AMPEX VIDEO TAPE. This is a "peep pre-view" of next month's illustrated article on the fabulous Pictures on Tape machine

EDITORIAL

PEAK 72 — N'EVEREST

WE feel like mountaineers this month, having arrived at the dizzy height of 72 pages. Our only worry is that you may not be able to finish reading ATR before next month's issue appears! This month sees the first of the series of constructional articles by Mr. F. C. Judd, which should have all the home handymen sharpening their soldering irons and setting to. Other features herein include an up-to-date Directory of localised clubs—and with new clubs springing into existence every week, that is not an easy thing to compile. There are already two additions to be made to the list: Ilford & District Tape Recording Society, Secretary, Jeff Langley, 4 Clifton Road, Ilford, and the Southall Sound Club, Mrs. T. Thorpe, Southall Community Association, Southall, Middlesex. We hear that Ilford's first meeting was attended by thirty-one people, which must surely be a record.

TRAIL POINT

Progress so far along the Tape Bank Trail for the Hospital and Blind Services is slow but steady. We have passed through Crows-An-Wra, by St. Buryan (noted for its lobster and crab fishing) and Pendeen, and have just drawn level with Boleigh. We should reach Penzance by next month, if all the Gilberts, Sullivans and "Pirates" remember to send in that half-crown.

EDITORIAL APPOINTMENT

It is with great pleasure that we announce the appointment of Mr. Peter Rigg as ATR's new Editor.



Mr. Rigg is an experienced writer, journalist and broadcaster. In addition to having been an industrial photographic consultant and a specialised film producer, he founded and edited "Industrial Screen," and is the Industrial Films Correspondent to the "Financial Times." Other activities include being a member of the committee of the Royal Photographic Society and the British Kinematograph Society. He first "tapesponded" in 1950 with friends in Malaya, and sleeps with a transistor recorder by the

THE BRITISH RECORDING CLUB is organised under the auspices of British Tape Recording Clubs Ltd, 7-8 Norfolk Street, London.
"AMATEUR TAPE RECORDING" is published Monthly as the official magazine of THE BRITISH RECORDING CLUB and affiliated Clubs throughout the World

bedside as "one often wakes up in the middle of the night with a brilliant idea, and can't remember it in the morning. My tape recorder makes sure I do but often the brilliance is dulled by the cold light of morning." He believes that the day is not far distant when a tape recorder will be as much part of our lives as a telephone, a radio, or a television set—who knows, a tape recorder may soon BE a television set.

TAPE QUALITY

Recently we heard a taping of the Opera "Oedipus Rex," conducted by the composer, Igor Stravinsky. It was a fine recording that "sang" the praises of the equipment and tape used (Ferrodynamics Brand 5), and it prompted the observation that few recordists consider the quality of the tape they use. Yet there are now many different makes and types to choose from, so it is worth sparing a thought before buying "the same again."

CLUB AFFILIATION TO B.R.C.

ATR Magazine extend a cordial welcome to the ETESSA Tape Recording Club who have recently become affiliated to the British Recording Club. Etessa is probably the first Club to be formed within a Government organisation, its members being drawn exclusively from the Cable and Wireless Dept. of the G.P.O. One of the problems the Club has had to face is that many of their members are engaged upon shift work and it is therefore never possible for all the members to attend together. Despite this handicap, membership has grown steadily since the Club's formation, and our picture below shows the enrolment this month of the hundredth member, Mrs. Marie Lockmuller.



The ETESSA Tape Recording Club's 100th member, Mrs. Marie Lockmuller, has just been enrolled and Chairman Alan Howard asks her to mark the occasion. Looking on is General Secretary G. P. Jones and Treasurer Alf Needham.

SLOWER AND SLOWER

Tape speeds get slower and slower with the Stuzzi Tricorder's 15/16" per second representing the slowest speed we are likely to see available for some time to come. And now discs return to the slow speed battle with Top Rank making the first commercial release of a 16.2/3 revs. per minute, record. This is "Tales of Terror" by Edgar Allan Poe, a collection of his most spine-chilling stories. One of these is "The Strange Case of M. Valdemar." Surely not OUR Valdemar? (Valdemar Poulsen invented magnetic recording).

SMALLER AND SMALLER

A 1/4" long microphone is to be used by heart surgeons at St. George's Hospital, London, to aid the diagnosis

of heart complaints. This minute microphone is inserted into the heart, and relays the information it picks up along gossamer wires to a tape recorder placed beside the operating table.

BEDTIME STORY

We hear that they are going to mass-produce the bed with a built-in Tape Recorder. The more we think about this . . .

DECEMBER HIT PARADE COMPETITION

1st Prizes.—Shared by 4 winners. Each will receive £21 5s. 3d.

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A. PAYNE, Derby Road, Stapleford.

N. LINCOLN, Victoria Avenue, Derby.

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11 Second Prizes.—Each will receive £5 13s. 6d.

S. T. Russell, Cardiff; E. Reeves, London; T. Lamb,

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D. Jones, Burnley; E. Frampton, Glasgow; T. S.

Smith, Nottingham; A. Allcock, St. Albans; J. A.

Perry, Manchester; F. Raymond, Torquay.

And 16 Third Prizes of £1 14s. 0d.

FAREWELL TO SALLY—Sally our Cover Girl for the last seven months has now been retired by Messrs. Winston Electronics. Readers will undoubtedly join us in wishing her continued enjoyment with her Tape Recorder.

This Month's Front Cover features JACK HAWKINS, T.V. Personality and Film Star working on a script with his Grundig TK25.



The *kurland* SENSATIONAL TAPE RECORDERS



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TR7m
56 GNS. (incl.)**

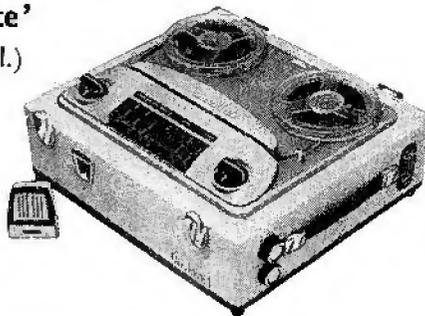
Fitted with the latest Collaro Mark IV deck. It has 3 speeds: $3\frac{3}{4}$, $7\frac{1}{2}$, 15 l.p.s. Will record and play back in either direction. It has instantaneous track reversal. Three digit rev counter gives accurate recording position. Built-in mixer unit. Magic Eye recording level indicator. High flux speaker. Amplifier is a modified version of the well-tried Mullard

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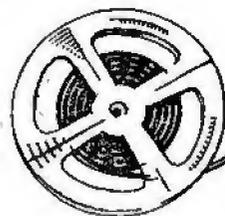
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water
on tap!

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Don't think that the Corvette merely replaces the kettle: it does far more than that. Water for shaving, washing, washing up, filling hot water bottles, making hot drinks, cooking, comes from the Corvette at the exact heat you need it. Yet it costs only £12.4.10d., including Purchase Tax.



The Corvette is easily installed, without plumbing, on any wall or windowsill—you can fix it yourself. Its hose simply fits over the cold tap, and its lead goes to the nearest power point.

Full details of this compact, versatile appliance will be sent to you without obligation on your part, if you fill in the coupon below.

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Creda Works, Blythe Bridge, Stoke-on-Trent.
Please send me the 1960 Creda Book, which contains full details of the Creda Corvette.

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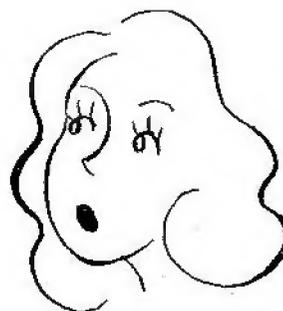
If preferred, send a postcard for details.

C-ATR3

What is...?

A Power Amplifier

By FREDERICKS



TO date we have covered pre-amplifiers and their associated circuits. These circuits enable us to control the volume and the frequency response of the tape recorder or amplifier but the output from the pre-amplifier is about one volt and is not large enough to drive a loudspeaker system. We must then use a power amplifier to increase the strength of the signal so it will have adequate power to drive one or more loudspeakers.

There are several classes of power amplifier and we use letters to designate the classes. They are Class A, Class AB₁, Class AB₂, Class B and Class C. Before we discuss these, however, some basic fundamentals must be explained and a triode valve will be used in the explanation. A triode valve has an anode, a control grid and a cathode. The theory discussed also applies to other types of valves that have a control grid. Vol. 1, No. 3, October, 1959, deals more fully with valve theory and should be referred to. Back copies are still available on request.

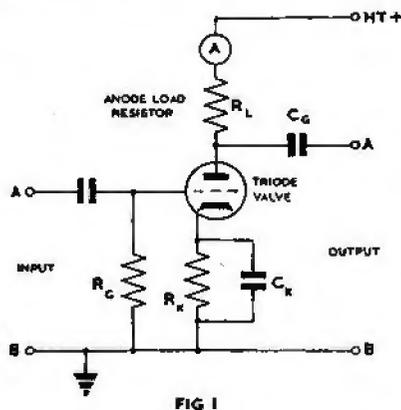
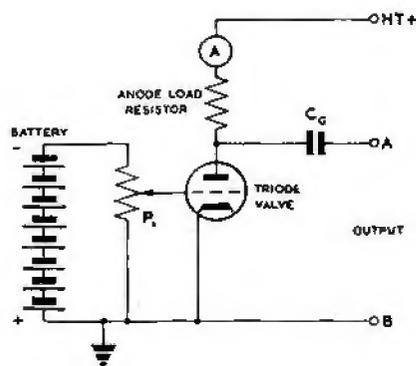


Figure 1 shows a typical triode amplifier. If we place an ammeter in series with the anode load resistor RL as shown in Figure 1, we can measure the current flow through the valve in milliamps. (Note: 1 Milli-amp = 0.001 amp. or 1/1000 of an amp. and this current is known as anode current.) If we set up our circuit as shown in Figure 2 we can vary the voltage on the control grid by rotating the slider of P.1, and cause the anode current to vary with the grid voltage variations.

You will notice that the negative terminal of the battery is connected to the grid and the positive terminal is connected to earth.

Now we vary the value of the negative bias voltage on the control grid and read the amount of anode



TEST CIRCUIT. IN THIS DIAGRAM A 12 VOLT BATTERY IS USED TO PROVIDE A NEGATIVE GRID BIAS VOLTAGE ON THE GRID OF THE TRIODE VALVE. THE THICK LINES DENOTE THE NEGATIVE SIDE OF THE BATTERY (-) AND THE LONG LINES THE POSITIVE SIDE (+) NOTE THAT THE + IS CONNECTED TO EARTH BY MOVING THE SLIDER OF THE POTENTIOMETER P1, WE CAN VARY THE VOLTAGE WHICH APPEARS ON THE GRID OF THE VALVE. R_L IN FIGURE 1 REPLACES THE BATTERY SHOWN IN FIGURE 2 BUT IT DOES THE SAME JOB.

FIG. 2.

current that flows through the valve. When we plot these readings on a graph it will look like Figure 3.

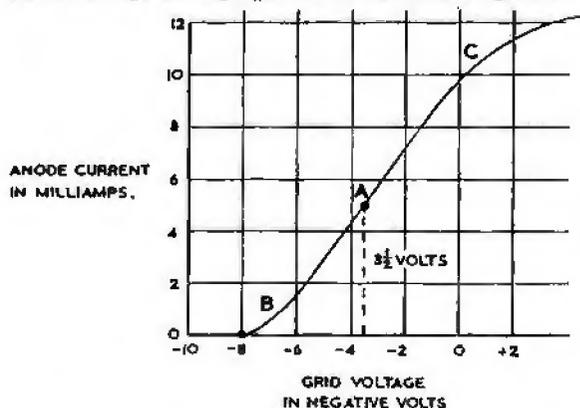


FIG. 3.

Note that the curve between -6 and -1 grid voltage is a straight line and this part of the curve is very important in high quality amplifiers. Class A amplifiers have this voltage developed across resistor R_K in Figure 1, chosen so that its value in ohms provides a voltage on the grid at the mid-point of the straight part of the grid voltage anode current curve. This voltage appears on the control grid as a

negative voltage via R_G and is called grid bias voltage. Point A on the curve in Figure 3 (approximately -3.5 volts on the control grid) is the point selected. Now, if we apply a signal voltage from a previous valve or pick-up device to the input terminals across A and B of the amplifier in Figure 1, we find that the effective value of the voltage on the control grid will be above and below the value of the grid bias voltage. When the signal voltage is positive it will add with the negative grid bias and a smaller negative voltage will appear on the control grid. For example, -3.5 volts bias voltage plus $+1$ volt signal voltage will give -2.5 volts effective voltage. When the signal voltage is negative the two negative voltages add together. For example -3.5 volts bias plus -1 volt signal voltage will give -4.5 volts effective. With an increase or decrease in the value of the effective grid voltage, the anode current will change a proportionate amount and we use this feature to make or amplify small voltages into large voltages. Strange as it may seem, the sequence of events is as follows: We supply a small varying signal across A and B in Figure 1. This causes a varying anode current as explained in Figs. 2 and 3 and this in turn causes a larger signal voltage to be developed across R_L , the anode load resistor, Figure 1, and this larger signal voltage then appears at the output and across A and B. The condenser C_G prevents H.T. appearing across the output.

A change of 1 volt on the control grid results in a change of 1.5 milliamps in anode current and a change of 2 volts results in a 3 milliamps change. As long as the effective voltage on the control grid keeps us on the straight part of the grid voltage anode current curve this will hold true.

Class A operation on this straight part of the curve will give excellent quality reproduction without distortion. See Figure 4, which illustrates an undistorted input signal, followed by an undistorted output signal.

Since the signal voltage across input A and B will vary through positive and negative by the same amount, say $+1.5$ to -1.5 volts, we might have part of the effective voltage going through the wrong part of the curve (B or C on Figure 3). When this happens the signal is distorted because all parts of the signal are not amplified equally. Figure 5 shows what occurs when the grid bias voltage changes to a more negative value,

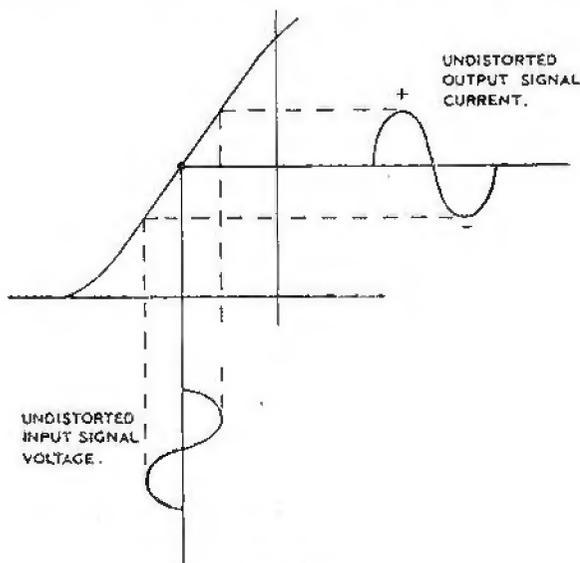


FIG. 4.

i.e. by applying a larger input signal voltage from the previous valve or pick-up device.

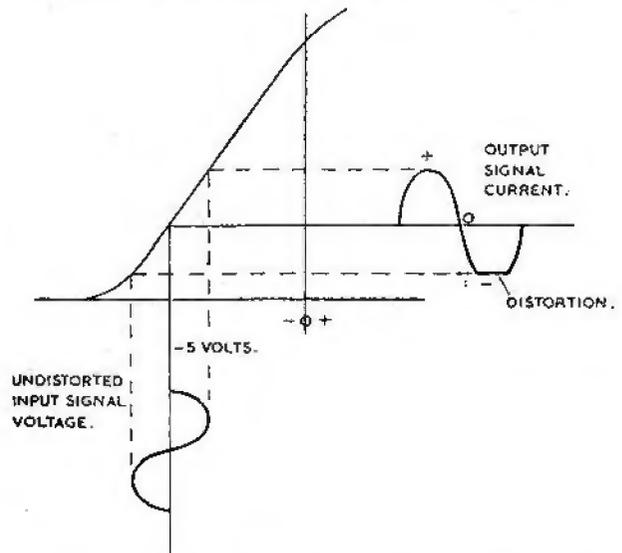


FIG. 5.

A Class AB_1 amplifier has the grid bias voltage selected so that a larger input signal can be used and the effective voltage on the control grid remains negative. Figure 6 shows this relationship and it will be noted that this results in distortion of the output signal.

A TAPE - RECORDER WITH A PEDIGREE

Crown

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39 GNS.

WITH TAPE & MIC.



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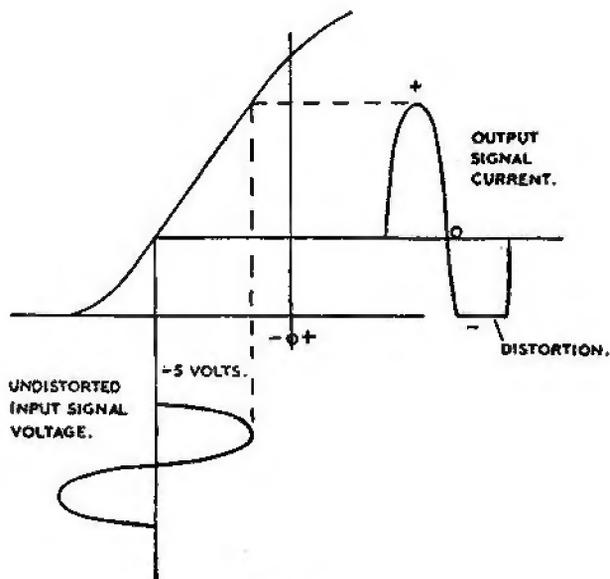


FIG. 6.

A Class AB_2 amplifier is biased to about the same point as a Class AB_1 amplifier, but when the effective voltage on the control grid becomes positive during the positive peaks of the input signal, distortion occurs and Figure 7 shows this relationship. You will notice that both the positive and negative parts of the signal are distorted.

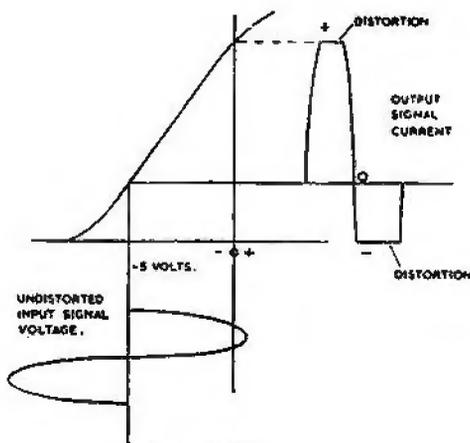


FIG. 7.

A Class B amplifier has the grid bias voltage set at the value where no anode current will flow. Figure 8 shows this type of operation.

Only the positive half of the input signal is amplified. The negative half of the input signal does not appear in the output.

A Class C amplifier has a grid bias voltage which does not allow any anode current to flow. Figure 9 shows this type of operation. Only part of the positive half of the input signal is amplified. This type of operation is used for radio frequencies and never used for audio

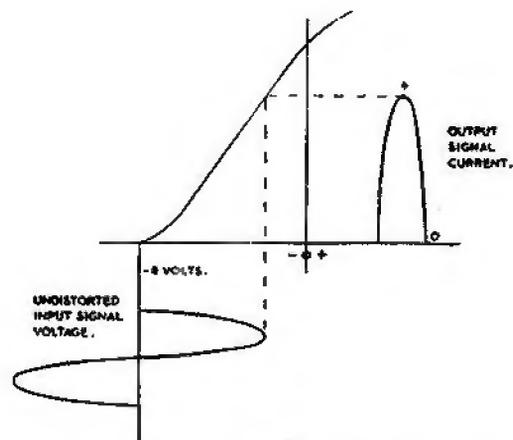


FIG. 8.

frequencies due to high distortion—but it has its uses in many other electronic fields.

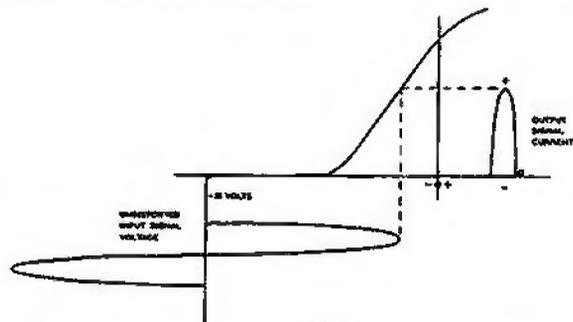
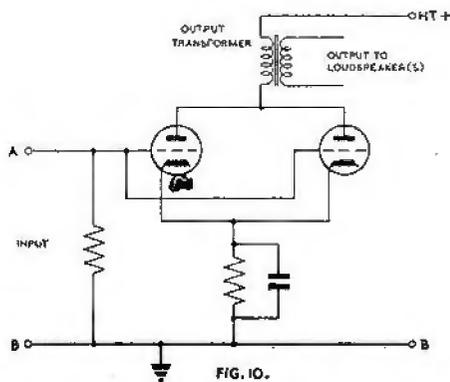


FIG. 9.

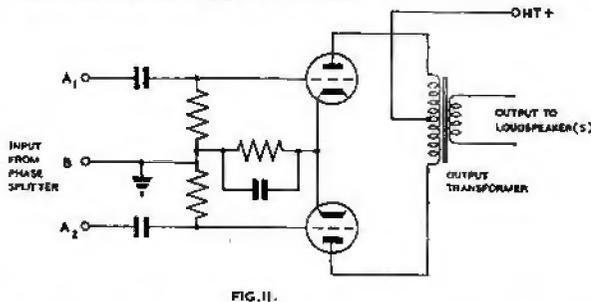
The power supply, which supplies the valve with heater and anode current, deserves a little attention at this point, although it will be discussed fully in a later article. Let us face the fact that Class A amplifiers always give the best results, but they require more power from batteries or mains than Class AB_1 , etc., and more power means bigger and more expensive power supplies—whether batteries or mains—so manufacturers do their best to cater for all users by designing equipments to suit the occasion. Class A for Hi-Fi which is fairly expensive to buy and run. Class AB_2 , where lots of pleasant noise is required, such as a fun fair, and power consumption is fairly low. Class B when equipment derives its power from batteries and is required for mobile public address systems and so forth. So on the basis of power consumption Class A amplifiers are about 20 per cent efficient, while Class AB_1 and Class AB_2 are about 40 per cent efficient. Class B is about 60 per cent efficient and Class C about 80 per cent efficient. You will note that by operating Class B amplifiers we can obtain three times the efficiency but we introduce a large amount of distortion. In order to reduce this distortion we have different types of amplifier stages: single valves, push pull valves and parallel valves.

A single valve audio power amplifier stage is normally operated Class A, as the other classes of operation would result in distortion.

If we wish to increase audio power output to the loudspeakers a second or more valves are added and depending upon how we arrange the circuit we have a push pull or a parallel type of output amplifier stage. When the grids of both valves are connected together as well as anodes and cathodes, we have a parallel type amplifier stage. See Figure 10.



This is one method of doubling the power output by adding only one valve. Instead of connecting the two valves in parallel, as in Figure 10, we can connect them where they oppose each other and we have push pull amplification. Figure 11 shows a typical circuit.



You will notice that a phase splitter stage is required before the push pull amplifier, but before we cover this, let us discuss push pull amplification. Comparing Figure 10 and Figure 11 we note that the cathodes in both are connected together; however, the addition of a resistor is required in the control grid circuit and a different type of transformer is used in the anode circuit. The phase splitter circuit has two output signals that are of equal strength but are out of phase. In other words, when one output is positive, the other output is negative. When we operate the push pull amplifier Class A, AB₁, AB or Class B distortion that results from each valve is greatly reduced or in some cases eliminated. If you refer back to Class AB and B operation, you will recall that the single valve amplifies only the positive half of the signal and only part of the negative half of the signal. Since one signal is positive and the other is negative at the input to the push pull amplifier, only one valve is operating, then when the signals reverse the second valve operates since the input signal for it is now positive and the first valve does not amplify due to a negative input signal. Therefore push pull, when compared to a single output valve, more than doubles the audio power output, and since Class AB and Class B operation is more efficient we require less power from the power supply (mains or battery) for the same audio power output of push pull amplifiers, as compared to Class A output parallel amplifiers. Since loudspeaker coils usually have low impedances (low resistances) and the anode circuit of an amplifier has a high impedance we must use a device to match these impedances and a transformer is the one normally used. Referring to Figure 10 you will find that a simple transformer is required for parallel type operation. This is also true for a single valve type of operation. This transformer has a high im-

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pedance winding for connecting to the anode circuit and a low impedance winding for connection of loudspeakers. This low impedance winding has several taps so that output impedances can be selected to match the loudspeaker to be used. Figure 12 shows a transformer with these taps.

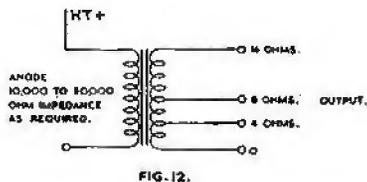


FIG. 12.

The transformer required for push pull type operation has the anode winding tapped at the electrical centre of the winding and the loudspeaker winding is the same as for single valve type operation. Figure 13 shows a typical push pull output transformer.

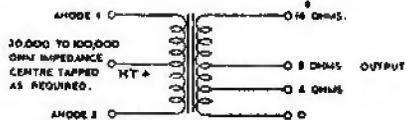


FIG. 13.

The centre tapped anode winding is required for push pull operation since the output signals from the valve are out of phase. When one valve amplifies, one half of the anode winding transfers the signal to the output side of the transformer and then when the second valve amplifies the other half of the anode transfers the signal. Therefore the transformer reverses the action of the phase splitter stage and ensures that only one phase is present in the output signal.

The phase splitter stage can consist of one or two valves. Since most phase splitters normally used have only one valve we will not discuss the other type. If you are interested, any good book on radio fundamentals can be consulted. Figure 14 shows the circuit for a typical phase splitter. You will notice that output "1" is taken from the anode circuit and output "2" is taken from the cathode circuit.

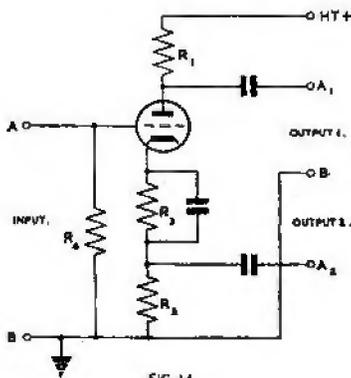


FIG. 14.

This takes advantage of the fact that a valve shifts the phase of the amplified signal 180 degrees. In other

words, the signal in the anode circuit is opposite to the input signal and the signal in the cathode circuit has the same phase as the input signal.

Another method of phase splitting is by the use of a transformer as shown in Figure 15. The output winding or secondary is tapped at the electrical centre, but a transformer of good quality that is suitable for audio amplifiers is very expensive.

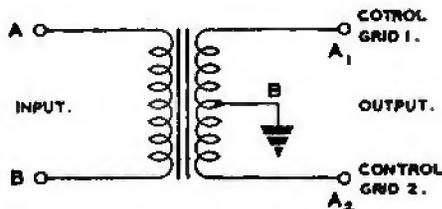


FIG. 15.

Most power amplifiers require more signal (voltage input) than the pre-amplifier can supply, therefore one or more Class A amplifying stages are used between the pre-amplifier and the power amplifier. This stage is often called the driver or penultimate stage. Figure 1 would be a typical driver stage amplifier.

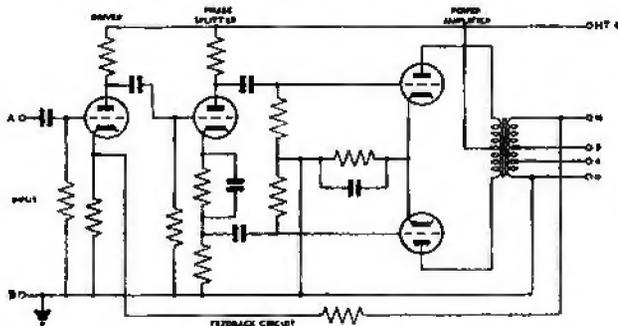


FIG. 16.

In order to improve the performance of amplifiers by reducing distortion in the signal and improving signal to noise ratio, part of the signal at the output is frequently connected to the input amplifier stage. This is called feedback and is normally out of phase with the input signal. In this case we call it negative feedback. Figure 16 shows a push pull amplifier with negative feedback.

You will note that the feedback circuit or loop consists of only a resistor to reduce the amount of feedback signal to the desired amount. You will also note that the capacitor (condenser) in the cathode of the driver stage has been removed (see Figure 1). If the capacitor remained in the circuit the feedback signal would be shorted to earth and would have no effect.

The capacitor would also affect the output signal.

So far we have discussed the audio amplifier stages of a tape recorder or Hi-Fi system. The remaining articles in future issues will discuss the various allied components and circuits to complete the system. They are the Bias Oscillator and Erase Head, Loudspeakers, Power Supplies, Gram Units and Tuners. You can refer to the December, 1959, issue (Vol. 1, No. 5) "What is a Microphone" for the order in which these components and circuits will be discussed.

PLAYS ON TAPE

The second article in the series by

HAROLD ROTTESMAN

FOR your first attempt at recording a microphone play, there should be one guiding rule: don't be too ambitious. Length is an important factor; choose something not longer than fifteen to twenty minutes to begin with. An excerpt from a stage play might be a good idea, provided that it is not from a piece which depends for its effects on visual action. Interesting dialogue and clear characters are important; but it is impossible to be too specific, as your choice will be determined partly by the number of people you have available, their voices, their experience, and so on.

If you have some literary talent yourself, you might try writing your own little play or sketch. If you did, you could write it to suit the actors you have available, and a lot of problems would thereby be solved.

Whatever you choose as your first short recorded play, you may want to type it out properly in script form. The illustration shows an example of how this might be done. (Some of the technical symbols will be explained in a later article.) Double spacing, numbering of speeches, clear separation of items on the page—all are of help to your readers when they are before the microphone.

CUE :

- | | |
|--------------------|---|
| 1. THE TOSSPOT : | The Duke is seven feet nine inches tall, and only twenty-eight years old, or in his prime. His hand is cold enough to stop a clock, and strong enough to choke a bull, and swift enough to catch the wind. He breaks up minstrels in his soup, like crackers. |
| 2. 1st CITIZEN : | So even though you are no prince, minstrel, take care. Your name begins with X. |
| 3. THE PRINCE : | I'm not afraid. (He twangs his lute.) Landlord! |
| 4. SPOT F/X : | COINS FLUNG ON TABLE. |
| 5. THE PRINCE : | Goodnight! |
| 6. 1st CITIZEN : | (Peak CROWD EFFECTS briefly) |
| 7. 2nd CITIZEN : | Hah! A strange fellow! |
| 8. THE TRAVELLER : | But a fine singer! |
| 9. THE TOSSPOT : | I've seen that youth before . . . |
| 10. ALL : | But he was neither raganuffin then, nor minstrel. Now let me see, where was it? |
| | In his soup, like crackers. |
| | (Laugh.) |

(Fade.
(Bring up :—

11. MUSIC

(Hold under :—

CUE :

- | | |
|----------------|--|
| 12. NARRATOR : | Outside the tavern, the night was lighted by a |
|----------------|--|

(continued

I explained last month how to arrive at a satisfactory basic working distance from the mic, and when you have decided on it, stick to it. And don't let your actors shout; make them approximate to a normal speaking level. The microphone (that marvellous instrument) will, if rightly used, do all the magnification and heightening necessary.

It is essential to get to know your microphone—how it responds to speech coming from different angles, differing distances, in order to be able to make fullest use of it in your play.

To take a very simple example: Suppose you are recording a scene in which a new character enters the room and speaks a line whilst approaching the other person or persons in the scene. You will need

to experiment a little in order to find out just how far your actor needs to walk in order to convey the right effect. (This is known as an "approach"). For an exit, too, you will have to experiment. This is where the bi-directional ribbon microphone



Alastair Riach and Mary Cheel at average distance from ribbon microphone.

really comes into its own. As you know, each face of the ribbon is sensitive to sound but the edges are not. Thus by facing the "live" side of the mic and moving gradually round to the "dead" side—without actually walking away from it—quite a startling effect can be produced; it will seem as though your voice (and you with it) has gone right to the far end of the room. (Accordingly, pitch your voice up when you are "off mic"—as though in fact you were having to communicate over a great distance).

For some special effects you will want to work closer to the mic than normal; for others farther away. If, for instance, you have a Narrator in your play, put him closer to the mic than the characters—this will produce an effect of intimacy and closeness to the listener that can be extremely compelling. Or (to take another example) a love scene might be most effective if played very close to the mic, with the actors breathing out their lines.

One thing you must guard against, with some kinds of microphone (particularly the ribbon type) is that if you go too close, unpleasant distortions can result. With ribbon microphones, use of the letter "p" at close quarters can result in a great "whoomph" on the tape. This is known as "popping," and should be avoided either by finding out exactly how near you can work without causing it or (in the case of one person speaking at the mic) by speaking close to it but across the face and not into it.

These variations of distance from the microphone, and the corresponding effects they produce in sound are known as "perspective," and by the imaginative use of perspective some very dramatic moments can be obtained. Listen to a radio play and notice how the producer employs the use of perspective at various

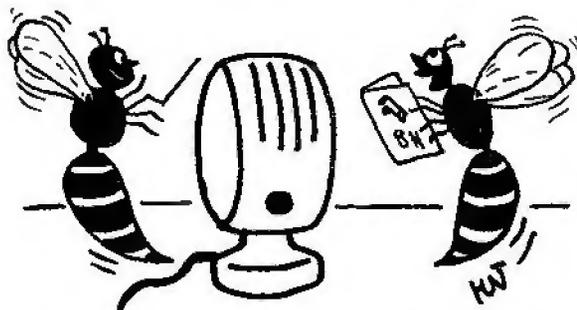
RECORDING NATURE'S SOUNDS

by DOM DE FRESTON

RECORDING the sounds of animals and birds is undoubtedly to the naturalist hunter one of the greatest joys of our day. Sad to say far too few people have as yet ventured into this domain of preserving the world around us and it is only relatively recently that recording, and more particularly tape recording, has moved out from broadcasting concerns into a more public life. When I was in a discussion recently with one of the largest manufacturers I was told that they believe that in the not long distant future nearly every household will have at least one tape recording machine in its possession. If you use or are contemplating using a tape recorder for such purposes as catching the fleeting sounds of birds and animals you will understand why this hobby is increasingly popular.

Although the scope of tape recording equipment is extremely vast (infinitely more so than some people may at first realise) I propose here only to deal with such equipment and its use in relation to ornithology and zoology. Undoubtedly the very first essential will be equipment and whilst any type of tape recorder will record the sounds of nature it should be understood that to obtain the best results the equipment must be able to cope successfully with the job; for the frequencies of a great deal of bird sound reach an extremely high register indeed, and all your tools for recording must be up to their job. The most practical and ideal equipment is the portable tape recorder run off a 12 volt battery, made for outside professional use. As most people could not or would not feel inclined to lay out the several hundred pounds this costs for recording the sounds of nature for amateur use, the second answer is to purchase a high grade domestic or semi-professional mains machine costing between £60 and £150 and run this from, if you possess such a thing, the battery of some motor vehicle via an AC/DC convertor. The majority of tape recorders run from the mains use what is described as synchronous motors, i.e., motors that depend on a given supply frequency. It has been found in practice that the best available convertor is the vibratory type which maintains the frequency of the alternating current to close confines. The enthusiast can obtain the vibratory convertors from around the £17 mark.

It must now be mentioned that although the latter mentioned tape recorders can give quality equal to a high grade luxury portable machine costing far more, it has to be realised that you can only get as near your quarry as your vehicle and microphone extension-lead will let you, which is not far by any standards. True you can record a great deal and obtain all the common garden songsters including, if you are lucky, the nightingale. The only answer, if your funds are not elastic, is, I feel, to buy a battery transistor portable recorder, which will cost from £60 if it is to be of any great use. Even though these machines cut the top frequency to a considerable degree as compared with the above mentioned equipment, you can get good and satisfying recordings of wild birds and beasts. These small "baby" or



"midget" transistorised tape recorders have some undeniably good points for the amateur in that they are really small, light and will run anywhere at any time. The transistors replace bulky valves and run off small and generally re-chargeable batteries. If you buy one of these make sure it has capstan drive so that you can play back your tapes on a larger machine if you so wish. As the microphone usually supplied with portable tape recorders is not up to the standard of recording for which your machine is capable, it is wiser to get one that is as soon as possible, preferably the dynamic type. When you have captured your sounds of the great outdoors you will wish to replay the sounds magnetised on to your tapes as true to life as possible. Speakers and unit amplifiers fitted to portable tape recorders are never able to reproduce sounds very well, although your tape will have registered sounds of extremely high and low frequencies. This is because the amplifiers and more particularly the monitor speakers are of only small dimensions and power. Speakers and unit amplifying equipment fitted to larger domestic machines are usually larger and of superior quality and do give very acceptable reproduction indeed. Should you already possess a fine quality radio set or radiogram with a very good speaker system you may replay your tapes from your tape recorder through these for even finer quality reproduction. Those wishing for real, high fidelity, living sound will find it best to investigate the possibilities of buying (once again, funds permitting) a pre-amplifier and electrostatic speaker. I have found that the electrostatic speakers, whose driving unit is a thin metal diaphragm some several inches square which vibrates as a whole in response to the signal source or input, give a much more faithful rendering of sound than the conventional moving coil or horn loaded types in special enclosures.

The next step, after buying your equipment, is to go out and find your sounds, and this may at first seem slightly more simple than it is in reality, for the catching of bird and animal sounds is not unlike wild life photography, an occupation that takes a great deal of skill in the choice of hides and how and where best to place. In this instance, your microphone to obtain a faithful and close study of the sounds you wish to record. You will eventually get used to the birds' and animals' haunts and when they usually sing or call out, so that you can time when the right moment to record is due. It is quite a surprising thing how many creatures haunt specific localities for certain purposes during the day's span and you can make good use of this, as the photographer does, in your kind of work. In fact you can combine both crafts and have pictures as well as sounds. Reflectors have great use on rivers

(continued on page 19)



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HOW TO USE AND MAKE YOUR OWN SOUND EFFECTS

by NIGEL REES

Many people still associate sound-effects with coco-nut shells and wind machines, and it is a fact that these methods are still used today in film and broadcasting studios. However, these days the producer now can draw from any of the effects record libraries that have been set up by the record companies and add a touch of realism to his programme with the effects obtained having been recorded from the real thing on the best equipment. In short they are a time and money saving investment. For the amateur recordist, however, these records are a luxury—they cost far more than ordinary 78's (they are recorded at this speed to facilitate groove location) and by the time he has finished paying dubbing fees, tax and postage, in my own opinion, they are not worth it. I believe half the fun in producing your own programmes is the manufacture of your own sound-effects. Admittedly the records give you the real thing and the noises it would be, to put it bluntly, impossible to fake. If you wish to know more about these records the following companies may be able to help concerning scales of charges if you tell them for what purpose they are to be used:

Charles Brull Ltd.,
31 Frith Street,
London, W.1

Special Recording Dept.,
EMI Studios Ltd.,
3 Abbey Road,
London, N.W.8

Paxton Recording Library,
Paxton House,
36-38 Dean Street,
London, W.1

Messrs. Stagesound (London) Ltd., 16 Gerrard Street, W.1, can also supply effects cut to your own specification.

All the above companies supply recorded music for dubbing as well (i.e. transfer to tape, disc and film).

In attempting to emulate the B.B.C. you may be tempted to fill your script with all kinds of sounds but often it is best to leave them out unless you are sure they are essential. However, well produced, balanced and recorded effects can richly enhance whatever type of programme you are producing. If you have a battery-operated portable you are off to a very good start but at the moment I am only going to describe how to manufacture sounds from things to be found in almost every home.

Sound effects are the "paints" with which a producer "colours" his production. They "sign-post" the direction in some instances, set the period in others. The sound of the famous B.B.C. seagulls

immediately indicates a nautical flavour and the addition of "creak of vessel" takes you back to the days of sailing ships.

I always rehearse my sound effects well in advance of speech recording, using everyday sounds but distorting and varying the speed or putting them in unusual contexts. Then I edit them into the rest of the production. If you require fade-ins and -outs or crossfades (slowly bringing up one sound while fading down the other) you may need two machines, but with a little ingenuity or if the effects are "vague," you can manage without. Vague? If the sounds are approximate like doors, breakfast noises, footsteps, you may like to enter the realm of "spot" effects; that is in the studio with the cast. If you can have a portion of the studio screened off from the cast or narrator with its own mike and 'dead' acoustic atmosphere, assemble in it your coco-nut shells and doors! Have if you can two or more sound-effects producers who can monitor the recording through headphones rather than by ear because nothing spoils a show more than when spot-effects are just a little slow or an actor forgets to wait for a knock on a door when we get the door opening three words after a character has made his entrance or we hear "Come in" and then "knock-knock"!

Pistol shots are dangerous as well! Nothing spoils a mighty drama more than a voice saying "All right, you asked for it!"—only to be followed by a faint click of a gun that just won't go off. Of course, with tape you can always tidy up such mistakes as these by editing but if it can be done correctly first time it saves a lot of time and unnecessary fatigue for everybody concerned!

Above all, never give up in your attempts to "cook-up" a sound-effect which you may think is impossible. A useful thing to acquire is an ear that can tell you whether a thing is "sound-genic" or not. This will enable you to break up a sound and tell you what it is made up of and what it will sound like when speeded up or slowed down. For example, once I required the roar of a waterfall for a travelogue. Now it so happens that I have a gasing in the studio for brewing coffee for actors, and when turned up to its full extent makes a wonderful roar!—or so I thought—because when I played back the recording the main sound was the hiss of the gas, which I had not noticed.

Here, then, are some ideas for manufacturing your own effects. The list is obviously endless and any other ideas will be gratefully received if you send them to this magazine for everybody's benefit.

AIRCRAFT: These are generally difficult to "cook," but the noise heard from the inside of the 'plane is easily simulated by having a Hoover, or

similar domestic appliance, running in the background.

BELLS are easily recorded as they are—try faking a peel of them!

A falling BODY sometimes is needed, and I have always used a heavy piece of wood (something like a lid from a recorder) followed by the thumps of the feet.

BIRDS in flight can be brought into the studio by flapping wet handkerchiefs in a waste paper basket for wing beats, but you'll have to be a veritable Percy Edwards to imitate the calls!

Once I needed the sounds of a BLACKSMITH'S FORGE. It went something like this:

Myself: Whoa, there.

Studio

Manager 1:

Use coco-nut shells for the horse being led to the shop.

Crinkle cellophane slowly by mic for the furnace and blow near mic for bellows.

Hit any available metal with a hammer for the shaping of the shoe.

CARS, etc., can really only be recorded in real life but when a conversation takes place in a moving vehicle keep a slight roaring in the background, say, an electric motor vibrating on a wooden box.

CROWDS can often be imitated by only a hand-

ful of people walking round and round a mike at continually varying perspectives, chatting constantly, although what they say is unintelligible.

DEMOLITION, EXPLOSIONS, WARFARE, CRASHES. A few years ago I adapted H. G. Wells' "War of the Worlds" into a very ambitious and complex recording script and, if you have read the book, you will know that the story revolves round a number of cylinders from Mars. The problem was: how to get the approach and landing of these missiles? My original plan was to buy a record of an air raid but I left this too late and, as I have said, it would have been quite an expensive item. The day before we were due to start recording I had no such record. I had written into the script a scene where a radio commentator is describing this "comet" in the sky—suddenly it lets out an eerie whistling noise and crashes to the earth. Now I happen to have a record of "Little Red Monkey," and at the end of it the clavioline lets out a piercing scream which, when played at a slower speed, gave just the right whistling noise. A friend once cut for me a disc of a car starting up, and this played at half the original speed plus feedback through the monitor speaker, gave the explosion, which my S.M.s quickly followed up with cellophane for fire, falling pieces of wood and stone (in miniature) and crashes of glass in a bucket. The overall effect was most effective if you will excuse the pun!

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(useful for FOOTSTEPS as well) and a few sheets of broken glass kept in a bucket. With fires also add falling masonry and beams: small pieces of wood dropped close to mike, at various distances, on to an empty wooden box.

FIRE ENGINE: I know somebody whose life ambition is to record an actual fire-engine zooming past with bell a-clanging . . . the only way I can suggest, though, is to have a recording of a bell superimposed on a lorry rushing past. A similar problem faced me when I was recording a programme about Provence, in the south of France, earlier this year. At the beginning it described the train journey down from Paris. In France, on level crossings, a bell rings as the train passes through the section and when heard from inside the train the effect is very like a fire engine.

HORSES, as everybody knows, are made out of coco-nut shells! These are brought down at various rhythms and quantities on to different surfaces: a "road" of three roofing tiles and the "turf" of a pillow. Accompanied by rattling and flapping we have a covered wagon, jingling keys for harness and a wheelbarrow for a stage coach. One of the strangest effects I have had to cook-up was a bullfight. This was introduced by much trumpet-blowing and Spanish music and a cheering crowd on disc. As for the bull, I damped the vibration of a drum with a cloth and gave the impression of the bull's great weight by thumping down the shells on to this surface.

RAIN is produced by pouring dry sand on to a drum.

In the realm of rocket projectiles and **SPACE SHIPS** you will have to use imagination with vacuum cleaners, but for a **ROCKET** take-off, a balloon slowly deflated close to the mike plus a lot of roaring. As you can see, a vibrator such as a drum (or a bath-tub, although this gives rather a tinny effect) is essential for sound-effects work. I'm sure that a set of child's drums was the best investment I ever made. They can also be used for drum-rolls and cymbal crashes—another useful thing.

For **SEA** on shingle or "wash of ship": a quantity of dried peas (or lead shot) rolled round on the bass drum is almost better than the real thing! For seafaring you will also need **SEAGULLS** and "creak of vessel." I'm at a loss for the first one but a creak may be manufactured by cutting off a length of about a foot of recording tape and holding it down firmly with the thumb of one hand while slowly drawing up the thumb and first finger of the other hand along the tape.

The **SCREECH OF BRAKES** before a car crash or a **SKID** is done either vocally or by drawing a tumbler across a sheet of glass. I usually record the lifting up and down of a **TELEPHONE** receiver separately and add an ordinary electric bell later, but as this involves quite a nasty editing exercise it often pays to get a friend to ring you up at a certain time and record that. For speaking over a telephone have the "receiver" close to the mike and "the-other-end" speaking into a jam jar or tin further away or on the "dead" side of the mike.

For a **THUNDERSTORM**, that car recording, slowed down again, is very effective, and if the treble control is brought up it produces the crackle off the record which represents the "electricity."

The lightning may be represented by the hiss when a hot soldering iron is put in a tin of flux.

With **TRAINS** I think a record is absolutely essential but for a background to a conversation in a carriage, where only a faint rhythm is required, continually hitting a typewriter in time will be all right, providing you miss the bell! If you have two machines, this might be a good place to experiment with continuous tape loops.

TREE-FELLING and **SHIPWRECK**: For the creak as the ship's mast or the tree begins to fall, use the method for "creak of vessel" or turn a square peg in a round hole in a piece of wood. Follow this by a "bump" with a rustling of tape "leaves" or the crushing of a matchbox close to the mike. However, unless you want to give the impression that there's mutiny on board you will eliminate the chopping caused by slicing cauliflower stalks or balsam wood with a penknife, from the shipwreck. For **RENDING OF TIMBERS** smack a piece of plywood down the steps of a ladder.

When **WATER SPLASHES IN RIVER** are needed the bath comes into its own. A piece of wood swished around can give the impression of wading or the lapping of the water against the bank or the side of a boat. Damp the "tinny" sound of the bathroom. Also put the microphone in a the bath with towels and also the echoey acoustic polythene bag to protect it from splashes.

Lastly, **WIND** which, when it whines round doors, may be brought about by blowing across the top of a fountain pen, but for an eerie or hurricane wind, it is produced by varying the speed of a cymbal being hit continuously and playing the result back at the wrong speed.

The list must end here, but do experiment with your own sound-effects and let us know about them. Don't forget, though, that first warning about overloading your production with effects and don't use your best microphone for the job.

RECORDING NATURE'S SOUNDS

continued from page 14

when you are in a boat for cutting out water ripple and when no hide is possible. As already stated the dynamic microphone is best for general use outside but has one disadvantage in that it can be affected by wind. You can use in this case the dynamic cardioid or crystal and condenser high impedance microphone. Crystal and condenser microphones will catch a higher sound frequency range. I often use wind shields and, in order to cut out extraneous noises and bring sounds nearer that are far off, a parabolic reflector in front of the mike, i.e., the face of the microphone turned inwards towards the reflector and this in turn facing the sound source. When you are recording sounds that are fairly near but moving about from place to place you may find a use for a mixer unit of the correct sort for outside work and two or more microphones placed in different strategic positions.

As regards the construction and use of hides I shall once again refer to the photographer and suggest you get a good book on photography of wild life, making sure it is a practical work of reference. However enthusiastic you may be, consider first and foremost the birds and animals.

CINE FILM-TAPE RECORDER TECHNIQUES

by RONALD CAREY

Only during the past year or so have units for synchronised tape to film commentaries become freely available as commercial articles. Prior to this it was a "do-it-yourself" effort, which in itself was grand fun to those who liked this sort of thing. But to many of us the fun of adding sound to our movies had worn itself out before we had arrived at adding the spoken word.

Today we have the choice of many excellent units which leave us with only a few of the former problems of synchronising sound on tape to our home movies.

The purpose of this article is to give some simple rules for making a sound track using the "swinging arm" or the "differential" types of synchronising unit. The principle of both these types is that the recorder governs the speed of the projector.

The most popular speed at the moment appears to be $3\frac{1}{2}$ i.p.s. on the recorder to regulate the projector at a constant 16 frames per second. But the same rules apply to any speed combination.

Step number one is to edit the film until its producer is satisfied that all unwanted material, bad exposures, etc., have been removed, and that a good continuity has been established. The commentator must have opportunity to pause, and to fit in words without haste before the next scene appears. Of course film editing and commentary must work hand in hand.

The second step is to lace up the projector with film, fixing a mark on the film just above the gate (scratch out one clear frame) so that the projector can be laced up with the film in exactly the same position at any time. Lace up the tape recorder, also with a "starting mark" just before the tape passes the sound head. This mark may be a small strip of coloured tape or a stroke of a wax pencil. After leaving the sound head the tape must pass over the pulley of the synchroniser unit before reaching the recorder take up spool.

All is now ready for a trial run. Arrange the microphone as far from the projector as possible, and place the body in between as an extra "sound muffler." Start both projector and recorder (set for "record") simultaneously and make the commentary as each item appears on the screen.

If the projector noise is still objectionable, try making a false door between two rooms, leaving a small opening for the lens to project through. For this method you will need an assistant to operate the projector whilst you make the commentary.

Another method is by the "time clock" principle. Obtain an old clock and remove the works, spring, etc., except for the last train of 12:1 reduction gears operating the hour and minute hands, fix a small tape pulley on to a short spindle, and attach this to the fast spindle in the clock gear train. The clock should have a fixed position relative to the recorder, and between full reel and sound head. So that when the tape recorder is running the tape passes over

the pulley and turns the clock hands slowly. This attachment is then an accurate tape measure.

The film and tape can be laced up for recording the commentary with the "tape measure" also "lined up." Then any point in the commentary may be identified with any "time" on the clock face. When this film "place marker" has been established i.e., the beginning of each section of commentary and its time is noted down on paper, the whole set up is put back to zero, *but without* the projector. In other words only the tape recorder and time clock are set running. By this method, and just watching the cue times on the clock, a commentary can be accurately made without any projector noise being on the recording.

The next stage is to add a musical background or other sound effects. If your recorder has a superimposing device, this is a simple matter, except that the commentator must be "word perfect" first time. The reason for this being that the music must be put on the tape first, and the commentary superimposed onto it.

The ideal method is to have access to three recorders, so that the music and effects tape can be mixed with the commentary tape onto a third tape.

The writer has made superimposed sound tracks with only one recorder, by just covering the erase head on the second run through. While this does work, quality of the final recording suffers, and quite a lot of trial and error effort has to be made to obtain the right level of commentary over the music; i.e., the music must not drown the voice. Failure to obtain this level *before* making the sound track proper, means that the pre-recorded music will be spoilt and will have to be re-recorded again. This could prove to be quite a long job.



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In Search of Music

by LAURENCE MALLORY

I have found nothing quite so fascinating and rewarding as travelling through Europe with my portable tape recorder in search of music. While photographs are able to capture the colourful scenes treasured by all who have been abroad, recordings of folk music, the haunting airs played by a cafe orchestra allow the mind's eye to re-create memorable moments.

As these recordings are played to many organisations in the course of giving illustrated travel lectures, I have to give more than a passing thought to the gathering of suitable material; not as difficult as it might sound.

The recorder, in my case a Stuzzi, is thoroughly checked before setting out on a trip. Several spare tapes are carried in case I should happen to come across something special. As with my photography, I like to take plenty of material. One can always edit afterwards. But if the recordings are short, it is impossible to add to them when you have returned from your holiday.

A tape can tell a story equally as well as a series of photographic slides or a cine film. It has one thing in common with the photographic medium; it is advisable to plan the rough outline before leaving home. How can you do this? Come along with me on a trip to Italy. Our equipment is packed, the car ready. Shall we go?

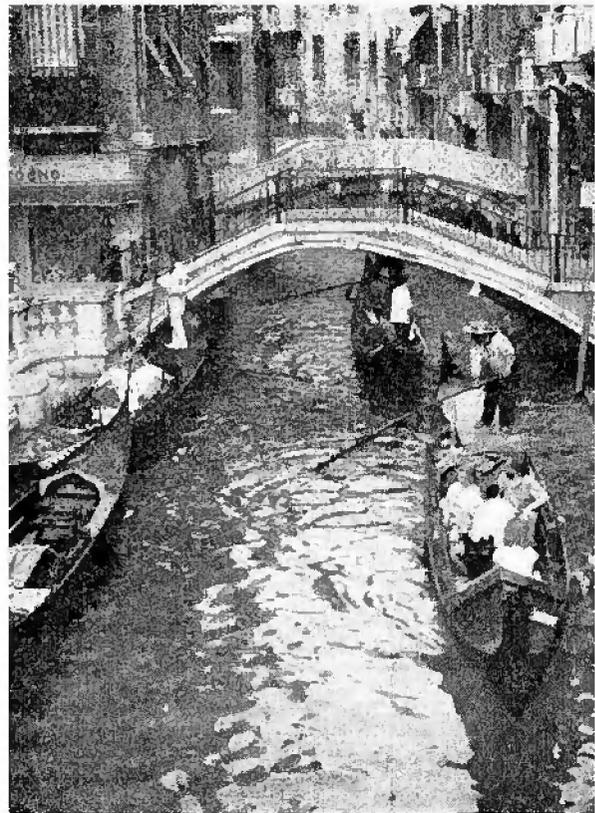
As we are flying the car across the Channel by air, a brief commentary in the plane, describing the run in over Calais could be an interesting introduction to our story, so let's tape it. The background level is high, so the microphone has to be held close to the mouth, but some of the sound from the plane's motors must be recorded to give atmosphere.

Luck is with us. Passing through Switzerland, we happen to come across a village fete. In the evening there is dancing in the local inn with that typical music to be found in that part of the world. The crowd makes recording difficult, but the chatter and laughter once again adds atmosphere, bringing the scene to life.

Continuing our drive through the Alps, we are sure to hear the melodious ringing of the cow-bells as they swing from the leather collar around the animal's neck. The sound, as it rings out across the alpine meadows once again adds to the picture we are trying to create.

Across the tortuous passes and down on to the sunny Italian plain. Florence, that gem of a city on the banks of the Arno, is a happy hunting ground for music. As the shadows lengthen, the cafes round the Piazza della Repubblica come to life. Orchestras and singers, the Italian dearly loves to sing, fill the warm night air with typical Italian songs, sung as only they know how.

If you happen to have only one recorder, it is perhaps best to make a short commentary on the spot. A few seconds thought will enable you to sketch a brief picture of your surroundings. Background sounds rather than interfering will enhance the recording. One can walk some distance away from the music, commence recording the commentary and then, still recording, gradually approach the music so that it increases in volume. Never mind the curious stares of the bystanders. They are only interested, as a portable recorder is still somewhat of a novelty. Maybe you will be asked if you



are working for a radio station. It has happened to the author.

With the music and gaiety ringing in our ears, we continue southwards towards Sorrento. Always check recordings as soon as you return to your hotel room. If anything has gone wrong, and this can happen to all of us no matter how careful we are, it is usually possible to return for further material. Or, if preferred, the recordings can be checked on the spot.

Sorrento, with its Tarentella dancers, is a must for anyone down in that part of the world. The soft, nostalgic songs, the lively clicking of the castanets,

all go to make up a recording that will bring back memories for many a year to come.

From Sorrento we turn northwards once again, heading for one of Europe's most romantic cities, Venice. Conditions here are somewhat unusual as far as recording goes. Every night during the season, parties are taken on a trip of the canals by gondola. As the group of gondolas leave the noise and bustle of the Grand Canal for the peace of a quieter channel, one of the boats with its musicians glides silently on the placid water while haunting melodies are played and sung. All around windows are thrown open as the music-loving Italians pause to listen. Such well known airs as "Come back to Sorrento" and "Figaro" from the Barber of Seville, are ours to capture. The music may fade slightly as we are recording outside and the sound disperses rapidly. But the result will be excellent. The lapping of water against the sides of the Gondola, the occasional cries of the Gondoliers and the music which gradually fades into the distance as one by one the boats slip slowly down another canal, is something which the author treasures amongst his numerous tapes.

Sound and music are everywhere, but the recordist must learn to attune his ear to it just as much as the photographer has to train himself to spot just the right angle for his picture.

It is only when one starts recording sounds and music on location that one realises how much the average person misses. Noises that we ignore, often due to familiarity, take on a new value. With a little practice, one's ear becomes attuned to the variety of sounds that constantly surround us in our daily lives. We also learn to recognise any interference. Will that noise in the background add colour to our recording or ruin it? Only experience will tell.

I, myself, find there is nothing so satisfying as returning home from a recording session on location. Having owned one of the first portable machines that appeared on the British market, I have had several years experience of recording out-of-doors.

Up in the air, rocking on a rough sea in a small boat, driving a car or travelling in a train. Recordings have been made in all these places.

Once the people know that you are making recordings for your own enjoyment, wanting to take their music and customs home as memories, they are always very co-operative. Songs that are typical of the region, may well be specially performed for your benefit. And should you have the misfortune to have a technical fault, they will only be too pleased to perform once again.

It has to be remembered that, for the majority of people, a recorder is something very new. Most of our performers have never heard their own voices. They are well rewarded if, at the end of a recording session, the tape is played back to them.

Now that so many truly portable machines are on the market, and at prices within everyone's pocket, the joys of taping it on location are well within our reach. Not only do holiday recordings provide us, the recordist, with endless hours of pleasure in our own home as memories are revived, they also give us a new way to make friends amongst those of other countries.

Taking a recorder abroad will open many a door that had previously been closed. You will come back to England having seen things and met people that many a fellow tourist may well have missed; thanks to the electronic marvel of the portable tape recorder. Good hunting on your next trip.

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“MIND - YOUR FLEX IS SHOWING !”

By LORNA GULSTON

The golden rule to observe when purchasing a tape recorder is—tell nobody. Turn your coat back to front, don a pair of sunglasses and skulk into an electrical shop at the remotest ends of the city where none of your acquaintances are likely to spy on you, then, the furtive transaction concluded, have the machine disguised as an egg-box, or bury it deep in a bag of garden fertiliser, or dress it in baby clothes and meander along the street crooning “issums wassums diddums” and suchlike incredible lunacies, thrusting a feeding bottle into the input socket for greater authenticity. Once home, lower it into the bath and call it an Immersion Heater, or fit it with twisty legs and beading and announce it as an Olde Worlde Rustick Stoodle. That way, no one will know you own a tape recorder, and you may continue uneventfully to pursue your normal occupation of fiddling your income-tax, doing the pools, floating

fraudulent companies, or whatever other honest means of livelihood you have embarked upon. Otherwise, All Is Lost and life becomes one long round of predatory encounters something along these lines :

“Ooooh, have you got a tape recorder? Tee-hee, what fun ! I'd never have the *nerve* to listen to myself on one of those things. Bet I'd sound *awful*. Tee-hee—unless you switched it on sometime when I *didn't know*. Tell you what, though, you must come round some night the gang are visiting—what about Saturday? Oh, you're booked up? Never mind—make it Monday.” (Or Tuesday, or Wednesday, or Thursday, or Friday, or Sunday, till all possibility of escape with honour is ruled out.) And so you go, complete with recorder, and The Gang giggle and gag and scream and sing into the mike and then dote on the hideous cacophony which emerges after a session of unremitting idiocy. Now that is quite bad enough, if it ended there, but The Gang inevitably know Other People, all of whom (“Tee-hee”) profess to shudder at the thought of exposing the gyrations of their larynx, but when it comes to the bit need muzzling to restrain them.

I fell into the trap very early in my recording career. Possession of a freshly-bought machine always throws the proud owner psychologically off balance for at least a week, and I was caught at the stage where it was a thrill to put my new pet through its paces. The first “customer” was a Friend of a Friend, an earnest young man with a fascinating Adam's apple, who fancied himself as an undiscovered Caruso. His fiancée, alas, played the piano, in the style of a pneumatic drill tearing up road surfaces, and so we embarked upon a Musical Evening “full of sound and fury, signifying nothing.” The



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aspiring tenor posed by the side of the piano, his Adam's apple whizzing up and down like the metal balls in those nasty slot-machines where you pull the handle and always lose your money, while his accompanist crouched over the keyboard, crunching

down on the keys as if they had told scandal about her. I was as yet ham-handed with the temporary stop control, and so I instructed the earnest pair to wait till I said "Now" before starting, but they were carried away with artistic fervour and we kept decapitating the first few bars, which resulted in a rather rude tape beginning in the middle of a sentence with a sharp hiccup, and giving the impression of bawdy verses unskilfully censored. The performers, however, clutched it to their bosoms and exclaimed coyly that it would be "something to play to their grandchildren." Since they had at that stage neither tape recorder nor offspring, it seemed vaguely on the premature side, but that was *their* problem.

Now, this distressing episode should have taught me sense. In fact, it did. But it did not arm me against the persistence of those who pleaded a Good Cause. There was Doris, who had suffered a broken engagement and needed Diverting, so could she please make a tape to her old "cast-off" boy-friend in Canada; there was the Fête which wanted to boost its takings ("Hear your Own Voice—Three Exciting Minutes for Sixpence!") and which I couldn't refuse as it was for the benefit of an animal charity; there was "little Valerie," who was "so nervous" about her forthcoming music examination and would feel *much better* if she could hear what she sounded like (I felt *much worse* when I heard what she sounded like, shredding Handel's Largo on a cheap violin); and (ouch!) there was Mant and Munkie.

Mant and Munkie were the property of the office cleaner, whom I encountered every morning trailing her mop and bucket down the stairs as I came up. She was a thin, sad-looking person with a nose which appeared perpetually wet and cold, like a healthy dog, and eyes brimming with constant woe, for no logical reason that I ever found out. She'd spotted the recorder one morning I had had to bring it into



work, and a great longing stirred in her breast, a longing which could no longer be stifled after a week of agitated thought, or so she informed me when she made her request, leaning on her mop, her mournful eyes fixed imploringly on my face. It was quite simple, really. Could I please go round some evening to her Aunt and Uncle's house to record?

"It would lift her mind, like," she explained. "Y'see, Mant's been in bed with the Doctor for weeks, and Munkie's awful worried."

This I could well appreciate. Even the most broad-minded of husbands might balk at such a situation. But I couldn't exactly see where I came in, unless the lure of the recorder was calculated to coax either Mant or the Doctor out of bed. However, it transpired (to my disappointment) that it was terribly terribly respectable after all—Mant merely had some obscure digestive disorder which was receiving medical treatment, and "a laff" would do her all the

good in the world, and it was a lot to ask of me, but if only I *would* . . .

I fell for it. Next Friday evening I hoisted the recorder into the car, and after a great many wrong turnings and a puncture I arrived at Mant's, hot, disgruntled and plastered with mud and grease, all ready for Jolly Jinks.

Mant and Munkie were expecting me. Mant had for the occasion risen from bed and was ensconced in a wicker chair by the fire, cocooned in a housecoat of severe black quilting stippled with forbidding-looking roses which insinuated that you'd better mind how you sat down or they might plunge a thorn into your buttocks. Munkie sported a shiny navy suit and an even shinier bald pate, and sat with his knees a little apart and his hands clasped like a figure in a Victorian family portrait. As well as Mant and Munkie there were Mikusins (their daughters), three of them, all married, all with a child or children bobbing around, but minus their husbands, who had no doubt prudently gone for a pint. The children were confusing—they all looked very much alike, very much a miniature of Mant and Munkie, and all eyes and hands which fretted to poke and pry into the mysteries of the recorder. I narrowly rescued the mike from a babe-in-arms who snatched it up and tried to cram it down his throat. Later I was sorry I had stopped him—indeed, I would have been gratified to shove it down for him, because he set up an earsplitting wail so that everybody shouted a great deal above it and the magic eye went hysterical and almost leapt out of its housing, and two budgerigars in the corner burst into speech and vied with each other as to which could garble the most nursery rhymes. This gave the gathering An Idea, and everybody had to recite a nursery rhyme into the microphone, and not laugh. Mant said "Humpty Dumpty"

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and Munkle said "Little Jack Horner," and Mikusins picked gems from the remainder, and at the end of the row a revolting small boy of some nine years too many caused alarm and despondency by thrusting his face practically down the microphone cable and



bowling "Mary had a Little Lamb—and the doctor fainted," followed on without a breath, in a display of shattering sophistication, with the opening stanzas of "Caviare Comes from the Virgin Sturgeon." He was pounced on and smacked by his blushing Mum, while Mant and Munkle emanated shocked embarrassment, and his howls were added to those of the squalling infant, but, nothing daunted, we pressed on, and next time everybody had to say a sentence in a funny accent, and then sing a song, and then—oh, horror!—I played the tape back, and the budgies, with commendable discernment, relapsed into harsh laughter, rocking on their perches and tinkling their little bells, and Mikusins and their brood tittered, and Munkle smiled soberly, and Mant, for whose express benefit the pantomime had been staged, maintained an expression of remote suffering, which I shared with all my heart. By the time the evening was over Mikusins, etc., were rolling in their seats, Munkle was chuckling—and Mant's expression of suffering was no longer remote—it was now urgent and acute. I felt that Mant and I had a great deal in common, but I had no desire to stay long enough to find how much, especially as a diabolical female child had upset its supper over my feet and my shoes were awash with hot milk.

"Tee-hee, you must come again," cried Mikusins, as I squeaked through the gate.

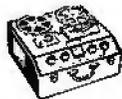
"Yes, I must, mustn't I?" I agreed, meaning entirely the opposite.

So you see why Locked Lips is the key to peaceful tape recorder owning, don't you? And if, dear reader, you happen to possess a Mant or Munkle or Friend of the Friend the burden of whose existence I can lighten and whose jaded palate I can titillate with tape, you may rest assured that if you ask me, I shall be only too happy to answer—"Not Pygmalion likely"

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TAPE TALK the monthly summary of queries by post

Dear Sir,



ANSWERS TO TECHNICAL QUERIES

The Panel of technical advisers of A.T.R. have been overwhelmed with letters and we apologise for any delay which may occur in replying. We feel sure that readers will appreciate that in a large number of instances it is necessary for the panel to acquire particular equipment in order to answer queries accurately and this of course takes time. Finally we would mention that due to the volume of correspondence we must now restrict this service to members of the B.R. Club and affiliated clubs only.

From TECHNICAL SUPPLIERS LTD.

We note with interest a letter in your Correspondence Column in the January 1960 issue from R. H. Wilson, Esq., of Stockport.

This machine is obviously being used under guarantee, and as you so rightly state, is probably due to a valve or some such component in the oscillator circuit. We would like to point out that if your correspondent had returned the machine, either through his retailer or directly to us, we should have been only too pleased to rectify the apparatus without it being necessary for him to seek advice elsewhere.—Yours faithfully,

for TECHNICAL SUPPLIERS LTD.,
WALTER J. MAY, Chief Engineer.

MR. BALDRY, of Clapham, S.W.9, replies to Mr. Braddock's remarks which appeared in last month's "Dear Sir":

"Operation by telepathy—a good idea, but a little beyond most of us as yet I fear. However, I think Mr. C. Braddock, of Blackpool, was being a little hard on me in his letter in February's A.T.R. The third part of my suggested "purchasing formula" (November, A.T.R.) was "Are the controls easy to operate?" I put this in because I realised how much easier my recorder is to operate than quite a number on the market, especially some of the Continental jobs with their vast array of sockets and knobs, which throw a lot of people into complete confusion. Example: A friend of mine has a very good recorder, but before a recording can be made the following is necessary, (1) plug what you are recording into the appropriate input socket (e.g., radio-mic, etc.), (2) move the selector switch to that position, (3) select the track to be used, (4) press down the safety button, (5) press the second button, (6) release the safety button. Six separate moves, all of which must be carried out.

On my recorder only two moves are necessary, (1) plug mic or radio into the input socket, (2) move the REC/PLAY switch to record and we're off. Perhaps this explains to Mr. Braddock my "pull this, push that and turn that switch."

I would like to endorse Mr. Braddock's remarks about the Verdik S1. I have had one of these

machines in use for the past eighteen months, and as far as I am concerned it is a "Little Darling" and worth every penny I paid for it."

A Club member from Manchester, 14, writes to say:

I have a Stellaphone ST450 tape recorder (which is essentially identical with the Philips AG8108) with which I made reasonably satisfactory recordings of music from B.B.C. programmes using an Ecko A104 set. However, interference got worse. I longed for something better, and recently plugged for a Bush VHF 64, which is excellent as a radio, especially on VHF, but hopeless for tape recording. In fact, with the radio at a reasonable level I have to turn the T.R. amplifier full on to get an adequate recording level, and anyway there is no treble to speak of—all bass. This isn't so obvious if I play back on the tape recorder, but any tape played back through the radio sounds terribly flat and booming, and I thought that with this amplifier and speaker system it should be much better. Oddly enough the signal from a record turntable fed into the "gram" sockets of the radio gives very good results. I would be very grateful for any suggestions as to what may be at fault (self, set or T.R.), and how, if at all, it may be overcome.

My knowledge of electronics is rudimentary, but the connections for "External Loudspeaker" (which I must use for recording) and so-called "Tape Input" sockets look most unsatisfactory to me. Surely all the trouble is shunted off to the small speaker?

ANSWER.—The reason for the low signal input to your Stellaphone ST450 is the fact that you are trying to match the 3 or 15 Ohm output impedance on the VHF set Ext. L.S. terminals to the high impedance, 1 Meg. Ohm, of the tape recorder input circuits. This is known as impedance mis-match, and it means that only a small percentage of the power available at the Ext. L.S. sockets is transferred to the input circuit of the tape recorder. Hence the need for "full wick" on the recorder.

The "Tape Input" sockets probably refer to a method of connecting the recorder and the radio so as to enable the radio's internal speakers to be fed from the tape recorder's Ext. L.S. socket.

The only way around this problem is to feed the Tape recorder from a high impedance source within the V.H.F. radio. Probably the best place to take your signal would be from the grid of the output valve of the F.M. receiver. A screened lead from this point to an external socket on the rear of the set should suffice. This should be 3 cable to avoid hum.

The signal level at such an output would be unaffected by the radio's volume or tone controls.



LET'S MAKE A RECORDING—SAID COCO

When Coco, the world-famous clown from Bertram Mills' Circus, visited the Elizabethan Stand at the Schoolboys' Own Exhibition, he invited youngsters to make a recording with him. As you can see, they really enjoyed themselves.

Mr. D. E. ROSE, of Retford, Notts., asks:

I wonder if you could clear up a few queries I have regarding my recorder which is a Telefunken 85KL. Incidentally, I only recently purchased it some six weeks ago.

Firstly: On playback of a recording there is just noticeable a faint hiss in the background; this, however, increases if the volume or treble control is turned up, or if a quiet passage of music has been recorded. Could it be that the heads require depolarising as I gather the Wearite De-Fluxer claims to end all background hiss? If this is so, could you say whether this device will fit my recorder?

Secondly: Although the built-in internal loudspeakers of the recorder give very good reproduction, I was desirous of purchasing a larger, more hi-fi speaker. I contacted the manufacturers of the recorder to see whether in fact a larger speaker would give better reproduction, to which they replied "A good quality speaker in a suitable enclosure would greatly enhance the performance, due to the limited size of the internal speakers," whereupon I've placed an order for a Wharfedale W10 FSB in a cabinet measuring 31½ in. x 15 in. x 15 in. Do you consider this alone will give a hi-fi performance or do you think that a "tweeter" is necessary? If you think the latter, could you recommend a suitable "tweeter," one which would fit together with the Wharfedale in the enclosure, or perhaps a Burne-Jones tweeter would suffice.

Thirdly: The frequency response of my recorder seems to be well above the table laid out in the September issue of the "Amateur Tape Recording" magazine. Is this advantageous?

ANSWER.—The hiss of which you complain sounds most definitely like polarised heads.

The Defluxer that you mention is suitable for use with any recorder as it does not fit on to the recorder; it is just a piece of equipment that should



"The main issue in this case M'lud, is custody of the Tape Recorder!"

occasionally be used on the heads of any and all recorders.

If you intend going the "whole hog" with external loudspeakers then by all means get a tweeter. It will definitely improve the system, and the one you mention, the Burne-Jones, should be more than adequate.

The extended frequency response of the Telefunken 85KL is most advantageous. It means that your recorder gives a level amplification to a far greater range of sounds.

P. J. SIMS, of Hayes, Middlesex, writes:

I wonder if you are able to give an opinion on my recorder or "dictaphone" as it is called in the booklet. It is a "Korting" MK 112. I have read all four editions of A.T.R. and have not seen the slightest mention of a "Korting." Is it that you don't approve or haven't heard of this particular recorder yet? I have seen quite a few in the shops recently.

I am the rankest of amateurs in the field of taping and the like. Since reading your magazine though I have become keenly interested in the subject. I no longer wish to be just a recorder owner. I want to become as enthusiastic as those people who write to you with their problems. For the life of me I haven't a clue. I wonder if there is such a thing as a dictionary of phrases, terms, definitions, etc. I enclose the operating instructions on the Korting which I shall be glad if you will return.

ANSWER.—Thank you for the operating instructions relating to your Korting MK 112 recorder. We had heard of such a recorder, but as no one had made any queries relating to it we naturally had made no mention of it.

You asked for an opinion on it. Judging by the literature, it would seem to be a very reasonable machine. It has its limitations, of course. The single speed, 3½ in./sec. makes it somewhat inflexible so far as any high-fi recording is concerned.

Unfortunately there is no "dictionary of terms" relating to the art. It is something that one picks up. There have been many books written relating

to tape recording, and a look through the "technical" or "hobbies" section of your local library should help you in your search for knowledge.

J. F. GRIFFITHS, of Dundee, says:

I am much obliged for the information already sent me. My machine, the Stella ST.450, is performing well but with one rather serious reservation, wow at 3½ i.p.s. has increased considerably. I realise that wow at this speed is difficult to minimise, but the point is that it has increased many times since the machine was new (it is even now only just over two months old). I have kept the heads, capstan, etc., clean by using methylated spirits on a soft cloth periodically, and I have purchased a "Klensatape" with negligible results. Any further advice you can give me will be appreciated. I have written to the makers for their observations.

ANSWER.—The wow at 3½ of which you complain could be caused by any number of faults. The more obvious one, which you yourself might be able to check are, brakes binding, dirty capstan or rubber pulley wheels worn. If there is no "wow" on the other speeds then worn pulleys seem to be the most likely cause.

Mr. K. S. DUKE, of Streeety, near Sutton Coldfield, wants some advice on portable tape recorders:

In addition to my present mains tape recorder (3½/7½ i.p.s.) I wish to acquire a portable battery operated tape recorder for general outdoor use. I have read various articles and test reports of the different models, but I would very much appreciate your expert advice as I have no opportunity of trying out any of the models myself. I am not con-

cerned with the play-back quality of the portable recorder as my recordings would be played back on my mains model, but am anxious to obtain good quality recordings. Would you please advise me:—

(a) Do you consider a recording speed of 7½ i.p.s. essential or advisable for outdoor recordings or do you consider that 3½ i.p.s. is satisfactory—even for, say, bird songs?

(b) I would want a really portable recorder—this would eliminate the E.M.I. model L.2 which is used professionally, due to its size. From the articles I have read, it would appear that the next best model for good quality recordings is the Fi-Cord. Would you please advise me how you consider the quality of the recordings of the Fi-Cord at 7½ i.p.s. compares with the E.M.I. L.2 at 7½ i.p.s., the Stuzzi Magnette (3½ i.p.s.) and the Clarion Transatape (3½ i.p.s.—the advertisement says this is a "governed" speed, a model at less than half the price).

ANSWER.—We would not go as far as to say that 7½ i.p.s. is essential for recording out of doors but we would say that it is advisable.

You have asked for a comparison between the E.M.I. L.2, which, incidentally, is the best in its class and the Fi-Cord. We do not think that you would be disappointed with the results obtainable with the Fi-Cord. A direct comparison cannot really be given because of the many different points to compare.

Our personal choice would be for the Fi-Cord in preference to the Stuzzi and the Clarion, because it provides this 7½ i.p.s. speed, but others might consider this outweighed by the halving of recording time compared to 3½ i.p.s.

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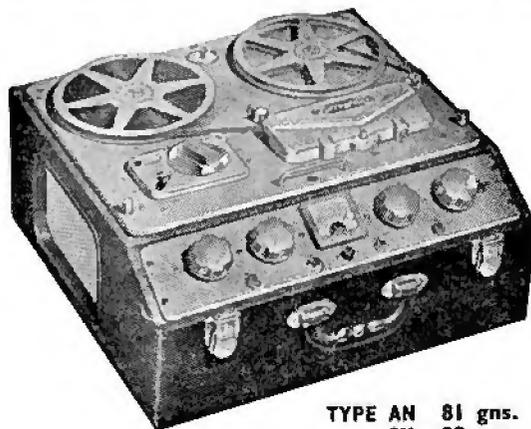
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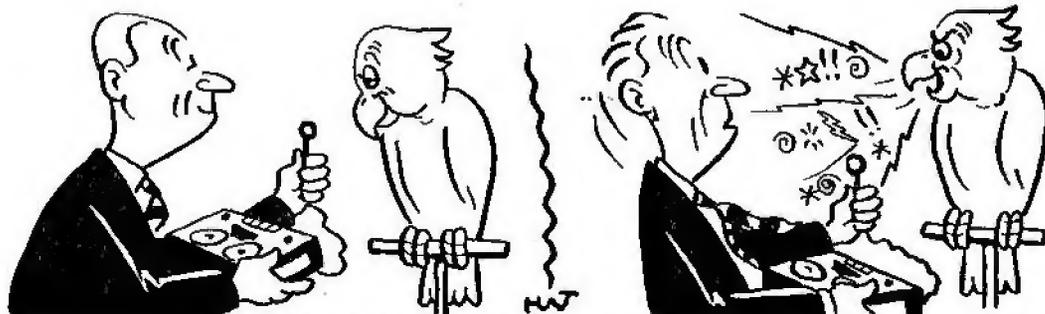
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ADVENTURES & MISADVENTURES WITH A TAPE RECORDER

by A. A. WALES

Tape recording has been one of my hobbies for many years, but I am still learning, often from my mistakes. Perhaps hearing about some of them, will enable you to learn as I have done. (Unless of course you already know all the answers, in which case you can just sit back and laugh).

I have never felt that a tape recorder's place was only in the home. Admittedly it can be very useful for taping radio programmes, and filling up time at a party, but I feel it has too many much more exciting potentialities for it to remain solely within the family circle.

Almost since I first owned a tape recorder, I have been carting my various machines about to any kind of event, or place, which promised some unusual or interesting sounds. These have ranged from mechanical organs to steam traction engines, from firework displays to talking birds, and from musical boxes to electronic organs.

Rather too often, this seems to have led me into slightly embarrassing situations. For instance, one Christmas I was recording a pantomime with a

professional cast, with what I sincerely imagined to be their full permission. Due to a misunderstanding, I did not realise that this had not been granted. Imagine how I felt when "The Dame" curtly ordered me from the stage to stop my recording. (He had to say it twice, as I just couldn't believe he was talking to me!). And of course my discomfiture was recorded. Moral—make absolutely certain that you have permission to record events of this kind.

Another time at the same theatre (Not my lucky spot!) I fixed up an amplifier with my recorder, just before the performance. The two things together must have proved too much for the power supply, and Phut went a fuse. Was I popular with the theatre manager!

Now something over which I had no control. Whilst recording a carnival parade, I was passed by an army jeep carrying a radio transmitter. When I played back my tape later, I was amazed to hear the army radio operator's voice speaking to his headquarters, and cutting right across my own commentary. By a freak, my recorder had acted as a

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radio receiver. Since then I have mentioned this to many other tape recorder owners, and found that this was not so unusual as it sounds.

At another carnival parade in a small Sussex town, I suddenly found I was surrounded by yapping hounds. The local hunt had selected my own spot to wait for the rest of the procession to catch them up.

Once I feared greatly for the safety of my microphone, when the vibrations of dancing and singing on a theatre stage caused my mike stand to over-balance from the chair on which it was perched. It crashed into the orchestra pit, but when I played back the tape I found it had continued playing even when lying on the floor. And I had recorded an awe inspiring crash. Another moral, make certain your microphone is in a secure position.

Once I thought I had a fine recording of a country fair in full swing. Imagine my disgust when I returned home to find I had recorded absolutely nothing. I'm still wondering what went wrong with my battery recorder. Another blank was an evening I spent looking for a lorry containing carol singers and a band. They were advertised as visiting a particular estate on that evening, in fact several times I heard them in the distance. (Or was it a mirage?).

Still another miss was a huge circus parade. The crowds were so thick (and I arrived too late) to get near enough to record. The lesson here could be, make certain you arrive in good time when planning a recording of this type.

In case you think I missed all the best recordings, here are just a few items I did manage to record. A harpsichord, a zither, a solo tuba, an electronic organ, child carol singers, several musical boxes, an Irish pipe band, church organs, and many more.

One of my most satisfying recordings was of a big mechanical organ (privately owned) "The Orchestrion." I made two trips to another town to tape this chap, and he is still thrilling my friends through the medium of the recordings I made at that time.

Another enjoyable experience was visiting a real old country character, a traditional singer in a small village. When I first called on him, I took a mains machine, but was a little disconcerted to find he hadn't got any electricity supply in his cottage. What's more he wasn't on such friendly terms with his only neighbours, so we thought it best not to ask their permission to run a lead from their supply. Shortly after this I bought my battery recorder (The Butoba), and paid him another visit—this time with more success. During the recording of one of his songs, a large wall clock proceeded to slowly chime twelve o'clock. (It was in actual fact about four o'clock in the afternoon). This was almost immediately answered by another resounding striker in the next room (fortunately this one struck the correct hour). During all this din, my singer carried on with his song completely unperturbed, but I'm afraid the recording was ruined.

Once when making a series of folk song recordings for an American record company, I got to the end of a very long folk ballad I had been singing, my guitarist lifted his fingers from the instrument with an almost audible sigh of relief (he had been accompanying me all the morning, and this was the final song), and at that very moment someone burst into the room with a hearty remark. We appreciated the remark, but not the time chosen to make it, as we had to make a completely new recording of the

lengthy song. Perhaps I should install a red light outside my recording room!

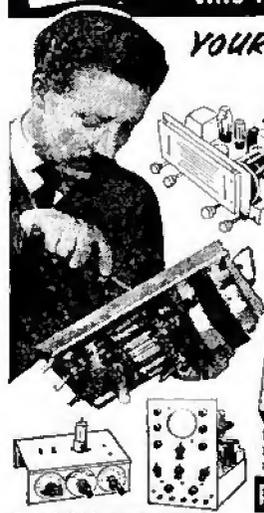
One very interesting recording was of an International Ceilidh. This consisted of 3½ hours of thrilling items from many different countries including India, Japan, China, Indonesia, Malaya, Mongolia, Tibet, as well as the U.S.A., and European countries. But who will sit and listen while I play them 3½ hours of tape, so I managed to edit this down to about ninety minutes.

And now just one more of my embarrassing situations. I was using the battery machine to record the farewells to a group of foreign students leaving the town. Everyone was assembled on the station platform saying their goodbyes, the train steamed in (not strictly accurate, as it was an electric train), I said, "Well here comes the train to take the students away, blah, blah, blah," and everyone said goodbye again in urgent tones. Then someone ventured to suggest that it wasn't the right train after all. Oh well, thank goodness tape can be erased.

In case you feel I have exhausted all the possibilities of recording in my part of the world, I'll hasten to add that there are still plenty of things I want to add to my collection of sounds. For instance I still haven't got that fair, and then there's a street organ to add to my other organs, and of course a Punch and Judy show. And by the way, does anyone know where I can find a one-man-band?

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ADD BELOW ANY MODELS YOU ARE ESPECIALLY INTERESTED IN :

TAPE CLUB NEWS



Edited and compiled by
TERENCE NURSE

ANNOUNCEMENT

Will Club Secretaries continue to send news to:—
TERRY NURSE,
161 Stuart's Road,
Birmingham 33,
not later than the 26th of the month. Send plenty
of news in because **THIS IS YOUR JOURNAL.**
Interesting photographs are also invited.

STAR RECORDING COURSE

Not even the thick fog which descended like a blanket over most of the Midlands could keep us away from the opening session of the Star Course of Tape Recording. Nor could it keep the eager students away either; we counted over thirty of them by the time the course opened at 8.0 p.m.

During the next six weeks, I gathered, they would learn quite a lot about tape recording. Co-organisers Mike Brown and Mrs. Vera Tilcock had seen to that. They had planned the course in detail weeks in advance, and had put a tremendous amount of energy into assuring its success.

On this very important first night the instruction was given by R.A.T.R.S. President John O. Bannister. Once the course had been officially opened, he proceeded to give us a really fascinating lecture. Starting with the discovery of magnetism itself, he took us through the days of Valdemar Poulsen and his Telegraphone; through the 1930's when broadcasting stations were using Marconi-Stillie recorders with two-foot diameter reels of steel tape needing two men to lift them; through the war years when in Nazi Germany secret developments were being made in the coating of plastic film with ferrous-oxide, and finally up to the present day.

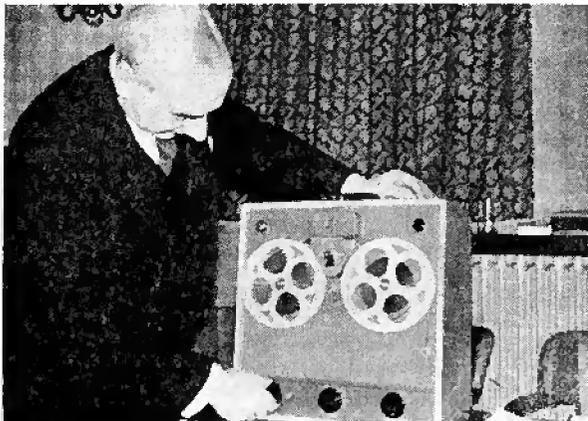
A fascinating talk indeed, and one during which Mr. Bannister brought to light a number of lesser known facts of great value. "You know even the best of us are in a blind alley about many aspects of tape

recording," new R.A.T.R.S. member Stuart Morgan said to me afterwards. "This course should be of great interest to us all."

Mr. John Cappell, manager of J.T.E. Brown Ltd., who gave tuition at the second session, went further: "I think the course is truly ambitious," he told me, "and it should attract a lot of people who haven't already got tape recorders. With so many popular-priced recorders on the market now, more and more people are being attracted towards the hobby."

Of those who already had recorders, he added, "The course should broaden their interest, and they should get a great deal more pleasure from their machines after taking it. There should be terrific scope for other clubs to organise similar events."



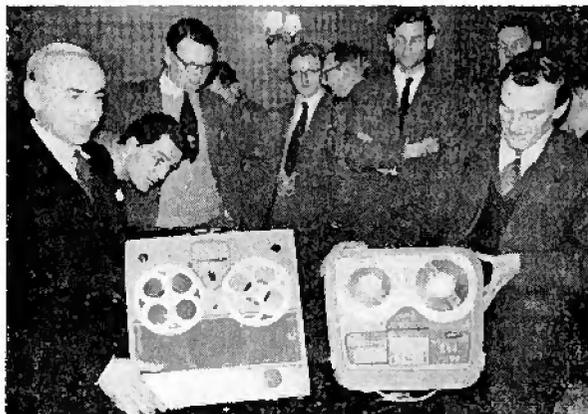


John Bannister demonstrates a 1948 Baird recorder. It can fast-rewind 1,200 foot spool of tape in 45 seconds

Mike Brown also had high hopes of a national scheme. I asked him if he had the Rose Bruford course in mind when planning the "Star". "We have aimed for a similar standard," he replied, "in fact I did suggest a tie-up to them. This failed to materialise, but I certainly would like to see other clubs organise similar events. In time it should be possible to organise a national scheme." At the second session, as I have already mentioned, Mr. J. E. Cappell, and also Mr. Moyston Ridley, of J. T. E. Brown Ltd., a well-known local retailers, gave tuition. Mr. Cappell introduced some of today's tape recording equipment, demonstrating Grundig, Fidelity and Walter recorders. Mr. Moyston Ridley talked about the care and maintenance of recorders.

The third session was given by Mr. L. W. Saunders, a representative from E.M.I., who was accompanied by Sales Manager P. J. Wetherall. They talked about the manufacture of tape, the various grades and their uses. Afterwards students were invited to question Mr. Saunders on the subject.

Mr. George Dawson (R.A.T.R.S. Technical Group) talked about the importance of the right microphone for the job in hand. Talking about ribbon, moving coil and crystal microphones, he had with him a selection of these to demonstrate his points.



Comparing the old with the new. Students gather round the 1948 Baird recorder and a modern Grundig.

WOT A FOG

The elements of nature played havoc with what was to have been the first meeting in 1960 of the Coventry Club. Only six hearty souls managed to drag themselves from the warm fire at home and make their way to Rotherhams Social Club. For these six it turned out to be quite an enjoyable evening; sitting round the Clubroom fire with the odd noggin by one's elbow, talking of recording and recorders. "Hardy" Henry Hopfinger had brought along his machine ready to make a tape to another club, but since this had to be postponed, it was used instead to play a tape he made a few nights previously of speeches made by the Lord Mayor and the Bishop of Coventry at a meeting held in aid of World Refugee Year.

EDINBURGH TO LONDON WALKER RECORDS FOR "B"-TRAC

If you read the papers at all last month, you can't have failed to hear of Terry Haywood and the controversy which arose as to whether or not this Brumborn lad had walked the whole of the 350 miles from Edinburgh to London, in the footsteps of Doctor Babs Moore and in record time.

The day after the controversy broke out, a team of interviewers from "B"-TRAC went along to "tape" Terry and his fiancée at home. Montee Knee, Frank Wilkinson and Reg Smith, three familiar figures at the Birmingham Club's Monday-night-at-8 meetings, took along with them a Telefunken and a Stuzzi, and they returned convinced that Terry had, in fact, walked the complete distance. After hearing the tapes at the clubroom, one lady stood up and declared to the other members "I am convinced he is not a phoney." Another exclaimed "Surely no one would walk nearly all the distance, and then throw away their chances of claiming the prize by cadging a lift for a mere 8 miles!"

In the tape Terry made reference to the way the Press had misinterpreted practically everything he said. For example, he gave his occupation as a fork-lift truck driver. Apparently the Press didn't know what this was so they changed it to a Transport Driver. By the time it was printed in one paper, he turned out to be a Bus Driver! The tape was initially made to demonstrate how to conduct a successful interview. After giving his account of the journey Terry proceeded to "turn the tables" and fired questions about "B"-TRAC and tape recording in general. He also invited those members present to visit a stock car race with him, a sport on which Terry is more than keen.

COME ON TO MY CLUB

Proud moment for the newly formed Friern Barnet and District Club came during January when the club were hosts to ATR Assistant Editor Ken Peters and Club Secretary Alec Alexander. A very pleasant evening was spent by these two, outlining the history of the British Recording Club, telling of the BRC's ambitious future plans, and offering suggestions for Club Night activities. A very foggy night (here we go again!) prevented many of the Friern Barnet members from attending, but as Tony Andrews says "We were delighted to have our two visitors and hope they will be able to join us again when we can offer a "full house." The Club invites prospective members to attend a meeting. Please write first to A. S. Andrews, 13 Hartland Road, Friern Barnet, London, N.11, or phone ENTERprise 7972.

THERE WAS A YOUNG LADY FROM . . .

A good idea comes from the West Wales Tape Recording Club this month for making sure meetings are well arranged. This task, all too often the duty of an over-

worked Secretary, is at their club shared out amongst the members themselves, with a prize at the end of the year for the best "programme arranger."

At the last meeting held in this unusual way, at the Clubroom, New Street, Aberystwyth, Mr. T. Islwyn Nicholas submitted several items, one of which was of Dylan Thomas reciting a poem. Mr. Nicholas' father is one of the most famous sonnet writers in Wales and the club hopes to hear some of his works read by his son.

As the evening was largely social in make up, members' wives were invited. This proved popular, so it was later agreed to continue the arrangement. Simultaneously the first two lady members were enrolled. The club has purchased a new electronic mixer with which the Secretary has been producing programmes for use over the Hospital service. This operates over six hospitals in the Aberystwyth area, two of which are for T.B. patients. The club has been fortunate in getting contributions from several local sources. The club throws out a challenge to the Merthyr Club which was formed on the 25th March, 1959 and has up to the present claimed to be the first Welsh society for tape enthusiasts. The West Wales club was constitutionally formed on January 1st, 1959. Furthermore, the club has operated the Hospital Tape Service from June, 1959, and has been in contact with the BRC Hospital Broadcasting Service since August, 1959.

Mr. D. Gareth Jenkins, the Secretary, invites prospective members to contact him at 5 Glyndwr Road, Aberystwyth.

WELCOME TO CLACTON-ON-SEA

If that sounds like a hackneyed holiday poster, we should point out that it is the Clacton Tape Recording Club which we are welcoming. The new Secretary, Mr. A. Ings, of 18 Cooper Lane, Clacton, Essex, informs us that the club meets every Monday at a room in the R.A.F.A. H.Q., Pier Avenue, and the club started from an advertisement Mr. Ings put in the local paper. The club has ten members including a member of the cine club who is currently adding sound to his silent films.

May we also offer a welcome to the Ultracorder Club which is part of the Ultra Sports and Social Club. Ultra Electric Ltd., Western Avenue, Acton, W.3, and which held its inaugural meeting on January 19th.

WILL SEX REPLACE THE BICYCLE

At the last meeting of the Sheffield Tape Recording Society, members were warned that during the evening they would be called upon to talk for three minutes on any subject chosen for them by the Chairman, W. N. Anderson, the proceedings to be "taped" on his machine.

Topics chosen ranged from tape indexing and audio fairs to holidays abroad and parking problems. Mr. Jeeves, the Secretary, also offered a subject, "Will sex ever replace the bicycle," but this was rejected. Why? Anyway, playback of some of the other subjects provided enough amusement and sparked off some instructive discussion.

A mystery raffle was held too, and this was won by Mr. Brazil who discovered he had become the proud owner of a pound of sausages, two pork chops, and a packet of dried peas, all donated by Mr. Gullick.

VOTE FOR JONES

A.G.M. time for Weymouth Hi-Fi Tape Club came round on January 6th when at the Waverley Hotel, Mr. Garnet Jones was voted Chairman for a second year running and Mr. Butler held his position of Secretary. From the club's short memo we learn that a fishing contest is to be arranged between members. "Tape-worms" will not be used for bait."

SOUNDS MYSTERIOUS

All members of the Wakefield and District Club had a really enjoyable time at the last meeting when Messrs. Wood and Appleton gave a first-class demonstration of "sounds mysterious." These were produced by using some pre-recorded sounds of everyday life, and by distorting, cutting, looping, dubbing, re-dubbing, and splicing these in various permutations. Much laughter was heard at some of the unusual noises produced. Mr. Wood ended his demonstration by inviting all present to have a go at making tapes themselves, with a prize of a tape for the member producing the most enterprising entry.

This edition of AMATEUR TAPE RECORDER should be on sale in time to inform Wakefield readers of a demonstration of Ferrograph and Fi-Cord recorders to be given by the Club in the Library, Drury Lane, at 7.30 p.m. on 29th February. Beckett Film Industries of Leeds are giving the demonstration at this meeting. Leeds Society have been invited to attend. Why not go along and see it yourself?

Colin Braddock would like anyone living in the Blackpool area who would like to join a tape group to contact him at 266 Waterloo Road, Blackpool (Tel.: 45049). Colin says that the object of a group rather than a tape club run on official lines is to spend time actively on tape recording, etc., rather than on running a club.

David Birtwistle, of Blackburn, would like to meet London club members when he is visiting the capital between July 18th and 23rd this summer. David's address is 11 Pilkington Street, Blackburn, Lancs.

George Clegg is forming a tape club for recordists in Northallerton. Members interested should write to Mr. G. F. Clegg, 5 Friarage Mt., Northallerton, Yorks.

Charles Young is interested in forming a club for Doncaster tape recordists. Members interested should write to Mr. C. K. Young, 28 Chelmsford Drive, Wheatley Park, Doncaster, Yorks.

Mr. R. S. Bunn, whose tape recorder is an Elizabethan Essex, would like to form an Essex owners' club. Members interested should contact him by letter or tape, at 130 Welbourne Road, Tottenham, London, N.17.

William T. Smith is interested in forming a tape recording club in the City of London, to be known as the International Tape Recording Club, to convey the proposed emphasis on tapesponding. Meetings will be held at least three times a month. Members wishing to join should write to Mr. W. T. Smith, 97 Great Arthur House, Golden Lane, Aldersgate, London, E.C.1.

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Everyone who uses a tape recorder will need this little tool. It is indispensable. P. Willson, 'The Gramophone'. Send a stamped, addressed envelope for a helpful leaflet on tape editing.

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A GOOD IDEA FOR YOUR NEXT PARTY

BY EDWIN THORPE

Two rooms are required, all the ladies present being requested to go into one room and all the gentlemen into the other. My Grundig 'TK5' recorder is then installed in the room with the ladies in and the microphone placed in the room with the gentlemen, the microphone being connected to the recorder with an extension lead which passes under the closed doors of the two rooms. The gentlemen are then supplied with a pile of popular Woman's Weekly Magazines which have been opened at the "Agony" letters page. Each of the ladies is supplied with a paper and pencil. The gentlemen are then given numbers and each one in turn announces himself as a number and proceeds to

read one of the "agony" letters in a faked voice. The ladies in the next room write down the number announced and have to write the correct name of the gentleman who then reads the letter. All this is recorded, the ladies listening through the monitor speaker which does not suffer from "gain" as the room doors are closed.

I find that the gentlemen are first class at faking their voices—much to the surprise and laughter of the ladies. The ladies are then given a turn at the microphone, but I generally find that they are unable to read a complete letter before bursting out laughing, thereby giving away their true identity to the gentlemen. The whole recording is then played back to the reunited guests and the papers checked, the person who guesses most of the correct names of the mysterious voices being given a prize.

A Directory of Localised Clubs

Aberdare Tape Society.—Dyfrig Roberts, 1 Aman Street, Cwma-man, Aberdare, Glam., S. Wales.
Aberdeen.—William Hobben, 22 Ruthrie Terrace, Aberdeen.
The Birmingham Tape Recording and Audio Club ("B"-Trac).—Dennis W. Brown, 133 Pool Lane, Oldbury, Birmingham.
The Blackpool and Fylde Tape Recording Club.—Eric W. Wallis, 23 Kipling Drive, Marton, Blackpool.
The Bournemouth and Poole Tape Recording Club.—Hedley R. Jones, 442 Poole Road, Branksome, Poole, Dorset.
Brighton Tape Recording Club.—R. Vivian, 37 Ditchling Road, Brighton, Sussex.
Bristol Tape Recording Club.—Whist Secretary John Mitchell is in Cape Town, South Africa; R. F. Beaton, 12 De Clifford Road, Lawrence Weston, Bristol.
Catford Tape Recording Club.—Derek C. Harker, 62 Batmeston Road, Catford, London, S.E.6.
Chesterfield Tape Recording Society.—Cyril R. Newman, 9 Devonshire Villas, Barrow Hill, Nr. Chesterfield, Derby.
Clacton Tape Recording Society.—A. Ings, 18 Cooper Lane, Clacton-on-Sea, Essex.
Coventry Tape Recording Club.—Roy Victor Reynolds, 1 Thurstone Road, Radford, Coventry, Warwickshire.
Crawley and Sussex Tape Recording Club.—R. C. Watson, 32 Southgate Drive, Crawley, Sussex.
Dundee Tape Recording Club.—Charles W. Aitken, 59 Strathmartine Road, Dundee, Angus.
The Edinburgh Tape Recording Club.—John F. Penman, Esq., 22 Lauriston Place, Edinburgh, 3.
E.T.E.S.S.A. Tape Recording Club.—G. P. Jones, c/o O/C Details, Room 2, G.P.O. Cable and Wireless, Electra House, Victoria Embankment, London, W.C.2.
Friern Barnet and District Tape Recording Club.—Anthony S. Andrews, 13 Hartland Road, Friern Barnet, London, N.11.
Glasgow Tape Recording Club.—D. Craig, 55 Ledaig Street, Glasgow, E.1.
Grantham and District Tape Recording Club.—L. G. Gilbey, 67 Denton Avenue, Grantham.
Huddersfield Tape Recording Society.—George R. Parks, 175 Newsome Road South, Newsome, Huddersfield.
The Ipswich Tape Recording Club.—Malcolm Wilding, 31 Darwin Road, Ipswich, Suffolk.
Irish Sound Recording Association.—Barry J. Hardy, 6 Capel Street, Dublin, Eire.
Irish Tape Pals.—Edward T. O'Neill, "Mandalay," 12 Meyerson Park, Limerick, Eire.
Jarrow and District Tape Recording Society.—John Rippington, 30 Breamish Street, Jarrow, Co. Durham.
The Jersey Tape Recording Club.—President, Graeme A. Ahier, "Santa Barbara," Maufant, St. Saviour, Jersey, Channel Islands.
John Shinn Recording Club.—(Director) John Shinn, John Shinn and Sons Ltd., Town Centre, Leigh, Lancs.
Keighley Tape Recording Club.—K. Wells, Esq., 318 West Lane, Keighley, Yorkshire.
Kettering and District Tape Recording Club.—A. M. Webb, 93 Regent Street, Kettering, Northants.
Leeds and District Tape Recorder Club.—Terence Quigley, 52 Station Road, Horsforth, Nr. Leeds, Yorkshire.
Lefcester Tape Recording and Hi-Fi Club.—Peter J. Starie, 56 Minehead Street, Leicester.
London Tape Recording Club.—Stanley Wrist, 6 Doneraile Street, London, S.W.6.
Luton Tape Recording Society.—Roy Thody, 25 Salters Way, Hockwell Ring, Leagrave, Luton.

Manchester Tape Recording and Hospitals Society.—Joe Kerrs, 20 Naylor Street, Hulme, Manchester, 15.
Merthyr Tydfil Tape Society.—Colin Francis-Griffiths, 4 Garden City, Penydarren, Merthyr Tydfil.
Middlesbrough Tape Recording Club.—G. Brian Harrison, 27 Tennyson Street, Middlesbrough, Yorkshire.
Millom and District Tape Recording Society.—Kenneth H. Thompson, "Freya," Haverigg, Millom, Cumberland.
The North Lincs Sound Recording Society (Grimby).—G. H. Leighton, 21 Langton Drive, Nunthorpe, Grimsby, Lincs.
Nottingham Co-operative Amateur Tape Recording Society.—Norman D. Littlewood, 129 Standhill Road, Nottingham; and Keith Fricker, 10 Sherwood Avenue, Sherwood, Nottingham. (Joint Secretaries).
Plymouth Sound Association.—J. M. Ashby, 3 Hill Cottages, Station Road, Plympton, Plymouth, Devon.
Reading Cine and Tape Recording Society.—D. M. Noyes, 4 Froxhill Avenue, Reading, Berks.
Rugby Amateur Tape Recording Society.—Mike Brown, 219 Clifton Road, Rugby, Warwickshire.
Royal Air Force Tape Recording Society.—R. L. Restace, c/o Sgt. Mess, R.A.F., Waterbeach, Cambridgeshire.
R.A.F. Tape Society.—Mike Edser, R.A.F. Ballykelly, Limavady, County Derry, Northern Ireland.
The Sheffield Tape Recording Society.—B. T. Jeeves, 58 Sharrad Grove, Sheffield, 12.
The Staffordshire Tape Recorder Society.—Mrs. Joyce M. Tasker, 7 Swinwell Grove, Stafford.
Stroud Tape Recording Club.—K. E. Trenerry, 9 Corby Avenue, Old Town, Swindon.
Alpha Tape Recording Club (Sydenham and District).—A. R. Dyer, 59 Tannfield Road, Sydenham, London, S.E.26.
Tape Recording Society of Great Britain.—John Walters, 29 Pitt Street, Broadwaters, Kidderminster, Worcs.
Ulster Tape Recording Society.—W. J. Scott, 41 Haypark Avenue, Belfast, N. Ireland.
Ultraorder Club.—D. A. Wiseman, Ultra Sports and Social Club, Ultra Electric Ltd., Western Avenue, Acton, London, W.3.
Wakefield and District Tape Club.—Ivan C. Chidwick, 13 New Street, Kinsley, Nr. Pontefract, Yorkshire.
Walthamstow and District Tape Recording Society.—J. A. Wells, Esq., 178 Selwyn Avenue, Highams Park, London, E.4.
The Warwick and Leamington Amateur Tape Recording Society.—Brian Race, Esq., 30 Ashford Road, Whitnash, Royal Leamington Spa, Warwickshire.
West Essex.—F. Stebbings, 24 Tweedmouth Road, London, E.13.
West Middlesex Tape Recording Club.—H. E. Saunders, 20 Nightingale Road, Hampton, Middlesex.
West Wales Tape Recording Club.—Gareth Jenkins, 5 Glyndwr Road, Aberystwyth, Cardiganshire.
Weymouth Hi-Fi Tape Recording Club.—Gordon Butler, 53 Chapelhay Heights, Weymouth, Dorset.
The Winchester Tape and Cine Club.—J. H. Beck, 127 Stanmore Lane, Winchester, Hants.
Wolverhampton Tape Recorder Club.—E. M. Mountford, c/o Mobile Recordings, 35 Berry Street, Wolverhampton, Staffs.
The York Tape Recording Society.—E. Edwards, Esq., The York Tape Recording Society, c/o The Shambles Cafe, York.

WE WILL BE GLAD TO HEAR FROM ANY LOCAL CLUBS NOT LISTED ABOVE.

TOP

FAVOURITES IN THE RECORDER FIELD

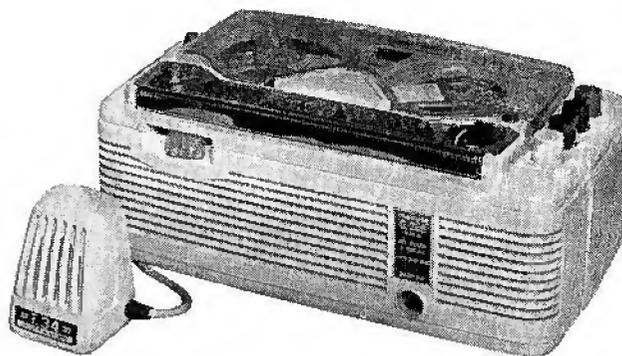
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Almost 90 minutes of your favourite music or whatever you choose on one tape ... recorded and replayed to a standard of perfection beyond your wildest dreams. So light and portable you'll love to take it to every party you go to, to capture every fleeting word and happy song, to be re-lived just whenever you please ... and the price.

26 $\frac{1}{2}$
GNS.

(Complete with microphone and tape)



High-quality reproduction at 1 $\frac{1}{2}$ " per second from extra high flux elliptical speaker. B.S.S. tracking. Simple push-button control. Accurate place indicator. Dimensions 10" X 5 $\frac{1}{2}$ " X 4". Weight only 6 $\frac{1}{2}$ lbs. Isolated chassis.

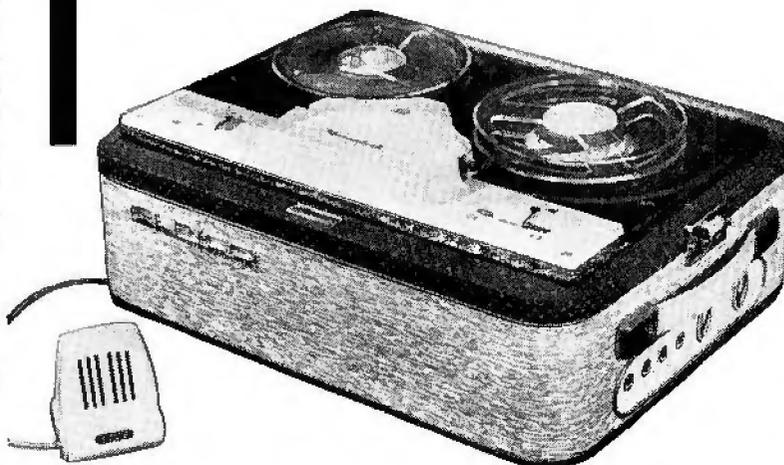
ELPICO TR400

Here is the tape recorder for both the young in heart and the critical music enthusiast. Its smart appearance, simplicity of control and clarity of reproduction will thrill you. Never before in the history of Tape Recorder manufacture has so much been offered for so little. The ELPICO TR400 combines all the advantages of much higher priced equipments with the latest techniques in manufacture to provide you with many years of trouble-free enjoyment.

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GNS.

Complete with high fidelity microphone and 600ft. tape and spare reel

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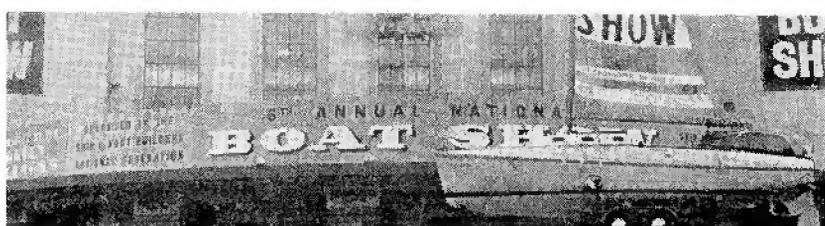


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BEHIND THE SCENES AT THE BOAT SHOW



(Above) View towards the Harbour.



(Left) The Monaco twin screw diesel express cruiser built by Morgan Giles Ltd.

(Below) Jan has a chat with Mrs. Temple-Walter (sister of the owner) about the Star-Craft "33" (W. Bates & Son) in the Boat's lounge. This was one of the craft actually floating in the Harbour.



Tape viewed
by
JAN PHILLIPS



A HOST of silver sails and not a breath of wind. This great Armada lay becalmed in the Sargasso Sea of Earls Court—and a good thing too when a landlubberess has to report on nautical affairs.

Rowing boats, sailing boats, motor boats—all were there . . . and dinghies, yachts and launches, or are they the same? Over three hundred and fifty boats under one roof. The most varied boat show in the world.

I loved the tall, graceful sailing boats with their slender lines and glorious sails. To me they are even more attractive out of the water than in, for then the graceful curve down to the keel is visible. However, if a fairy godmother had popped up and asked me to take my choice, it would have been the 52-foot Monaco Fast Cruiser (£25,500). This is fitted with three 100 h.p. engines—thirty cars-worth—packed into one hull. Its standard equipment includes cocktail cabinet, chromed electric horn, Latex Foam upholstery, galley with refrigerator, stainless steel sink, gas cooker, two toilets and an electric shower, searchlight, electric lights in all compartments, and a King Size overcraft.

One of the surprising things about the show was the huge size of some of the exhibits, and in particular the Monaco, and the Melora III which is also 52 feet long and is the biggest sailing yacht ever exhibited at a boat show. Someone was silly enough to suggest that they must have built them there. But I know better now!

Other surprises were the Fashion Show (at which one daring manufacturer introduced a Susie

Wong jacket) and the Sabre Speedcraft which has a helicopter unit to lift it up into the air when towed by a motor-boat. A real sea-glider that can reach a height of 500 feet.

The most unexpected items present were a piece of rope from an Egyptian tomb, and a frog woman. I would have tried on an underwater swimming outfit—but for the danger of getting wet. After all, why swim when you can skim over the surface in a floating palace.

Looking down the main aisle towards the harbour, one saw a wonderful country view complete with fishing village by the harbour side. The houses looked quite real until I got closer—and found that they were! The back-cloth, which bore the country scene, is the biggest ever made in this country, being 200 feet long. It absorbed seven hundredweight of paint, which is enough to have floated most of the small craft present. I felt sorry for the artist though, with both his arms in slings.

One delightful feature was a drip-dry boat hanger. Any questions?

The floor plan of the Show was like a complicated Board Game in which you start from A1 (Yachting Monthly) and try to reach R.14 (Royal Navy) without being Shanghaied on the way.

We discovered tape recorders in three places: in the Monaco (naturally), where a Grundig was part of a built-in section comprising radio, television and recorder; on the British Ferrograph stand, where the Ferrograph Echo Sounders were also on display; and under the harbour where an intrepid diver went fishing for sounds.

I was rather taken by the Build-It-Yourself Boatyard, but the kit was too big.

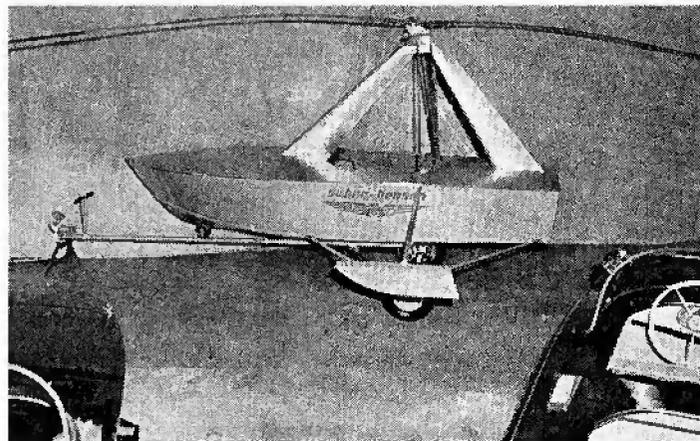
The range of craft was enormous, with prices from 40-25,000, which is not a bad frequency range either! For £40 there was a 7 ft. runabout made of glass fibre, that could be fitted to a luggage rack on the top of a car. My motto being "safety first," I was glad to note that it is fitted with an expanded polystyrene block to provide buoyancy in an emergency.

There were fishing rods and fishing smacks, Hovercraft and water skis, and underwater sledges and so much else that one was still discovering new and fascinating exhibits when the time to depart arrived. So as the arc lights slowly sank in the West to the amplified strains of "Britannia Rules the Waves" I bade a reluctant farewell to the Boat Show.

(Right) Aqua-girl.



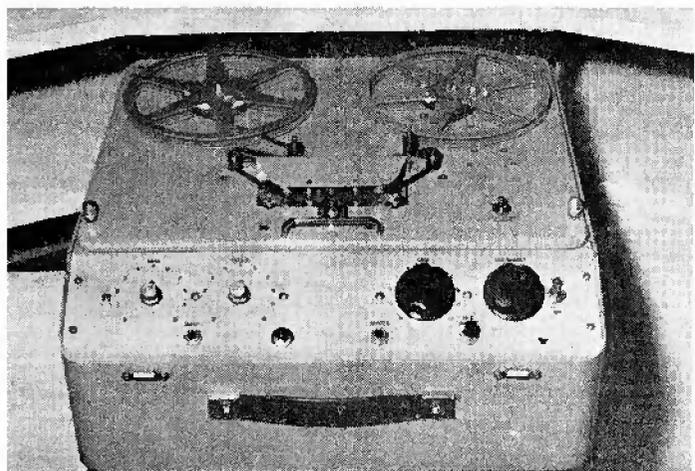
(Below) The Boat That Flies. Sabre II G.B., two-seater dinghy (Sabre Speedcraft Ltd.).



(Right) Jan sees what's cooking in the galley of the Star-Craft



(Below) The new Ferrograph Model YCP was being used on the British Ferrograph stand to supply information on the Ferrograph Echo Sounders. It runs at 3 1/2 i.p.s., takes 7" reels and is continuously reversible by means of end of reel tension. Its stop switch can be operated at any time to cut off the machine when the tape is fully wound.



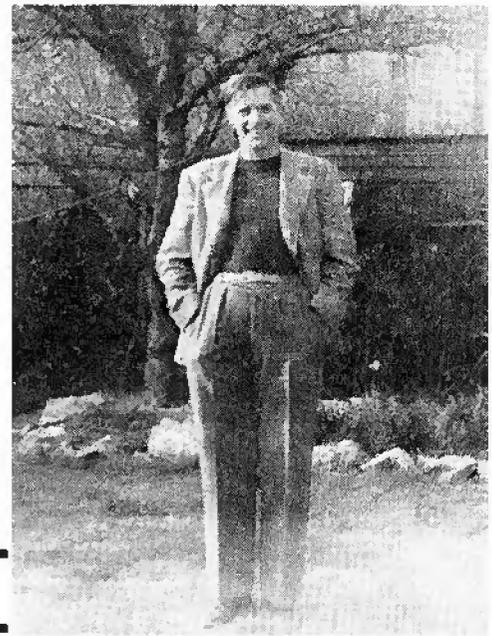
CLUBMAN PROFILE....

Meet the Men & Women behind the
"MIKE"

In February, 1959, I bought a Philips A.G.8106. For the next six months I used it for recording my old 78 speed records. Then from buying my copy of the AMATEUR TAPE RECORDING I started taping. This has now become my main hobby. Television is the box that stands in the corner and is the thing I used to watch. Books are things that stand in the bookshelf. I am a tapeworm with an insatiable hunger for eating into miles of tape. In the last few weeks I must have acquired the friendship of about thirty tapefriends from all over the world. The magic of a friend's voice coming into one's own room with natter and music is very stimulating. Each tape is so individually personal. A "make-it-yourself" programme, even if not up to professional standards, is to me so much better than just watching others create. I was lucky in my tape friends. Especially was I lucky in contacting Jimmy Marshall from Brighton, who, with a friend, makes a Folk Voice magazine which circulates round the world. It is recorded on a 5 inch spool and some really interesting material goes into this enterprise. I feel further recorded magazines could be started with other styles of music—say classical material. What about it enthusiasts?

I am a qualified teacher and teach guitar and piano mostly. I use the recorder for my work, both for practice and record purposes. Also when a prospective pupil calls, I can show him by means of these tapes the skill that other pupils have acquired after only a few months' tuition. In fact, the recorder now helps me so much that I don't know what I would do without it. I taping in between my lessons and try to return my tapes the same day. As I work "at home" this is easy for me to do and I am very lucky.

My hobbies other than taping and recording are weight-training (bodybuilding), travelling round the world, reading travel books, listening to music



JOHN
BARTER

(all kinds but especially guitar), photography, and humour.

My future ambition is to keep the good friends I have already, improve my taping, gain more friends, keep fit and my sense of humour. I want to travel the world, taping songs and sounds and take colour films and write books about my experiences.

The address is 55 Shakespeare Road, Hanwell, London, W.7, if anyone would like to send a tape.

JOHN BARTER.

(Editorial Note.—John puts humour last in his list of hobbies. Having read his "How to lose friends in 12 easy plays" in last month's inter-tape notebook, we would like to add "but not least!")

TAPE TERMS

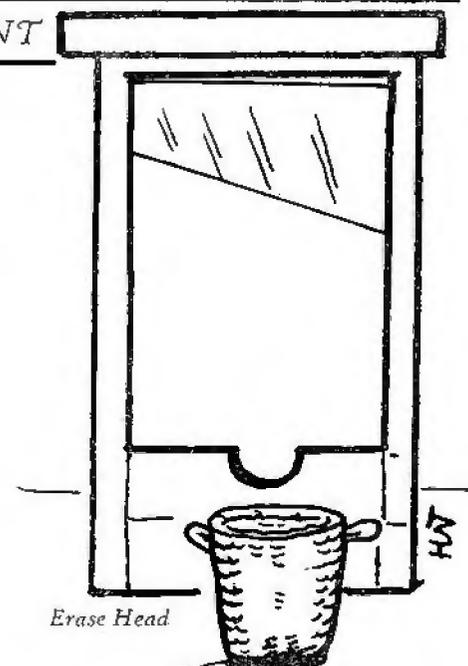
by HUNT



Tape Head



Mixer



Erase Head

Madness in 3D

By Rupert Smith

Bill is quite mad. His wife says so. Bill has his own ideas on this, however. Baffled by High Frequency sound and positively overcome by "Reproduction" (she had thought that only women shared this privilege), Mrs. Bill has resigned herself to the inevitable, and now goes out to work to keep Bill and his machines turning. A patient wife you may think. She is.

The other evening Bill phoned, "Care to pop round this evening old man?" (When Bill suffixes his remarks with "old man" I know it is the time to refuse, as this inevitably means a new segment of his ever expanding chain of equipment has been acquired.) How can I say "No"?—after all there is Gin in his cupboard, and perhaps if I work fast I might get "blotto" before he starts in earnest, anyway.

Well, I "popped round this evening old man," and from the moment Mrs. Bill let me in I knew there was a crisis on hand. Delicately brushing away tears of sympathy, I made my way to the "Studio," anxious to get at the Gin. Much to my surprise, however, I found the "Studio" (the late lamented sitting-room) crowded with strange faces, and no Gin.

Bill came forward and formally motioned me to a seat, "Bill, I'm your old pal Rupert. Don't you remember me?" I saying anxiously. I get a look like that given by the wine waiter when one orders Burgundy with Escallope du poisson.

A hush is imminent. Bill rises to his feet, and surveys the guests with a proud far away look in his eyes. There is a hint of triumph there. The eyes are misty, the head held high. I have never seen Bill look like this since the day his dog bit the postman.

A short technical prologue starts the demonstration (which no one understands—least of all Bill, I am sure) and we are introduced to "Stereophonic Sound"? In the early stages all goes well, the volume is well moderated, the reproduction good, and the turntable is behaving itself. (Not a drink in sight.) Every now and then Bill disappears behind one of the monstrous speakers he built. After a spell of 50 minutes' listening to "demonstration records" the guests were well and truly impressed, and, let's face it, ready to leave. To Bill, however,



this was only the hors d'œuvre, and now, looking slightly. The half-light was, I was told after- ing considerably happier, was beginning to enjoy himself. "They" were not going to get off as lightly as that. Next came a Brass Band. "Do you hear the Brassiness?" said Bill. Did we! The volume had now crept up, and, as delicately as possible, I was trying to extricate the Trombone from my left ear. The next record was louder still. Bill still kept disappearing behind one of the speakers. I noticed in the half-light that Bill appeared to be colour- wards to create "mood."

Restlessness was beginning to show, and one or two periodically made shabby attempts to

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go, but Bill was by now oblivious of their wishes.

At one point in the proceedings, one of the guests suddenly shouted "All right, I give in; please let me go." Bill was mortified until the good man explained he had fallen asleep and dreamt he was being chased by a large green Tuba.

At the end of two hours, Bill announced the last record: the 1812 Overture. Bill now crouched over the controls like a fiend, and throughout the record perceptibly increased the volume control. Three-quarters of the way through, guests were making a physical effort to back away, and by the time that the Cannons and Bells (all but the Kitchen Sink) was brought into play, they were flat along the walls, their features contorted by the pressure, in appearance as if they were pulling 10 G's in supersonic flight. This latter description fits exactly the reaction of the guests when the last bars of the overture had reverberated away. Covered in ceiling plaster and dust, some having bitten through their tongues, they made wild exodus, as it were a stampede.

When the dust had settled, exhausted, I crawled over to Bill, who was now talking gibberish to himself in the corner. Behind the

speaker was an empty bottle of Gin. In the corner was a skinful of Gin. Suddenly, and without warning, Bill, crazed and intent, screamed "MORE MORE MORE," and with abandon threw another record on the turntable, and with the volume at maximum, began to flail the remains of the room.

At this moment, two men in white coats entered.

Bill is now a lonely man, and I have lost a friend.



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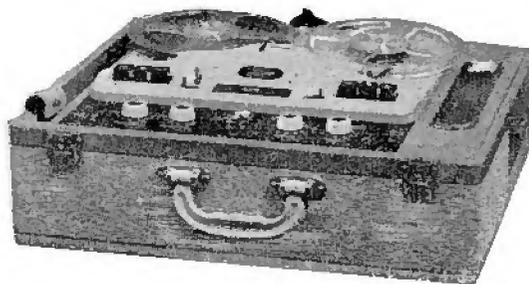
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TETE-A-TAPE

a topical column of tape talk for amateurs like David Lazell who writes it

*Further Meditations upon troublesome technicalities
by a bewildered amateur*

Have You a High Fidelity Voice ?

ONCE upon a time, I was a happy little fellow, well content with my crystal microphone. Then, one dark day, a hi-fi fan (really the villain of the piece, well disguised) heard a recording of a conversation that I had made. I was rather proud of this tape, as both voices had been captured effectively—or so I thought. The hi-fi fan shook his head and said that something was wrong. When I mentioned my modest microphone he sighed in that superior fashion that denotes the devoted hi-fi follower. He announced that I would have to get something better. Thus, I wrote to a number of companies, and called upon one or two others to obtain some suggestions about microphones for my particular machine. Some gentlemen said I should use a condenser model; others said that it was impossible to use a condenser model with my machine. One firm offered to sell me the crystal microphone I already owned at a sum more than that usually asked for that particular model. After studying a number of leaflets and the sad state of my finances, I selected a new moving coil microphone and ordered it. There was some delay in its delivery and I eventually finished with an entirely different and more expensive microphone, which is really super sensitive. When I used this new acquisition for the first time the other day, I realised something that the old and faithful crystal microphone had thoughtfully concealed. My voice hasn't got High Fidelity—down in the lower ranges it creaks, and, in the higher, it squeaks. My breathing isn't too even either, and when excited I have a tendency to lisp. In fact, I now look back with some nostalgia to those days in which I used only a crystal microphone, and in which I felt a great deal happier about this business of tape recording. Therefore, gentle and unsuspecting amateur, remember the words of the immortal Bard, that "the fault is not in our stars, but in ourselves." And if you ever play one of your tapes to a Hi Fi Fan (sounds like a pantomime character, doesn't it!) just tell him that it was made on most expensive equipment by a rich uncle who owns a recorder factory. That way, you'll encourage the intellectuals to pat you kindly on the head at the end of the evening.

How to get a Voice in True High Fidelity.

I think it's high time we had some notes on speech training in our magazines; after all, no microphone can conceal what you say, although I have one tape-pal who insists on speaking against a background of music, often fiery Mexican rhythms and the like. I wonder why he does this; maybe an orchestra lives next door. Anyway, I did hear once that a good hint for folks who want to improve their diction is for them to find an empty hall, stand at one end of it, and then say the word "Bells" to the blank wall at the other end. This is supposed to give you a certain penetrating quality of speech. One of the more interesting tapes I received from America recently contained a reading by a middle-aged lady of some of her favourite poetry (by a great Englishman, Alfred Noyes). For an amateur, she read surprisingly well, and I reflected it might be a good idea to extend this kind of thing. Of course, you shouldn't over-do it, but the inclusion of a favourite piece of poetry (written by yourself, maybe, or by a recognised writer—I used to write verse myself, long, long ago) on a tape abroad, can

be well appreciated. In any case, reading verse on tape for your own use is one way of improving your voice. When poetry is played back it reveals faults and failings in speech more effectively than your usual conversation. It also helps you to express moods in speech, and thus assists your tape-making to be more reflective of yourself and your surroundings.

All this may sound rather intellectual, but, in fact, yours truly has realised that the best tapes start from the person who makes them, and, without some personal qualities like imagination, good humour, the ability to carry on a conversation and sincerity, the best equipment is not sufficient. So watch out for the Tete-A-Tete School of Personal Improvement (beginning with myself).

How to Succeed in Life !

An American salesman friend has just sent me a very interesting tape which lasts about half an hour. On this tape there is a most encouraging talk about "self help"; you are probably well acquainted with the number of books that are written on the general basis of doing well in life and the like, many of them originating in that fair land on the other side of the Atlantic Ocean. Well, I heard this tape while I did the washing-up this morning. By the time the last plate was dried, I was wondering whether I ought to be Prime Minister or Admiral of the Fleet. Apparently, nothing is impossible to the man who has a goal and sets out to achieve it. If you want anything in life, write it down on a piece of paper and then, every morning as you get up, look at this piece of

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paper and remind yourself that this is another day nearer to being a Beefeater (or whatever your ambition may be). Of course, all this is entirely true; people with definite goals usually achieve them—a startling example of this may be seen in that brave lady, Miss Gladys Aylward, who was rejected by a missionary society, but who set out herself for China to be a missionary. As we know, she achieved a life's ambition by doing so. I suppose that only a few of us have any ultimate ambition—I'm very much a drifter. During recent years I have been a printer, laboratory worker, Butlin "Redcoat", despatch clerk, editor of a works magazine, full time student, postman, community centre warden and writer. So if ever I had anything to write down on a sheet of paper, it would probably be obsolete rather quickly. I am, however, grateful to my American salesman friend for giving me an insight, not only into my own indecision but also into a dynamic approach to life that is very definitely Trans-Atlantic! I will play the tape again as I do this evening's washing-up, and wonder just where I ought to be.

Getting Them Young!

Like many other enthusiasts I am forever trying to demonstrate the advantages of recorder ownership to those who have little knowledge of the lore of tape swapping. I think I've almost persuaded my favourite maiden aunt to get one!! Last week, a youthful friend of mine helped me to carry my record playing equipment home from a youth club meeting. I invited him in for the usual cup of tea. This young lad—still in his teens—is a junior reporter, and I foresee a great future for him. He had been telling me about the imminent arrival of a stereo record-player in his

home. Being one of these conservative types who thinks we did away with the wax cylinder rather too hastily, I smiled that this was a very useful thing to have, but what about getting a tape recorder? He showed interest, and I gave him a demonstration of my equipment while the kettle hissed furiously in the kitchen. I even let the lad record his own voice needless to say, he was suitably impressed, even though the tape decided to act oddly just for the occasion, and wound itself around my hand like a subtle and affectionate snake. As he left, he said a propos tape recording, "I never realised . . ." etc. I am wondering (heh! heh!) if that stereo record-player will finally arrive, with all them shiny tape recorders in the shop windows!

Cymry am byth!

I lived for many years in that delightful land of Wales, and am therefore very interested in such things as "Penillion" (a peculiar and most musical harmony between a harper or harpist and the human voice, usually spontaneous). Anyway, I was browsing around a record store last week, when I came across a Welsh record by a young man called Ivor Emmanuel. Now it goes without saying that this young singer is destined for considerable fame and fortune. It also goes without saying that I bought the record there and then. The record is excellent, but you can imagine my surprise when I discovered that these four songs were not Welsh airs, but "evergreens" that we all know and love. The four on this EP (HMV 7EG 8527) include "If you were the only girl in the world," "I dream of Jeannie with the light brown hair," "The Skye Boat Song" and "If I love you." Incidentally, this record is worth buying for the pleasure of hearing Rodgers and Hammerstein sung in Welsh ("Os Yth Gerais"). So, pop out and get it, mon, indeed to goodness. The record is also available in English (7EG8526).

Watch for the Little Bright Boxes!

I hear that the manufacturers are going to persuade us to buy our favourite records on tape in 1960. Of course, discs have some advantages over tape recordings, but there seems to be little doubt that the latter will become increasingly popular. And it looks as though the tape recordings are going to be as attractively packaged as the familiar discs (I once bought a 12 inch LP of Italian songs because I liked the laminated cover). And you know what they say about the package selling the goods. . . .

New Opportunities for Tape Reports.

Some time in 1960 I hope to make a permanent tape recording reflecting some aspect of life in the town in which I live. This research will also give me some interesting material for my tape correspondents overseas. In the near future, I am going to attend a morning children's film matinee as a bit of social research—if only I had a hi-fi battery recorder! Come to think of it, there must be many aspects of community life everywhere worthy of reporting on tape. I wonder how long it will be before the branch of the Public Library will have tapes on local life available!

Further Note for People wishing to Improve their Diction.

Go and see "My Fair Lady" as soon as you can!

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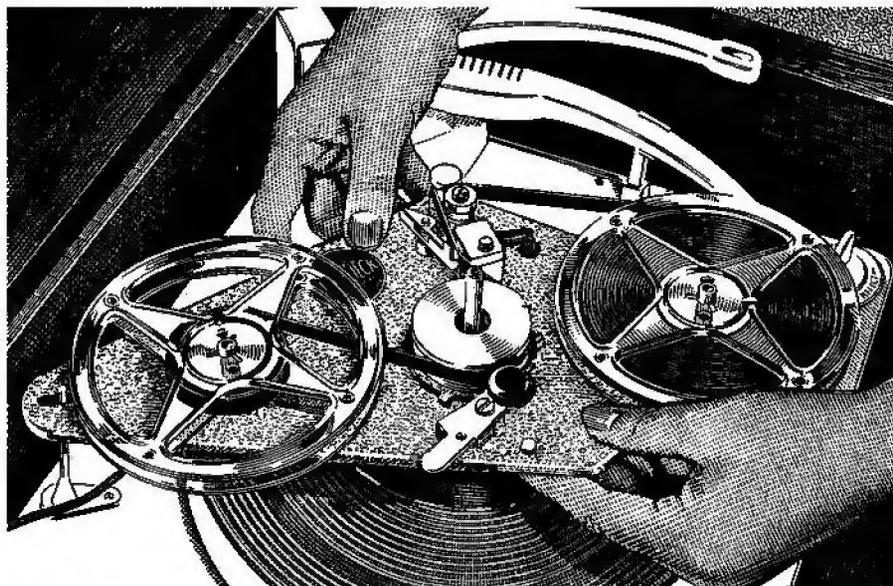
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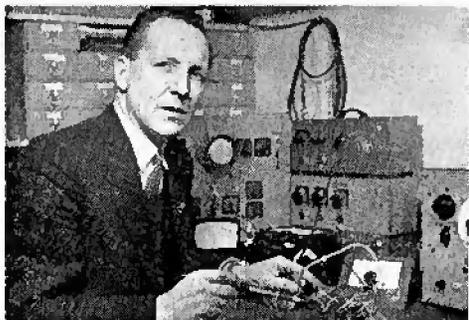
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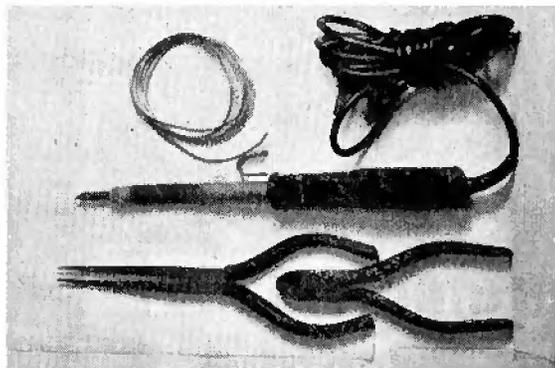


Fig. 1

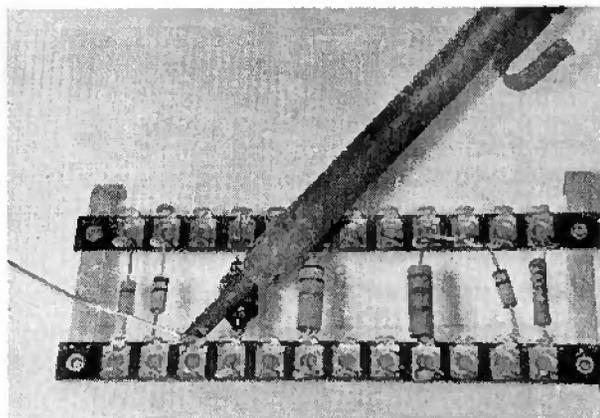
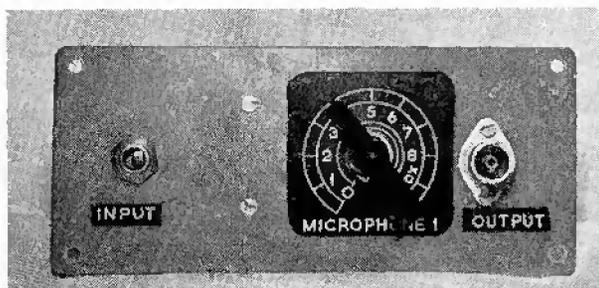


Fig. 2
Front View of PRE-AMPLIFIER



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

Introduction

MAY I, for a moment, take you back to about 1928, for it was then that "wireless construction" was a hobby just coming into its own. To build your own radio was just about the only way of participating in the new entertainment from the then British Broadcasting Company's station 2LO. To buy a ready-made receiver, even a simple crystal set, was almost unthinkable, and expensive anyway; in fact to buy your own components ready made was hardly in the rules of the "wireless constructor." In those days we wound our own tuning coils, made our own capacitors, switches, resistors; some even tried making their own valves, such was the enthusiasm born out of necessity to "do it yourself." Nowadays, of course, modern techniques and the vast range of ready-made components, valves, transistors, etc., simplify things for the enthusiast and there is now a general revival in home construction of radio, or, if you like, electronic equipment. Printed circuit boards, of course, make the construction of kit equipment easy, for little more than the ability to solder is required for the production of a complete and finished instrument.

Constructing radio or electronic equipment from diagrams is not difficult providing, of course, the diagrams and instructions are clear, and may I, at once, assure all those readers who claim "no technical knowledge" that little or none is required anyway to assemble and wire most of the tape recording accessories to be described in this series of articles. Each item is being specially designed for construction at home with the fewest possible tools, the smallest possible workshop, i.e. the kitchen table—and the least amount of technical knowledge. For the benefit of the more expert enthusiast, each of the circuits to be described have been developed for performance to the highest possible standard, consistent, of course, with limitations imposed by simplicity and each one will be accompanied by a performance specification and technical description.

Tools and the Kitchen Table Workshop

Radio and electronic equipment requires careful assembly of components, usually on metal chassis, which can be purchased in sizes suitable for home construction. One can, of course, buy a sheet of aluminium or duraluminium from which to make them and a small vice, used in conjunction with two pieces of angle iron about 12in. long, can be adapted as a simple sheet metal bender. The aid of one or two patent cutters for valve-holder holes, plus two or three files, should take care of the metal work. A wheel brace for use with up to $\frac{1}{4}$ in. or $\frac{3}{8}$ in. diameter drills is suitable for the smaller fixing holes. Add to these items a pair of thin-nosed pliers, a pair of wire cutters, one or two screwdrivers of different sizes and a small electric soldering iron, and you have the basis of a set of tools for the kitchen table workshop.

Soldering

Popular makes of electric soldering iron for radio work are the Solon or Adcola pencil bit types as shown in the photograph Fig. 1. Use only resin cored solder of radio or T.V. quality, 18 or 20 s.w.g. (standard wire gauge). Make—Superspeed or Multi-core, obtainable

CONSTRUCTING YOUR OWN ACCESSORIES FOR TAPE RECORDING

from ironmongers. The golden rule of soldering—"Keep the bit clean and well tinned" and for strong soldered joints the bit, the solder and the wires to be joined should all come into contact at once so that the solder runs freely over the wire and/or solder tag (see photograph Fig. 2). If the wire ends of components or the solder tags are oxidised (covered with a film of grease and dirt), they must be first cleaned with emery paper or by light filing and separately tinned before making the joint. As the solder runs it will flow into a little "blob" around the joint—this is the moment to take the iron away and hold the work still until the solder sets. Any attempt to move the wires before the solder has set will result in a "dry joint," and therefore bad contact between wire and tag.

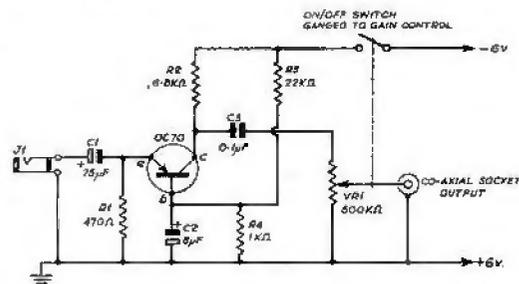
Constructing a Transistor Microphone Pre-Amplifier

A few words now on preparation for building a piece of simple equipment such as the microphone pre-amplifier described in this article. This handy little unit is all assembled on a metal panel, aluminium or brass will do, and if you want to make a nicely finished job give the front of the panel a coat of grey cellulose paint (Brushing Belcose) after the drilling is completed, of course. If the unit is made up as per the diagrams you will see that sufficient space has been left all round the edge of the panel so that a cover may be fitted, and if this is made deep enough the battery can be accommodated inside, thus making the pre-amplifier completely self-contained and portable. The cover may be constructed from plywood as screening is not greatly important providing the amplifier is used a short distance from any equipment operated from the mains.

Before continuing with constructional details some notes on how this pre-amplifier may be used is of importance. There is no point in making one if you cannot use it, either now or in the future; on the other hand, you may well find it a valuable item to your tape recording accessories. It has been designed for pre-amplification of low impedance microphones and as the input is itself low impedance *no matching transformer will be required*. The output impedance is high, so the amplifier will match straight into a valve grid circuit. The frequency response is substantially flat from 50 to 50,000 c.p.s., and the overall gain about 25 to 30 dB. So much for the technicalities, but for those who require it, the circuit diagram is shown as Fig. 3.

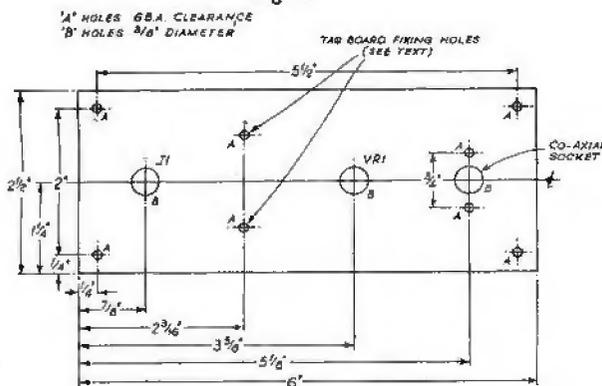
Practical use.—Let's assume you have a low impedance microphone (ribbon or moving coil type) but no spare low impedance input on the recorder or microphone mixer. The microphone can be plugged into the pre-amplifier and the pre-amplifier plugged into a spare high impedance input on the recorder or mixer. The gain through the pre-amplifier is sufficient for the gram or radio input of the tape recorder to be used, so that in effect you can provide an extra microphone input for the recorder, but remember it will operate from a low impedance microphone only. Later on the possibilities of a simple transistor pre-amplifier for high impedance microphones (crystal types) will be considered.

One final note concerning this pre-amplifier is that two or three of these units can be assembled and used



CIRCUIT DIAGRAM of the Microphone Pre-amplifier

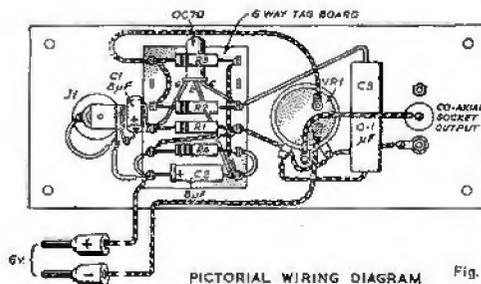
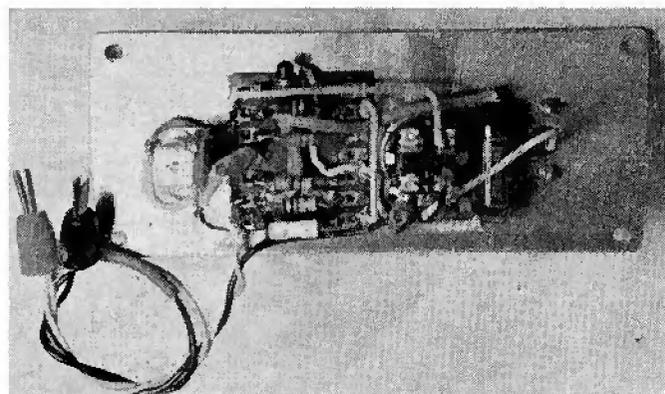
Fig. 3



PANEL DIMENSIONS

Fig. 4

Back View of PRE-AMPLIFIER



PICTORIAL WIRING DIAGRAM of the Microphone Pre-amplifier

Fig.

Fig. 5

in conjunction with each other as a microphone mixer. Details will be given in a later article.

Constructional Details

The panel, as already mentioned, may be aluminium or brass cut to size and drilled as shown in Fig. 4. The fixing holes for the tag board will, of course, depend on the type of tagboard you are able to buy; some are drilled with a series of holes down the centre for fixing, others may require drilling but holes spaced approximately as shown will suffice. Make sure that the tags and their securing rivets do not come into contact with the metal panel. Spacing washers or a piece of thin cardboard under the tagboard should prevent this. When the drilling is complete, a coat of grey enamel on the front panel will enhance the appearance, and when this is dry a dial transfer may be put on for the gain control.

Assemble the microphone jack, gain control, tagboard and co-axial output socket and wire up as shown in the pictorial diagram of Fig. 5. Note that the small electrolytic capacitors are polarised and the end marked + must be connected as shown. The transistor connections are marked e.b.c. (emitter, base and collector) and are identified by a red spot on the transistor. This can be seen in the diagram where the red spot is adjacent to c. Note also the solder tag under one of the co-axial socket fixing nuts, which must be in metallic contact with the front panel as it carries the common earth connections. The wiring may be carried out with p.v.c. covered flexible wire and when completed should be carefully checked before the battery is connected.

Take care when soldering the transistor leads. Hold them with a pair of thin-nosed pliers whilst soldering so as to conduct the heat away from the transistor. Each lead should be covered with a piece of p.v.c. or other form of insulating sleeve.

The lead between the pre-amplifier and the recorder (or mixer) should not be more than two or three feet and must, of course, be screened. Standard co-axial cable or single screened microphone cable is suitable.

The pre-amplifier requires 6 volts to operate it and this may be obtained from a standard 9v. grid bias battery (Ever Ready or Vidor). The negative (-) plug connects to -6v. and positive (+) plug to + on the battery. Reversal of the plugs may damage the transistor.

Finally, here is a list of the components required:

Microphone Jack J1—Bulgin Type J6.
Gain Control VR1—500K.ohms log type with single pole on/off switch. Morganite or Dubilier.
Co-axial Socket (output)—Belling and Lee.
Wander Plugs—1 red, 1 black. Clix.
¼ watt. Morganite or Erie.

R1 470 ohms.
R2 6.8K.ohms
R3 22K.ohms
R4 1K.ohm
C1 25uF Electrolytic miniature type, T.C.C.
C2 8uF Electrolytic miniature type, T.C.C.
C3 0.1uF paper tubular, T.C.C.
Transistor—OC70 Mullard.
6-way Tagboard—Miniature type.

The above should be obtainable from a radio component dealer.

Now for next month. A simple diode radio tuner that can be plugged directly into the recorder and a simple mixer unit that can be used with two of the transistor pre-amplifiers just described, to form a simple, but useful three-channel mixer. To whet your appetite further, a three-channel microphone mixer for "high impedance" microphones and which uses a new type of battery-operated valve is on the stocks as well as a transistor radio tuner and a tape head amplifier.

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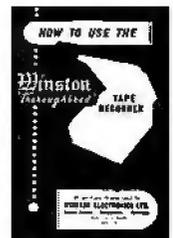
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Jason FM	22	15	8	Garrard 301	22	7	3
Jason JTV	25	18	10	Jason J-2.10/MK3	37	10	0
Pye FM	20	0	7	Leak Stereo 20	30	9	0
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Garrard 4HF	18	17	8	Expert, C.Q., W.B., Pye, Wharfedale, etc.			

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THE AUTHOR AND TAPED CONTRIBUTIONS

by F. TERRY NEWMAN

THE result of a period of research into editorial consideration of the submission of taped scripts in place of typewritten manuscripts emphasizes the truth that new developments are slow of acceptance.

A diversity of reasons were put forward by the publishing houses approached by the author in expressing their reasons for not favouring the submission of MSS by means of tape.

There was tacit agreement that the tape recorder was already an invaluable adjunct to business efficiency, and it is interesting to examine the chief objections to taped scripts put forward by editorial boards. Some of these objections are apparently technically valid, some the result of traditional conservatism by long established publishers; whilst others, though seemingly trivial, are worthy of consideration by all who are enthusiastic about advancing the future of taping scripts.

A point put forward by the editor of one of the George Newnes group of publications (Practical Mechanics), stresses that "the editor's time is extremely valuable and he could not spare the time to listen to a tape-recording before deciding whether an article is of interest to his readers, whereas if an article appears in manuscript form it is only necessary for a quick glance through the article to see whether it is useable in the paper."

This is understandable, of course, when one realises that the great majority of unsolicited contributions are

totally unsuited to the periodical to which they are submitted.

Messrs. Collins, publishers, whilst paying tribute to the value of tapes for recording authors' talks and descriptions of books for publicity purposes, submit pungently that "books are in the first place read and not heard," and for this reason they prefer to judge a book in the same medium as it is appreciated by their customers. This point of view is echoed by the Fleetway Publications Central Editorial Department.

Iliffe & Sons Press Group stress the point that: "our journals being mainly technical in character the risk of errors in typing copy from a tape recording could be increased, and detailed examination of articles with diagrams and illustrations would hardly be possible until the copy had been transferred to visual form."

Fair enough! Up to a point. But I should have considered a spoken explanation of a diagram (one cannot yet tape blue prints), would have been as explicit as a typed one.

It was strange that publishers who issued musical journals did not seem to agree that a taped musical passage could have stressed accuracy in execution better than a musical score submitted for this purpose. At least one would have thought it could have been regarded as complementary, for scores may have many and varied interpretations, as every disc fan knows.

Novello & Co., publishers of The Musical Times and Music in Education, did, however, bring up a simple

issue which may be more important than first appears. It is the little matter of punctuation.

A pause is not sufficiently explicit: it would require a trained ear to distinguish between the duration of a comma, semi-colon, colon and full stop. To interpolate spoken "periods" throughout the duration of a long complete, as in the transmission of cables and telegrams would destroy both tempo and atmosphere of a narrative.

It is feasible that one day some one may invent a form of aural shorthand to overcome this difficulty! (EDITORIAL NOTE—How about Victor Borge and his "Punctuation" record!)

The general publishing world seem fairly unanimous in their rejection of the medium of tape; but this is only to be expected at the moment, and most reasons expressed are basically sound. After all, writing is as old as man, whereas tape is still regarded as much an innovation as bebop and rock.

But there is much speculation taking place in many editorial departments, and though there may be a long period of gestation before the first publishing house consents that taped scripts may be sound authors' currency, it is not unlikely that some progressive editor may shortly proffer the suggestion, if only as a tentative experiment.

However, the outlook is not so black for the tape-recording author as the foregoing may have indicated. The British Broadcasting Corporation have stated—and I quote the authoritative announcement given by the Head of Talks Department: "There are no technical or policy objections on the part of the BBC to the submission of tape recordings instead of typewrit-

ten manuscripts. We would, however, ask that if possible a script should accompany the recording.

"If this is not possible, some indication of the subject matter and the running time should be given; also the name of the speaker if the recording is not in the voice of the person submitting it.

"The tape must be marked clearly with the name and address of the sender, and should be accompanied by a note to state whether the recording is on a single or twin-track tape; also the speed of the tape and the size of the spool. If we are asked to consider only part of the material recorded, the tape should be marked in some way so as to show where the relevant piece begins."

Would-be contributors, either free-lance or professional may be interested to know that the BBC Talks Department welcomes manuscripts, particularly from contributors able to describe a personal and unusual experience.

Such episodes should be timed for 5, 10 or 15 minutes duration, and comprise approximately 600, 1,000 or 1,800 words. It is very unlikely that the taped recording will be used for broadcasting. If the material is acceptable, the contributor will almost certainly be asked either to broadcast in the studio or to record the material again.

Writers submitting material may be asked before final acceptance to attend an audition, either in London or in one of the regional studios.

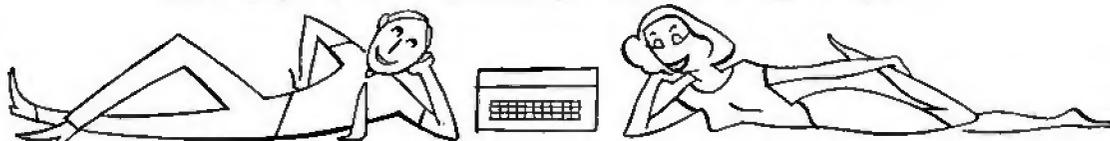
(EDITORIAL NOTE—But remember that out of the hundreds of scripts submitted to the B.B.C. each month less than 5 per cent prove acceptable.)

The Saba Story

The Saba Tape Recorder is made at Villingen in the Black Forest. It is a two-speed— $7\frac{1}{2}$ and $3\frac{3}{4}$ i.p.s., twin track, two way machine built to professional standards. When recording it reverses automatically and stops at the end of track II; when playing back it reverses until stopped. It takes 7 inch reels, giving over 4 hours playing time at $3\frac{3}{4}$ i.p.s. The record-replay heads measure 0.00016 ins., which with careful attention to circuitry give frequency responses of 40 to 20,000 c.p.s. at $7\frac{1}{2}$ and 40 to 16,000 at $3\frac{3}{4}$ i.p.s., all ± 3 dB, at a signal-to-noise ratio better than -40 dB unweighted, including hum. This means that, at normal room volume, a recording of the average f.m. broadcast combined wow and flutter is less than 0.4% at the slower speed, and cannot be detected even on sustained piano type motor is silent in operation. The Saba will fast wind 1,800 ft. in either direction in under 3 minutes. The Saba will fast wind 1,800 ft. in with even and drum-tight spooling. Braking is instantaneous, even on fast pentode output with triode driver without audible distortion into two elliptical speakers 7×4 ins. There are separate inputs for low-impedance which may be left permanently connected; there is a knob to choose the one required. There are outputs to an external amplifier, to the microphone, radio and pick-up, all of the output stage of a radio and to an external speaker. The internal speakers can monitor; there is an erase cut-out button. Clicks on the tape are attenuated. Control is entirely by relays, actuated by illuminated buttons; no pressure pads are used. The Saba which is housed in a two-tone brown case will give many years of that contentment born of the conviction that one has the best. It costs 79 guineas without microphone. Write for multi-coloured fully descriptive brochure to Dept. SS1, Selmer, 114 Charing Cross Road, London, W.C.2.



NEW RELEASES



POPULAR RECORD REVIEW

By STANLEY R. WHITE

That firm, "Music On Tape," have done it again. I do not hesitate to place at the head of this review their tape called "Salute to Tommy Dorsey." (Monaural 3½ ips dual track, 32/-, Monaural 7½ ips dual track, 42/-) Number CA 167. (Stereo 3½ ips, 60/-, Stereo 7½ ips., 80/-). Number CA 1. Playing time approx. 30 minutes.

"Salute to Tommy Dorsey" was recorded by the Brussels International Big Band. The arrangements are based upon the original ones used by the Dorsey Orchestra, and are taken mostly from the "Swing Era."

It is thrilling to listen to this tape as it opens up with the band swinging the famous "Opus Number One." I really mean swinging; this for me is quite as good as the original Tommy Dorsey Band, although of course I do not envy the trombone player who has to take the Dorsey part. He does sound similar to Dorsey and plays extremely well. This is big band swing, and it is encouraging to hear a real session of big band playing today. There is not a dull moment on the tape and full marks to the reproduction quality which is as good as any I have heard from tape.

Titles. "Opus Number One," "Daybreak," "Love For Sale," "This Love of Mine," "Hawaiian War Chant," "Not So Quiet, Please," "There are such Things," "We'll Git It," "I'll Never Smile Again," "Yes, Indeed."

Titles are not in the correct order on the tape box? "Music On Tape," 6, Laurence Pountney Hill, London, E.C.4.

"Never Be Afraid," a musical version of The Emperor's New Clothes, GALA GLP 352.

"Ali Baba and the Forty Thieves." GALA GLP 351.

These two 12 inch LPs from Gala sell for only 16/6 each. They offer extremely good value for the money. These are really records for the children, I imagine, or are they? I've found them to be excellent entertainment, for the story-teller is none other than Bing Crosby. Bing has a superb musical quality in his rich speaking voice which makes him an ideal choice for such records. I listened to these records and enjoyed them. Bing also fits in a song here and there to help things along. Grand for the whole family I would say. You can't beat Der Bingle when he's dealing with the children.

"Saga" have some excellent pre-recorded tapes to offer. STB 8004 (7½ ips Monaural) 50/-, George Gershwin: Track 1, "An American In Paris. Track 2, "Rhapsody In Blue."

These two popular Gershwin pieces are played by Joyce Hatto (solo piano) with The Hamburg Pro Musica Orchestra. As much as I enjoy listening to this version of the "American In Paris," I must say



BING CROSBY

that I prefer the "Rhapsody In Blue," a piece of music which I've always enjoyed, and probably Gershwin at his best. Joyce Hatto performs the Rhapsody extremely well with the orchestra giving the necessary support. Anyone requiring these Gershwin items can buy them with confidence. ("Rhapsody In Blue" is also available in stereo, 55/-)

Sergio Fiorentino is another superb pianist who has recorded for Saga with the Hamburg Pro Musica. SAGA STA 7026 features Fiorentino with the orchestra conducted by George Hearst in music by Tchaikovsky. "Piano Concerto No. 1 in B Flat Minor, OP. 23."

Track 1.

1st Movement: Allegro non troppo e molto maestoso-Allegro con spirito.

Track 2.

2nd Movement: Andantino semplice-Prestissimo-Andantino.

3rd Movement: Allegro con fuoco.

STB 8007 features Sergio Fiorentino with the Hamburg Pro Musica conducted by Erich Riede, in music by Franz Liszt.

Piano Concerto No. 1 in E Flat Major.

Track 1.

Piano Concerto in E Flat. La Campanella.

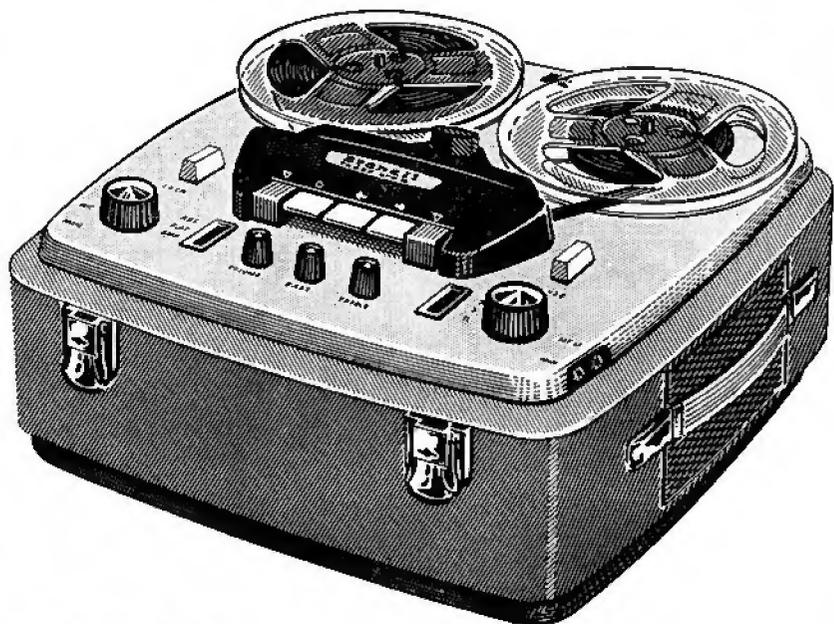
Track 2.

Liebstraum, No. 3. Funerailles.



SERGIO FIORENTINO

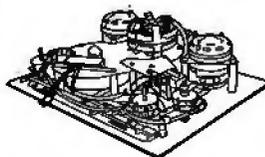
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Both of the above tapes have given me much pleasure; they are monaural at 7½ ips dual track giving approximately 30 minutes playing time. The STB series sells at 50/-. The STA at 35/-.

STB 8012 "Overtures From The Mozart Operas." 7½ ips—dual track—50/-.

This Saga tape again features the Hamburg Pro Musica Orchestra, conducted in this case by Harry Newstone.

Track 1.

- Clemenza di Tito.
- Marriage of Figaro.
- Così Fan Tutti.
- Magic Flute.

Track 2.

- Entführung aus dem Serail.
- Don Giovanni.
- Impresario.
- Idomeneo.

As you will see, this tape presents eight well-known overtures by Mozart, and it is nice to find them all together on one tape.

These recordings by the Hamburg Pro Musica with various conductors and guest artistes should go far to establish the popularity of pre-recorded tapes. No worthwhile musical collection should be without them.

A special word about the presentation of these Saga tapes is called for. I like the tape boxes which carry picture covers similar to the LP sleeves, and which will go far towards creating sales appeal. The back of the boxes contain details of the recorded tape.

The advantages of pre-recorded tapes over discs are many in my opinion, and every tape I have reviewed to date reaches a technical standard equal to an LP record. So, if you haven't already done so yet, why not buy and try one?



' Could you direct me to the Tape Deck please ? '

ESSEX TAPE RECORDER CENTRES

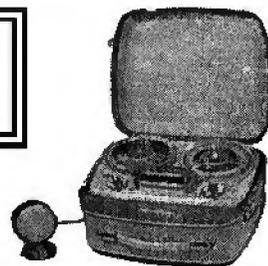
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INTER-TAPE NOTE BOOK

The number of schools interested in taping continues to grow. We have just heard from a teacher in the U.S.A. who would like to be put in touch with an English Grammar School or a Scottish Senior Secondary School. He is Mr. Robert F. Williams, 751 East Olive, Decatur, Illinois, U.S.A.

Mr. Williams is Social Studies teacher at Stephen Decatur High School, where he teaches 9th and 11th Grades. He is also anxious to make tape contacts for his 6th Grade pupils, whose ages range from 11 to 14 years.

AFRICA CALLING

The Durban and District Recording Club, P.O. Box 2655, Durban, Natal, South Africa, would be pleased to exchange tapes with any member desiring contacts in Durban and Natal. As a club the D.D.R.C. is interested in adding taped commentaries to 35mm. coloured slides showing views of any major town in South Africa, Bantu studies and villages, and wild life. The D.D.R.C. work together with the Durban Camera Club and some fine slides are obtained for this purpose. They feel sure that this will interest U.K. members.

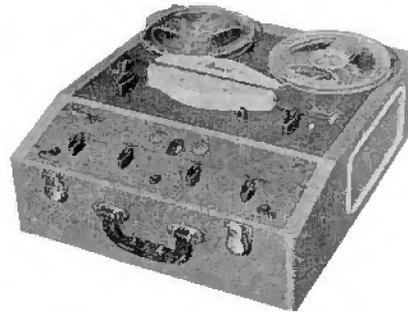
Friend-Spotting

Donald Cox, of 69 Elmcroft Avenue, Wanstead, E.11, writes to say that two of his taperspondents were mentioned in the November "A.T.R." Firstly, Frank Weston, who has since changed his address to H.M. Prison, Ukonga, Dar-es-Salaam, Tanganyika Territory, secondly, Bob Ellis (the obliging Scot), who was the Clubman Profile for the month. Donald continues: "Thanks to 'A.T.R.' I now have a photograph of him." We return the compliment for Bob's benefit. Donald thinks that it is partly because he is a "London Bobby" that he now has 25 contracts all over the world; most people abroad just refuse to believe that they don't carry guns. By the way, Donald guarantees replies to all tapes sent to him.



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INTER-TAPE



The Club suggests that in all instances it is advisable to first contact a prospective tapespondent by letter on the following lines:—

*Dear Mr. X,
I am a member of the B.T.R. Club and I would like to "Tape spond" with you.
I own a X machine and use X" spools playing at X i.p.s.*

My interests are as follows:— Yours sincerely,

For ease of reading, particulars of Tapespondents are printed in the following order—name, occupation, address, interests, taste in music, type of machine and area of Tapesponding.

COMMONWEALTH INSTITUTE, South Kensington, London, S.W. 7. All aspects of Commonwealth. National and Folk. Telefunken TK. 85, 7 in., 3½ and 7½ in. All parts of Commonwealth.

W. JOHN KENNY, Cinema Projectionist, 42 Abererch Road, Pwllheli, Caerns., North Wales. Films, photography, tape recording. Anything but highbrow classics. Sound 444; up to 7in. spool (speeds 3½, 7½, 15 i.p.s.). Any place where English is spoken.

M. ALEXANDER, Varied, Rocks Farm, Balcombe, Haywards Heath, Sussex. Everything, particularly research, writing and philosophy. All types. Telefunken 85; 7in. spool (speeds 3½ and 7½). Everywhere and anywhere.

JOHN WILSON, Civil Service, 22 Amberley Road, Bush Hill Park, Enfield, Middx. Motoring, music (pop, rock, jazz). Recording. Philips, Walter 101, 5 in., 3½, U.S.A. and Scotland (Highlands). No need to write, please "tape" right ahead.

PERCY ROBERT WRIGHT, Joiner, 43 Medina Road, Cosham, Portsmouth, Hants. Radio and Television, Colour Photography. Light from Classics to Modern Pops. Wyndor Regent, up to 7 in., twin track. 3½ and 7½. British Isles and United Kingdom mostly. Anyone who wants to tape, male or female.

CPL. C. S. GILLESPIE, Clerk Secretarial, R.A.F., c/o C.D.O., R.A.F. Leuchars, Fife, Scotland. Theatre, films, jazz, contemporary literature. Classical modern jazz, Ella Fitzgerald, Mel Torme, etc. Grundig, 5½ in. maximum, 3½ i.p.s. Any (Britain preferable).

CLR./SGT. R. O. SANDERSON, Vehicle Mech., Royal Marines, 21 Third Avenue, Denvilles, Havant, Hants. Photography, motor mechanics, boats. General

(no jazz), light classical enjoyed. Philips AG.8108, Grundig Cub, 3 in. to 7 in., 1½, 3½, 7½ i.p.s. New Zealand and other English speaking countries.

IAIN S. SAINSBURY, 20, Cartographical Surveyor (Ordnance Survey), 1 H.M. Coastguard Station, Marina Avenue, Coatham, Redcar, Yorks. Everything, except politics! Light and classic, popular and some jazz. Grundig TK.20, 5½ in., 3½ i.p.s. only. Any as long as English is spoken, boy or girl.

MICHAEL F. EMBERTON, National Service with 15 months to do (stationed in England and home regularly), 44 Vyner Road, Wallasey, Cheshire. Photography, sport, theatre, T.V. and general. Classical, traditional jazz, pop. Philips AG.8108, 7 in., 1½, 3½, 7½. Scandinavian countries, British Isles, America, France, Italy, Spain (a little Spanish spoken) and New Zealand. No need to write, all tapes replied to.

RONALD G. NORMAN, Owner of Carpet and Window Cleaning Co., 51 Bellands Way, Eye, Suffolk, England. Photography, collecting and just making friends. Light classical, orchestra and modern. Elizabethan Mayfair, 7 in., 15, 7½, 3½. American continent and Europe.

IRENE PYNE, Police Officer in Tanganyika Police Force (at present on leave), 83 Gunterstone Road, W. Kensington, W.14. Tape recording, people, general. Opera, popular classics, folk ballads (Burl Ives, etc.). Telefunken KL.65, 5 in., Brenell Mk. V, 8½ in., Steelman Battery Transistor Portable, 3 in. 3½ and 1½ i.p.s. also 7½ and 15 i.p.s. on Brenell. Any, English speaking, possibly Italy. Preferably contacts in 30/50 age group.

JOHN SHUTTLEWORTH, Schoolmaster, Christ College, Brecon, S. Wales. Sailing, music, hi fi. Classical, Ferrograph 4S, 7 in., 7½ i.p.s.

H. A. TAYLOR, Post Office employee, 22 Northampton Buildings, Rosoman Street, London, E.C.1. Colour Photography and 9.5 cine. Light orchestral. Elizabethan 56, 3 in., 7.5 or 4.8 i.p.s. U.S.A. preferred.

GORDON W. LANE, Production Engineer, 41 Stamford Avenue, Stivichall, Coventry, Warwickshire. Photography, music, psychology and electronics. Organ and choral. Walter and Clarion. 7 in. and 3 in., 7½ and 3½. Holland, Germany and America (only English spoken).

MRS. BETTY WALKER, Clerical, 9 Outgate Road, Willesden, N.W.10. Colour photography, 35 mm. slides, 8 mm Cine. Eydie Gormé fanatic, some modern jazz. Ferrograph 4 s/n, up to 7 in., 3½ and 7½. England, U.S.A., Canada.

W. J. HART, Printer's Assistant, 68 Ilchester Road, Becontree, Essex. Angling, coarse and sea colour photography. Pops, light music. Baird T.R.I., up to 7 in., 3½, 7½, 15. British Isles.

E. PETER HILLAM (wife, Rhona), Municipal Engineering Assistant, 212 Park Avenue, Bushey, Herts. Amateur Dramatics, amateur magician (youth work). Light classicals, musicals, some pops, and jazz vaguely. Grundig TK.5, 5½ (max.), 3½. U.K., Australia, Canada and U.S.A.

BRIAN D. J. GEORGE, Factory worker, 27 Dartmouth Road, Wyken, Coventry. Dancing, music. Traditional jazz, commercial not R. & R. Light classics. Grundig TK.30. 7 in. max., 7½ and 3½. France, Belgium, Germany, Austria, Holland, Switzerland and Great Britain. All replies acknowledged (I speak only English).

NOEL FAIRHURST Insurance clerk, 50 Gresty Avenue, Peel Hall Estate, Wythenshawe, Manchester, 22. Dutch life, music and customs. Interested in anything concerning the Netherlands. Also Aviation. Brass/Military bands, light classical, novel or unusual music. No modern pops, swing or jazz. Philips AG. 8108G, up to 7 in., 1½, 3½ or 7½ i.p.s. With an English speaking Dutchman, living in or near Haarlem, North Holland.

A. S. ANDREWS, Civil Servant, 13 Hartland Road, Friern Barnet, N.11. Amateur radio, motoring, music. Popular dance, musical shows, light classics. Walter 101, 5 in., 3½. Anywhere.

MICK LABELTER, Audit Clerk, 41 Montague Tibbles House, Prince of Wales Road, London, N.W.5. Cycling (racing and touring), photography, languages. Light classical. Argyll, 5½ in., 3½ i.p.s. only. British Isles and European countries.

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STANLEY HARTLEY, Bus Driver, 11 Woburn Road, Blackpool N.S., Lancs. Radio, electricity, photography. Popular and light, not jazz. Brenell 3 star, 7 in., 7½, 3½. Canada or U.S.A.

C. R. D. DOWNES (a New Zealander), School Teacher, c/o Overseas Visitors Club, 180 Earls Court Road, Earls Court, London, S.W.5. 8 mm cine and 35 mm. colour photography, travel, history, geography. Mainstream and modern jazz, classical. Clarion Portable (at present), 3 in., 3½. Canada, U.S.A., Europe, British Isles.

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(continued on page 62)



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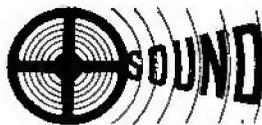
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KM. 22 TWO TRACK 54 GNS.	KM. 33 FOUR TRACK 62 GNS.
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Please send me details of CHITNIS Two-Track and Four-Track 2-Speed Recorders and name of my nearest supplier.

Name

Address

(Block letters please)

WHO'S WHO

AND WHAT IS MANUFACTURED

An A-Z of manufacturers and their equipment

THE STORY OF A REEL OF "MASTERTAPE"

We found the M.S.S. factory in a lovely country setting at Colnbrook, Buckinghamshire. This has been their home for many years, and they are obviously happy in this location, with its extensive grounds for future expansion.

The development and introduction of plastic tape was the break-through material which enabled recording devices to be brought to the general public. Tape is a plastic material in every sense of the word and the end product is the result of constant research and experimentation.

Modern tape is a coated plastic sheet, which at M.S.S.

is either P.V.C. (Polyvinyl-chloride) or Polyester. The two basic ingredients arrive at the factory in the form of rolls of transparent plastic sheet and non-magnetic yellow powder. The plastic sheet is ready to be fed on to the coating machines, but the powder has to pass through a number of processes before reaching this point as a coating solution.

Firstly, it is taken to the kiln house where it is cooked in hundredweight batches for twenty-four hours at a temperature approaching 1,000° Centigrade. It has now become magnetic and dark brown in colour. It is then re-loaded into ball-mill machines where it is pounded together with various constituents such as binders, anti-static, wetting and lubricating agents, etc., for periods of three days, to produce the particle size and constituent dispersion required. In this process it has changed from a powder to a sticky solution. A vacuum system transfers the solution to the 500 gallon storage tank, at the same time removing any air bubbles formed in the milling process. From the bulk storage tank it is gravity fed to the spreading machines. It is at this juncture that coating and plastic base come together.

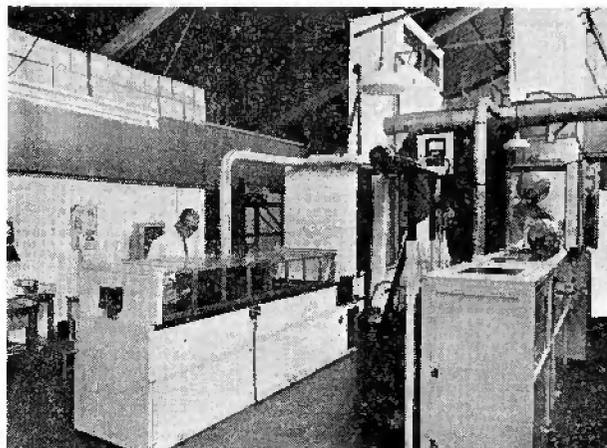
These machines operate on fifteen inch wide material, and nominal 4,000 foot lengths, at the rate of thirty feet per minute, covering the material with an even surface. The design of the equipment guarantees that the coating thickness when dry is controlled to within 5 per cent. of four 10,000ths of an inch. This check is made by a nucleonic thickness gauge indicator which scans the material as it progresses through the machine. The material then passes through two more of these devices, and the instrument to which they are connected co-relates the two readings and indicates the weight of the coating deposited on the instrument scale mounted above the spreading equipment.

Continuing its journey, the tape enters the curing cubicle where a pressure of three hundred cubic feet of air keeps it free from solvents. An ingenious device incorporated into this operation eliminates lateral wander of the tape as it is finally rolled on to the last shaft. The principle employed is that as the tape advances for its final wind it travels against a pivoting shaft at each end of which there is a small hole, pitched at the width of the tape. Any side movement of the tape immediately exposes one of these holes, releasing a small jet of air which automatically compensates for this deviation.

After leaving this department the wide tape is checked and inspected before being mounted on to the slitting machine which reduces the width of the tape to the standard sizes we know. The leader and metal foils are welded on to the tape before the actual slitting operation commences. This is done in order that they are slit accurately in line with the tape. Vacuum chambers control the winding tension of the tape coming off the cutting machine. At the same



Milling Department



Tape Spreading Department

time the tape passes between a number of critically spaced cutters which separate this sheet into twenty-eight individual tapes reeling on to 7 inch spools in banks of four. Simultaneously, the unevenly spread oxide surplus edge is cut off and fed down to separate spools for waste disposal.

The cutting machines operate at the rate of two hundred feet per minute, and the cutters employed are hardened to a glass hard consistency. The life of these cutters is approximately three to five weeks. It is then necessary to set the entire cutter shaft assembly between centres on a cylindrical grinding machine for re-sharpening. The top and bottom cutters are of distinctly different shapes and are so designed as to remain in constant pitch regardless of the number of re-grinds. This of course ensures that there is never any variation in the width of the cut tape.

If wider tapes than the standard $\frac{1}{4}$ inch are required, such as the $\frac{1}{2}$ inch and $\frac{3}{4}$ inch computer tapes, it is only necessary to mount a different cutter assembly. The reels of tape are passed to the electrical test section where they are individually tested. A large number of them are checked throughout their length with a pen recorder and also electronically for all characteristics.

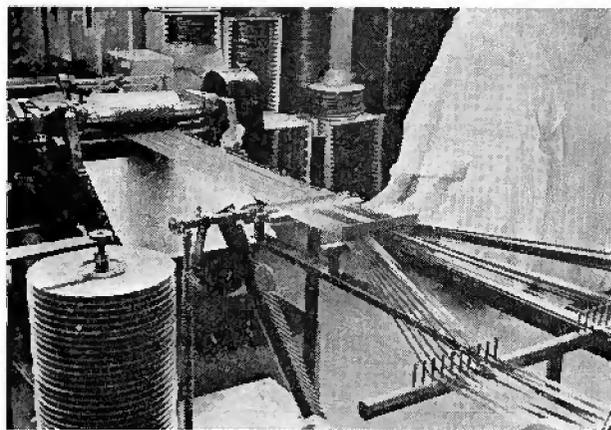
Although computer and T.V. tape are also electronically checked in this way, special spreading machines are necessary for their production, because of the dissimilar magnetic and physical characteristics required. T.V. tape, which is usually 2 inches wide, has no real relationship whatsoever to audio tape. M.S.S. anticipate that their T.V. tape will be marketed this year.

The tests mentioned are carried out on a series of test racks, one of which is used solely for B.B.C. tapes.

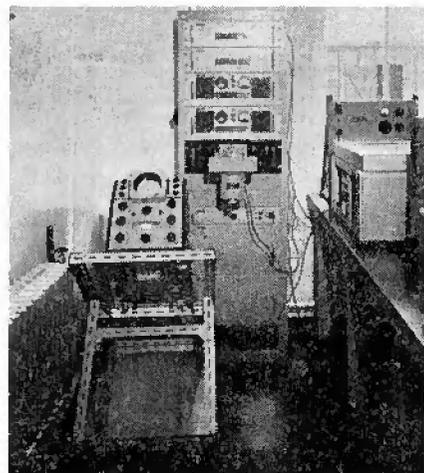
After these tests have been completed, the tapes are ready for their final spooling. This is carried out on machines nicknamed "Sputniks" by their operators, which are made to a works design and employ the principle of a large rotating disc with a finely etched rim flanked by two width guides. This disc is mounted on a pivot arm which is counter-weighted at the other end, and controlled by spring tension. This arrangement ensures that the tape is not stretched or spooled unevenly.

Somewhat one does not think of the production of recording tape as being the type of manufacture requiring the services of a complete engineering department. We were therefore surprised when we encountered such a department fully equipped, but the explanation is that M.S.S. make the tools that make the tape. Not only do they make the tools and the tape, they also manufacture special purpose recording equipment. One example of this is the dictation device supplied to a Liverpool concern for use in large factories. A bank of these mechanisms is connected to the factory telephone system. Anyone wishing to dictate a letter, dials the appropriate number and is connected to one of these machines, which records his call. The typists then collect the tapes from the machines, and transcribe them. Typing facilities are thus made available to personnel outside the normal scope of office administration.

Another speciality of M.S.S. is to undertake experimental manufacture and sub-assemblies. One of their current contracts is for the production of a section of the Wonder-gram pocket record player, and for this purpose a series of small machine tools have been designed. Part of the assembly involves the mounting of two rubber idler wheels of dissimilar diameters on to a die-cast mounting frame. The spindle carrying the wheel is suspended between a ball bearing housed at each end of the assembly, which is held in position by lock nuts. This operation is common with others,

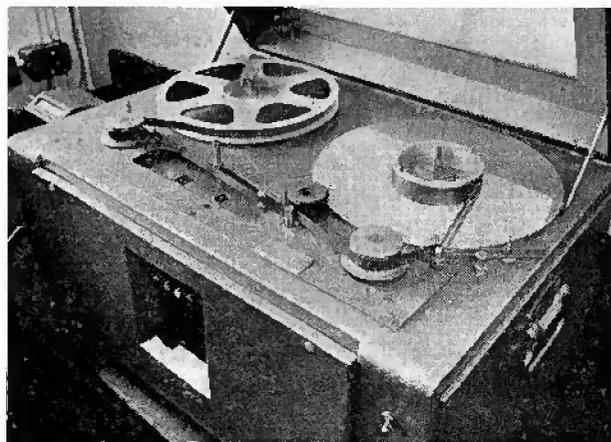


(Above)
Tape Cutting
Machinery



(Right)
Test Equipment

(Below)
Main Winding
Room



Special Tape Test Equipment

(continued on page 68)

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WHICH YOU MUST SEE



THE "VICTOR" GRAMOPHONE

The only Portable Gramophone specially designed for use as an accessory to a Tape Recorder, supplied complete with mains lead and tape recorder connecting lead.

Salient features:—

Four-Speed motor, B.S.R. Gramophone Deck. Strongly constructed portable case, finished in Rexine. Special plug connection for direct linking with Tape Recorders. Provision made for the addition of a mixer to be made available shortly.

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Record and hear your own voice with top line bands, or orchestras. Operates with any make of Tape Recorder, Radio, Television, Radiogram or Microphone. Intermix your tape recordings with: Radio, Television, Radiogram or a combination of any. Anyone can fit the Tape Mixing Ade in a few minutes.

Price complete 5 Gns. (no extras whatsoever)

Full information and illustrated leaflet from
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Telephone: SHEpherds Bush 2234

STUDIO IN A BOX

Your own recording studio in a box; a small plastic case, no heavier and no larger than a half-pound box of chocolates, fitting snugly in the palm of your hand.

That is a fair enough description of the Tape Mixing Ade, another little marvel of this electronic/transistor age. Virtually a miniature recording room which can put you on tape in the company of any of the world's finest musical backgrounds you care to choose.

Housed in a tiny box is the complete equipment needed to make your own music. But to make it professionally. To record your own vocal or instrumental solo with the accompaniment of bands or orchestras led-in to the Tape Mixing Ade from radio, television or gram. To record your own accompaniment to any other programme, and to make endless permutations of composite recordings, blended to suit your own taste and to reflect your own personality.

You can control recording levels so that you can provide low level, soft, musical background for your own instrumental or vocal solo, at a higher sound level. Just as the professionals do. In fact, unlimited recourses can be used in limitless ways to produce and record your own concerts. And you have the conductor's power to blend and control the sounds you want to present to your audience.

A professional job which every amateur can use, because no prior technical know-how is necessary in order to fix up and operate the Tape Mixing Ade; no special premises, no elaborate and expensive equipment, no special technical skill.

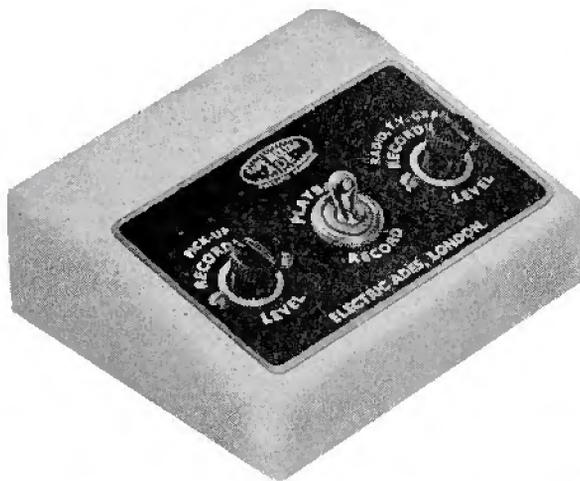
Here is another very useful feature of the instrument. Most tape recorders have loudspeakers which are usually too small to give adequate bass response. When playing back your tape recordings, and by using the Tape Mixing Ade equipment, you can bring into use the loudspeaker on your television, radio or radiogram merely by flicking a switch and thus greatly improve the bass response of your own tape recorder. A handy "extra" to your pleasure.

Moreover, the Tape Mixing Ade will work with any type and any make of tape recorder, radio, television or radiogram. That is worth bearing in mind. It is a universal aid to recorders.

The instrument has been designed by engineers who have had many years' experience in the sound film, television, and tape recording industry, and all you need in addition to your tape recorder is an ordinary domestic radio, television, radiogram or gram.

The purpose of the equipment is to enable the keen amateur who possesses no technical knowledge whatsoever to make composite tape recordings from any combination of radio, television, radiogram or microphone directly on tape.

This remarkable little instrument is obtainable from any radio retailer, or direct from "Electric Ades," 4 Eastbourne Road, Hanworth, Feltham, Middlesex, and the modest price of £5 5s. is the result of streamlined production and careful attention to both planning and design. There are no extras whatsoever, and with each instrument is sup-



plied free of charge a composite booklet which will enable an amateur to achieve the variety and standard of recordings which could get very near to those achieved in the studios of professionals.

A studio in a little box indeed; it can truly be stated that the Tape Mixing Ade is the universal aid for every tape recording enthusiast.



ALL YOUR
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FOUND QUICKLY AND
EASILY BY USING —

METRO-TABS

3/11 per set

A new and scientific device designed to clean the record and erase heads of your tape recorder, and to reduce faults caused by oxide deposits. Price 12/6



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LONDON - N.1

Telephone: CLIssold 8506/7

THE STORY OF MASTERTAPE

continued from page 65

is jig assembled, and this method of mounting is designed to minimise running friction. The jigs and tools designed to follow up the assembly operations are well designed both from the point of view of efficiency and operational safety.

Another interesting piece of equipment made by M.S.S. is the erase head for B.B.C. use.

DISC PRODUCTION.

In 1930, Mr. Watts, the founder of M.S.S., produced the first lacquer coated disc in the world. Since then the M.S.S. Company has pioneered and developed the direct recording disc to the present day high quality level which has guaranteed its extensive use throughout the five continents.

The core of the disc is an aluminium blank which is checked initially for any surface blemishes. Any faulty blanks are hand grinded down to a smaller diameter.

A series of corridor locks between departments cut down the risk of material contamination inherent in the production of recording discs. After being coated, the discs are placed in a "curing" store where they remain for seven days. The rack arrangement in this store allows up to 6,000 records to be handled at any one time. Having been "cured" they are checked, labelled and despatched to their many destinations.

RESEARCH.

M.S.S. devote a considerable amount of time and trouble to research work. Dr. Noble, their chief scientist, is at the present time engaged in investigations into the fundamentals of magnetic recording, and has already advanced beyond the ideas currently held on this subject. Another aspect of his researches is the statistical prediction of the performance of computer tape by examination of the impulses recorded on a small section of the tape taken from a production run. The application of this technique eliminates the lengthy tests previously involved and constitutes a notable advance in large-scale quality production.

The last word must surely come from tape recorder manufacturers, many of whom supply M.S.S. tape with their machines, either under the M.S.S. label or their own.

NEW "MULTIMUSIC" TAPE DECK

Initial supplies of the new Multimusic tape deck will soon be available to manufacturers of high fidelity equipment. Assembled under skilled supervision at their Chelmsford factory, Multimusic Ltd claim that this is probably the first British deck of "professional" quality to be made in quantity.

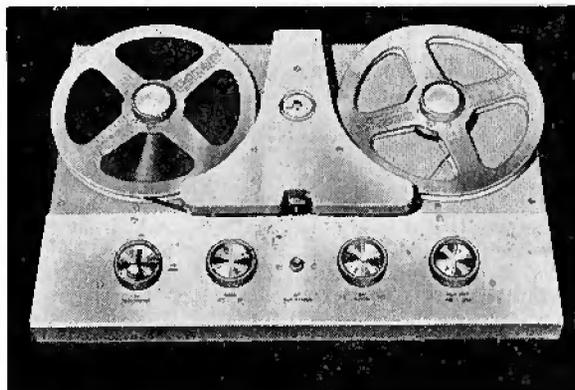
The primary feature of the design by Multimusic engineers of this entirely new tape deck has been reliability and consistency in operation.

There are no belts or interwheels and in operation there are only five moving parts. Three of these are the motors, all specifically designed for the job, one being the main drive motor, synchronous or alternatively, hysteresis synchronous, and two side motors. Instant start and stop is possible. The only other moving parts are the pinchwheel and a gear-driven clock type tape position indicator. The main motor, which is direct drive, can be reversible, and provision is made in the head assembly unit for three heads to be accommodated each side of the capstan.

The deck is supplied for use with reels up to 8½in.

diameter. Fast wind forward and back, which is guaranteed will not stretch or break even the thinnest tape, is entirely electrically controlled by a single knob and 1,200 feet of tape can be wound in either direction in 45 seconds. A mechanically locked "PARK" position holds the reels gently but firmly when the function switch is in the "Off" position.

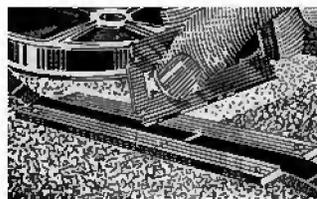
The new Multimusic deck is standard rack size—19in. width, and will be used in a new range of Reflectograph tape recorders.



The simplest quality design in the world. Completely efficient with equal simplicity of operation.

designed by Stanley Kelly
ROMAGNA

EDITING BLOCK



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B.A.S.F. 300ft. (3") 14/-; 600ft. (4") 25/-; 1,200ft. (5") 42/-; 1,600ft. (5½") 52/6; 2,400ft. (7") 77/6.

M.S.S. 300ft. (3") 14/-; 1,200ft. (5") 45/-; 2,400ft. (7") 80/-.

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Full list of Standard and L.P. Tapes and accessories available free.

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NOTE.—Past orders only to this address

AGFATAPE
AGFA PE-31 (LONG-PLAY) AND PE 41
(DOUBLE-PLAY) MAGNETON TAPES

The new Agfa Magnetone tape PE is pre-stressed, which means that the raw material, which is a dead smooth plastic foil, is mechanically stretched to attain maximum tensile strength and resistance to further stretching. This prevents distortion caused through contraction or elongation. After the pre-stressing process any exceptional handling in use will not alter it in any way, as it is as resistant to stretching as steel, indestructible, and will not weaken with age. Heat and moisture have in the past seriously affected magnetic recording tapes. During durability tests Agfa Polyester PE tapes were subjected continuously to alternating temperatures—100°C. to +200°C., without affecting in any way the tape or the recordings.

A new type of wear-resisting binder is used for the magnetic material which gives Agfa PE tapes unrivalled resistance to abrasion. A million runs in the course of an endurance test failed to produce any mechanical change in the magnetic layer. This special adhesion of the iron particles keeps the recording head clean and reduces wear on the head.

No distortion or overload

Even if on occasions the recording is inadvertently somewhat overloaded, the new Agfa Polyester PE tape absorbs the surplus without detriment to quality. The distortion factor is so low that even under such conditions reproduction is clear and quite free from distortion.

★

SOUNDCRAFT "PLUS 100" TAPE

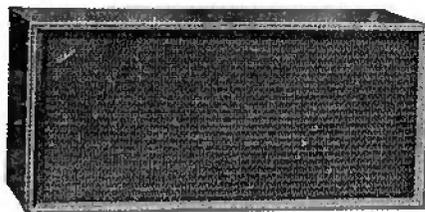
Soundcraft, whose high fidelity (hifi) tape will already be familiar to recordists, have now brought out "Plus 100." This provides the purchaser with 1,200 feet of tape on a 5in. reel (XP-12), and 2,400 feet on a 7in. reel (XP-24). The latter gives one 4½ hours' recording time at 3½ i.p.s. Although few domestic recorders will take it, the 10½in. (XP-52) is the dream reel, for it holds 5,200 feet—a mile of tape! Now with a few of those on the Tape Bank Trail . . .

"Plus 100" has a Mylar base (DuPont Polyester Film). Its thinness has not been achieved at the expense of the oxide coating, which is to the standard depth. This thinness hugs the recorder head better, giving greater uniformity of recording and increased high frequency response. Extra thinness means increased print through, but this can be minimised by guarding against over-modulation. "Plus 100" is intended for the expert who can give careful handling to a delicate tape in return for improved sound and extra playing time.

DONATE 2s. 6d. (100 ft. of Tape)
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BRITISH RECORDING CLUB
TAPE BANK
 FOR THE USE OF THE
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B.R.C. HOSPITAL BROADCASTING
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TAPE
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WHARFEDALE
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Modern tape recorders are capable of astonishingly faithful reproduction when connected to a separate wide range loudspeaker such as the PST/8.

This unique enclosure is designed to give optimum results with Wharfedale 8" foam surround units which are available in a range of impedances to suit all machines.

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PRICE: £7 10 0 in whitewood
 Cabinet only £10 10 0 finished in walnut
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Recommended units 8" Bronze/FS/AL
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A Home-View

of the

SYMPHONY Tape Recorder, Mark III

By KEN PETERS

"WHAT'S in a name?" said the poet. To me the Mannequin and the Symphony suggest the feminine and the masculine, and I consider that the respective appeal of these recorders is similarly placed. The new "Symphony" Mark III (portable cabinet) is neat but not decorative, functional but not fancy. A recorder with man-appeal! Its name also carries the suggestion that despite being in the middle price region, it can cope with a symphony orchestra. The first question therefore is: can it?

Recorders in this price region can be roughly divided into three groups:

A—the quality sans extras;

B—the accessory laden, with speaker squeezed in as an afterthought;

C—the half-n-halfers, some quality, some extras.

A suits the musicophile, B the grasshopper, and C suits Mr. T. A. Mits (The Average Man in the Street).

To which group does the Symphony belong? Well, it has $7\frac{1}{2}$ and $3\frac{1}{4}$ i.p.s. speeds, standard half-track recording in one direction only, a useful pause control, and the new Truvox Mark VI deck. Many recordists differentiate in their minds between a Truvox deck and other makes, by the fact that it records and plays back from right to left, and requires a capstan change to obtain the two speeds. Well, the Mark VI deck plays from left to right and has a two-speed switch which also provides a neutral position, so some NUthink will now be necessary.

The speed trials reveal a spooling rate that ought to be fast enough for anyone, but it does demand very positive use of the brake switch. Fast wind of 1,800 feet took 1 minute 25 seconds, and the journey back 1 minute 15 seconds. Special Hubloc spindles keep the spools from going into orbit during this process. This high speed is not conducive to very even spooling, however. One recorder I have tried spools very evenly but takes 7 minutes for 1,800 feet, so you pay your money and take your choice.

With a Reslo ribbon microphone "drinking" it all in, I fed piano sound to the Symphony. Eighty-eight went in and eighty-eight came out none the worse for the trip.

I have just heard about the crash test for recorders. I gather from my informant that you require an icy pavement, coupled with a base over apex motion. He contrived to land his machine smack on its lid. Result: one decorative band broken but otherwise unharmed. If valves can survive this treatment, who needs transistors? Anyway, I won't be incorporating this test into Home-Views yet awhile.

A critical ear applied to the $7\frac{1}{2}$ i.p.s. sound heard nothing of our two old enemies, wow and flutter. I *did* hear a very enjoyable sound though, and one that left no feeling of ear droop after a sustained listening session.

The slow speed is good enough for "Pops"; by which statement I am not decrying the juke box fodder. It's just that the frequency range of a con-



cert orchestra is usually greater than a "Pop" group. The formula for this is

L.P.O.

$\frac{\text{L.P.O.}}{\text{M.J.Q.}} \times ? \text{ c.p.s.} = \text{Manufacturer's statement.}$

M.J.Q.

The Office Boy said he couldn't work this out. But then he also said that he couldn't get much of a tune from his grannie's ear trumpet!

Tape is laced up via an open straight slot, so that presents no difficulty. The digital counter (three-figure) is consistent in its readings. A 7in. standard ran from 000 to 528. This means that a difference of one on the digital counter represents approximately 28 inches, or four seconds of playing time, at the $7\frac{1}{2}$ i.p.s. speed, which is quite sufficient when one considers that pops last at least a hundred and eighty seconds each. However, a thought to bear in mind is that this becomes eight seconds at $3\frac{1}{4}$ i.p.s., or half as accurate. $7\frac{1}{2}$ i.p.s. are best! A friend observed to me recently that many people with two-speed machines use the slower speed even when they do not intend to keep the recording permanently. As he said, "they are losing quality to achieve a false economy of tape." The extension speaker socket is half-way up the back of the machine and easy to reach. All other controls are neatly arranged on top, which is one of the advantages of a functional recorder.

The pause control is a side-to-side switch that does not have to be held in position when used. Its action on playback is silent.

The "Record" button does not resemble any of the other controls and so is unlikely to be used accidentally. There is an added safety factor in that

it cancels out automatically when the motors stop, or the brake is used.

The volume control would be improved by having a numbered scale fitted to it. The owner could, of course, add a paper scale. While on the subject of scales, the reading of 38lb. for the Symphony puts it in the "portable" class.

To sum up, the Symphony is well-designed for easy use, is a quality job, giving quality results through an excellent speaker. Northern Radio's manufacturer to consumer policy certainly seems to have produced a reasonably priced machine at £54 12s. (which includes a reel of tape and its box, but not a mike). Unlike a number of similarly priced recorders, the Symphony can be used with a range of microphones. The makers recommend the Ronette Coronation (£3) and/or the Reslo Ribbon microphone ("Ribbon" price).

The Symphony is also available in a table cabinet at the same price.

Answer to the first question: Yes.

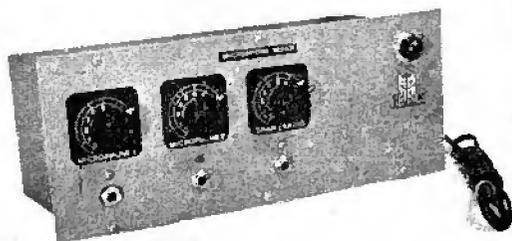
Technical or other information on the Symphony Mark III can be obtained from Northern Radio Services, 11 King's College Road, London, N.W.3.

THE ROTECH THREE-WAY ELECTRONIC MIXER

This is a high quality three stage microphone mixer designed to perform very closely to professional standards, for operation with all makes of tape recorders, public address amplifying equipment in theatres, schools, etc.

Two of the input channels are suitable for microphones, whilst the third will accept an output from a radio tuner, equalized tape amplifier or crystal pick-up, etc.

These mixers have a wide frequency response and exceptionally low hum and noise level. Three models are available, each of which may be inter-connected with another.



Performance Specifications for Mixers RM.1, RM.3, RM.4.

Frequency Response: Level 30 to 20,000 c.p.s. referred to 1,000 c.p.s. —2 dB at 20 c.p.s. —5 dB at 15 c.p.s.

Hum and Noise: 50 dB below output at maximum output.

Sensitivity for full output: Microphone channels 3mV. Radiogram Tape Input 250mV.

Output Voltage: 800mV (can be supplied with outputs down to 40 mV or up to 1v (max.).

Output Impedance: 600 ohms—Cathode follower output circuit permits long cable connections to recorder or amplifiers without loss of high frequencies.

Features of the Rotech Mixers

Mixing and fading on each channel is entirely independent.

Crosstalk between channels—nil.

Negative feedback preserves a high frequency response and reduces hum and distortion to a minimum.

Mixers housed in robust cases, stove enamelled in grey/green or hammered bronze.

Mixers may be inter-connected to provide multi-channel mixing system.

Graduated dials, clearly labelled. Instrument type fluted controls with white pointers.

All mixers are pen recorder tested for response before despatch.

Valves: EF86, EF86, ECC83. H.T. rectifier, RM.0.

Mains input for self-powered units: 220-250v. 50 c.p.s.

Available Types

RM.1. Two high impedance microphone inputs and one high level input. Built-in power supply. L.T. H.T. outlet for external amplifier or additional mixer 6.3v A.C. and 200v H.T. Price 19 guineas.

RM.3. Two high impedance inputs and one level input for operation from external power supply 6.3v —1A and 250v—5mA H.T. (many recorders are fitted with a supply socket of this nature). Price 18 guineas.

RM.4. As above but for low impedance microphones (2 inputs) and one high level input. Price 19 guineas. Dimensions: 12" x 5" x 4½".

The inter-connecting facilities of the ROTECH Mixers allow two or more to be used together, for example.

RM.1 and RM.4 may be used for a total of six channels, two for high impedance microphones, two for low impedance microphones and two high level inputs.

RM.3 and RM.4 together—four low impedance microphone channels and two high level inputs.

These Mixers have been designed by F. C. Judd, A.M.Inst.E., for Rotech Electronics, 152, Maybank Road, South Woodford, London, E.18.

The Manufacturers state that as these Mixers are Custom built, delivery will be two to three weeks from date of receipt of order.



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New, colourful plastic containers of high impact material, are now being used for EMITAPE 3 in. and 3½ in. Tapes, Empty Spools and Leader Tapes. Types of tape will be indicated by a coloured label on the outside—"44" Yellow, "88" Red, "99" Green and "100" Black—in accordance with the existing colour code.

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TAPE TO DISC SERVICE—78's-45's and L.P.'s. Prices from 12/0d. Special discounts for schools. Manufacturer of "Geordie" dialect commercial discs. S.a.e. for full details to: John Levis, Sunderland Sound Services, 28 Viewforth Terrace, Sunderland, Co. Durham. Telephone 57032.

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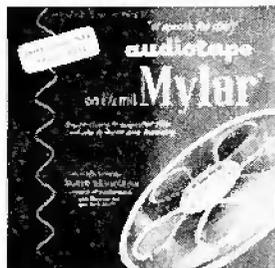
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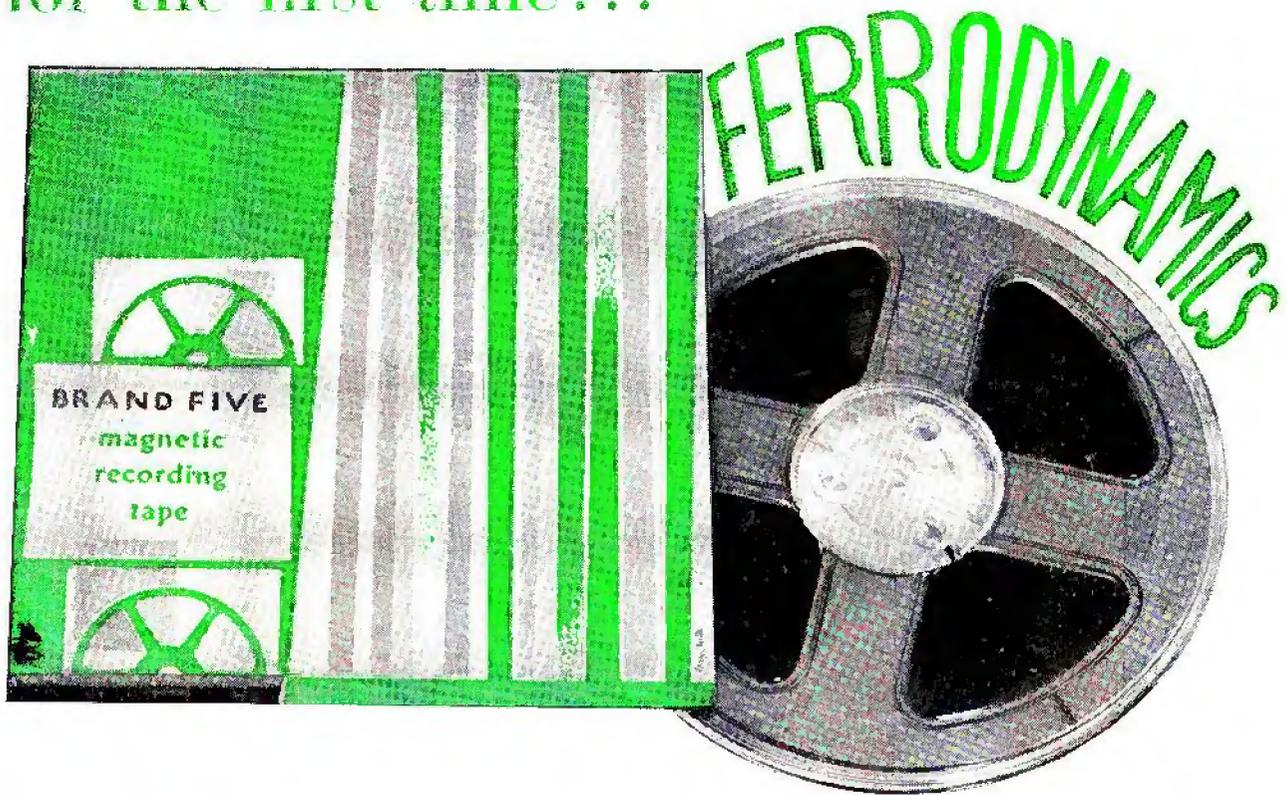
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