

JANUARY 1965

TAPE

RECORDING MAGAZINE

24



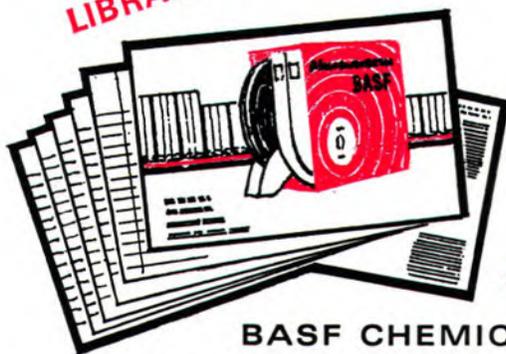
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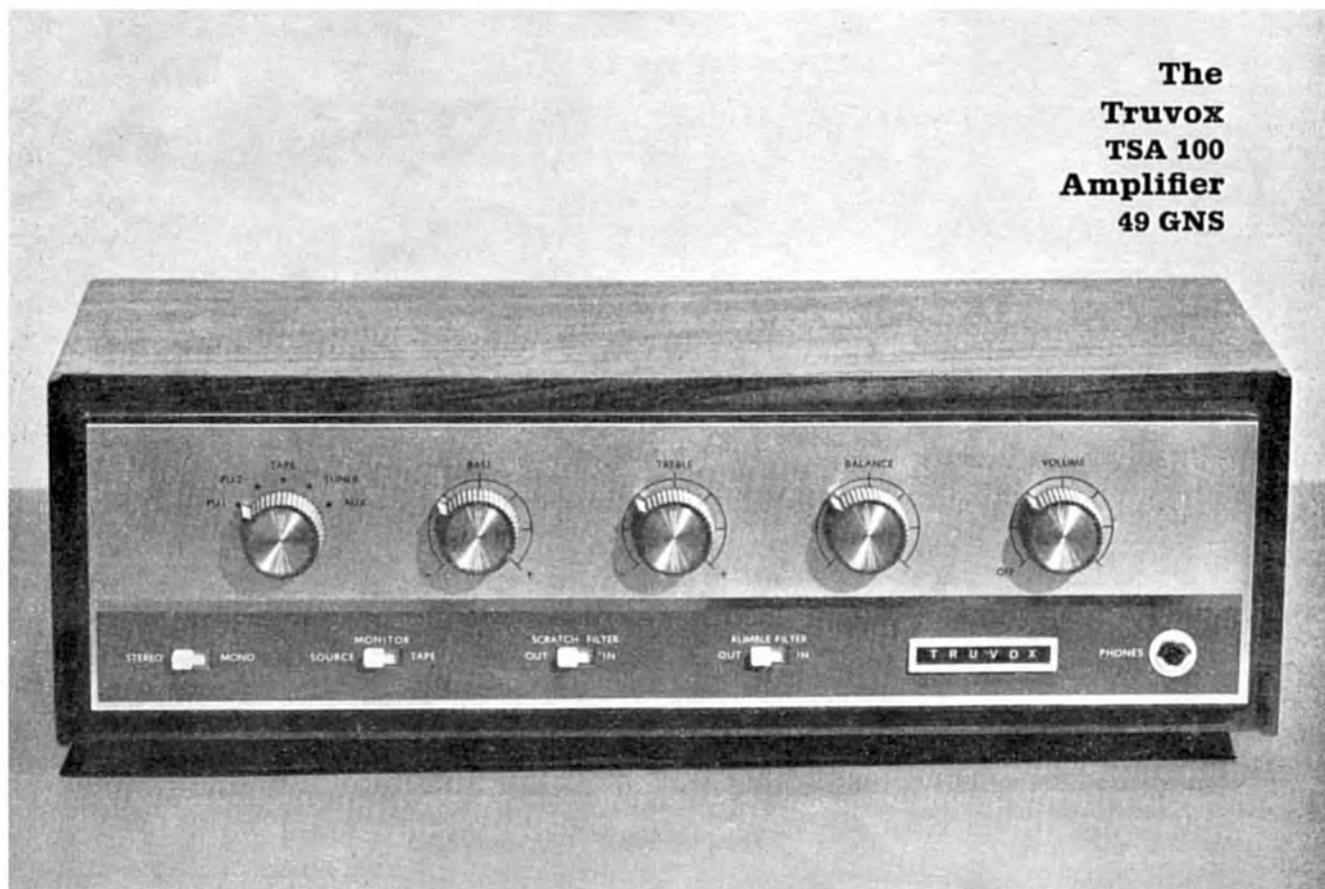
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Truvox announce an important new amplifier

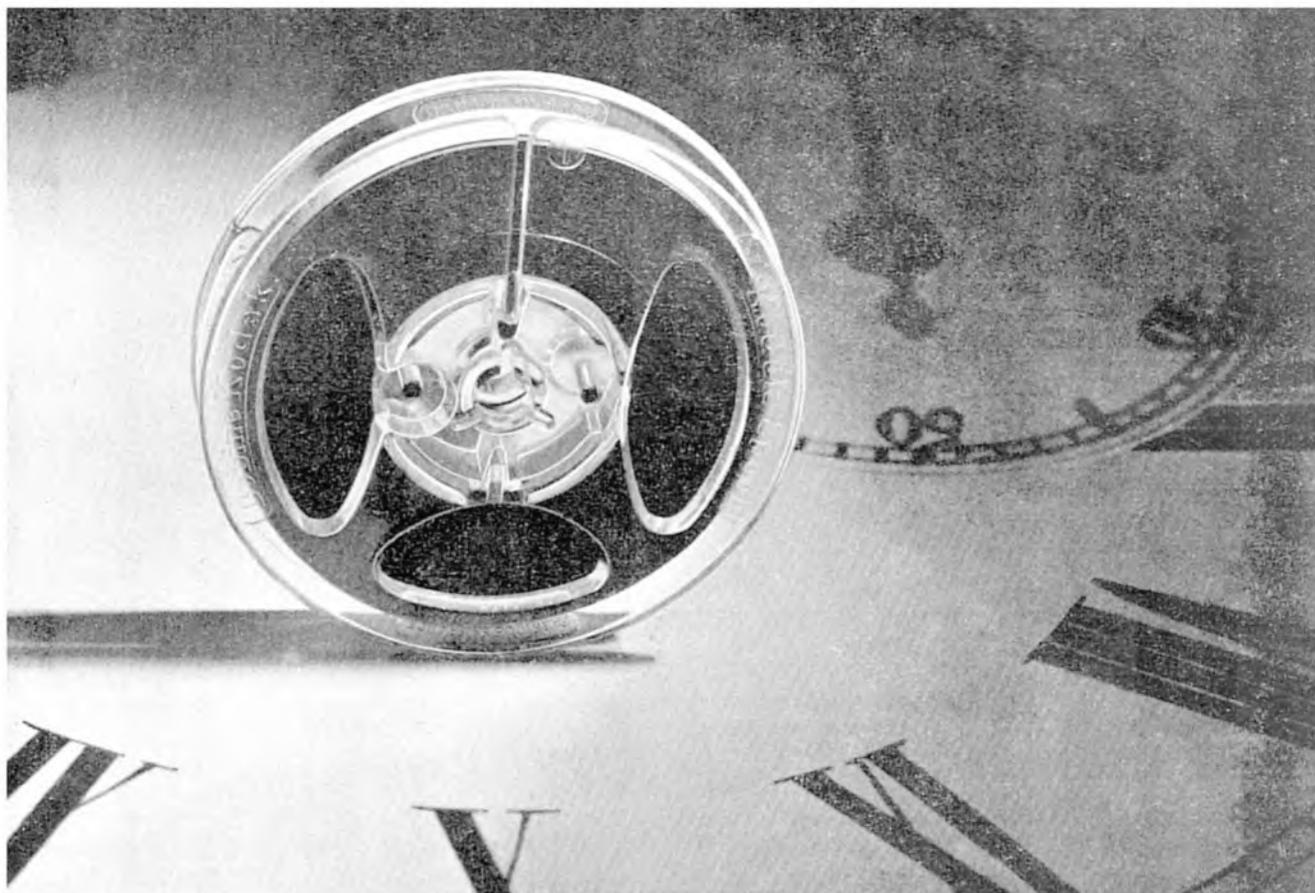
Hot on the heels of the outstandingly successful series 90 recorders comes another new pace-setter from Truvox. An amplifier. A completely new amplifier. A fully *compatible* amplifier—the TSA 100. The TSA 100 is a complete, integrated, transistorised, stereo amplifier designed and built for extremely high performance. Perfect compatibility does away with all matching problems; the TSA 100 can be used successfully with any disc, tape or tuner equipment on the market. The fascia panel is simple and elegant and all sockets are fitted at the rear. The TSA 100 makes a handsome free-standing unit as it is housed in an attractively-finished afrormosia plinth. Alternatively it can be built in. A brief specification of the TSA 100 Amplifier is given alongside.

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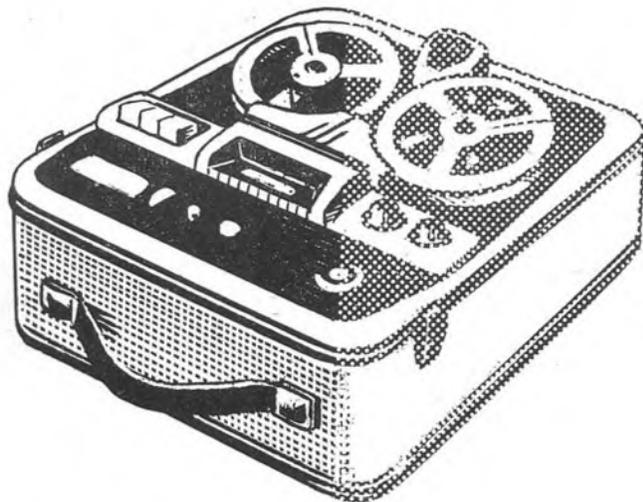
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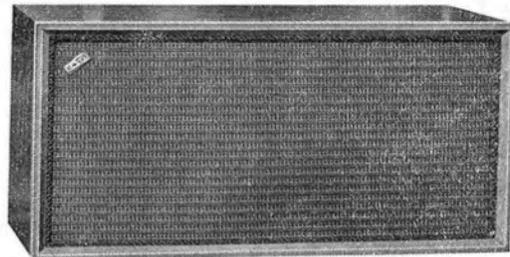


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TAPE

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Vol. 9

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January 1965

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COVER PHOTOGRAPH: Winners in the British and International Amateur Tape Recording Contests seen with their trophies at the Presentation Party held in London last November. Left to right (standing) are Robert Drew (Irish Trophy), Peter L. Bastin (Philips Shield), Alan Stableford (F.B.T.R.C. Chairman) who presented the International awards, Walter Buchanan and Mike Avel (F.B.T.R.C. Shield), and Richard A. Margoschis (Kodak Shield). Seated are Philip P. Towell (Acos, Agfa and Scotch Cups), Miss Josephine Douglas, who presented the British awards, and Roy S. King (Emitape Cup and "TAPE Recording Magazine" International Shield).

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EDITORIAL

Editor,
R. DOUGLAS BROWN

Assistant Editor,
FRED CHANDLER

Tape trends and tape talk

By the Editor

AT THE TURN OF THE year, one looks back to see what expectations have been fulfilled, and what disappointed. I confess that I had thought we should have moved much closer to domestic video recording than we have. "Telcan," which stimulated expectations, did not appear on the market and the latest news is that the British company is in voluntary liquidation. The big firms have taken a major step forward with their portable video machines, suitable for industry and commerce and various specialist users. But the price barrier has still to be broken.

The most important development of 1964 will probably turn out to be the marketing of Philips' tape cassette as part of their EL3300 battery portable recorder. I think the full significance of this has yet to be realised.

The successful co-operation of eight leading firms marketing magnetic tape to sponsor the British Amateur Tape Recording Contest was one of the most encouraging features of the past year. Their committee came into existence too late to develop maximum power and success in 1964, but next month we should be able to announce a much bigger exercise for 1965, and I feel that out of this permanent committee planning co-operative effort to popularise tape recording a lot may come in the future.

One of the disappointments has been the BBC abandonment of its regular programme catering for amateur audio enthusiasts. There have been assurances that it will be restored in the future and we must hope that this will be achieved early in the New Year.

THE LONDON TAPE Recording Club is to be congratulated on its efforts to get all London clubs

north of the Thames in closer contact. Members of nine clubs turned up at the Hotel Russell at the end of November for a very well-organised get-together and discussion of common problems.

London clubs had been invited to present a programme illustrating their activities.

* * *

THE LONDON CLUB itself produced an excellent feature tape telling the story of its history and activities and the North London and Friern Barnet clubs and the Bedford group provided recorded narratives.

There were 50 people at the meeting and it was the most successful get-together of its sort that I have attended.

I hope that it may result in much closer co-operation between clubs in the area north of the Thames.

* * *

HIGHLIGHT OF THE meeting, I think, was a talk by Keith Hindle, of the BBC, one of the producers responsible for the "Today" programme on the Home Service.

This programme, built up of a very wide variety of four-minute items, is perhaps the best of all BBC examples for the amateur to seek to emulate. Most items broadcast are models of how to tell a story briefly and effectively in sound.

As Mr. Hindle explained, the "Today" items embrace on-the-sport reports, "Vox Pop" interviews with men-in-the-street, "curtain-raisers" and "back-grounders" on current events, commentaries, and humorous items.

Between the two editions transmitted each morning, there are four million regular listeners. There are 40 to 50 people involved in the production of each programme (including studio staff, but excluding transmission staff). About 18 items are prepared for transmission each day and 3,500 are broadcast in the course of a year.

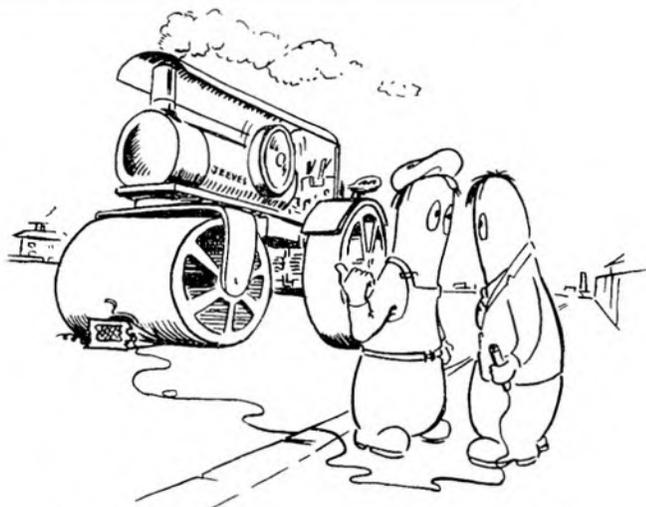
One of the impressions formed by the judges in each Amateur Tape Recording Concert has been that most amateurs' tapes are over-long. "Today" can serve as a daily study course for the home enthusiast and can show him (or her) what is possible in a space of four minutes.

* * *

IN THIS ISSUE WE publish, for the first time, an index to one year's contents of *TAPE Recording Magazine*. We trust that this will be considered a useful service to our readers. It has entailed a great deal of work. Some publishers sell their index separately but we have felt that it should be made available to all readers, most of whom we know keep their back numbers of the Magazine on file.

Comments or suggestions for improving the form of the index in subsequent years will be appreciated.

LAUGH WITH JEEVES



"Look mate, you distinctly said you'd like to have my traction engine on your recorder."



Left: The Agfa Cup for the best entry in the "Actuality Section" of the British Amateur Tape Recording Contest, and right, the Scotch Cup for the best stereo entry. Both were awarded to Philip P. Towell for his tape "Pisa Baptistry"



Recording the echo in Pisa's Baptistry



The Author

HOW many times have you walked into a beautiful church and found the organist practising, or heard the joyful peal of its bells? I have found, like so many recordists, that sounds are often more evocative than the sights and most of us have at one time or another met a sound or event which we dearly wish we could have recorded.

So what more natural than to take a portable recorder where most holiday-makers take a camera. Of course, if you're *terribly* clever, you can do both and combine the soundtrack with your slide show. However this is tricky, especially if you are working alone. It is difficult to watch what's going on at the same time as you hold the microphone in one hand while the other manipulates the controls (its twice as difficult with two controls for stereo!).

I remember getting a wonderful tape of the Tivoli Boys Band in Copenhagen a few years ago. Unfortunately, it is punctuated by camera clicks. By sticking the microphone in my top pocket on another occasion in Switzerland, I was able to record the complete Fete-Dieu procession in the little mountain village of Saviese, as well as taking many beautiful colour slides of the astonishing uniforms and picturesque dress of centuries ago. Incidentally, I wonder if I hold the record (forgive the pun) for the highest and lowest recording in the world. I've taken a recorder to the top of Mont Blanc, and also made stereo tapes in the eerie atmosphere of the Catacombs in Rome.

My first excursion into this field was with a Fi-Cord 1A battery portable tucked under my coat at the royal opening of the Stockholm Festival in 1960, an event which included a fine choral concert and attendant fanfares. Considering the conditions under which it was made (which included a faulty microphone lead), I still treasure its uniqueness, especially as the reception was only for diplomats and VIP's. I think I only got in because I was a foreigner and had the cheek to ask for an invitation. My Fi-Cord went everywhere with me, in spite of having smashed the tiny indicator light bulb on the first day when I swung my camera against it.

Last year, when I decided to go again to Italy, I invested in the stereo version of the Uher Report, because I now rarely make mono recordings. Stereo conveys the atmosphere so much more, and this Uher is a marvellous machine. In spite of its relatively high weight and bulk compared with the original Fi-Cord, it has a choice of four speeds, which with five-inch spools enables one to record for considerable time without changing reels. I found 1½ ips quite suitable for the speech of guides, whereas 3½ ips is satisfactory for most uses, with 7½ ips for special recordings.

In the course of a fortnight's tour of Italy I took some 300 colour slides as well as made about nine hours of recording. This includes an excellent tape of Ponchielli's opera "La Gioconda" in the vast open-air arena at Verona, in which every word can be heard, even though I was almost in (I nearly wrote "with") the Gods. This was the only time I met someone else with a recorder—and that, strangely enough, was also a Uher.

The tour started with a flight to Dijon in

France, where we were met by the coach and the guide who was to show us all over Italy. The first day took us to Berne, whose cacophony of church bells is *really* worthwhile recording. Unfortunately the famous bears were ominously silent for this Soundhunter. Following an interesting route from the Swiss capital, we were in Lucerne for coffee, the Susten pass for lunch, and Lugano for tea.

Night time saw us in Milan, whose famous Cathedral was our first objective next day. Here I made a faux-pas: recording without asking the guide. He rounded on me thinking I was some radio producer stealing his material, and I was obliged to slink away from the party—to record the organ playing. Our "own" guide had been most helpful, almost to the point of being verbose in providing me with material as we drove in the bus. So I recommend always asking permission before you record—it will rarely be refused if you are straightforward.

I was lucky in having visited many of the places on previous occasions, and when we were told we would be staying in either Viareggio or Pisa, I fervently hoped it would be the latter. As it turned out, the hotel in Viareggio was full, so we went on to their associated establishment in Pisa. We couldn't have chosen a more appropriate day because it was the 900th anniversary of the Cathedral, and that night each tier of the Leaning Tower's wedding-cake facade was lit by oil lights, making it look even more enchanting. Just before midnight we had the most terrific thunderstorm, but as I did not want to risk running down the batteries, it escaped untaped.

Next morning was beautifully sunny again as we trooped round the Cathedral, and then into the Baptistry. I remembered its fantastic echo from a previous visit, and was somewhat doubtful whether it could be captured in stereo without any rehearsal. The guide advised me where to stand (by the font) and I recorded his "spiel" about the building's history. Then as the caretaker shut that massive door facing the Cathedral—the only one of the four allowed by custom to be opened—I braced myself. His single staccato notes became a veritable torrent of sound, and we held our breath.

All too soon it was over and as we went out into the sunlight again, the bell began to ring from the campanile of the Leaning Tower. Hastily the recorder was restarted, while I made angry faces at some Italians shouting nearby. Later all the official tourist guides gathered round to hear the tape, widely criticising the one who had been recorded.

The bell made an ideal background for my brief introduction of the "Pisa Baptistry" tape, and was followed by an edited version of the guide's remarks, and the actual echo. So the completed tape lasts almost as long as it took to record. Luckily it came off, but not so another I made at the Pantheon in Rome. This ancient church, built in 27 B.C. is completely circular with an open cupola, and with the organ playing the acoustic was marvellous. Alas, the tape sounded muddy—probably because of the sustained bass notes, producing reverberation instead of echo—quite a different thing. In St. Peter's it is not permitted to take tape recordings, or was my Italian so bad they thought it was a cine camera? Next time perhaps they will be more used to seeing them, and maybe you'll be able to record the Sistine Choir in their own fabulous Chapel. If not, *please* don't talk when I am taping next to you!

The fourth article of a new series explaining the mysteries of electronics to the layman. Below the author describes how electrical generators activate electrons and produce power to operate a tape recorder.

This electricity: Storing power

By CHARLES NORMAN

ALTHOUGH we talk about electrical generators, we cannot generate electricity any more than we can generate the water in a hydraulic system. The electrons are present all the time. So, having established that there is no such thing as an electrical generator, let us discuss electrical generators.

A generator is simply an arrangement which, by chemical or mechanical action, creates a surplus of electrons at one end, or terminal, and a shortage at the other. This is about the same result as the old Greek philosopher achieved when he massaged his cat with a chunk of amber. But the generator does it more efficiently

and with less injury to the feelings of the RSPCA. So, on the whole, generators are good things.

We saw last month that if we connect a tape recorder or any other electrical device between the terminals of a suitable generator the surplus electrons at one end of the generator force their way through towards the shortage. They can only get there by going through the recorder, and in doing so they make it work. What we really want to know now is how does the generator keep up the pressure so that the machine continues to work?

The most easy generator to understand is the simple cell. This was invented many years ago and is the ancestor of all the batteries and accumulators in use today. In its original form it was simply a rod of

copper and a rod of lead suspended out of contact with each other in a bath of weak sulphuric acid. The acid does not affect the lead but attacks the copper to form copper sulphate and bubbles of hydrogen. A chemist would write down the chemical action in the form of an equation:—



Now a compound consists of molecules composed of atoms which are held together by the interlocking of the electron orbits discussed in the first article of this series. This chemical reaction breaks up the molecules in such a way that the hydrogen atoms are left with no electrons. In other words, they are positively charged. As more and more positively charged hydrogen atoms are produced they are forced away from the copper and make their way towards the

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lead, which they see as a storehouse of free electrons. They cluster around its surface, abstracting electrons, so that the lead itself becomes positively charged.

The electrons which the chemical action has split off from the hydrogen atoms are forced into the copper. So this becomes negatively charged. So now we have precisely what we were after, a shortage and a surplus of electrons. If we connect a conductor between the few metals a current must flow along it. And the current will continue to flow until all the copper has been dissolved or the acid has been exhausted. On the face of it then, we have our steady electrical pressure.

But things do not work out quite so easily because the bubbles of hydrogen which cluster about the lead rod—this is called the anode, incidentally—form an insulating layer which very soon stops the current flow. This means that we must throw away the simple cell and think of a better answer.

About the first person to come up with a really practical answer was a French scientist called Leclanche. His cell, a section of which is shown in Fig. 1, has been used for years in modified form as dry batteries for every purpose, and it is only recently that more efficient substitutes have been developed.

The Leclanche cell uses carbon instead of lead and zinc instead of copper. The sulphuric acid is replaced by sal ammoniac—a much safer chemical to handle. This attacks the zinc, forming positively charged

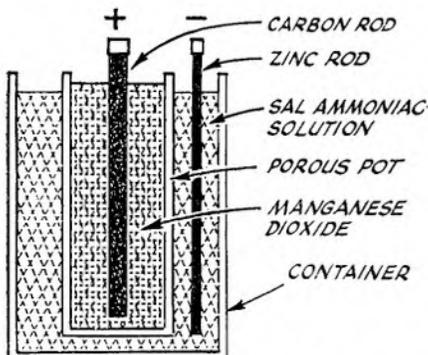


Fig. 1. The Leclanche cell has been used in modified form as dry batteries for every purpose.

hydrogen atoms, or ions, which immediately make their way towards the carbon anode in search of electrons. They get their electrons, so the anode becomes positively charged as in the simple cell.

But the carbon is surrounded by manganese dioxide, a chemical which is very rich in oxygen and very ready to part with

it to newly-produced hydrogen. Thus, as rapidly as the hydrogen gets its missing electrons and becomes normal it combines with this oxygen to form water, which mixes with the sal ammoniac solution. So no insulating layer of bubbles can be formed. The zinc rod, which like the negative plate in any other form of battery is called the cathode, collects the electrons lost by the hydrogen and so becomes negatively charged.

Up to a few years ago, all so-called dry batteries were made from Leclanche cells with the sal ammoniac in jelly form. Recently though, dry cells containing mercury and cadmium have been commercially developed. If you have a transistor radio or battery operated tape recorder, this is almost certainly the type of battery used.

One great disadvantage of all the cells we have discussed so far is that once the chemicals have been used up the batteries are useless. As the rate at which the chemicals are used depends upon the current drawn this makes using batteries an expensive business if very much power has to be supplied. Electricity itself is very cheap though, provided it can be produced on a large scale.

For instance, it would cost a small fortune to run a one hundred watt lamp for ten hours on batteries, yet the electricity undertakings can show a profit on doing this for coppers. So it would be a great advantage if, instead of using chemical action to produce an electrical pressure, we could use an electrical pressure to cause the chemical action, then use the chemical action in reverse to produce the electrical pressure. In this way the chemicals could be used over and over again.

This is the principle of secondary cells, or accumulators. The chemicals used are lead and sulphuric acid. When a current is passed through two lead plates hanging in sulphuric acid it forces a chemical reaction to take place. To do this the electrical energy supplied by the current has to be converted into chemical energy which is stored in the altered lead plates. When the applied voltage is removed and the lead plates connected by a conductor the stored chemical energy is reconverted into electrical energy which drives a current through the conductor and will operate any suitable machine. These days dry secondary cells are made. If your recorder is battery-operated, it would be a good plan to change over to these. They cost more to begin with, but over a period they are very much cheaper.

Now that we know what a generator does, let us go back to the electrical circuit that we examined last month and see how a resistor can operate as a machine. The circuit is drawn again in Fig. 2.

When the switch is made electrons begin

to flow through the resistor at a rate determined by the battery voltage and the ohmic value of the resistor. As we have both a current and a voltage we must be using power so we must be doing work of some kind. This means that we must be causing something to move. As the resistor itself stays precisely where it is, and as the protons of its atoms are firmly held in the

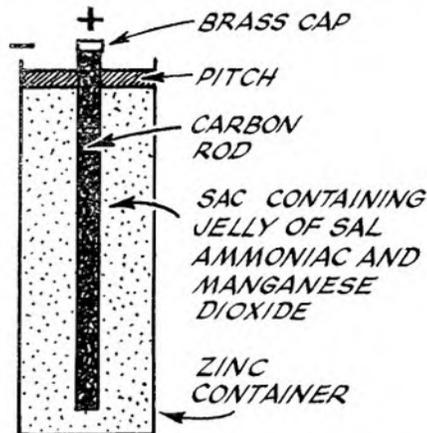


Fig. 1a. Detailed section of the Leclanche cell shown in Fig. 1.

heavy nuclei, the most likely result of this work is an increase in the speed of the orbital electrons.

This is in fact what happens. They are accelerated so much that some of the electrons in inner orbits move into outer orbits. As an atom cannot remain in this state, these electrons or others immediately drop back

NEXT MONTH

'Magnetism'

into the inner orbits. But to do this they must get rid of the extra energy they have acquired. They cannot hand it back to the battery, which is constantly pumping yet more energy into the resistor. So they shoot it out into space as extremely short-wave radio signals. These signals are of a much shorter wavelength than those usually thought of as radio waves, but they are true radio waves. If the current is high enough and you hold a finger close to the resistor the waves will give up some of their energy to your skin. By now you should have guessed it—the waves are heat rays. So we can truthfully state that a resistor is a device which can convert electrical energy into heat energy.

Of course, an ordinary resistor will go up in flames if it gets too hot, but there are specially made resistors that can handle a very large amount of power. The element of a one kilowatt fire, which is an example, works at the rate of well over that of a one horse-power motor. Other examples of resistors that do work are the elements of such things as electric irons and kettles.

As we increase the current, the resistor gets hotter and hotter and the electrons jump backwards and forwards from orbit to orbit faster and faster. When they are jumping fast enough the resistor gives out radio waves so short that we can see them. If we make it in the form of a fine spiral of wire enclosed in an evacuated glass bulb, we have an electric light bulb.

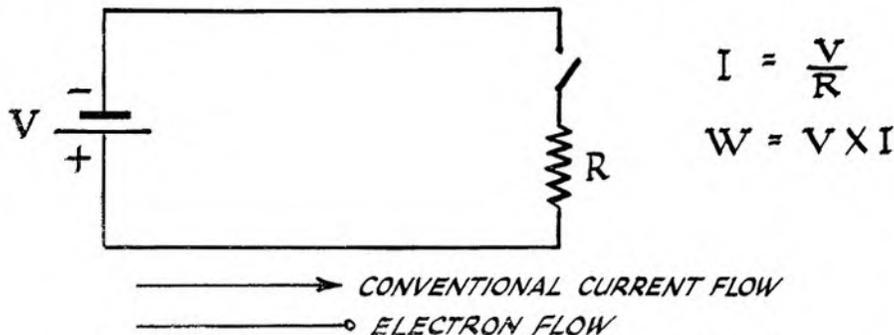
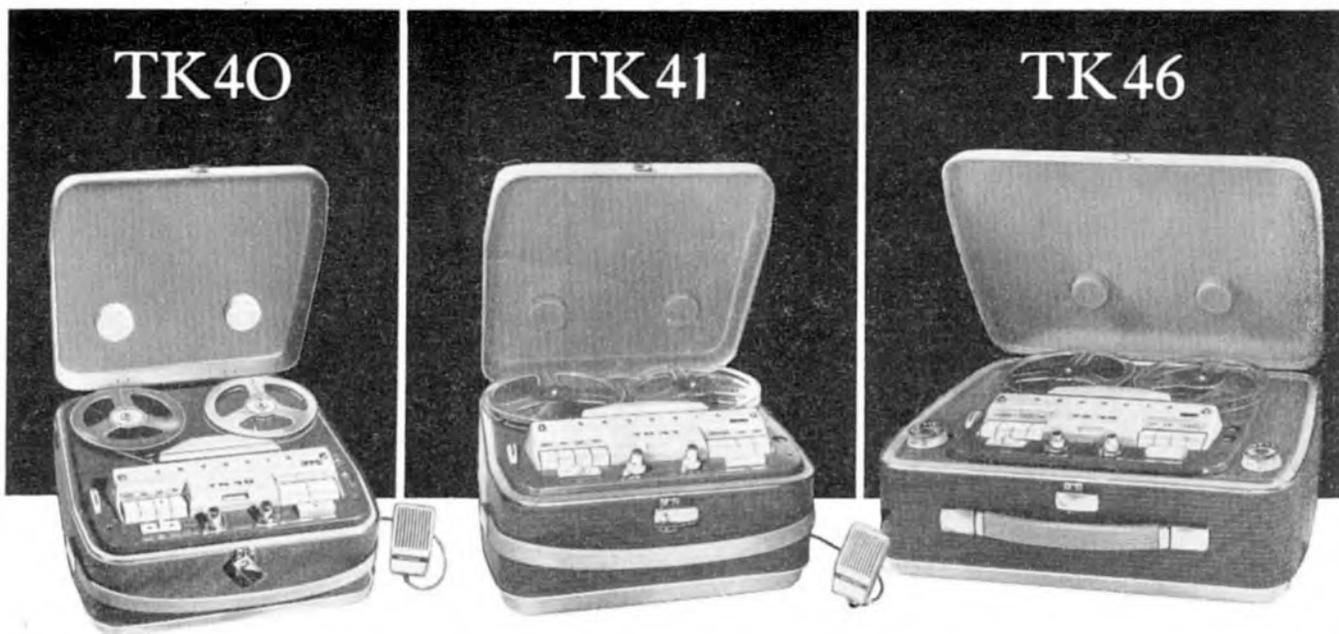


Fig. 2. A simple electrical circuit depicting the battery (left), the resistor (R), and above it the switch.



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TRM1

TAPE AND CINE. The second article in our new series giving advice on the exciting possibilities when tape is linked with cine photography. This month our expert discusses synchronisation.

Success depends on accurate start marks

By PETER RYDE

WHATEVER system you use to keep your tape and film in sync, its success will depend ultimately on accurate starting. Before ever you begin recording, you must make start marks on the film and the tape so that you can always thread them up in an absolutely standard way, not only for recording, but for playback on all future occasions.

Film can be marked by punching a hole in it, or by scratching a cross in the emulsion. The tape can have an adhesive label stuck to it, and as an extra safeguard you can record a handclap or some similar noise, in case the label comes off.

As with the sync system, interchange-

up, and if this leader gets damaged, splice on a new section. At the same time, allow plenty of blank film and tape after the start marks and before the picture and sound begin, because it takes a second or so for the synchroniser to settle down to a stable running speed.

Before you start any serious work on the sound track, it is worth spending a little while "polishing" the film. Some of the shots might be improved by further trimming; the cutting may need tightening up here and there; a few shots ought perhaps to be removed altogether. Once the sound track is recorded in sync with the film, alterations like this will be very difficult to make, because any changes in the film will require corresponding changes in the tape to avoid destroying sync.

Once you are satisfied that the film is in its final form, the next job is to start

mentary which consists of a brief description of each shot and a cue sound to indicate the end of it. You can now take the timings from the tape, shot by shot, stopping the tape when you like, to enable you to catch up.

Another approach altogether is to measure the actual physical length of the shots in terms of numbers of frames or numbers of feet. From these figures you can work out the time taken by each shot at any specified projection speed.

It would be possible, but tedious, to measure every shot with a ruler. A better scheme is to use a film counter, which consists of an ordinary revolution counter driven by a sprocket wheel; different versions will give you readings in feet, seconds, or number of frames.

Alternatively, you can use a Synchrodek. If you connect this to the projector by the mechanical link only, and without threading a tape through it, and then start the film going, you can read off the length of each shot in seconds on the dial. Since the Synchrodek measures length not time, you can run the film through very slowly if you like, and still read off the time each shot would take at the correct projection speed.

Now comes the business of writing the commentary. Some people prefer to give an unrehearsed commentary, completely off the cuff, because they think it sounds more spontaneous and relaxed. So it may, but the effect, and especially the timing, is usually rather crude, and the unrehearsed commentary is not suitable for the more ambitious sort of film, where information needs to be put across in the most economical and effective way.

As a rough guide when writing the commentary, you can allow for three words to be spoken per second. A faster delivery speed is physically possible, but defeats its own object by not giving the audience time to take in everything that is said. If you find that you cannot get everything in without speaking rather faster, you can increase the speed as far as five words per second, but this gives the impression of undue urgency and breathlessness, and the words may come out rather indistinctly. It may be better in the end to be satisfied with saying less.

If all else fails, it may help to rearrange the order of the shots slightly. This is especially valuable when you want the commentary to draw attention to some specific detail on the screen, but find the shot has changed before you have had time to finish your explanation. If you can arrange for the

Procession; Medium shot.	4 sec.	To celebrate the/ 800th anniversary of/ the granting of/ the Charter by/
Royal Car passes: Close up.	4 sec.	Henry II there/ was a procession/ headed by the/ Queen and the/
Crowds cheering:	3 sec.	Duke of Edinburgh.

Fig. 1. Extract from a script giving details of shots, duration, and commentary.

ability is enormously important. Your start marks must be usable with any recorder and projector. For this reason, there is only one satisfactory place for them. Film start marks should go in the gate; tape start marks should go over the replay head.

It is often recommended that film start marks should be at the top sprocket, or just above the gate, or in some other position, but this is most inadvisable. If you ever changed your projector, or wanted to show your film on someone else's, start marks of this sort would be valueless.

For several reasons, it may seem more convenient to have the film start mark not in the gate: for instance, it is often extremely difficult to see into the gate aperture to check that the marked frame is in the correct position. But if you do use start marks in non-standard positions, be sure to make "standard" (i.e. gate and replay head) marks *as well*, so that if you change your equipment you still have the means of threading up the tape and film correctly.

Still on the subject of start marks—don't make them too near the outer end of the reel. Leave plenty of leader for threading

planning the sound track in detail, and writing the commentary. In order to do all this, you will need to know the exact timing of a good many of the shots so as to find

Fig. 2. The same extract as above rearranged to draw attention to a particular shot.

Procession:	4 sec.	To celebrate the/ 800th anniversary of/ the granting of/ the Charter by/
Crowds:	3 sec.	Henry II there/ was a procession/ headed by the/
Royal Car:	4 sec.	Queen and the/ Duke of Edinburgh.

a form of words that will fit the picture, and it's not a bad idea to make a detailed list of every shot in the film, together with its time in seconds. This list will be useful later on as well, when you come to arrange the music and effects.

The most obvious method of timing the shots is to project the film and measure the length of each with a stop-watch, but you will find that you need several runs through before you have the timing of every shot. An easier method is to set the film going and then record on tape a "pilot" com-

mentary which consists of a brief description of each shot and a cue sound to indicate the end of it. You can now take the timings from the tape, shot by shot, stopping the tape when you like, to enable you to catch up.

For example, suppose that at the first attempt, you arrived at something like the script notes shown in Fig. 1.

This clearly would not do, for you don't identify the Royal party until it is almost off the screen. But if you interchange the last two shots, the difficulty is at once overcome. Your script now is as shown in Fig. 2.

(Continued on page 21)



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Dramatape miscellany

By PERSPECTIVE

TRY some acting this Christmas.

Everyone can act. True, we can't all attain the high drama, but we can all tackle comedy and "the straight stuff." And, on tape, acting couldn't be simpler.

You don't have to join a dramatape society. You don't always need to find a cast. Many dramatapes are acted by solo performers—and these talented single-handers also operate all the gadgets. That's one of the marvellous things about this hobby—you get the best of all worlds. You can meet people or escape from them.

Everyone can act.

Do you disagree? I'm not saying everyone *must* act. Why should you if acting bores you stiff?

But I insist that everyone can, who *wants* to, act. And I'm convinced that a lot more people want to than might be supposed.

What, then, holds them back? Simply fear of making a fool of themselves. And ignorance—ignorance of how easy and delightful acting can be . . . on tape. All you need are four basic tips. These will help you to act a tolerably wide range of easy parts.

First, don't worry about your accent—if you're lucky enough to have one. Develop your accent.

Secondly, learn to read aloud *a little faster than you think advisable*. Too many of us read aloud too slowly.

Thirdly, speak your lines in a "conversational" manner. Don't recite them. Never read off the bare and literal words. Incorporate a few spontaneous "ums" and "ers," plus the repetitions and interruptions of real-life speech.

Lastly, start speaking your line on the *very last word of the preceding actor's line*. Don't wait for him to finish speaking—chip in, as you do in real life! Failure to observe this last tip will result in a "lag" between speeches, a tiresome characteristic of almost every amateur drama recording. Don't let it happen.

Absorb those four points and you'll make a darn good microphone actor—far better than most.

You must, of course, have a certain amount of imagination and sensibility. And there are more subtle points—such as pitch and tempo—all of which can be summed up as artistic application. This is the quality

that can make you the star of your company. All I wish to say, however, is that you don't have to be a star to enjoy acting.

In my case, for example, I am a very minor actor. I specialise chiefly in production. I love collecting sound-effects: gadgets; the unique atmosphere of the studio—the coloured drapes, the shaded lights. I love working out perspective. I love building invisible scenery. . . .

Yet I thoroughly enjoy acting, although taking good care not to step outside my range.

I always choose parts that need common-sense rather than inspiration—the simple "straightforward" parts of which there are dozens, and leave the more ambitious parts to the stars. I could never hope to equal their performances. And, quite frankly, I don't want to rival them. I am contented with being the crusty old butler and the idiotic young man.

Such typical parts have always brought me a wealth of relevation and delight. . . . I invite you to share my fortune.

WHAT ABOUT SCRIPTS?

"All right," you may say. "Cut the cackle. I'll try some acting. But what can I act?"

Now this is your first stumbling-block. There are very few scripts published for drama recording. You can only wait patiently for the situation to resolve. Meanwhile, you must make your own adaptations of stage-plays—a not very palatable task if you don't like writing.

But the clerical labour can be minimised by judicious pencilling on the printed play. You rarely need to have the whole play re-typed and duplicated. You'll also find many short stories which can be amended into script form—simply by crossing out the context between the dialogue.

In particular, children's story-books are choc-a-bloc with actable dialogue. And, before anyone laughs the idea to scorn, I would mention that producing dramatapes for children is very rewarding to the adult. I find it a good idea to get various relatives into the cast—a fairly easy task at Christmas

time. The children, on hearing the tape, go into ecstasies at hearing familiar voices in favourite stories.

As I've said before, everyone can act. So give Uncle a stiff drink and cast him as the little elf. He might turn out as good as Johnny Morris.

* * *

WHAT'S THE DIFFERENCE?

Although guilty of coining several words and phrases concerning our hobby, I must plead justification. When I set out to write a simple paper-back about dramatape, I had no corpus of relevant literature to guide me. I had to write chiefly of my own techniques—which meant christening them.

But I am the last person to insist upon designations of my own making. Different amateurs have their own private terms. Some, for example, refer to drama recording as "acoustic theatricals." Others call their productions "radio-play tapes." Others call them "microphone-plays." I've even come across the satiric term "earpieces."

We should all (it seems to me) use the terms we like best and find most convenient. However, I am now asked to act as arbiter in some slight confusion.

"What is the difference," writes Mr. J. S. Sloane of Cambridge, "between the expression *dramatape* and *drama-in-sound*? Could you define the two terms for us a little more clearly? Are they synonymous?"

I never interchange these two terms. To me, they imply two different things.

Dramatape is just my lazy way of saying "drama tape recording." It describes the activity of performing plays on tape; it also describes the finished tape—we refer to "a dramatape."

But *drama-in-sound* is the generic term: it embraces all plays performed in the media or sound. There are four such media: tape, live-relay; disc; radio (live and recorded).

Live-radio drama is now virtually dead. Few (if any) radio plays are broadcast "live"; and live-radio drama can no longer be regarded as a separate category. This

(Continued on page 21)

Two-minute tape sketch by David Haines

A monthly series of simple exercises in perspective, acoustics and sound-effects.

THIS month's sketch is an example of how simple dialogue, added to a disc-effect (HMV 7FX15), can form a brief dramatape. An American intonation is easy to imitate and both parts can be enacted by a solo performer.

JOURNEY INTO SPACE

INTERVIEWER: Captain, you are about to depart on man's first trip to the moon. Would you and your men care to say a few words before you enter the rocket?

CAPTAIN: (*modest and tongue-tied*) Well, I guess I don't really know what to say. . . .

INTERVIEWER: (*briskly*) No doubt you'd like to say how much you appreciate the work of your scientific colleagues?

CAPTAIN: Yeah, that's right. I sure do appreciate their work.

INTERVIEWER: This whole project has taken many years of painstaking research. Would you agree?

CAPTAIN: Yeah, it took a long time.

INTERVIEWER: And it's taken up quite a lot of the taxpayer's money, hasn't it? The figure named in Congress was some fifty-thousand million dollars.

CAPTAIN: Yeah, it's a lotta dough.

INTERVIEWER: No doubt you are fully aware of your responsibility for the success of this expedition?

CAPTAIN: Yeah. And I sure do appreciate everything that's been done to get this rocket off the ground. (*pause*) Well, men, I guess we'd better get aboard. . . .

INTERVIEWER: (*indignantly*) Have none of you any final word you wish to say? Any message for mankind?

CAPTAIN: (*firmly*) I think we'd better leave all the grand speeches until we get back. . . .

(ROCKET BLASTS OFF WITH A ROAR AND DEPARTS. PAUSE.)

INTERVIEWER: (*aghast*) I'm sorry, Captain. I didn't know, really I didn't—just a tiny lever . . . how was I to know? (*hysterically*) I've said I'm sorry, haven't I? Don't look at me like that. . . .

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T.2

DAYSTROM LTD. Dept. T2
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John Borwick asks:

DO you ever cut your tapes?

I am a great believer in the cut-and-join method of editing tape recordings. Somehow, once you start to work the tape backwards and forwards to locate the exact cutting point, make the Chinagraph pencil marks, and splice pieces of tape together, you become a really creative worker in recorded sound. Now I know that tape is very expensive stuff, which is the reason always advanced for not cutting it.

But, once you have mastered the fairly simple art of making neat spliced joints, the tape remains still as good as new. A good splice will not come undone, and you will be able to erase and re-record through it at a later date as often as you like.

Nor do you need to waste any tape. If you are cutting out a recorded passage, you should preserve the removed length of tape, and splice it back on to the end of the tape. In this way, except for short pieces which you may accidentally damage, your original 1,200 ft. reel of tape is still 1,200 ft. no matter how much cutting and joining you do. In fact, one of the cautionary tales I included in a recent talk to a Tape Club was that I made a habit of opening out my tape splices slightly, with a short length of the

jointing tape showing in between. So, being a Scotsman, I ended up with *more* tape than I actually started with!

Since I like to encourage people to edit tapes, I was heartened to hear this week that a club which recorded my lecture some time ago had now edited it down to five minutes (taking about five hours to do so) and were including it in their taped Newsletter. Incidentally, if anyone from that club reads this column will they accept my apology, already communicated by letter, that I cannot let them have a dubbing of one of my demonstration tapes they asked for; but this contains material that is not my copyright, though I am permitted to play it at lectures.

ARE you one of the apathetic two million?

I was sorry to see in a contemporary tape magazine the other day an outspoken attack on the 2,000,000 owners of tape recorders in this country, accusing them of taking a totally apathetic attitude to the creative side of tape recording.

The attack was based on the very small numbers of entries which are normally submitted to tape recording contests (presumably the writer was making special reference to the British Amateur Tape Recording Contest, though he never mentioned it by name). Well, I have to admit that I share this disappointment. In any of the contests where I have been involved, I have naturally hoped for a big number of entries—on the theory, I suppose, that the more the merrier and the higher the standard of the prize-winning tapes.

But my disappointment at the small number of entries is soon forgotten if the *standard* of the entries is high. This year's British Amateur Tape Recording Contest was surely a case in point. Mr. Ray King's winning tape "Sink Symphony" was of real professional standard, although being the work of a lone amateur. It has gone on to give pleasure to thousands of people. Having been broadcast on the B.B.C.'s "Today" programme and elsewhere.

This tape also went on to win the Grand Prix Mono at the International Contest (the prize includes a month's trip to the United States) and several other British tapes did well. So it would seem that there's nothing wrong with our standards. And I take the view that one good tape is better than 100 bad ones. Still, why don't you who are reading this make up your mind here and now to prove us all wrong. Get your brain-box and your tape recorder working (not forgetting the razor blade and jointing tape) and enter for every tape recording contest that you hear about. You may not win a prize, but at least the tape that reaches the judges stands a better chance than the one that never leaves your machine.

DO you listen properly?

Now that I have got on to the subject of creative recording, by which I mean recording sounds for some other reason than just to send a letter or learn a foreign language, I wonder if it is generally known that the most important step-ladder to success is *listening*.

Whether you are recording an orchestra, a lecturer or a goods train, the first and most critical thing you should do is listen to all the finer points of the sound. Only by doing this will you get right inside the sound, and begin to work out the best position for the microphone, etc. If circumstances allow, you should then start to make a *series* of trial recordings. And the way you listen to these on playback, trying hard to pick out any details in the sound quality

—balance, perspective, realism, intelligibility, extraneous noise, etc.—will decide whether any adjustments you make to the microphone, room or positions of the performers are going to make for a better recording.

This critical listening, or monitoring, should become a regular habit. You should try to train your ears to be so sensitive to the tiny differences between one microphone position and another, or one motor-bike and another if that's what your setting out to record, that each recording you make is better than the one before.

To listen properly will ultimately mean that you will become dis-satisfied with the built-in loudspeaker in your recorder—and maybe with other bits of your equipment. Well, I understand that the Editor is planning to publish something on the correct choice and use of external, high-quality loudspeakers. If you have not already got a hi-fi loudspeaker, the improved quality of the sound may come as a surprise to you.

Even a relatively cheap loudspeaker, mounted in a well-designed cabinet, will reveal nuances that you could never hear on the small, lightweight speaker that the recorder manufacturer must of necessity build into a portable machine. Building hi-fi speaker cabinets is not particularly difficult. And to make it easier, a number of very good designs have been produced capable of well above average sound quality and yet employing a standard board of plywood or chipboard.

Drawings showing how to cut the panels and seal up joints, etc., are available for their 8-inch, 10-inch or 12-inch speaker drive units from such reputable manufacturers as Wharfedale and Goodmans. Their booklets also explain the mysteries of adding high frequency units (tweeters) and crossover units. If you do not fancy do-it-yourself cabinetry, there is now a marvellous range of complete loudspeakers at a reasonable price, and of reasonable dimensions, introduced to satisfy the pockets and room space of two-speaker stereo enthusiasts. So why not start critical listening today?

DRAMATAPE MISCELLANY

(Continued from page 19)

is a very depressing situation, if I may say so. Radio plays are now broadcast from tape and disc, but it is essential to emphasise that BBC recorded drama has made great strides in the last few years. Techniques are now vastly superior to the old-time methods. Far from being the poor relation of TV, British radio-drama is now building a famous and secure reputation.

Live-relay is a technique used only by a few dedicated amateurs and occasionally by schools. As the name suggests, the performance takes place in one room and is heard direct in another. *Live-relay* drama is a most challenging aspect of drama-in-sound.

Radio and disc, of course, are associated with the professional; and drama-on-disc is going from strength to strength. I was surprised to hear that disc-sales are quite staggering. I would mention, however, that certain amateurs (for various good reasons) also produce drama on disc. I refer to my own discs as *drama-discs*—this avoids confusion with the other form of drama recording, the drama-tape.

Now let's get back to work. . . .

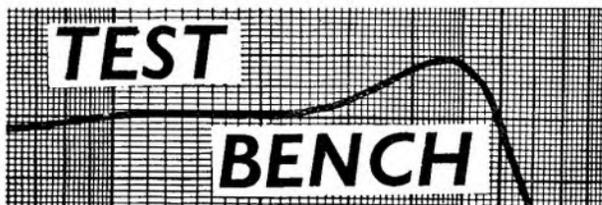
TAPE AND CINE

(Continued from page 17)

When planning the commentary, make sure that what you say adds something to what is seen in the picture, and does not merely repeat what is already evident. You'd be surprised how many people produce commentaries which describe the action, instead of amplifying it with additional facts which are important, but are not clear from the picture.

Here is an example from a film I'm working on at the moment. One short sequence shows some men hammering a huge wooden post into the ground. It would be futile for the commentary to run "Here we see the workmen hammering a huge wooden post into the ground," but I've heard dozens of commentaries in which such a remark would be quite typical. My own rough draft for the shot is something like this: "This post is one of twelve which will mark the intersections of a 300 ft. grid."

On the other hand, don't be so eager to cram in information that you overload the commentary with irrelevancies. What you say should have a direct bearing on the picture, and it should be important. An audience can only take in a certain amount at a time, and it doesn't pay to try and say too much.



GRUNDIG TK23A

By John Aldred

SOME tape worms are inclined to scoff at automatic tape recorders, rather like photographers who run a mile at the sight of auto-exposure setting cameras. The desire to "fiddle" with the volume is inherent in most of us, yet there are many occasions where automatic control can prove extremely useful in the hands of an experienced operator, let alone a beginner. Messrs. Grundig seem to have catered for all tastes in their new four-track recorder, model TK23A. This has either manual or automatic control, as well as facilities for double tracking and superimposition.

The TK23A is really a combination of the TK18 "magic ear" amplifier and the TK23 tape deck, re-styled in a neat plastic case with a strong metal carrying handle. It remains a single speed machine running at $3\frac{1}{4}$ ips, the maximum spool size being $5\frac{1}{4}$ inches.

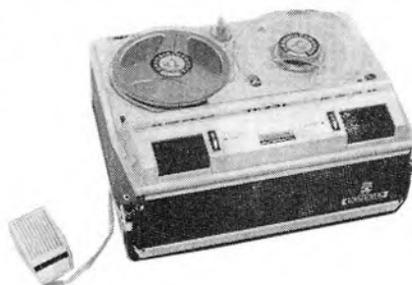
Other features include pause control, inputs for microphone, radio, or gramophone, facilities for synchronous recording on two tracks—monitoring one on headphones whilst recording the second, and an outlet for an inexpensive "Sono-Dia" attachment. This permits the TK23A to be used in conjunction with an automatic transparency projector.

TAPE TRANSPORT

Mechanically speaking there are no snags about this new recorder, which has the same transport arrangements for the tape as the earlier Grundig models. Most of the tape deck and amplifier components are mounted on a main chassis plate which is spot welded

to a steel frame. The two-pole drive motor runs continuously from the moment the amplifier is switched on, and drives the fly-wheel and capstan shaft which is mounted in a self-aligning bearing. Therefore full recording speed is reached instantaneously when the "start" key is pressed.

The take-up clutch makes use of the amount of tape on the take-up spool to obtain a correct clutching action, so the tape



is always nicely wound—not too loose and not too tight. The Grundig "pressure tape" feature, which replaces the usual pressure pad, has been retained. This special linen tape makes contact with the base of the recording tape, thus keeping it in uniform contact with the record/replay head. This feature is essential on most four-track recorders to minimise sound "drop-outs," and also to maintain a good high frequency response.

ELECTRONICS

In spite of the modern trend towards transistorised amplifiers in tape recorders, Grundig still pin their faith in valves. They have wisely fitted the TK23A with the successful circuit they developed for their TK18 automatic recorder, which gives a good hum-free performance, an excellent frequency response of 60-12,000 cycles, and a reasonable signal-to-noise ratio of 45 dB.

The "automatic" part of the circuit consists of a pre-set sensitivity control feeding a limiter valve, which permits a normal volume range to be recorded up to almost

100 per cent modulation. The limiter valve then takes over to remove the distortion associated with overload, merely by keeping the volume at 100 per cent however loud the input signal. At all times the magic eye shows exactly what is going on to the tape, including the high frequency compensation built into the recording amplifier.

Manual volume control is effected by an alternative position of the "record" button, which removes the limiter valve and pre-set sensitivity control from circuit. A third position on the "record" button disconnects the erase head to give the superimposition feature, and here manual control becomes essential.

When recording, the output valve is switched on to become the bias oscillator. So there is no loudspeaker monitor. But there is a headphone monitoring circuit for use with the Grundig type SE5 miniature earphone.

CONTROLS

The layout of the operating controls follows the usual Grundig pattern. A sloping front panel contains piano-type keys for all tape movements, and a microphone selector switch. Edge-on controls are fitted for volume and tone, the latter giving treble lift or treble cut on playback. The separate red record button must be pressed and held down until interlocked by the start key, and it always restores the amplifier to replay as soon as the stop key is operated.

Between the spools is a three-position selector switch, providing top-track record or replay, bottom-track record or replay, or plays both tracks together. To simplify the synchronised recording of two tracks, often referred to as double tracking, a previous recording can be monitored on an earpiece by using a small external transistor amplifier (Type MA2). This is far more successful than superimposition, which is also provided on the TK23A. Superimposition inevitably produces a loss of treble frequencies on the first recording, as well as a loss of volume, although the result is fairly click free.

CONNECTIONS

There are five input and output sockets of the DIN three- and five-pin type, grouped together on a rear panel with an internal loudspeaker muting switch. Separate sockets for microphone, radio, and gramophone will accept a large range of input voltages without distortion, with a minimum of 2.2 mV for microphone and radio, 100 mV for gram. Both high and low impedance outputs are available, the former for monitoring whilst recording, and the usual extension loudspeaker socket. Power is also available for the external transistor monitor

TAPE RECORDING HANDBOOKS

ADVICE ON BUYING A TAPE RECORDER

By J. F. Ling 2/6 (post free)

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amplifier, which incidentally only measures $4\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{2}$ inches. A screened connecting lead is supplied with the TK23A, suitable for any input or an extension speaker.

PERFORMANCE

The overall performance of the TK23A leaves little to be desired for a recorder in the medium price range. The tape transport system did not produce any audible wow and flutter, even with a constant tone ranging from 2,000 to 5,000 cps which usually shows up the slightest faults. The combined record/replay characteristic is shown in the accompanying graph, the overlaid shaded area indicating the effect of the tone control on treble frequencies. I obtained excellent results with this control in a middle position, around number 6 on the dial, when both voice and music recordings sounded "correct."

The rise of 5 dB at 200 cps shown in the graph greatly improves the bass reproduction from the internal loudspeaker, also from any external loudspeaker with a small baffle area. But the reproduction is a trifle bassy when using an infinite baffle or a reflex loudspeaker cabinet. However the moving coil microphone supplied gives an extremely pleasing voice quality; even when speaking close the results are not too "boomy." The connecting lead enables it to be used about five feet away from the recorder, although the noise from the drive motor is not in any way excessive.

The headphones monitoring socket gives adequate volume when recording, but there is no separate control for this as on the more expensive Grundig models. When making synchronous recordings, the external monitoring amplifier provides a perfectly satisfactory signal, but a different impedance headphone is necessary for the best results. The external amplifier can also be used for replaying pre-recorded stereo tapes if required, in conjunction with another power amplifier.

The rewind on the TK23A is not particularly fast, 1,800 ft. of tape taking just over five minutes instead of the claimed speed of three minutes 4 seconds. But spooling is extremely even in both directions, so there is little chance of tape damage due to "ridging"—an important point with four-track recorders.

COMMENTS

The TK23A is easy to use, gives good results, and can be considered a worthy addition to the Grundig range. The "automatic" feature is there if you want it, or feel lazy, but manual control can be restored at the twist of the red record button.

I felt that the superimpose position of this button was rather limited in use, since it must be rotated clockwise through 90 degrees and held down with one's finger. I suppose one could devise a simple clip to keep it pressed continuously for lengthy passages of superimposition.

The double tracking circuitry works ex-

remely well, although a little practice is required to judge the relative volume levels recorded on each track. Where information on one track has to be synchronised to information on the other track, the accessory monitor amplifier is invaluable for listening to the first recording. I also tried the trick of inter-track transcription (not mentioned in the instruction book) by connecting the monitor amplifier back into the gram-socket. The result was not correctly equalised, but there was no trace of instability due to one half of the record/replay head being virtually fed back into the other half.

The recorder itself works quite happily without any earth connection, although a three-core mains cable is provided, and it is not fussy as to which mains lead is connected to the "live" side. Earthing therefore becomes a function of any external apparatus connected to the TK23A.

The all plastic case seems to be current Grundig practice, as is the absence of any metal lid fittings. But the plastic push-buttons holding the lid in position are very smooth in operation, and the plastic covered metal carrying handle is extremely strong. I always feel that there should be a storage compartment for tape and microphone in any recorder, but the only compartment in the TK23A is for the captive mains lead. However, Grundig provide a neat plastic case for their moving coil microphone, together with a former for stowing away the five-foot length of screened cable.

MANUFACTURER'S SPECIFICATION

Operating voltages: 110, 130, 220, 240 volts A.C.

Power consumption: 58 Watts.

Tape speed: $3\frac{3}{4}$ ips.

Maximum spool size: $5\frac{1}{2}$ inches.

Number of tracks: Four (international standard).

Frequency response: 60-12,000 cycles (+3 -5 dB).

Signal-to-noise ratio: Better than 45 dB.

Wow and flutter: Less than ± 0.2 per cent.

Amplifier inputs: Microphone 2.2 to 45 mV at 1.5 MOhm; radio 2.2 to 45 mV at 22 K/ohms; gram. 100 mV to 2V at 1 MOhm.

Amplifier outputs: 12 V at 220 K/ohms; 700 mV at 15 K/ohms; four watts at 5 ohms.

Valve line-up: EF 86, EF 83, ECC 81, ECL 86.

Volume indicator: EM 84 magic eye.

Loudspeaker: $5\frac{1}{2} \times 4\frac{1}{4}$ inch elliptical.

Microphone: Moving coil, Type GDM 311.

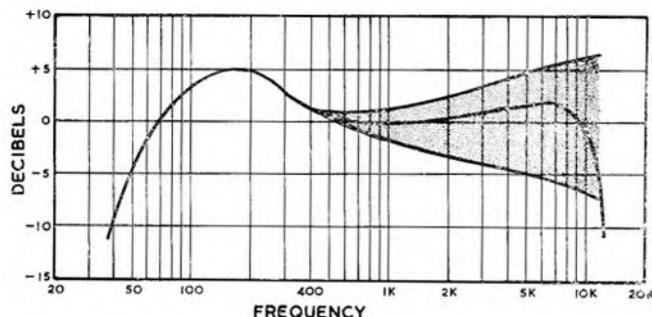
Dimensions: $13\frac{1}{2} \times 10\frac{1}{2} \times 6\frac{1}{4}$ inches.

Weight: 20 lb.

Price: £51 9s. (including microphone and tape).

Accessories: Transistor monitor amplifier, £4 14s. 6d.; Miniature earphone to match (SE3), £1 2s. 6d.; Monitoring earphone (SE 5), £2 12s. 6d.; Sona-Dia attachment, £16 16s.; Telephone adaptor, £3 3s.

Grundig (G.B.) Ltd., 40 Newlands Park, Sydenham, London, S.E.26.



Frequency response of Grundig TK23A showing the effect of the tone control (shaded area). Both tracks gave identical responses, hence the single-line graph.



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CLASSICS



By Edward Greenfield

THE MAKERS OF HISTORY—Elizabeth the Great. HMV (TA-CLP 1713), 3½ ips, mono. 35s.

This is one of the first in a very practical series designed primarily for use in schools. The approach is straightforward rather than imaginative, but anyone who accepts the tone-of-voice of the BBC Schools Programmes will find this ideal. There is an obvious enough advantage in being able to repeat a particular programme at will. If the particular class is taxed by the cramming in of facts, a second hearing will obviously repay dividends.

The dramatic reconstructions in Elizabeth Jenkins' script are on the whole discreet, limited to direct quotations spoken by actors in character—the French Ambassador in broken English, Elizabeth herself in the robust contralto of Mary Morris—but it was surely misguided to have a child speaking a mere four words "I will never marry" in the middle of an otherwise straightforward narration near the beginning. The narrator is Michael Flanders.

The greater part of the tape is taken up with a simple account of the Queen's life story and the events of her reign. After that separate sections deal with Music in the Elizabethan Era and Literature in the Elizabethan Era. The assessments of individual authors, tend (perhaps of necessity) to be oversimplified—that of Marlowe as dramatist for example—but they do provide just the sort of information that puts the period in general perspective for a child. There are a number of well chosen musical items, performed by such artists as Denis Dowling, Heather Begg and Roy Jesson.

SCENES AND SPEECHES FROM SHAKESPEARE. HMV (TA-CLP 1739), 3½ ips, mono. 35s.

Like the tapes reviewed above this is one of the series put out by HMV for use in schools. This particular volume has excerpts from *Hamlet*, *Julius Caesar*, *As you Like it*, *Much Ado about Nothing*, *A Midsummer Night's Dream* and *Twelfth Night*, all of them favourites of school examiners. The choice of items is sensible enough, concentrating on the obvious speeches that most schoolchildren will know something about already.

The presentation is deliberately straightforward with nothing in the way of incidental music, and with each item introduced with a few words of explanation of the situation in the play. The actors are mostly young, and ably follow what must have been the producer's direction to leave histrionics

aside and concentrate on clear, intelligent expression in the voice.

Such a scene as Mark Anthony's funeral oration for Caesar is badly served in having to few actors about, and the "rhubarb-rhubarb" noises of the handful present only make the very dry acoustic more obtrusive and the presentation less convincing. In the same scene the reticence of the actor tends to undermine the ironic element in the oration, but at least the straightforwardness should be undistracting for the student.

THE PATTERN OF POETRY—IV. HMV (TA-CLP 1750), 3½ ips, mono. 35s.

The tapes in this series present a selection from an anthology published for schools by the Burke Publishing Company on behalf of the Poetry Society. The selection has been made by William Kean Seymour and John Smith, and ranges intelligently on this particular tape from Donne and Shakespeare through Browning and Tennyson to twentieth century verse by poets like John Heath-Stubbs and Philip Hobsbaum.

All of the poems should be readily understandable by senior grammar-school students at least, and the readings are generally competent if hardly inspired. Every individual has his own ideas about poetry readings, and within the general category of the Third Programme approach (the voice of conscious uplift) these vary from the highly professional reading by Alec Clunes of Browning's *Two in the Campagne* to several that are merely gauche.

There have been many better poetry records from Argo, but none unfortunately has been made available as yet on pre-recorded tape. The recording acoustic varies sometimes between poems, which is unnecessarily distracting.

POPULAR



By Fred Chandler

Historic tape of Beatles hit tunes

OFF THE BEATLE TRACK. The George Martin Orchestra. Parlophone (TA-PMC 1227), 3½ ips, mono, 35s.

Their talents as song-writers make John Lennon and Paul McCartney highly respected in the business. Many artistes have used their compositions to great effect, and now their A & R Manager, George Martin, has gathered together an orchestra specially to perform his own arrangements of the most popular Beatle compositions.

On this tape all but one of the numbers stem from John and Paul. The exception is George Harrison's *Don't bother me* which he sang in the LP "With the Beatles" (Reviewed, April 1964). George Martin accentuates the melancholy air of this lonesome sounding number by introducing a harmonica.

The toe-tapping *All my loving* and *Can't buy me love*, both given an effective Latin-American beat, appear on track one together

The tapes reviewed this month are issued by E.M.I. Records Ltd., 20, Manchester Square, London, W.1.

with another standard *She loves you*, along with *From me to you* and *I want to hold your hand* they make this album almost an historic document.

The Beatles are responsible for another success, part of which is undoubtedly the work of George Martin who, with his scoring and arranging, has added something new to the original.

Beatle fans will undoubtedly prefer their idols' versions, but for those with affections more towards the actual music this will be a worthwhile purchase.

CALL UP THE GROUPS. The Barron Knights with Duke D'Mond. Columbia (TA-335X1648), 3½ ips, mono, 35s.

Although Duke D'Mond and the Barron Knights have been around for a long time; they only achieved success with their popular mickey-taking "Call up the groups." This forms the title track on their first tape, issued on disc in October last, seemingly recorded live with an audience; details are not given.

Their sense of humour is evident on many of the other titles in this tape including *Don't call me* (I'll call you) penned by lead guitarist P'nut Langford who also supplied three of the other titles *Jo-Anne*, *Come back* and *Where are you going?*

P'nut then sings his version of "You've got to have heart" but he explains why "skin" is more necessary than heart. The simple beat number "Jo-Anne" is followed by the halting ultra-slow beat number *Duke of Earl* sung by Duke and backed vocally by the group. More emphasis on the humour in this version than in Gene Chandler's original opus.

The second track begins with *That's my girl*, and beats its way through *Come back* and *Talking Blues* (with Butch Baker describing his "life in the backwoods of one of the Southern States") through *What a girl to the Beetroot Song*. This Mitch Murray composition features Duke D'Mond describing the culinary tastes of a suitor's family during which he makes the point that "if you like beetroot, I'll be true to you."

The tape finishes with the whole group asking *Where are you going*, and one could well ask this of the Barron Knights. The LP has been described as an important one for them; if only to prove their gimmick was not the sole reason for their making the charts.

THE LATIN WORLD OF PEPE JARAMILLO. Pepe Jaramillo with accompaniment directed by Geoff Love. Parlophone (TA-PMC 1231), 3½ ips, mono, 35s.

Born in the State of Chihuahua, that part of Mexico which contains the upper stretches of the Sierra Madre, Pepe Jaramillo is a natural exponent of the Latin type of music. His love of music and talent for playing began at the early age of four; and he eventually studied at the Conservatoire of Music in Mexico City.

In accordance with his parents' wishes he studied first as a dentist, disliked the profession, and turned to banking. During a vacation from his job with a mining company, Pepe entertained his friends at the piano in the Mexico City fashionable Ritz Hotel. The manager noticed him and offered him a job. Three years later, after many radio and TV spots and accompanying various visiting singers he moved to the smart restaurant bar El Quid. He finally decided he wished to see something of the outside world, and reached London via Paris in 1958.

His musical travels have since taken him to Portugal, Spain, France, Holland, and three times to South Africa. His latest trip

to Johannesburg finished early last year, since when he has again toured Spain. Back once more in London, he is now planning a trip to Japan and the Antipodes.

This is his seventh LP, four of which have also been issued in stereo.

"Latin World" is the first of his albums to appear on tape, following the disc version by only one month. Geoff Love and his players accompany Pepe, and together they provide a relaxing session typical of late-night club music complete with bongos and marraccas. Such standards as *Tangerine*, *Nightingale*, *The Coffee Song*, *In a little Spanish Town*, *Desafinado*, and *La vie en Rose* are included. Also listed in the fourteen titles are *Maria Elena*, *Till and After Tonight*, which Pepe helped to write.

IT'S A MAD, MAD, MAD, MAD WORLD. United Artists (TA-ULP 1053), 3½ ips, mono, 35s.

Music has always been an essential part of the motion picture, and anyone who has had the good fortune to see the comedy epic, "It's a mad, mad, mad, mad world"—now in its second year in London—will know just how important the musical soundtrack is. It's as if composer Ernest Gold has succeeded in making the score one of the stars of the film, underlining as it does the riotous slapstick scenes which occur throughout the action.

Listening to the music on its own without the antics of Spencer Tracy, Ethel Merman, Phil Silvers, Terry-Thomas, Mickey Rooney, etc., to distract, it is apparent how it stands alone as a highly successful exercise in descriptive writing.

Instant chase and *The great pursuit* vividly recapture the excitement and hilarity of the crazy car rides which are a main feature of the film. The treasure hunt sequence is readily portrayed by *Big W*, and *Adios Santa Rosita* provides a strong Mexican colouring and places the setting for the latter part of the film; and of course the title number is self-explanatory.

"Mad World" was conceived as a massive assault on an audience's risibilities, and script and cast were carefully weighed to this end. It was hoped that the score would augment the effect, and it certainly does.

More titles in M-O-T Minitape services

A "Top of the pops" tape record album containing twelve recent hit titles was recently issued by Music on Tape.

The new tape record, No. 1 Hits of 1964, is issued in their three-inch reel Minitape series retailing at 15s. (3½ ips), and 10s. 6d. (1½ ips).

Among the titles on this tape are *Needles and Pins*, *Hard Day's Night*, *Pretty Woman*, *Always something there to remind me*, *World without love*, *Anyone who had a heart*, *Little red rooster*, *Do wah diddy*, *You really got me*, *Have I the right*, *Bits and pieces*, and *Don't let the sun catch you crying*.

This programme inaugurates a regular month-by-month issue of "Pick of the pops" Minitapes with each issue carrying six current smash hits from the charts. They will be available at 3½ ips (10s. 6d.) and 1½ ips (6s. 11d.).

Music on Tape Limited, 9, Kew Green, Richmond, Surrey.

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NEW PRODUCTS

**NEW AGENTS
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THREE recent additions to the Körtling range of recorders, now handled in this country by Europa Electronics Ltd., are the MT3624, MT2223, and MT3623.

First of these is a three-speed, four-track stereo record and replay tape recorder selling at 95 guineas. One outstanding feature of this model is the facility for copying tapes, using tape copy equipment which secures to the side of the recorder on either side of the standard tape spools.

The quoted frequency response is 30-18,000 cps \pm 2dB at 7½ ips, 40-14,000 cps \pm 2 dB at 3½ ips, and 40-7,000 cps \pm 3 dB at 1½ ips. Wow and flutter is given as 0.12, 0.2, and 0.3 per cent respectively, and signal-to-noise ratio as better than 54, 52, and 48 dB at each of the three speeds. Accommodation is available for seven-inch spools, providing a playing time of 64 minutes per track (mono) or 32 minutes (stereo) using standard-play tape at 3½ ips. Rewind for 2,400 ft. of tape is achieved within four minutes.

Among other features of the MT3624 are facilities for tape monitoring, pause control, separate bass and treble controls, three figure digital rev. counter, separate magic eye recording level indicators for each channel, separate record, replay and erase heads, push-button operation, facilities for adding reverberation, straight-through amplification, automatic tape end stop, and remote control operation. Two permanent dynamic 7 x 4 inch loudspeakers handle the three watts per channel power output.

The MT3624 measures 20¼ x 14 x 8 inches, and weighs approximately 44 lb.

The second machine, the MT2223 is a two-speed, four-track mono machine selling at 56 guineas. The quoted frequency response is 30-18,000 cps \pm 3 dB at the top speed of 7½ ips, and 40-14,000 cps \pm 3 dB at 3½ ips. Signal-to-noise ration is given as 42 dB.

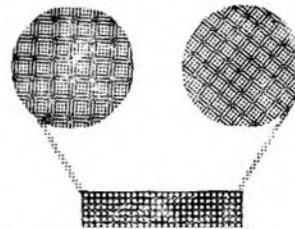
Accommodation is available for seven-inch spools, providing a playing time of 64 minutes per track, using standard-play tape at 3½ ips. Rewind is achieved within three minutes.

Among the features are facilities for monitoring, a magic eye recording level indicator, three figure digital rev. counter, and a combined tone control. Inputs are provided for radio (0.5 mV at 33 K ohms), microphone (0.1 mV at 200 ohms), and phono (120 mV at 1 M ohm). Outputs are provided for extension speaker (4.5 ohms, two watts), and radio (1.5 V at 33 K ohms).

The power supply required is 100-130-150-220-240-250 volts, AC 50 cycles. Tube complement includes an ECC81, EL95, EAM86, two OC602, and a metal rectifier, B250, C75. The weight is approximately 21 lb.

The third of their new recorders, the MT3623, is a two-speed, four-track stereo record and playback unit selling at 69 guineas.

The quoted frequency response is 30-18,000 cps \pm 3 dB at the top speed of 7½ ips,



and 40-14,000 cps \pm 3 dB at 3½ ips, signal-to-noises ratio is given as 42 dB, and cross-talk is rated at 48 dB at 1,000 cps.

Seven-inch spools can be accommodated, providing a playing time of 64 minutes per track monaurally (32 minutes stereo) using standard-play tape at 3½ ips. Rewind time is given as five minutes.

Among the features are two built-in loudspeakers, facilities for sound-on-sound dubbing, pause control, three figure digital rev. counter, magic eye recording level indicator, straight-through amplification, and combined tone control.

Inputs are provided for radio (0.5 mV at approximately 4.7 K ohms), microphone (0.1 mV at 200 ohms), and phono (100 mV at 1 M ohm). Outputs include sockets for radio (0.7 V at 33 K ohms), external stereo amplifier (0.7 V at 33 K ohms), and for two extension loudspeakers (4.5 ohms, two watts).

Power supply needed is identical to the MT2223, and the tube complement includes an ECC85, ELL80, EAM86, eight OC602, metal rectifier B250, C75, plus one diode OA150.

It measures 16½ x 12¼ x 7½ inches, and weighs 28 lb.

Europa Electronics Ltd., Howard Place, Shelton, Stoke-on-Trent, Staffordshire.

**FOUR MORE
UNITS
FROM GRAMPIAN**

LAATEST addition to the Grampian range of microphones are the Type GC1, cardioid units. The range comprises four units, with impedances ranging from 25 ohms to 50 K ohms.

The GC1 has been designed to meet the requirements of users to whom overcoming background noise and acoustic feedback is a serious problem. The lower sensitivity to sound arriving from behind the microphone makes it eminently suitable for this purpose.

Quoted frequency response is 40-12,000 cps, and the output level for the GC1/L (25 ohms) is -86 dB ref. one volt/dyne/cm² at 1,000 cps. With the same reference, the output levels for the remaining three units are as follows: GC1/X (200 ohms), -75 dB, GC1/M (600 ohms) -70 dB, and GC1/H (50 K ohms) -52 dB.

As its name implies, the new Grampian cardioid microphone has a heart-shaped polar response pattern with a front to back discrimination of approximately 15 to 20 dB over the mid-frequency range.

The length of the GC1 is 5½ inches, diameter 1 19/32nd inches, and it weighs 11½ ounces. A wide range of connectos, extension leads, swivel holders and stands are available. A standard 18 ft. lead is supplied with all microphones.

The GC1/L costs £14, the other three units are £15.

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

SELF-THREADING TAPE SPOOL BY SCOTCH

A NEW magnetic tape reel which threads itself has been added to the "Scotch" range of tapes. Their reel does not use standard hooks, leaders or catches to start the threading process. Tape is laid between the flanges or near the hub and as the spool is rotated manually or otherwise, the tape is drawn towards the central hub. The flanges incorporate a slight taper inwards towards the hub, and small "pressure pads" clasp the edge of the tape. The tape is then held until sufficient turns are made in the normal manner.

Their self-threading reel has solid flanges and is equipped with a snap-closure collar (illustrated below) which makes the combination a dust-tight, self-storing unit.



Pressure sensitive identification labels are supplied, and these may be read with the reel in either the lying or standing positions, giving quick reference to the contents.

The new reel is available only in seven-inch sizes, in a cellophane pack containing 150-18 tape, price 52s. 6d.

Minnesota, Mining & Manufacturing Co. Ltd., 3M House, Wigmore Street, London, W.1.

CASSETTE TAPE PLAYER BY NEW COMPANY

MUSIC ON TAPE (Services) LTD. announce the introduction of a continuous automatic tape player.

Using the Garrard cassette with spools of four-inch diameter, the new unit sells at £80. Each cassette plays for one hour on the first track, is automatically rewound, and then commences playing the second track. The process can be repeated indefinitely.

In addition to the set two-hour programme, individual programmes can be compiled from the Music on Tape catalogue.

Additional loudspeaker units are available at £4, and each two-hour programme cassette costs £5 5s. Individual programmes sell at the list price of the catalogue, plus 7s. 6d. for programming.

A music hire scheme is also available. Three cassettes, one of which can be changed weekly, are available at £38 per year, or, changed fortnightly, for £34 per

year. Rental of hire-purchase of equipment is quoted individually.

Music on Tape (Services) Ltd., 9, Kew Green, Richmond, Surrey.

SLIMLINE CONTAINER FOR TAPE SPOOLS

A CONTAINER suitable for carrying tape spools, is announced by Jury Holloware Ltd. This is the "Jurycase" selling at 19s. 11d.

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Jury Holloware Limited, Brierley Hill, Staffordshire.

NEWS FROM THE TRADE

PRICE changes, effective from December 16, are announced for four of their tape recorders by Grundig (Great Britain) Ltd.

The recent 15 per cent levy on imported goods necessitates the increases although not all will be passed to the purchaser.

Prices of the recorders affected by the change are increased by eight guineas in each case. The TK6 is now 73 guineas, the TK40, 87 guineas, the TK41, 83 guineas, and the TK46, is now 107 guineas. Prices of the TK14, TK18, and TK23A are not affected.

Grundig (Great Britain) Limited, 40, Newlands Park, Sydenham, London, S.E.26.

PRICE increases are also announced for the Uher tape recorders effective from December 1. Their Universal tape recorder will now retail at 99 guineas, the 784 Royal Stereo at 149 guineas and the battery portable 4000 Report S at 103 guineas.

Bosch Limited, 205, Great Portland Street, London, W.1.

FERGUSON'S latest two-track tape recorder, Model 3206, and Standard Telephones & Cables omni-directional 4114 microphone were accepted for the Design award in the October lists published by the Council of Industrial Design. The Ferguson 26-guinea model employs a single speed of 3½ ips, and incorporates the Thorn FTD3 tape deck with piano-key controls. The STC4114 costs £3 13s. 6d.

A CHANGE of address is announced by Brenell who have recently completed their move to a new factory and offices at 231-235, Liverpool Road, London, N.1.

TWO Philips tape recorders were stolen in London's West End on November 21, when thieves broke into a car parked in Stukeley Street, W.C.2. The car, owned by Philips Press man, Michael J. Gale, contained the 62-guinea EL 3549 (Serial No. 071636) and the 24-guinea EL 3552 (Serial No. 701748). Information on these two machines should be passed to Mr. Gale at Philips Electrical Ltd., Century House, Shaftesbury Avenue, London, W.C.2 (GERrard 7777).

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BELFAST

A change of secretary is announced by the Belfast club, who have recently experienced a sad drop in membership, and some difficulty in maintaining club meetings.

The new officer is John McEntee, who welcomes inquiries from interested readers. The club has resumed its weekly meetings, and will continue to meet every Thursday at the secretary's home.

Secretary: John McEntee, 68, Abyssinia Street, Belfast 12, Northern Ireland.

LOFTUS

A tape group has been formed by the members of a Youth Club in Loftus, Yorkshire. Five of the members are listed in the "Tape Exchanges" section of this issue (page 32), and the group welcomes tapes and communications from other teenage tape enthusiasts.

Details of the club, which is affiliated to "Tape-worms International" are available from the secretary.

Secretary: R. Sessin, Station Hotel, Loftus, Yorkshire.

LONDON REGION

At a special meeting called by the London Tape Recording Club at the end of November, representatives from nine clubs attended to discuss the possible formation of a regional association. The clubs in Bedford, Friern Barnet, Ilford, Manor Park (New Circle), North London, Southall, West Middlesex, Aylesbury, Walthamstow and Uxbridge were represented.

A further meeting is scheduled for January at the Southall club premises, when other clubs will be invited to attend. Details of the discussions held, together with information on the proposed formation, are available from the London club secretary, Douglas J. Morris, 80, Tangier Road, Richmond, Surrey.

NORTH LONDON

After some four years as secretary of the North London tape club, formerly the Enfield society, founder member Richard Collinson is giving up his office prior to his proposed round-the-world trip.

With Chris Greenwood, he recently set off for Ostend on the first lap of a hitch-hike journey which he hopes will take in Europe, the Middle East, India, and finally Australia. Continuing eastwards, the pair will continue working their way around the world. Depending on the weight question, Richard hopes to take with him a tape recorder to record notes, experiences, and effects on their proposed two-year journey.

The club's own "Tape of the Year" competition continues apace, and at present their league is headed by David Barker who leads David Scott by four points. Fourth in the table is Miss Patricia Allbutt who recently won the "Holiday" competition. Her tape included sounds recorded at an air terminal, foreign railway station, and interviews with local personalities overseas. In the same competition, David Scott took second place for his tape which described a futuristic space holiday. A live recording of a guide's commentary secured third place for Harold Jennings.

Topicality for a special issue of "Enfield Microphone," the club's newpaper for the blind, when club members interviewed candidates in the recent General Election. Public meet-

ings were attended, and among those interviewed was the Liberal leader Mr. Jo Grimond.

Other recent items of interest recorded for their magazine included tapes made at the Enfield Show, which included sounds and a description of the concluding firework display.

Their weekly meetings continue to afford varying activities. The first in October comprised a practical recording session. A week later members were entertained to a demonstration presented by Cosmocord Ltd., and the following week had to work themselves to produce 3-5 minute tapes for a competition. November 4 saw the more experienced members giving advice on maintenance and equipment testing, and the following meeting was to include a demonstration given by Philips Electrical Ltd.

RICKMANSWORTH

R. Lander of "Hilbre," Rickmansworth Lane, Chalfont St. Peter, Buckinghamshire, is attempting to form a tape club in the Rickmansworth and Chalfont St. Peter area.

Interested readers are invited to contact Mr. Lander direct for information regarding an inaugural meeting.

RUGBY

A demonstration of professional recording equipment and electronic components was given at the most recent meeting of the Rugby society. It was presented by Mr. D. G. Warby, manager of the Equipment Division of Elcom (Northampton) Ltd.

Bob Pick, the club's third president, and a member of the club since 1960, moved to Manchester recently. A farewell meeting was arranged for the end of August, and during the evening his service as a very active President was praised by the members. One of his most recent roles was to act as a delegate to the Association of Midland Tape Recording Clubs. His office has been taken over by Len Stephens, a relative newcomer to the society who joined last September.

Secretary: Michael Brown, 219, Clifton Road, Rugby, Warwickshire.

THORNTON HEATH

The Thornton Heath club members have had an active period since their last report appeared in this page. Highlight of the period was the August Bank Holiday Fête during which the members succeeded in obtaining an interview with Miss Evelyn Laye, who performed the opening ceremony. Miss Laye also gave a message for the club's two hospital programmes. The members provided the PA system for the Fête, and also recorded the entire proceedings. An edited version of this tape, together with Miss Laye's opening speech is to be given to the Croydon National Spiritualist Church.

The club's monthly competitions continue: latest winner being from Maurice Webb, who—it seems—recorded an interview with his Elkhound!!!! It really is wonderful what can be done with a splicer.

John Borwick judged the club's

entries for an internal competition for a prize donated by E.M.I. Tape Ltd. His task wasn't eased by the widely differing nature of the entries, and the prize-winner was eventually chosen from the lot.

For the first three days of October, the club recorded a Churchmen's weekend conference. Twelve members were involved; with teams being separated for mass meetings, an organ recital, and a service in the parish church. Some 2,000 persons, including an Archbishop and fifteen Bishops attended the Convention.

Their autumn programme included lectures by Mr. Timothy Eckersley who is the Assistant Head of Central Programmes Operation (Recording) BBC; Derek Chatterton of the British Council; and Frank Parrington of BASF (Chemicals) Ltd., a stalwart as far as tape club demonstrations go; and a demonstration by local dealers Southern Audio on behalf of Truvox Ltd. A film show with taped commentary is also short-listed for presentation by member Philip Wardle.

Two of the club's members John Bradley and Maurice Webb, as members of the Federation of British Tape Recording Clubs, were judges in the recently completed British Amateur Tape Recording Contest.

An edited version of a tape recorded at the meeting of south-eastern tape clubs organised by the Thornton Club, is currently available. Ten clubs have already received the twenty-minute tape. Return postage and blank tape will secure free dubbings for interested club secretaries.

Secretary: H. J. Bradley, 8, Canning Road, Addiscombe, Surrey.

WALTHAMSTOW

A demonstration of microphone layout was given by TAPE columnist John Borwick at a recent meeting of the Walthamstow tape club. During the evening members heard some of Mr. Borwick's recordings, including an interview with Cliff Richard, played on his own equipment. Visiting the club for the evening were members of the Lambeth tape club.

Interviews with candidates in the recent election obtained by members are to be used in "Tape Link" the club's magazine for the blind. The recordings will also be used in the documentary programme "Walthamstow—our town," which is currently in production.

At the local Assembly Hall recently a beat contest was recorded by members. Several local groups took part, and the winning group received an offer of a recording session with a record company.

On Sunday, October 11, members visited the Civil Defence Centre to record sounds and effects for the documentary programme on Civil Defence. Three days later members were entertained to an evening of stereo recordings when they visited the home of Mr. and Mrs. Stares and their son Colin. Stares Senior and Junior are both members of the club, and they started their demonstration by describing how they constructed their own stereo equipment.

Incorporating Ferrograph 808 tape recorder, Rogers Cadet tuner and amplifier, with a Lenco-Goldring GL60 disc deck, and two 10-120 inch speakers their set-up took twelve months to build.

Next followed a coloured slide show of "Rome 1964" a programme of their recent holiday which included taped commentary and background music.

Member Tony Norton was recently interviewed in the BBC Home Service when he described "Tape Link" and spoke about the club's activities compiling their documentary feature tapes.

Secretary: Tony Norton, 22, Lechmere Avenue, Chigwell, Essex.

WORLD TAPE PALS

A change of name is announced for WTP, the international tape exchange organisation with headquarters in Dallas,

Texas. To encompass the many school groups which are now joining the society, it will now be known as World Tapes for Education, the title used by the American parent body.

The reason given for the change is that World Tapes for Education is listed as a non-profit education club in the U.S., and any donations made to it are classed as tax-deductible. The club, which to date has relied on subscriptions alone, now faces a more sound financial future with members benefiting through more and better services.

U.K. Representatives: John N. Davies, 19, Wythenshawe Road, Sale, Cheshire.

TAPE EXCHANGES

Tape recorder owners who wish to contact others with similar interests, to exchange news and views by tape are invited to fill in and return the form on page 32, giving their name, age, address, special hobby or interest for this section.

Details given here also include speeds and snool size to be used, name of recorder, and special area to be contacted.

Howling, Darrell (34). 27 Streatley Road, Kilburn, London, N.W.6 7J. 3½ ips. 7-inch spool. Cossor recorder.

Justice, Muriel E. (22). 2, Woodside Avenue, Esher, Surrey. Radio, TV, drama, pop and c & w music. 3½ ips. 5-inch spool. Philips Starmaker.

UK and Australia.

McIntosh, Chas. (40). 31, Queen Anne's Grove, London, W.4. Light and Continental music. 3½, 1½ ips. 5Z-inch spool. Telefunken four-track.

Europe.

McKeachan, Millan (45). 57, Houston Road, Crosslee, Johnstone, Dumfriesshire, Scotland. Photography, folk music. 7½, 3½ ips. 7-inch spool. Grundig TK30 and TK40.

UK, Sweden, Japan.

Mitchell, Alex L. (25). 28, Alloa Road, Larbert, Stirlingshire, Scotland. 35mm photography, German language, classical music. 7½, 3½ ips. 7-inch spool. Truvox R92 and Philips EL3541, four-track.

Morrison Nicholas (21). Flat 2, "Saxonholme," Woodlands Road, Aitricham, Cheshire. Motor racing, classical music, wine. 3½, 1½ ips. 4½-inch spool. Grundig TK6 battery portable.

Neason, Kenneth (32). 98, Highbury Road, King's Heath, Birmingham, Warwickshire. 7½, 3½, 1½ ips. 7-inch spool. Simon SP5, Sony, and Stella, four-track.

Norway, France, Italy.

Newsome, Malcolm (33). High Inhams, Sutton-on-the-Forest, York, Yorkshire. Hi-fi, radio, other countries. 3½, 1½ ips. 5½-inch spool. H.M.V. Mk. 2.

Peters, Reginald (48). 9, Dibun Road, Sutton, Surrey. Sound effects, theatre, humour, music. 15, 7½, 3½ ips. 7-inch spool. Home-built Collaro transcription unit. English speaking males in Denmark, especially Copenhagen.

Riley, Michael J. (25). 39, Alexandra Street, London, S.E.14. Cycling, youth hostelling, music. 7½, 3½, 1½ ips. 7-inch spool. Marconiphone recorder.

Eire and UK.

Seragg, Roy F. (32). 56, Roach Road, Sheffield 11, Yorkshire. 8mm cine photography, travel. 7½, 3½, 1½ ips. 7-inch spool. Elizabethan LZ29, Philips battery portable.

Slonim, Stanley (39). 7, Sumner Place, London, S.W.7. Photography, politics, music. 7½, 3½, 1½ ips. 7-inch spool. Sound recorder. Female contacts preferred in Commonwealth, UK, USA, Israel.

Thomason, John (23). 5, Mallard Way, Moreton, Wirral, Cheshire. Photography, pot-holing, modern jazz music. 7½, 3½ ips. 8½-inch spool. Ferrograph, Series 4.

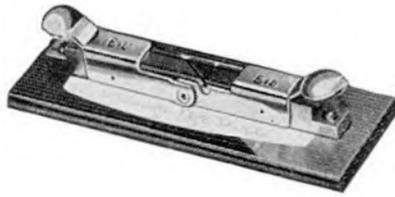
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(Continued on page 32)

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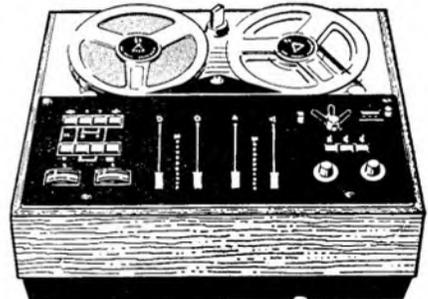
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2. Alternating Current and Acoustics. Edited by Edgar J. Black (1964). 116 pages, 86 illustrations. 10s. 6d. <i>Deals in simple terms with the origin and generation of alternating current, construction of coils and capacitors. The second part deals with the nature of acoustics and construction and operation of devices used for sound recording and reproduction.</i>		11. High Fidelity Sound Engineering by Norman Crowhurst. 336 pages, 262 illustrations. 50s. <i>Comprehensive coverage on the engineering of modern single-channel and stereophonic sound equipment.</i>		25. Sound Recording Works Like This by Clement Brown. Illustrated. 10s. 6d. <i>Part of "Science Works like this Series" the book is intended for the younger members of the family.</i>	
3. A to Z in Audio by Gilbert A. Briggs (1960). 224 pages, 160 illustrations. 15s. 6d. <i>A first-class book of reference for the subject.</i>		12. High Fidelity Sound Reproduction (Second edition). Edited by E. Molloy. 212 pages. 20s. <i>Contains a mass of valuable data for the serious amateur, and the maintenance engineer, and covers the expensive and complex equipment now on the market. Chapters on amplifiers and preamplifiers, dynamic loudspeakers, etc.</i>		26. Sound Effects on Tape by Alan Edward Beeby. 66 pages. 3s. 6d. <i>How would you get on to tape the sound of a storm at sea? or a ghost in a haunted house? or a man splashing through a sea of mud? Answers in simple language to these and many other sound effects problems are given in this first-class little book.</i>	
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9. Hi-Fi for the Music Lover by Edward Greenfield (1959). 40 pages. 3s. <i>Mr. Greenfield, well known music critic of "The Guardian," sets out to help musicians and music lovers to cope with the baffling technicalities of recorded sound, and aims at giving the music lover at least a basic know-how to become a hi-fi enthusiast without developing into a hi-fi maniac.</i>		21. Practical Hi-Fi Handbook by Gordon J. King. 224 pages. 25s. <i>A guide to choice, installation and servicing of equipment, for dealer, engineer, and amateur enthusiast.</i>		34. Introduction to the Tape Recorder (revised edition 1964/65) by Charles Langton. 48 pages, many diagrams. 3s. 6d. <i>Best possible value for the newcomer. The technician however, has not been left out and the radio service apprentice studying for the RTEB Radio Servicing Certificate will find in the text sufficient material to progressively support his class work in the principles of tape recording.</i>	
		22. Practical Stereophony by H. Burrell-Hadden (1964). 159 pages. 37s. 6d. <i>The author, an instructor at the BBC, has been actively engaged for many years in research in this field, as a result</i>		35. Tape Recording Yearbook 1965. Order now, and Yearbook will be sent as soon as published. 7s. 6d. <i>The 1965 edition contains all the well known facts and figures of earlier editions, revised to date, as well as important contents vital to all interested in this field. Compiled by the staff of "TAPE Recording Magazine" this Yearbook is a must.</i>	

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(Continued from page 29)

Trower, Dennison (20). 10, Grange Street, Brompton, near Loftus, Yorkshire. Pigeons, cricket, football, pop music. 3½ ips. 5½-inch spool. Ferguson recorder. Especially USA.

Udall, Arnold F. (48). Woodcocks Farm, Wigan Road, Leyland, Lancashire. Travel, sport, dancing, music. 7½, 3½ ips. 7-inch spool. Brenell Mk. 5, Series 2. Overseas only.

Washbourne, Kim (40). 23, Wyman's Road, Cheltenham, Gloucestershire. Camping, motor-cycling, music. 7½, 3½ ips. 7-inch spool. Sony TC200, stereo four-track.

West, John (34). 64, Westfield Road, Birmingham 14, Warwickshire. 8mm cine, travel, sunbathing. 7½, 3½, 1½ ips. 7-inch spool. Robuk RK4 four-track.

Wilson, George (39). 23, Highfield Street, Cemetery Road, Pudsey, Yorkshire. Sound effects, electronic music. 7½, 3½, 1½, 15/16 ips. 7-inch spool. Philips EL3549, four-track, and EL3586 (battery portable). Male contacts only.

OVERSEAS EXCHANGES

Andrew, Roy E. (23). 17, Bloemendal Road, Mowbray, Cape Town, South Africa. Camping, hiking, squash, marketing and advertising. 3½, 1½ ips. 7-inch spool. Philips EL3548, four-track.

Blickman, Anton (43). Palamedestraat 17, Haarlem, Holland. Folk music, history of wine, birds. 7½, 3½, 1½ ips. 7-inch spool. Philips EL3541 and Collaro deck.

Harrison, Alwyn M. (50). 1612, South Broad Street, Philadelphia, Pennsylvania, 19145, USA. All music. 7½, 3½, 1½ ips. 5-inch spool. Tandberg 64, two/four-track stereo. Letters not necessary.

Howe, John W. 84, Sproat, Detroit, Michigan, USA. International round-robins. 3½ ips. 5-inch spool. Wollensak recorder.

Minarik, Vladimir (21). Tabor 34a, BRNO 2, Czechoslovakia. Photography, travel, badge collecting, languages (Czech, Slovak, Russian, German, English spoken). 3½ ips. 5-inch spool. Sonnet Duo tape recorder. UK, Germany, Benelux countries.

Pessina, Hector Paul (32). CC 3869, Correo Central, Buenos Aires, Argentina. Stereo recording, philately, science fiction, folk and classical music. 7½, 3½, 1½ ips. 7-inch spool. Webcor stereo, and Regent Coronet recorders.

Smith, W. E. (59). P.O. Box 581, Nairobi, Kenya, Africa. Colour photography, animal wildlife, oil painting, travel, trees and timber. 3½, 1½ ips. 3-inch spool. Elpico Geloso, Australia particularly.

Sully, Corporal Ronald A. (29). Sgts. Mess, R.A.F., Akrotiri, Cyprus, B.F.P.O. 53. Most music. 7½, 3½ ips. 7-inch spool. Sony TC500. UK and Australia.

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Trappett, Larry (29). 898, Samford Road, Groveley, Brisbane, N.W.6, Queensland, Australia. Motor racing, rifle shooting, hi-fi music. 7½, 3½, 1½ ips. National RQ703.

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Atkinson, Pat (15). 31, Lumley Street, Loftus, Yorkshire. Folk singing, philately, dancing pop music. 1½ ips. 4-inch spool. Philips battery portable.

Cuthbert, Janet (15). 35, Queen's Road, Loftus, Yorkshire. Reading, drama, dancing, music. 1½ ips. 4-inch spool. Japanese battery portable. Wishes to contact boys of own age.

Frounks, Sidney James (17). 83, Swannington Road, N.P.E. Leicester, Leicestershire. Pop music. 3½ ips. 5½-inch spool. Fidelity Playmaster, four-track. England.

Haines, Don (19). 8, Sycamore Terrace, Personly Abercarn, Monmouthshire. Singing, humour, pop music. 3½ ips. 5-inch spool. Elpico Geloso TR702. Female contacts preferred.

Harriss, Elizabeth (16). 11, Deepdale Terrace, Loftus, Yorkshire. Pottery, matchstick modelling, swimming, pop music. 3½ ips. 5-inch spool. Philips recorder. Especially Spain.

Martin, John (19). 49, West Road, Loftus, Yorkshire. 8mm cine and 35mm photography, fishing, sport, classical and pop music. 3½ ips. 5½-inch spool. H.M.V. four-track. Especially USA.

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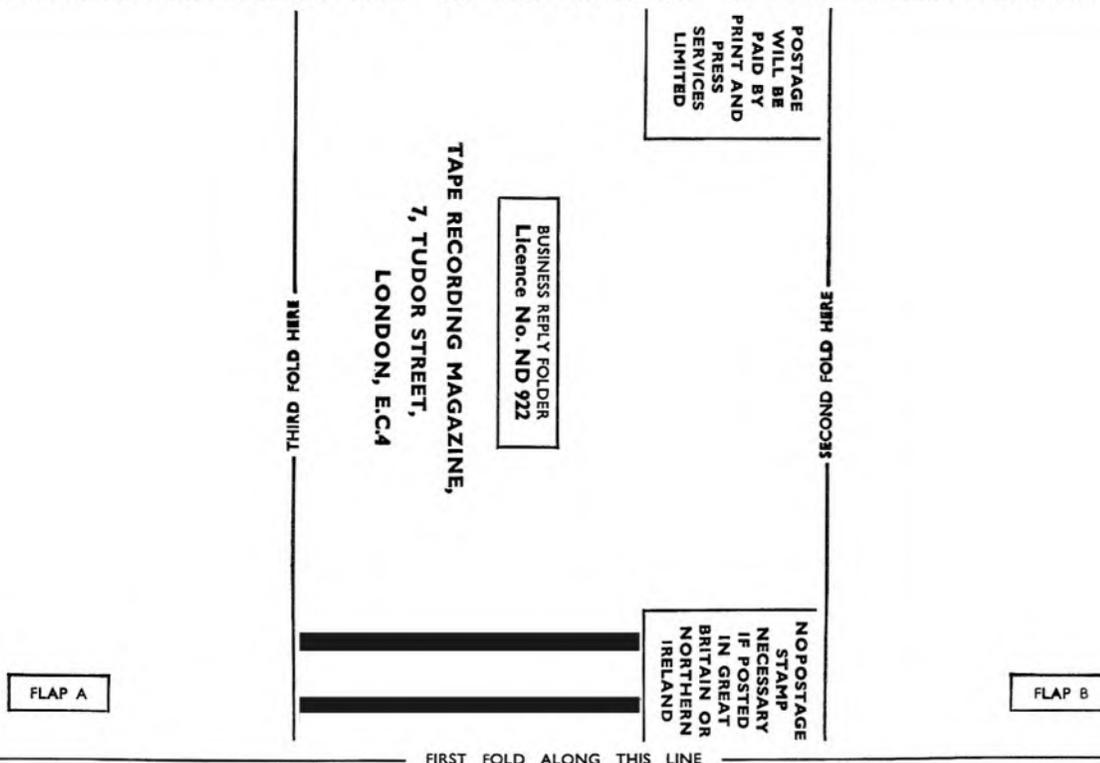
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