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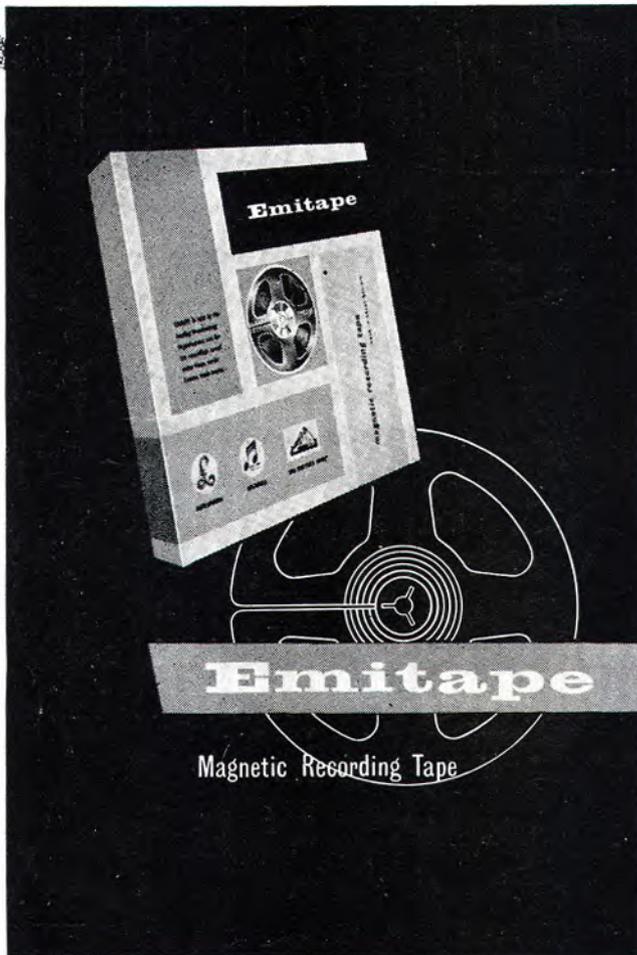
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TIP OF THE MONTH by Mr. Irish

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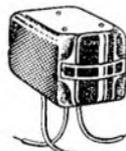
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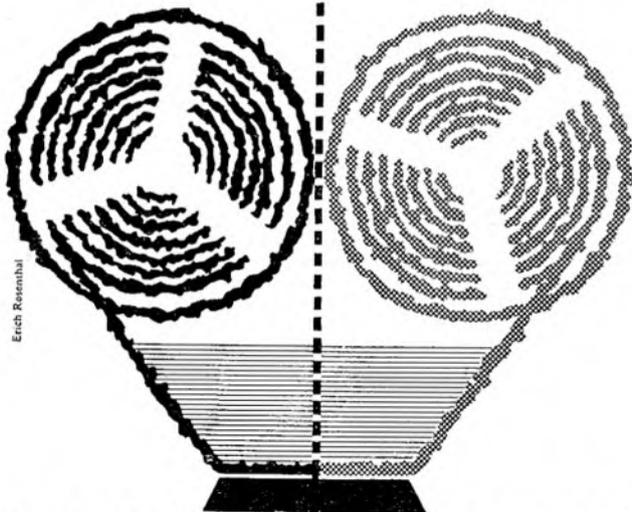
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But the purchase of a Ferrograph falls into rather a different category. Being almost always in short supply—inevitable with a high precision instrument requiring so much individual supervision during manufacture—only a relatively small number of Dealers can be permitted to distribute it. Our advertising, therefore, seeks to overcome this handicap by appealing to those thoughtful and discerning people who are more influenced by reputation and performance than by any other consideration. That is why there are no sensational claims or grandiose statements in Ferrograph advertising. It is sober, restrained and free from exaggeration. We believe that the purchase of a Ferrograph is a serious business—that almost invariably it is bought by those who, like the B.B.C. and other broadcasting organisations and leading personalities in the world of music and drama, are capable of assessing its great qualities at their true worth.

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Vol. 4 No. 9 4th May, 1960

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

EDITOR: **R. D. BROWN**

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

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

DON WEDGE
News Editor, New Musical Express

MOVIE-MAKING: **JOHN ALDRED**

NEWS AND CLUB ACTIVITIES: **FRED CHANDLER**

OVERSEAS CORRESPONDENTS:

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

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

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

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

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

EDITORIAL

Address all communications
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ADVERTISING

All advertising communications to
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A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

An astonishing ruling on amateur recording of speeches by members of the Royal Family is reported to me by a reader in Northampton. So far as I know it has never previously been revealed and it may be of importance to enthusiasts who seek to record events in their localities which enjoy Royal patronage.

My Northampton informant relates that when Princess Margaret visited the town recently for a St. John Ambulance Brigade function, permission was sought from the Palace authorities to make a tape recording of her speech at the main ceremony.

The reply was that, under no circumstances, could this be permitted, either with or without the Princess's knowledge.

Further, failure to observe this ruling would result in action against the offender and confiscation of his equipment.

With the new, small and unobtrusive battery recorders now so popular, this ruling seems not only unnecessary and unwise, but unenforceable.

The recording of private conversation would, of course, be an unwarrantable intrusion, and no responsible recording enthusiast would think of doing it—even if he had the opportunity. But the recording of a speech at a public function is a different matter altogether.

One is tempted to suppose that the Palace authorities are out of touch with modern technical developments and fail to appreciate what is involved in an amateur recording.

But the Duke of Edinburgh is known to have used a tape recorder for domestic purposes, and the Court officials should keep themselves more up to date.

Prospects

In many parts of the country companies are now being formed to operate private radio stations, if and when the government decides to permit commercial sound broadcasting. Yorkshire, South Wales, Manchester and Liverpool, the Border country, and the South of England already have their companies.

It is, of course, by no means certain that the government will ever let them go ahead. In any case, it could not be for several years yet.

But even if private companies do not shoulder this task, the appearance of many local radio stations seems certain. The B.B.C. is understood to be keen to do the job itself.

This is an exciting prospect for the amateur tape recording enthusiast. For one thing, with so many smaller studios opening up throughout the country, there will be interesting technical and production jobs open, and those who have taken their tape activities seriously will have special qualifications.

For another, the existence of local stations should provide opportunities for part-time amateurs to get their recorded material on the air. It is interesting that the club movement is perhaps most firmly and most creatively organised in Switzerland, where it is supported vigorously by local radio stations of a comparable size and character.

The enthusiast who walks into a news event with his camera can often get a shot which sells readily to a newspaper.

In the time ahead, there will be similar opportunities for keen amateurs to seek out material which will be suitable for broadcast on a local station.

Bulls-eye

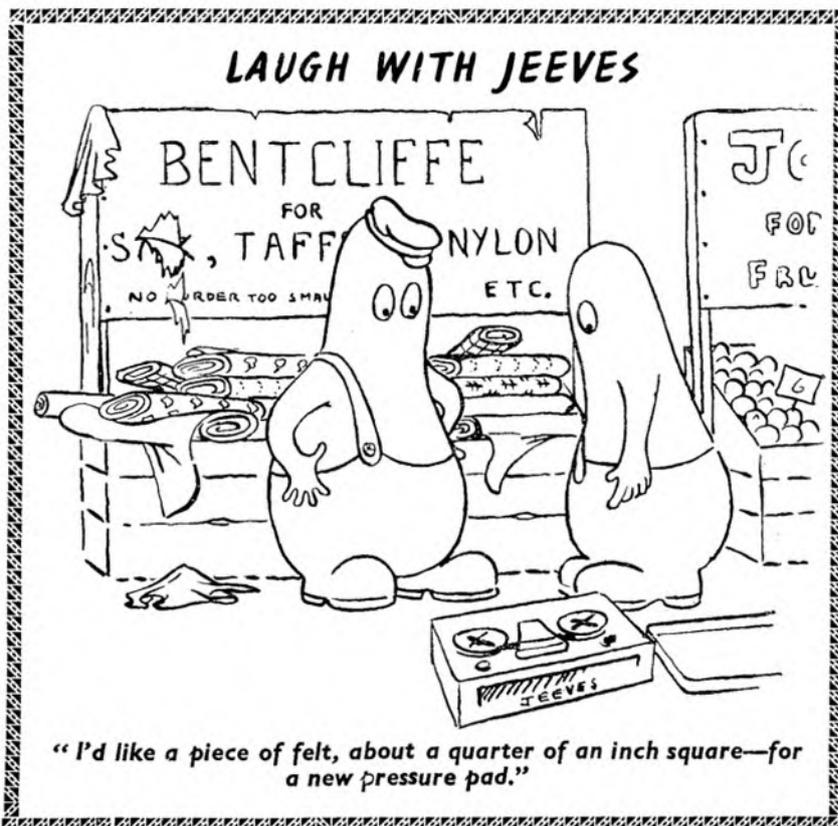
MR. V. G. WEAKE, the chairman of the Audio Fair organising body, is proving himself a doughty champion of the industry, ready to take on anyone who doubts its importance.

At the Harrogate Fair last autumn he was scalping the BBC for its alleged dragging feet on stereo developments.

At the opening of the London Fair he broadened the front. Hi-fi exports last year, Mr. Weake pointed out, earned £16,000,000 for this country . . . more than double the earnings of the entire British film industry in the same period.

"But," commented Mr. Weake, "the Board of Trade apparently couldn't be bothered to come, even though they were invited."

A bull's-eye.



£18,000 FOR RECORDERS

One of the biggest co-ordinated programmes to equip schools with tape recorders has just been announced by the Middlesex County Council. During the next six years, a sum of £3,000 a year will be provided for the purpose. Secondary and primary schools are to be equipped and the main use of the recorders—at first, at any rate—is stated to be for speech training and play reading.

All secondary schools “where the divisional executives are satisfied that good and efficient use will be made of them” will get their own recorders.

Primary schools are to be equipped, under the programme announced, on a one-recorder - between - four - schools basis.

THE WORLD OF TAPE • A NEWS ROUND-UP

Swiss plan unique international rally

SWISS enthusiasts are organising a unique international rally of tape recording enthusiasts, to take place in June. It is being run in collaboration with the International Federation of Sound Hunters (FICS), to mark its tenth anniversary.

The idea is that teams of three or four

enthusiasts will spend up to nine hours on Saturday, June 18, seeking and recording interesting sound material over a 175-mile course taking in some of the loveliest countryside in Switzerland.

At 4 p.m. the teams will assemble at La Chaux-de-Fonds to put together their edited tapes.

After dinner that evening, there will be a dance and social evening, and on the following day prizes will be awarded—quality Swiss watches to the members of the winning team, 200 Swiss francs to the second team, 100 francs to the third, and 50 francs to the fourth. Other prizes will probably be added.

Those who would like to take part in this International Rally should apply, immediately, to M. Fredy Weber, Bürenstrasse 12, Berne, Switzerland.

A remittance of 28 Swiss francs per person (£2 6s. 8d.) should be sent to cover dinner on the Saturday, a room for the night, breakfast and lunch on the Sunday, and entry to social events. Campers, who do not need a room, should send 18 francs.

Applicants should also state whether they intend to enter Switzerland at the frontier posts at Geneva, Basle or St. Margrethen, and should give details of their cars (including registration numbers). The Swiss Customs officials will then facilitate their entry.



Vanessa Lee, star of the Merry Widow show at present touring the country, seen using her Walter 303 de-luxe

THE *Reynolds News* third National Drama on Tape competition was won by the Hartley Hodder Players, of Bristol. They were awarded the £100 first prize.

The section for Youth Club drama groups was won by Hope Church Dramatic Society, Merthyr Tydfil, who received £40.

The Schools section was won by Felstead School Dramatic Society, Dunmow, Essex, who were awarded £40.

The Hartley Hodder Players stated afterwards that they knew nothing about tape recording technique when they began rehearsing.

An interview given by the director implied that the group did not appreciate the advantages of editing a tape, and re-recorded the whole entry when an extraneous sound was picked up.

INTEREST in tape recording is spreading rapidly among those who are working among youth.

Mr. A. Woolgar recently lectured to the annual conference of the Surrey Association of Boys' Clubs on the way

three years ago was taped by Mr. Jimmy Sime and Mr. Tom Clark, and since then similar activities have been recorded, edited and copies by Mr. Clark and Mr. W. T. Cowe.

We regret that in a recent issue part of this recording activity was attributed erroneously to other hands.

IN BRIEF

in which tape can be used as a basis of activities in youth clubs. Club leaders formed the audience. Arrangements for the lecture were made by *Tape Recording Magazine*.

In Bedfordshire there was a one-day conference of members of the Youth Department of the Dunstable Circuit of the Methodist Church to discuss the uses of a recorder in church work.

TO date about 95,000 feet of tape have been used to make copies of recordings of Clan MacLeod World Parliament held recently at Dunvegan Castle, Skye. Recordings made during the event required 22,000 feet of tape.

The copies are sent to overseas branches throughout the world.

The annual gathering in Edinburgh

THE British Standards Institution has just published a revised specifications of standards for commercial and domestic tape recording and reproduction. It replaces a 1954 standard specification, now withdrawn.

The new standard covers dimensions of tape-winding, identification of recorded sides of tape and of recorded tapes, colour codes for leaders, tape speeds, spool sizes, positions and dimensions of magnetic sound tracks, recording characteristic, tolerances on recorded levels, tolerances for reproducing equipment.

The new standard is set out in a 16-page publication available from the British Standards Institution, 2 Park Street, London, W.1, price 4s. 6d., postage extra.



MISS DAPHNE ORAM is today probably Britain's busiest and most successful producer of electronic music and *musique concrete* and an increasing number of amateur enthusiasts are now benefiting from her professional knowledge and skill.

Over a year ago, Miss Oram established an electronic music studio and recently she has converted an old Kentish oasthouse into an enlarged studio in order to cope with her extended activities.

A REMARKABLE WOMAN PIONEER

In the accompanying article an amateur who has attended a course conducted by Miss Oram at her studio, gives an interesting account of the work attempted, and the technique used.

She has also given lecture demonstrations to Kentish school teachers and to students of Morley College, and recently she appeared in a B.B.C. "Sound in Vision" TV programme.

Miss Oram was once a BBC employee herself. For many years she was a Studio Manager in the Music Department. She also helped to direct the Corporation's radiophonic workshop.

Her oasthouse studio, known as Tower Folly, has been initially equipped with about £1,500-worth of equipment for producing electronic music.

There are three Brenell Mark 5 tape decks and amplifiers, with a variety of capstan sleeves to enable the minute frequency changes to be obtained. There are electronic generators to provide sine waves (pure sound), square waves (uneven harmonics), and white noise (roughly, the whole spectrum of sound).

Countless loops of tape festoon the walls of the studio.

Miss Oram was trained as a musician and as an engineer. Naturally, she has a passionate interest in her subject, and in the developing interest among enthusiasts in electronic composition.

But her studio is a commercial venture. She composes electronic music for television advertisements and documentary films.

She has also worked on the sound track for a film about capital punishment made by a group of Oxford undergraduates.

Alan Sutcliffe visits the studio

NEVILLE CARDUS tells the story of two *Guardian* leader-writers in a hurry to finish an important article. They agreed on a sentence in the middle, and while one wrote the first half, the other wrote the second. Miss Daphne Oram's recent weekend course in electronic composition was run on similar lines, but the link in this case was a fireball—which she had prepared on tape.

The five students gathered on a bleak Friday evening at Tower Folly, Daphne Oram's home on the North Downs, with its oast-house so well known to organisers of scooter club

treasure hunts. Round a log fire, the following plan was developed: we should compose a ballet to a story akin to that of Icarus.

In our version, before an amazed crowd, Icarus attaches feathers to himself and flies into the air but, flying too high, is struck down by the jealous Sun God, falls from the sky into the sea and, as he drowns, is sung to rest by nereids.

The two students, including myself, with no previous experience should compose the first half, while the other three, who had attended Daphne Oram's lectures last year at Morley

College, should compose the second half. The two parts were to be joined together by the fireball only when both were complete. Morley College lectures had given students a chance of hearing both electronic and concrete music by many composers, but the weekend course was the first opportunity any of us had of learning something of the elementary techniques of handling the equipment.

Work began on Saturday morning. Each group was equipped with three recorders, so that at any stage two previously prepared sounds could be combined.

- and a fascinating oasthouse studio

The recorders were three-speed models, and as $7\frac{1}{2}$ ips had been chosen as the speed for the final work, this left $3\frac{1}{4}$ and 15 ips to be used for octave transpositions. One of the recorders had staggered stereo heads, so that sounds could easily be reversed. The outputs were permanently connected to a speaker so that we could hear what we were doing.

PRACTICAL

Each group also had, as well as a copy of the fireball, some simple loops prepared by Daphne Oram, based on natural sounds and electronically-generated one. These were given to us because, in these very first practical lessons, it was necessary to learn how to handle the recording equipment before going on to building original sounds, for which we had an audio-generator and white noise, together with a number of musical instruments.

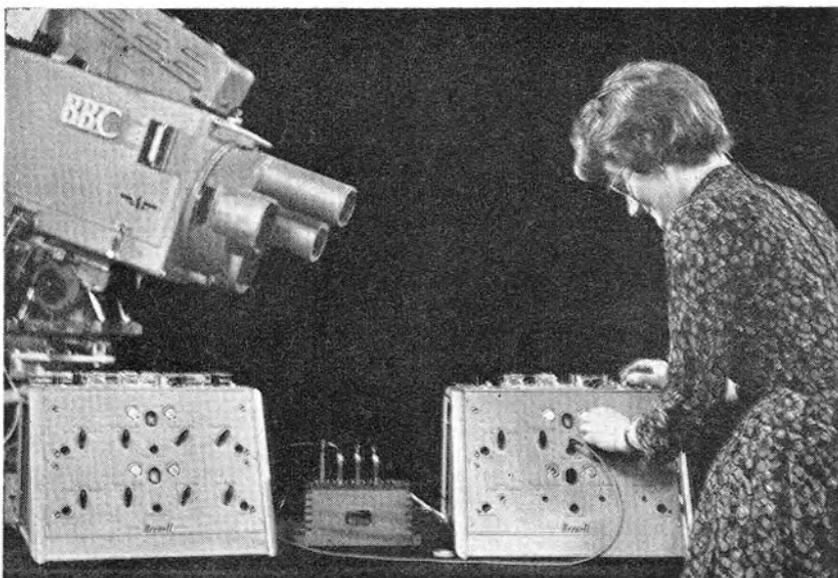
A set of capstans with which the tape speed could be altered to transpose a note to any other degree of the chromatic scale, and a variable transformer for a similar purpose, but over a continuous range, were used by the second group.

The first group began by taking one of the loops provided, and making from it slightly longer loops in less regular rhythms, altering the 4 time of the original, for example, to one loop in 5 time, and another in 4+4+3 time. Some of these loops were then run together in pairs at varying speed combinations, to give several minutes of sound. From this about six short sections were cut to give rather less than a minute of music, gradually, but not regularly, increasing in speed.

We discovered by chance a ricochet-like sound that was produced when the machine was switched off. We were able to make use of this by incorporating it into one of these loops, and letting it represent Icarus attaching feathers to himself, so that this section became his dance preparatory to the flight.

EDITING

Care had to be taken in editing the short sections together, for, although the ear is very tolerant of what it will accept as a regular rhythm, once such a rhythm is established, any small departure from it can sound like missing the beat. It was also necessary in this editing to avoid the first



Daphne Oram demonstrates "musique concrete" in the BBC television programme "Sound in Vision"

cliché of this medium, the repetition in a speeded-up version of something just heard. This was done by ensuring that when one of the faster sections appeared it was of a different rhythmic pattern from what immediately preceded it.

LOOPING THE LOOPS

A similar method of combining loops was used to make the music for the crowd, but the loops were cut from a recording of two of the original loops run together. Thus in the final result there were four strands going on at once, and this gave a good crowd effect.

For the flight, some simple arpeggios, alternating C and F sharp major, were recorded on the piano, low down and quite slow. By superimposing different versions of these, a gradually rising passage was obtained. In doing this, when the speed of one of the play-back recorders was increased, its volume control was turned down momentarily so that the brief slurring up of sound was avoided. This passage was, at the beginning, recognisably piano, but at the end just a high shimmering sound.

We intended to make a searing sound to depict the flight of the fireball, but over Saturday night thick snow fell, and a lot of time was taken digging out cars, bringing in logs and admiring the white world! So there

was only time to fit together what we had.

The music of Icarus was joined on to the end of a section of the crowd music, and at the end of it a more animated section of crowd music was faded in. The piano flight was then brought in for a few seconds, at a quite low pitch and then again slightly later, until it dominated the crowd music, which was faded out.

When we heard the whole passage we realised that the relation between the recognisable piano and the other sounds was not a good one. Another fault was the result of not having time to make something to lead up to the fireball sound. This had, therefore, to be put at the end of the flight music, and this gave an abrupt Goon-like effect.

THE COMPLETED WORK

Only then, when both parts were complete, did we hear what the other group had done. Unlike *The Guardian* leader, it didn't all fit together so well that no one could tell where the joins were. I found the second part far more sophisticated, but as I was not concerned in making it I can only briefly describe the music.

Following the fireball, to depict Icarus falling through the air, a single note is heard, slowly increasing,

(Continued on page 22)

CHAIRMAN,

Ladies and Gentlemen, may I again, er, extend to you all a very hearty welcome, er, to this ~~which is almost unique~~ or, this Lane Setting of Ratcliffe Culey, and I think a good many parishes possibly are very jealous of us, er, in this particular event which we hold annually. And every year er, presently we seem to get more people, more people interested in this ~~which appears to be a~~ very old custom and, may I say, very happy one in as much as the proceeds go towards the expenses of running the Parish Council, of which Ratcliffe Culey is a Ward, er, our Auctioneer is again with us, and, this evening in particular, he will read out the us (conditions) the conditions of sale, he's more used to it than I am you see, us, conditions of sale, a thing we haven't done for a very long time, it's sure you'll appreciate to hear them once in a while, er, I would say here that we are very sorry that Mr. Wally Stafford will not be with us this evening. I think it is something like but, er, we have been to see him, and he is with us in spirit, and I mean that, in spirit, and he wishes us well for the evening. Now without more

..... (laughter and background chatter)

Now I'll call on Mr. John Briggs to officiate, the auctioneer for the evening. Mr. Briggs.

An example of the way the author edited his transcription of the recordings

LAST year my wife read an article about Lane Setting in our local newspaper. It gave something of its history and stated that it would take place at Ratcliffe Culey, a village about three miles from our home, the following week.

The custom was common about a hundred years ago, when the business of a parish was conducted by the Vestry Committee. This Committee was the forerunner of the Parish Council, a body elected by ratepayers which, among other things, was responsible for the maintenance of roads within its area. In order to defray the cost of repairs it was allowed to sell or let the keeping along the verges of the roads. ("Keeping" is a farming term referring to grassland suitable for grazing by animals, and the term "to set" has the same meaning as "to let.")

A special meeting was held each year to offer the keeping available along the lanes of the parish to the highest bidder, and to this was applied the term "Lane Setting."

For many years now the maintenance of roads has been the responsibility of County and Municipal Highway Authorities, and so the practice of Lane Setting is one of those colourful old customs which has fallen by the wayside. Ratcliffe Culey, which is situated just inside Leicestershire, is, I believe, the only place where it is continued. The chance of recording such a custom was exactly what I wanted, for documentary work is my particular interest.

I sought the co-operation of all concerned in the ceremony, and made my plans.

The room in which the meeting takes place is about thirty feet long and twelve feet wide, with only one entrance door. We arranged that I should set up my equipment at the top end of the room (away from the door) where I should be near to the Chairman and Auctioneer.

When the evening came I made sure that I was ready well before the meeting was due to start. The Reslo ribbon microphone stood on its stand just in front of the Chairman's table, and in a corner of the room the Bradmatic deck was ready warmed up and set at 7½ ips. The Chairman and Auctioneer had been briefed and gave me great assistance by always looking at me before starting to speak; this saved unnecessary use of a lot of tape.

After a brief outline of proceedings, the Chairman introduced the Auctioneer, who first read out all the conditions attached to the sale. As I listened on my headphones I soon realised that this would be an essential part of any record of the event, and it added a touch of humour, too. The conditions were adopted in 1880 and, among other things, lays down what animals may and may not be grazed on the lanes. "... and no ass, bull, tup or pig shall be grazed thereon now I want you to pay particular attention to that—no tups please," said the auctioneer amid laughter.

The sale followed, and as bidding proceeded it was evident that this was

HOW I MADE A WINNING CONTEST TAPE

I MADE MY DOCUMENTARY IN A PUB

writes

RICHARD A. MARGOSCHIS

no ordinary auction sale. The audience kept interrupting with humorous quips, and the bids were not always straightforward.

Auctioneer: 17s. 6d. I'm bid, 17s. 6d. offered.

Bidder: I tell you what I'll do; there's a couple of ducks up there, I'll give you another sixpence, 18s.

Auctioneer: I'll make it a pound (laughter)—a pound I'm offered.

The microphone picked up the whole atmosphere perfectly and as I heard it coming off the tape, I knew that it was something which had simply asked to be recorded.

After the seven lots had been sold the Chairman started the second half of the evening's activities. This consisted of a sing-song which, in the early stages, contained old country songs traditionally sung at this event. It was started by the Auctioneer singing "The Little Yellow Bird" as he had done for the previous twenty-five years, and his father before him.

There was, however, one disappointment for everybody. Ninety-two-year-old Walter Stafford was ill, and this was the first time he had missed "Lane Setting" for over seventy years. Consequently his song about "The Old Country Squire" was not heard. I have since recorded it and he is thrilled to think that when he can sing no more his voice will still be heard leading his song on "Lane Setting Night."

I arrived home that night with recordings lasting one and three-quarter hours, and realised that the biggest job lay ahead—to produce an edition of ten minutes' duration.



Left : One of the lanes under the hammer during the ceremony of Lane Setting, and right, the pub where the auction is held

After some thought on the "plan" of the final programme I concluded that there were five essentials which must be included: the Chairman's opening remarks, the conditions of sale, at least one lot being sold, something from the sing-song, and a narration.

It was essential to complete the editing necessary to the first two sections before considering the remainder, and this turned out to be a very interesting exercise. By the time these two sections were edited, they contained 40 splices in a running time of three minutes.

The first essential in this part of the work was a *complete* transcription of the original tape. This was done by the use of headphones and the pause control. It is amazing how many um's and ah's, repetitions and other mistakes, show up, and without a transcription it is quite impossible to decide what cuts or re-arrangements are necessary.

Fig. 1 is a copy of part of my transcription after I had marked on it my proposed cuts and re-arrangements. These were made to remove unnecessary speech and improve presentation and yet retain the sense and, as far as possible, the character of the speaker.

The amount of improvement possible must depend to some extent upon the experience and capabilities of the speaker. Care must be taken when removing pauses, ums and ahs, not completely to ruin the character.

It is useful to have more than is necessary, rather than not enough, for odd words, particularly conjunctions, are often very useful, but when using them care must be taken to see that their intonation is correct. Using this technique, I was able to put the word "unique" into its correct context with "very old custom" having a choice of two "ands." The word "for" was also used to connect two sentences which had previously been separated.

After a similar process had been carried out on the Conditions of Sale, the actual job of cutting was started. This was now greatly simplified and was a matter of following the directions given

on my cutting script. When this editing was complete the two sections were timed in order to give an idea of the remaining time available. This indicated that there would be time to include only one Lot being sold. I felt that this would be sufficient, but that perhaps it could be improved.

It was successfully done by going through all the other Lots and removing some back chat from the bidders, together with the Auctioneer's reactions, and cutting them into the piece to be retained. Not strictly correct, I know, but justified, I think.

There remained the social part of the evening. The Auctioneer's song, "Little Yellow Bird," obviously had to be included. Eventually I selected the last verse of this song and followed it up with a verse from a song rendered by one of the gathering towards the end of the evening.

These four edited sections were now made up into one tape, but separated by coloured leader tape, and the playing time of each section noted. The sum of these times subtracted from ten gave the time available for the fifth and last essential, the narration.

The narration had to introduce the programme, tie the sections together, give something of the history of the custom, and bring the programme to a conclusion.

When it was written I checked to see that it could be read in the time available. On finding this impossible it was a matter of consolidating it until it came within its limits. In doing this, it is surprising how seconds can be saved by cutting out a word here and there, using one word to replace several and, if necessary, removing anything which is not essential. The whole was then typed out as a mixing script.

I was now ready to make my final tape and it was at this juncture that I had to call upon my wife for assistance.

Because I wanted certain sounds to fade under the narration, and also to

fade in as the narration ceased, it was necessary for the edited sections to be dubbed and mixed with the narration which I was to present to the microphone.

The equipment was set up in one room, with the edited tape on the Brenell deck from which it was fed to the Bradmatic for re-recording. In another room I had the microphone (low impedance) feeding into the mixer incorporated in the Bradmatic. Near the microphone was a signal lamp which my wife could operate from her position at the controls. We both, of course, had a copy of the mixing script.

The tape on the Bradmatic was started and I had the signal to commence the narration. Off the tape by way of the monitor head, my wife heard what I was saying and followed me on her script, at the appropriate time starting the Brenell and fading in the edited tape. I was now unable to hear what was going on but had a warning signal ten seconds before I was due to restart the narration, followed by the actual signal to start.

By this time the coloured spacing tape had arrived at the head of the Brenell and was allowed to run to its end, thus putting the edited tape in its correct starting point for the next section. In this way we went through the whole programme from start to finish.

The first attempts were not a success; in fact we rehearsed the whole thing many times without actually recording it. My part of this work was relatively easy; I only had to read the narration. My wife had all the controls to deal with. Eventually she was satisfied that she could cope and our first "take" was a success.

Some weeks later we heard, with great satisfaction, that the tape had won the Documentary Section of the British Amateur Tape Recording Contest. This satisfaction became complete when we were told that "Lane Setting" had been placed second in its Section in the International Contest.

LONDON AUDIO FAIR A PHOTOGRAPHIC SURVEY



OUR photographer was sent along to the Russell Hotel with a free hand to photograph some of the personalities and visitors to the Audio Fair. His initial reaction was one of dismay—how to photograph the various stands with the crowds milling around.

Eventually, and luckily, the visitors without exception graciously withheld their examination of the exhibits for a moment to enable our man to obtain this, the first full photographic survey of the Fair.

Most of the photographs need no caption. Apart from the apparent lack of visitors, which as explained was carefully contrived, the exhibits and general lay-out of the stands can clearly be seen.

There are, and must be, two schools of thought on the lay-out of any particular stand. Should the manufacturer exhibit his product, and leave the questions to be answered in the demonstration rooms? Or should he, or his assistants, be instantly available in both respects? Or did our photographer happen along at the wrong moment?

Whichever the case, most of the visitors in our photographs seem to be having their queries answered.

At the Chitnis stand, Miss Monica Barthel, from that company's German offices, finds her knowledge of the English language amuses a customer, while bearded Colin Donne, a London photographer, at his first Audio

LONDON AUDIO FAIR A PHOTOGRAPHIC SURVEY



Fair, hears about the Spectone 171 at the Spectone stand.

Fred Chandler, of *Tape Recording Magazine*, discusses the immense range of AKG microphones with Mr. P. Cameron, Sales Manager of Politechna Ltd., and a visitor to the Butoba stand prefers not to wait till he sees their demonstration room.

Miss Elizabethan, who arrived at the Fair in a litter carried by six hefty men, pauses for a photograph before being whisked away again, and Mr. F. Parrington, of Walter Instruments, in London after another of his tours round the Tape Clubs, is perhaps a little relieved to be answering only one question at a time.

In the bottom row, Mr. E. A. Rule, on the Armstrong

Technical Staff, is caught in a pensive mood as Sales Manager, Mr. J. A. Grant, attends to an enquiry. To his left, Mrs. Wellington finds a dazzling smile for a customer, and Mr. R. W. Merrick, Joint Managing Director of Ferrograph, discusses the latest trends in recorders, with two overseas visitors.

Our last four photographs show Mr. B. Babani, of T.S.L., describing his new "Vedette," and three of the portable recorder kings with their products. Left to right are Managing Directors Mr. K. Short (Stuzzi), Mr. R. Stroud (Minivox), and Mr. R. Gough (Fi-Cord).

Further photographs of some of the exhibits can be found on page 29.

AUDIO FAIR STOP PRESS

By the Editor

AT the event, there were not many surprises. The biggest news was the appearance on the Walter stand of a prototype of a new battery-mains portable which will be produced later in the year. It is a most attractively-styled product and the ease of switching from battery to mains supply makes it unique in its field.

The deck is one of the cleanest and simplest in design so far. I understand that the price may be around £40, in which case this machine should make a big impact on the market.

Challen Instruments introduced their promised new battery recorder, the model C Minivox, a two-speed (1½ and 3½ ips) version of their earlier model, with improved frequency response and output, as well as monitoring facilities. The price is 41 guineas.

The new Waltrak pocket oscillator is a welcome new unit for the keen amateur. It is battery-operated and provides a 1,000 cps audio signal from 0.01v to 2.5v.

A probe on the Waltrak can be applied without danger of shock to the vital points of a circuit, the signal is fed in, and the fault can be quickly tracked down. The price is £6 10s.



Described by the Organiser, Co. Rex Hassan as "My Audio Fair Lady," Julie Andrews is shown officially opening the 1960 Fair at the Russell Hotel.

During her speech at the ceremony, Miss Andrews professed a personal as well as a professional interest in tape. While in America with "My Fair Lady," regular contact with her husband was maintained with the aid of a 3-inch message tape spool.

The demonstrations of stereo reproduction this year dominated the Fair. The Ampex quality on tape and the disc standards of firms like H.M.V., Decca and the American firm of Shure were of the highest.

H.M.V. introduced a new £19 19s. stereo pickup which attracted a great deal of interest, and it was demonstrated in association with a new H.M.V. speaker system which will be described more fully in a later issue.

Three new machines that obtained more than average attention from visitors were the Spectone 171 which proves that very good results indeed are possible with the Garrard magazine deck; the Elizabethan "Major," which looks and sounds more like a professional recorder than almost any other in the medium-priced bracket; and the Reflectograph models, using the new Multimusic deck, which are among the best machines to which the amateur enthusiast can aspire.

Among the demonstrations, I was personally very impressed with Brenell performance, particularly an astonishingly fine reproduction of piano music at 1½ ips.

BBC MEN COACH THE AMATEURS AT NATIONAL TAPE COURSE

THERE was another full house at the third National Tape Recording Course held at the Rose Bruford Training College from April 19-24. Fifty-eight people attended from all over the country. As on the previous course the first three afternoons were given over to learning about the mechanics of a tape recorder, editing tape, and using a mixer panel.

As an experiment on this course there was a morning devoted to the recording of music. A local primary school was converted into a recording studio and Miss Daphne Oram demonstrated the different qualities of crystal and ribbon microphones and how the distance of the microphone from the performers affected the recordings.

For the demonstration Lustraphone Ltd. kindly loaned three ribbon microphones and a mixer panel, and three crystal microphones were provided by Cosmocord Ltd. The musicians and choir were provided by a local secondary school for boys.



Top: I. W. Jarman demonstrates tape editing. Centre: Jack Singleton (second from left) talks to members of the course. Bottom: Course Organiser, Geoffrey Hodson (third from left), listens to a tape reminiscence as Cambridge School-teacher, George Thomas, threads tape on to the new Walters 404 recorder.

The tutors, as on previous courses, were all experts, half of them being present BBC men. These included I. W. Jarman, the Senior Instructor on Editing, Producers Jack Singleton and Richard Burwood, and Desmond Briscoe who is now in charge of the Radiophonic Workshop at the BBC. The other tutors included John Borwick and F. C. Judd.

The Technical Operations Manager for the course was Graham Jones, a schoolmaster from Strood in Kent, and the Director of the course was Geoffrey Hodson, a tutor at The Rose Bruford Training College.

On the final two days the course was divided into groups for programme exercises in studio drama production, outside recordings, and a special small section in electronic effects at Miss Oram's studio at Wrotham.

Sound Effects

ALAN EDWARD BEEBY, who has had long experience in devising and recording sound effects, continues his regular column of advice.

If there is an effect you want, and which is causing difficulty, write to him for guidance.

IN the March 23 issue, I mentioned the problem of the "sound block." I also said that it was responsible for quite a few poor results in sound effect work, often without the operator being aware of the cause.

What is a "sound block"? Briefly, it is the microphone's "blind-spot." Strangely enough, however, the actual manifestation of a "sound block" has nothing to do with the microphone at all. It is, in fact, an adverse circumstance which prevents the microphone from doing its job properly.

We are all familiar with the sound effect which "doesn't sound right" even though we have followed the working instructions quite literally. Something . . . we're not sure what . . . seems to be missing; consequently, the effect loses some of its authenticity.

Here is an example. Imagine yourself trying to imitate a car crash. You've made the basic "noise" of the crash by blowing on the microphone, and you've put in the "tearing metal" sound by drawing a plastic ash tray across a sheet of glass. Finally, the "breaking-glass" noise is added, and there you are. You play the sound effect over and . . . that's funny! . . . where's the "tearing-metal" sound gone to? That is IT! You've run up against a "sound block."

Of course, it's not always so easy to spot the trouble as that. Nine times out of ten, the immediate cause will be so subtle and seemingly improbable that you won't even bother to give it a second thought.

There are several ways of tackling the problem. First of all, don't litter your sound effect bench or table with more equipment than is absolutely necessary. A small box standing between you and the microphone can cause a "sound block." Move the box only a *fraction of an inch* to one side, and the "sound block" will disappear! It's as simple as that.

Try, if you can, to operate your effects on the same level as the microphone. When you're working at floor level, take the microphone down with you. An inch-thick table top between you and the mike won't improve matters, I can assure you!

Another tip: Loud or violent noises should always be aimed *across the face* of the microphone, never *at it*, point-blank. Try recording a revolver shot by firing a blank cartridge directly at the mike and you'll see what I mean. On play-back, there will simply be a muffled "ppfhhht!" . . . and nothing else.

Out of door recording locations are a veritable breeding ground for "sound blocks." Buildings, walls, crowds or even small groups of people can play havoc with a recording if you're not careful.

Only recently, I listened to a recording made in a fair-ground by a friend of mine. Carrying a Grundig "Cub," he had mingled with the crowd in search of "atmosphere." Certainly, the noise of the people, the music and the side-shows was there, but the over-all effect was uncanny.

Throughout the entire 15-minute play-back, the volume climbed steadily up and down in the weirdest fashion!

The explanation was obvious. He'd simply walked in and out of a succession of "sound blocks." And, of course, he'd held the microphone low down by his side "so that people wouldn't notice it."

This gives the first clue. Hold your microphone as high as possible; never below the level of the top pocket of your coat. Height will always prove an effective precaution against the "sound block." Even standing on a door step can bridge the gap between failure and success.

Building angles present much the same problem. For instance, to try to record the approach of an unseen military band which is just about to come into view around a street corner is simply asking for trouble. One minute, distant music; the next minute: WHAM! That sort of thing sounds terrible on play-back.

A good thing to remember whether you are sound effect hunting either in your studio or out of doors is that *there is no substitute for a good microphone position*. Ideally, it should be possible to describe a straight and unbroken line between microphone and sound source. Elementary, I agree, but a simple little rule that is all too frequently overlooked in the interest of comfort or convenience. So much for the "sound block" problem.

"Which is the best type of microphone for sound effects?" a reader writes to ask. My answer to that is the one that does the job properly with whatever equipment you happen to be using. Microphone types and properties vary, of course, but I've always got along quite well by using a good-quality, omni-directional condenser microphone for general purpose sound effect work. Buying a new microphone should involve a good deal of careful thought.

It's not a bit of use paying a fancy price for something resembling a length of chromium-plated conduit tubing simply because it *looks* nice. I knew a chap who tried to solve all his recording problems in one go by paying the earth for a powerful American "Sassen" ball-and-biscuit microphone. Sufficient (and very nearly true) to say that his sound effects were invariably ruined by the sound of flies stamping across the ceiling!

Query number two comes from a group recording a thriller play and who ask for a method of recording the ticking of a small clock at full gain without any extraneous noise intrusion.

The answer is to build a "silence box." Obtain a small wooden box, roughly a foot square, and line the inside completely with layers of thin foam rubber. Put the clock and the microphone inside the box, close the lid, and record in the normal way.

The third query runs as follows: "Could you please describe, in detail, the sound effect man's studio and equipment, giving particulars of lay-out, etc.?"

That's a good question, Mr. A. Ashton of Wellingborough, and I shall be doing just that in the next issue.

On choosing a stereo set-up

LETTERS from readers on the subject of stereo show that the biggest problem of all is that of deciding which particular items of equipment represent the best choice. The problem is not a new one in the world of sound reproduction, but it certainly seems more acute in the case of stereo than in any other department.

I am very sorry indeed for the many enthusiasts who have, with comparative ease, decided that they will have stereo and that they will spend quite a large sum of money on it—only to find that they cannot bring themselves to the point of singling out the equipment to buy. There are now dozens of possibilities before them within the price range they wish to conform to and they suffer long-protracted agonies of indecision.

Many of them turn to me in the hope that I can prescribe the right answer for them, but it is something I cannot do, although I should be very happy if I could solve their problems in this way.

I can advise on general principles and offer general warnings, but I cannot single out one deck or pick-up, one amplifier and one make of speaker from the many that I know to have merit and advise inquirers to go and buy them.

Perhaps the best consolation I can offer is that in order to make a wise choice the agony is usually unavoidable—and also that you are far from being alone in your dilemma. The searching and pondering, although uncomfortable, are the instruments of your own eventual salvation.

Tape recording clubs are in a good position to render first aid, not only by staging stereo demonstrations—and ad-

vertising them as widely as possible—but also by introducing would-be stereo owners to members who already have it installed.

The chief value of a good club demonstration is that the equipment represents a system selected for its own sake and not one presented by a dealer or manufacturer with the specific object of selling a particular item. The value of individual contacts is that the seeker can hear a system in home conditions.

THE best letter received on the subject of ideas for stereo recording came from Mr. C. Bidmead who offered the outline of a play based on a game of chess. The two players are left and right and a metronome is heard in the centre.

At times the "stage" is occupied by the sounds of the movement of the pieces (on a wooden board, and highly magnified), and at other times the voices of the two players are heard expressing the thoughts running through their minds.

As the player on the left begins to be successful in the game his opponent grows more and more resentful. It has always been the same—left has always triumphed over right—but this time right is going to put the record straight . . . there is a gun in the drawer of the chess table.

With admirable restraint, Mr. Bidmead, who earns a 5-in. spool of tape for his idea, leaves you to contrive the end. He adds, however, that it should not be an obvious climax.

One possibility—depending on the nature of the dialogue—is that a shot rings out . . . and silences the metronome! "Now, perhaps we can concentrate on the games."

A spool of tape has also been sent to Mr. John Hone for his contribution, earlier on, setting out ideas for stereo recording at a party.

The technique of *musique concrete*

(Continued from page 15)

followed by another, slightly lower. A few short phrases of bell-like notes, some of them glissando, lead to a low note slowly descending and ending in an echo of the sound of the fireball as Icarus falls into the sea.

The last section has three strands of sound. A regular drum-like note, suggesting the heart beats of the drowning Icarus, provides the bass for a long line of free melody which is heard distantly echoing to represent the song of the sea-nymphs. Above this, repeated bell tones are heard

from time to time. At the end, the last note of the melody fades very slowly away, finally into nothing.

We had our meals, as I should have said earlier, at a nearby cafe, to avoid overloading Daphne Oram with domestic duties. As this was equipped with a jukebox and a fruit machine (one-armed bandit), our meals were, like the whole weekend, entertaining as well as nourishing.

I learnt a great deal about electronic composing—enough to show me how very much more there is to learn.

The New Decks

A test review by
E. A. RULE

THE Garrard tape deck is the only one manufactured in this country which has magazine loading. I feel confident that this is the shape of things to come. My general impression when unpacking the unit for the first time was that it had a very neat and clean appearance.

The tape deck measures 12½ x 8 inches and requires 1½ inches above and ¾ inches clearances below the base-plate. A fixing template is supplied with the deck, also operating instructions, and one tape magazine, complete with tape.

The Garrard Tape Magazine makes the whole procedure of tape loading so easy that a young child could do it without bother. There is no threading and anchoring, as with other types of tape deck. The controls have been kept to the absolute minimum: one for Record/Off/Playback, a second for fast winding. A shaft extension is provided on the record/playback switch so that, if



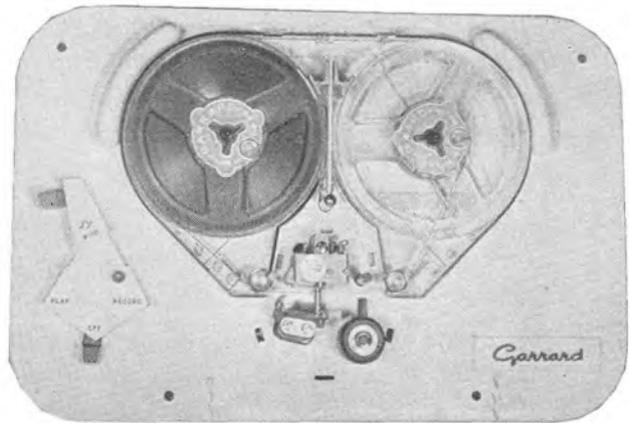
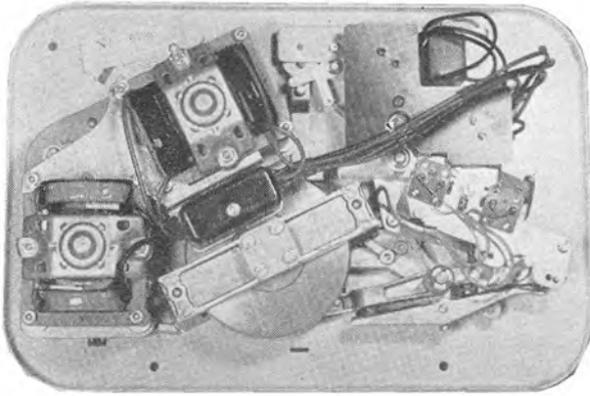
The Garrard Tape Deck

required, extra wafer switches can be fitted for controlling the appropriate electronic circuits.

As the Tape Magazine can be turned over easily, fast wind is provided in a forward direction only. The magazine measures 8⅝ x 5¼ x 1⅝ in. and is fitted with two 4-inch spools carrying approximately 650-ft. of double-play tape, with 6 feet of coloured leader tape at each end.

A spring-loaded brake is fitted, which prevents the spools turning and so spilling tape when not in use on the tape deck. Should it become necessary to clean, replace or join the tape the magazine can be opened by removing two metal spring clips, when the top (side one) lifts off. As the brake is only released when the magazine is on the tape deck, there is no fear of tape spilling or coming loose during this operation.

An interesting feature is that the tape magazine can be removed from the tape deck at any time, without the bother of winding the tape on to one of the spools.



Left: Underside view showing brass flywheel and motors. Right: Top view with magazine and head covers removed

THE GARRARD TAPE

When replaced later the tape will still be in the exact position at which it was originally stopped. Thus, there is no need to "inch" the tape in order to re-locate the last recording.

A scale is moulded on each side of the magazine to enable approximate location of individual recordings made on the tape.

For more accurate location of recordings, Garrard have recently introduced a graduated digital clock which is placed on top of the right-hand, take-up spool. A spring-loaded pin on the underside of the clock locates one of the holes on the spool hub almost immediately so that hub revolutions are registered on the clock face enabling precise measurement on any section of the tape.

The clock, specially designed for this purpose by Smiths and seen for the first time at the Audio Fair, will be supplied as an accessory to the deck.

Normal spools up to 4-in. diameter may be used, if required, but, as the tape deck is primarily intended for use with a tape magazine, no braking has been provided. There is a friction disc on the feed spool spindle, however, and it does prevent the tape becoming slack, except when fast winding, when it is necessary to use one's hand to check the feed spool and prevent overshoot.

MAGAZINE DECK

Using the tape magazine, tape spooling was very good on record/replay, but tended to become a little ragged during fast winding. Braking was good, with only a little overshoot on fast wind, and at no time did the tape jump the spools or guides.

A heavy precision-engineered capstan in solid brass, in conjunction with a precision pressure roller linkage from the motor, ensures excellent speed stability. A second motor is used for fast winding or takeup. The general workmanship sets a high standard, as is normal with Garrard equipment.

Electrical connections to the tape deck are simple; there are only six connections to make and these are clearly marked. Next to the brass flywheel is a mains connector block and on one side of the base plate, mounted on two paxolin panels, are solder tags for connections to the heads. The base plate is earthed when these connections are made and a separate earth is not, therefore, required.

In order to test the tape deck fully, it was connected up to a Mullard type-C tape amplifier which was, in turn, fed into a Mullard 5/10 high-fidelity amplifier. Equalisation was provided for the 3½ ips speed and all other controls were set to "linear." Measurements were made across a 15 ohms load, connected to the loudspeaker terminals. The results are listed below and show that the Garrard tape deck has a very high standard of performance.

Test results with erase head connected to the Violet tap on the Mullard type C oscillator coil and the bias feed capacitor changed to 68PF.

Replay only EMI test tape: -3dB at 20 and 5,000 cps.

Record/replay: -3dB at 20 and 7,000 cps.

Wow and flutter: both better than 0.1 per cent.

Note: The manufacturers say that with suitable equalising the frequency response can be extended to 10,000 cps. Using their recommended equalising curves, the response was only -3dB at 10,000 cps, making the overall record/replay response 20 to 10,000 cps ± 3dB. Full details of these recommended equalising curves may be obtained direct from the manufacturers.

Recordings were made from VHF/FM and on replay the results were excellent; the only detectable difference was a slight loss of treble.

To sum up, the Garrard Magazine Tape Deck can be confidently recommended to all who want excellent results at low cost and with a minimum of trouble. In conjunction with a Mullard type-C amplifier and existing radio or hi-fi equipment, most people could be recording successfully after less than one hour's work.

Manufacturers' Specification

RECORD/REPLAY HEADS: these can be connected for either high or medium impedance.

	High Impedance	Low Impedance
Track width	0.090 in.	0.090 in.
Gap	0.0002 in.	0.0002 in.
Inductance at 1 kc/s	450 milli H	110 milli H
Impedance at 50 kc/s ...	70,000 ohms	17,500 ohms
Output at 1 kc/s	1.8-4 milli V	0.9-2.8 milli V
Record Current	30-100 micro A	60-200 micro A
Bias Current	0.5-1.4 mA	1-2.8 mA
Bias Volts	56 v	28 v

ERASE HEAD: Track width, 0.120 in. Gap, double 0.005 in. Impedance at 50 kc/s, 250-300 ohms. Power, 0.5 watts. Current, 75-100 mA. Volts, 20 approx. Tape speed, 3½ ips two-track, upper track, left to right. Wow, better than 0.2 per cent. Flutter, better than 0.1 per cent.

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Equipment Under Test

KÖRTING Mk. 128

FOUR-TRACK STEREO



THE Körting type MK 128 was one of the first portable recorders available in this country to record four tracks on standard quarter-inch magnetic tape. To be precise, it will record two tracks simultaneously, each 1 mm. wide, in positions 1 and 3, as shown in the diagram, and then, on turning over the tape reels, two more tracks can be recorded in positions 4 and 2. The gap between tracks is 0.75 mm. Either or both of the two available tracks can be used, so doubling the useful playing time of the tape for stereo recording, and quadrupling it for mono.

In the case of the MK 128, running at $3\frac{1}{2}$ ips, this means that, with a 7 in. reel of double-play tape, a total playing time of four hours is available for stereo and eight hours for mono. Some considerable saving in tape!

The extra facilities available on this machine, which is of German manufacture, involve rather more controls than are normally available on a domestic tape recorder. But they are very easy to

operate, and an excellent instruction book is a great help in learning their functions quickly. In addition to the piano-key type start, stop, and forward and fast rewind, there are controls for selecting top track, bottom track and stereo. The individual tracks are labelled "left" and "right", these being the stereo loudspeaker positions, and it is possible to record mono on both tracks simultaneously by pushing both buttons at once. Record/playback is taken care of by another push button, and this is automatically returned to the playback position when the machine is stopped after the completion of a recording. Two further push buttons are grouped with the record/play button, one for selecting microphones or radio/gram, and the other switching off the erase head to permit superimposition of recordings.

Other controls on the top panel of the machine are the switch/volume control, operating on both record and playback, and three small slide switches. One of these mutes the internal speaker, the second is a fixed bass cut for use on speech, and the third is a fixed top cut. A stereo balance control alters the relative volume between the two channel outputs.

A number of sockets are provided

around the edge of the top plate. On the front are two sockets for microphones. These enable either two separate microphones to be used, one in each socket, for left and right stereo, or a double stereo microphone, such as T.S.L. type S/K, plugged into the left socket only. The sockets are wired for both high and low impedance microphones, but the instruction book only gives plug connections for the low impedance type. Reference to the circuit diagram will give the high impedance connections.

At the rear of the top plate are sockets for radio, gramophone, high quality outputs for stereo amplifiers, and two loudspeaker sockets for 3-ohm speakers. The internal loudspeaker is connected to the right-hand channel in stereo operation, or to the track in use in mono operation. It is possible, of course, to play two different mono tracks simultaneously by depressing the stereo button, so that one can be heard on the internal speaker and the other on the "left" track speaker placed, say, on an extension lead in another room.

On the top of the deck, there is the footage counter, a digital type, and a column-type magic-eye record level indicator. An automatic cutout is provided which stops the machine when tape runs out.

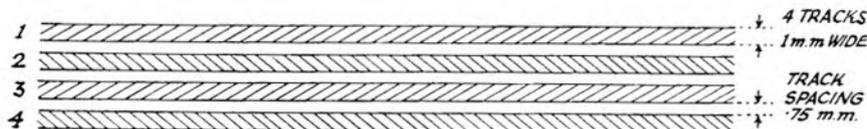
This may seem a lot of controls to get used to, and inevitably some mistakes were made when the machine was first used, but these were short-lived, and the extreme usefulness of all the facilities rapidly became apparent.

Internally, the machine is as well designed as it is externally. The two amplifiers are built on one printed circuit plate, and this makes for a clean, compact layout, and good symmetry between the amplifiers.

This last is no doubt contributory to the excellent balance between the frequency responses of the two channels. At no frequency did the out-of-balance exceed 2.5dB at the "best" setting of the balance control.

Wow and flutter were very low indeed. With a machine running at $3\frac{1}{2}$ ips, it is a pleasure to be able to record a piano and hear it replayed without any tremolo or jangle-box effects.

(Continued on page 26)



Dimensions of the four tracks on the tape

MANUFACTURER'S SPECIFICATION

Power: 110/125/165/220/240V., approx. 62 watts. A.C.

Valves: 2 transistors: OC603. 2 x ECC 85, 2 x EL 95, EM 84.

Tape Speed: $3\frac{1}{2}$ ips.

Playing time per reel: 2 x 120 min. for double-playing tape, Stereo. 4 x 120 min. for double-playing tape, Monaural.

Frequency: 30—16,000 cps \pm 3dB.

Max. reel size: 7 in. diameter.

Rewind time: Approx. 180 sec.

Sound track position: 4 tracks, 1 & 3,

and 4 & 2, on Stereo, or four separate tracks on Monaural.

Modulation control: Fluorescent Indicator.

Playing time check: Tape footage counter, with zero adjustment.

Speech output: 2 x 2.5W.

Loudspeaker: 1 perm. dyn. loudspeaker $3\frac{1}{2}$ x 6 in.

Operation: Mechanical press-button controls special Stereo-Mono button.

Case: Elegant, robust, modern design.

Weight: Approximately 28 $\frac{1}{2}$ lb.

Dimensions: 16 $\frac{1}{2}$ x 13 x 7 $\frac{1}{4}$ in.

Hi-Fi HARRY by Rich



"I don't know who he is either."

Körting Mk. 128

(Continued from page 25)

Frequency response measurements were made, first on play-back, using the *Tape Recording Magazine* test tape, and then of the in/out characteristics. The play-back response was flat within ± 2.5 dB between 40 and 8,00 cps, the limits of the test tape. Hence this machine should give a good account of itself from the $3\frac{1}{2}$ ips pre-recorded tapes.

The manufacturer's claimed frequency response is ± 3 dB from 30 to 16,000 cps, and a listening test suggested that this claim is a fair one. Such wide frequency response at this fairly slow speed has been achieved however, at some degradation of signal/noise ratio. The measured figure was somewhat less than 20dB. Most of the noise showed up as hiss, and it is fair to say that on the internal speaker, or playing stereo on this and another similar speaker, this hiss was not too troublesome. It did become somewhat objectionable, however, when the machine was played on two wide-range speakers. Most of the hiss appeared to come from the replay amplifier.

Because of the hiss, it was not possible to measure in/out frequency response above 10,000 cps and up to this figure the machine was within +3, -4, dB. If enough signal was recorded above 10,000 cps to make reliable measurements above the noise possible, beating with the bias oscillator occurred and readings were inaccurate. This is not necessarily a fault; it happens in all tape machines to some extent. In recording programmes no trouble occurs, since the level at these frequencies is much reduced.

With some disappointment at the rather high noise level, I can still recommend this machine as good value for money at 68 gns.

PLAYING TIMES OF MUSICAL PERFORMANCES

Continuing the publication of lists of playing times of well-known music, we remind readers that playing times may vary quite considerably according to the performance and the conductor.

In this feature, where several timings have been given for the same item, we quote the longest. Even so, it is advisable to add a "reserve" of tape of, say, five minutes.

We shall be obliged if readers will send us information which they have gathered in this field.

Brahms
Symphony No. 2, 40 minutes. *Hungarian Dances: No. 1*, 3 minutes, No. 6, 4 minutes.

Elgar
Violin Concerto in B minor, 50 minutes.

Gounod
Faust Ballet music, 16 minutes.

Hadyn
Symphonies: No. 86, 22 minutes. No. 102, 25 minutes.

Ibert
Divertissement for Chamber Orchestra, 15 minutes.

Kodaly
Dances from Galanta, 15 minutes.

Mendelssohn
Violin Concerto in E minor, 26 minutes.

Mussorgsky
Pictures from an Exhibition, 35 minutes.

Prokofiev
Peter and the Wolf, 27 minutes.

Rachmaninov
Rhapsody on a Theme of Paganini, 22 minutes.

Rimsky-Korsakov
Spanish Caprice, 17 minutes.

Sibelius
Violin Concerto, 33 minutes. *Symphonies: No. 1*, 38 minutes. No. 3, 35 minutes.

Schubert
Symphony No. 8, 22 minutes.

Tchaikovsky
Piano Concerto No. 1, 35 minutes. *Violin Concerto in D*, 35 minutes.

Vaughan Williams
The Wasps, 9 minutes.

Verdi
La Traviata, 2 hours.

Wagner
The Mastersingers, 10½ minutes.

MAGAZINE DIGEST

In this column we draw attention to items published elsewhere which may be of particular interest to readers.

Hi-Fi Stereo Review (American) *Stereo and the environment*. Layout ideas for stereo equipment. *Phasing the stereo system*—an explanatory article on a common problem.

Tape Recording (American): *Taping Shortwave* by Jean Cover; *Using contact microphones*; and an article on tape recorder specifications.

High Fidelity (American): *Can loudspeakers be tested*. Norman Crowhurst helps the layman to form a reasonable judgment of what he reads and is told.

The Tape Recorder (May): Field trial of Stuzzi Magnette.

Amateur Tape Recording (May): What is a loudspeaker and cross-over network? *All issues are dated April unless otherwise stated.*

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John Borwick describes some of the ways in which these can be achieved

3 p.m. Sunday, May 8, with a repeat at 6.40 p.m. Monday, May 16

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Letters to the Editor

DIFFICULTIES OF RECORDING PROFESSIONAL SINGERS

WITH the increase of tape recording throughout the country, amateur music societies are at last able to build up libraries of their performances for future reference so that their achievements may be assessed and improved on subsequent occasions. A problem, however, which threatens such activities is the professional artist who objects to being recorded by amateurs when visiting societies in the provinces. (I cannot speak for London.)

Recently, I was about to record a performance of Bach's "Mass in B minor" in a northern cathedral (having arranged to do this with the conductor, beforehand), when I was told by the honorary secretary of the society concerned that one of the artists had objected to a recording being made and that my microphone would have to be removed.

I pointed out the natural desire of the choir taking part to hear themselves and, after giving an assurance that no solos or duets would be recorded, I was allowed to leave the microphone in position.

OBJECTION

After the performance was over, we were approached by one of the soloists (presumably the one who had objected; a fairly well-known tenor) and asked if we had recorded the performance. We pointed out that only the choruses had been taken, as an objection had been raised by one of the soloists. Whereupon he said: "We are bound by 'Equity' to ask if a performance has been recorded."

We pointed out to him that the recording was for the benefit of choir members who like to hear their performance afterwards and that it was a private recording, not for profit. We also told him that we had been recording for over three years but had only had one objection raised before, and that was from a well-known bass singer.

On that occasion this singer's excuse was that the gramophone company for which he worked would not allow him to be recorded and that he "had to be careful of his contract." If it is true that gramophone companies object to their artists being recorded on such occasions, I ask: "What are they afraid of?" Not, surely, the amateur tape recordist; such a suggestion is ludicrous; rather like the elephant who is afraid of a mouse.

I have been associated with music and concerts for over thirty years and have regretted at times that some of the finer musical experiences I have heard under the ægis of amateur societies were before the days of tape recording. Many first-

class musical events take place every year throughout this country and are lost forever. With the development of tape recording, some of these events may be saved for the people most interested.

I have also served on music and artist selection committees and as concert organiser for amateur societies and, therefore, know that amateur choirs and orchestras work very hard during a season and, at their annual concert or performance of a major work, provide a platform for professional artists; in fact, if it were not for the amateur societies up and down the country, the income of many professionals would look "rather sick" at the end of a season.

When an amateur society goes to the trouble and expense of organising a performance of a large-scale work such as the Bach "Mass," and engages professional artists whose total fees may run into nearly £150 (a substantial fee for an amateur society to find), such a society's members should, at least, not be denied the opportunity of placing on record the culmination of their season's hard work by having their performances recorded.

Professional artists should realise that the societies whose members "pay the piper," very often have to pay him by augmenting the takings at the performance with Coffee Mornings or Bring and Buy Sales (more hard work for the members), and that lack of co-operation on the artist's part is not looked upon very kindly by the people who help to pay their fees. Professionals should realise that amateurs help to buy their bread and butter.

Many choir members have said to me: "When we are sitting in the choir we cannot hear the soloists very well as their backs are towards us." And yet these same soloists, whose fees have been paid by the hard efforts of the choir members sitting behind them, have the temerity to deny their employers (for such the amateur choir members are) the opportunity of hearing their performances from the "front of the house" by means of a recording afterwards.

AWARENESS

Are professional artists unaware of the manner in which they are chosen by amateur societies to take part in their productions? I will tell them.

They are usually chosen by a selection committee who have before them lists of the various concert agents, showing the artists available and their fees. The merits of these performers are discussed at length—perhaps at several meetings of

the committee—and the choice of an artist can be influenced by the merest whim of a committee member who may have something good or something bad to say about the artist. One member, perhaps, "did not like his (or her) manner on a previous occasion"; another may have heard an artist elsewhere and may influence the vote for or against a particular performer.

CO-OPERATION

It behoves an artist, therefore, to be co-operative with amateur societies, whose choice of an artist is not always decided solely by musical standards. There are many artists on agents' lists these days and far fewer jobs for them. If there is a choice before a committee of two artists of equal merit at the same fee, the one who may have been found unco-operative or whose manner "was not liked" on a previous occasion is usually turned down. Such silly objections by an artist as refusing to be recorded at an amateur performance may succeed in that artist finding in the future that he has killed the goose that layed his golden egg; whereas the leaving of a permanent reminder of his art with the society in the form of a recording may get him another engagement later on; how short-sighted can artists get?

If such objections continue by artists, I envisage the day when an amateur society may have to ask an agent before engaging an artist if that artist objects to being recorded and, if he does, he will be "out."

With the continual improvement in equipment and the increased experience of amateur recordists, artists have little to fear in the quality of such recordings. Most amateurs do their best for the sake of the societies with whom they are associated, and also for their own satisfaction, to produce as fine a recording as possible.

I, personally, use semi-professional equipment and go to a great deal of trouble to find the best microphone positions. Also, as far as I am concerned, there is no profit motive in such activities. Each performance I record costs me several pounds and the use of nearly £200 worth of equipment; but I am willing to do this in order to see the pleasure it gives members of societies afterwards. I only wish artists would think a little more about the members of the societies which employ them.

REGINALD WILLIAMS

Chester.

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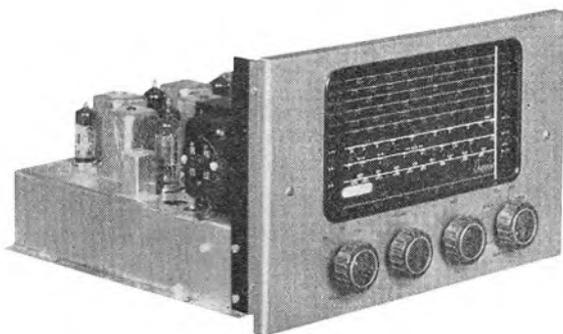
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SEEN AT THE AUDIO FAIR



The Chitnis KMS 44



Chapman S6BS/FM Tuner

Three items of equipment seen for the first time at the London Audio Fair are shown in this late illustrated report from the fair.

Top left, is the Chitnis Electronics two-track stereo model which was fully described in our March 23 issue.

Bottom left is the six-stage AM and high-gain FM tuner manufactured by C. T. Chapman Ltd. The S6BS/FM tuner is described as the finest in the Chapman range, and retails at £67 10s.

Right, the ribbon microphone introduced by Standard Telephone & Cables Ltd. Described as having an accurate "figure-of-eight" polar characteristic in both planes, this instrument has a response extending to 15,000 cps, with an excellent transient response.



STC 4038-A ribbon microphone

New Products

TWO RECORDERS BY NEWCOMER TO THE TAPE MARKET

The Gainsborough

TWO NEW RECORDERS are announced by another newcomer to the tape field—Gainsborough. The first, now available, is the Gainsborough 1, incorporating the Collaro Studio deck and selling at 39 guineas, including microphone. The other, the Gainsborough 2, is to follow later.

Both are three-speed machines— $1\frac{7}{8}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. The first model provides for mixing of mic and radio inputs, superimposition, straight-through amplification and playback through external speaker. There is also a pause control.

Push-button controls are used, and a digital counter and a magic eye recording level indicator incorporated.

Frequency response is quoted as up to 12,000 cps plus or minus 3 dB at the top speed, and output is rated at 4 watts using a 9 x 5 in. internal speaker.

The second Gainsborough recorder is to cost 45 guineas and will have independent treble and bass controls, a monitoring head, and a diode output socket.

Gainsborough Tape Recorders, 189 Northcote Road, London, S.W.11.

Pocket receiver by T.S.L.

A POCKET TRANSISTORISED receiver, claimed as ideal for use with a tape recorder, is now being distributed by Technical Suppliers Ltd.

This claim is made as a result of the high impedance socket incorporated for tape recorder or earphone listening.

Only $4\frac{1}{2}$ x $2\frac{3}{4}$ x $1\frac{1}{2}$ inches, the receiver has all the features of larger transistor models, is designed to fit into the pocket, and weighs only 11 ounces.

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Technical Suppliers Ltd., Hudson House, 63, Goldhawk Road, Shepherd's Bush, London, W.12.

When writing to manufacturers, please mention that you "saw it in Tape Recording Magazine"

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News from the Clubs

INTER club contact is progressively taking a greater part in tape recording usage.

A few weeks ago I mentioned the start of a scheme whereby clubs could pass on tape messages as part of their normal activities. The plan seems to be catching on.

Bert Guernsey, Chairman of the **Brighton Club**, reports a gratifying response from clubs to his letter announcing the inauguration of a nationwide message service. Dealing with the letters and tapes received has kept members very busy. So far they have sent follow-up tapes to their original letter to almost 30 clubs.

A number of clubs have asked for a list of participating clubs, and they hope to complete this request very shortly. Because of the close supervision necessary in this section of the club's activities the responsibility has been totally allotted to Mr. Guernsey. All letters or tapes should be sent direct to him at 44, Hogarth Road, Hove, Sussex.

Secretary Hedley Jones won an Emitape accessory kit as his prize in a competition held among **Bournemouth** members for the best story produced by weaving five sounds into a story. The prize was donated by Tape Recorders Ltd. of Westbourne.

A first attempt at a feature tape—a skit on Mrs. Dale's Diary—won recent praise for new members Mr. and Mrs. K. V. Ward. Entitled *The daily happenings of a Fireman's Wife*, the tape draw from the fund of specialised knowledge of Mrs. Ward who is herself the wife of a fireman.

At the same meeting Anthony Townsend presented a tape on Monaco received from one of his contacts in that tiny Principality. Arrangements are being completed to illustrate the tape with coloured slides.

A recent visitor to the club was Mr. L. V. Saunders, of the E.M.I. Technical Staff. Mr. Saunders gave a talk on the manufacture of Emitape, and interspersed his lecture with recordings dating from as far back as 1930.

A Dinner was held at the Highcliffe Hotel at the end of March, and the evening proved so entertaining that it was decided to make it an annual event.

A demonstration of recorders, including models built as early as 1930, was given at one of the March meetings of the **Leeds and District club**.

The demonstration was presented by club member Mr. Pape who owns a professional tape recording studio. He included in his show one of the Ampex machines used in his work.

Members are taking full advantage of Mr. Pape's offer to make available his studios to the club. Instruction on mixing is eagerly sought, and they have been

Edited by

FRED CHANDLER

producing tapes by mixing seven different sound sources.

The **Coventry** members are really getting down to increasing membership. At their latest meeting, March 31, 49 persons were present, this number being supplemented by the appearance of five members of the Rugby club. Several new members were enrolled during the evening, bringing the total membership to 38.

A recording may by Henry Hopfinger during the recent visit of a team of Russian architects and engineers, was heard during the evening.

Members of the committee have approached Audio Fairs Ltd., the organisers of the London Audio Fair, with a view to staging a similar event in the Midlands. Initial reaction is favourable, and although it may be too late for this year, they have every hope it will take place in 1961.

In a smaller, but no less gratifying way, members are spreading the tape gospel. When Mr. D. F. Lewis announced his intention of forming a club in Nuneaton, the committee offered him their assistance, and arranged to go along in strength to fortify the inaugural meeting.

A tape requesting sound effects recorded in a typical English pub with chatter by a "cheeky" barmaid, has been received from the San Francisco Tape Club. A search for this material is now being made by members.

Another American tape exchange concerns Roy Reynolds, who for some months has been in contact with a Los Angeles milkman. The American is bringing his family to Britain later this year, and members hope Roy will take him along to one of their meetings.

Howard Freer, who designed and sells

John Wells prepares to operate the recorder, Violet Burnett, producer, times the sequence, and Bernard Wells provides the sound effect, during the Walthamstow club's production of "Butcher's Revenge."

Others in the photograph are, left to right, Don Cooper, Ken Perks, Harry Epton, Maurice Dudley and Jim Dawson



Photo: Walthamstow Guardian

a conversion pully for the Collaro Mk IV decks, is now building himself a Lowboy cabinet to contain his equipment, following the footsteps of Henry Hopfinger who recently completed this item.

A trip round the world welcomed members of the **Warwick and Leamington club** at a meeting held at the beginning of April. Organiser of the trip was Secretary Brian Race, who told members before they set off that the mode of travel would be by tape recorder, film and slide projector. These are the only vehicles he uses when "visiting" his friends throughout the world.

The tour started with a short-Christmas-time visit to Sweden. Mr. Race then quickly transported his guests to Norway for the New Year, where they met Frank Johannsen.

On next to Canada, New York, New Zealand, and finally back to England via Tanganyika where Frank Weston, Governor of one of H.M. Prisons, told of life in his part of Africa.

The evenings entertainment closed with colour slides of the Society's Annual Dinner and shots of the recently formed drama group in action. Mr. Race concluded the evening by pointing out that three of the club members would shortly be going off on another jaunt—a "live" jaunt. They are going to entertain the Leamington Spa Scooter Club at their next meeting.

Four portable recorders, three Fi-Cords and a Stuzzi Magnette, kept track of the proceedings at a meeting of the **Iford and District Club** when sixteen members listened to a stereo demonstration on a Brenell 3 Star portable given by chairman Percival Ager.

Later that evening members heard a sample recording of a hospital tape service programme produced by Jimmy Hunter, who also described how he records reviews of *Tape Recording Magazine* for the benefit of the blind.

Following its initial spurt, when 30 potential members were counted, the numerical strength of the society has declined. "That is only to be expected," said Mr. Ager, "but we now have a hard core of enthusiasts on whom we can rely." This "hard core" is now busily producing material for the society's entry in the club section of the B.A.T.R.C.

Incidentally, have you still to organise your entry? Not much time left now, the closing date is July 1.

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Ferrograph 3 A/N 3¼ & 7½. Mint condition, best offer to Penfold, 48, Holbrook Lane, Coventry. Wanted Stuzzi Magnette, good condition.

Steelman recorder with new mercury batteries and mains power pack, best offer Box 353.

Perth Saja De Luxe M.5 Mic. Perfect condition. Bargain £45 o.n.o. Metcalf, Minster View, Bishop Monkton, Harrogate, Yorkshire.

Philips 8108G, cost 62 gns, 8 months old. Owner moving to smaller flat with thinner walls. £35 o.n.o. Jacob, 2, Dudley Close, Kempston, Beds.

Telefunken 85KL 6-watt Portable, complete with mic. Brand new. £76 (cost £88). P. J. Stanmore, 12, Pollards Hill North, London, S.W.16.

TK20 Grundig, good condition, will accept £40. G. Machen, 37, Chatsworth Terrace, Poppleton Road, York.

Wanted—Powered F.M. Tuner (Fringe Area). No dealers. Full details please to: 66, Almswood Road, Tadley, Basingstoke, Hants.

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Back issues Tape Recording, Recorder, Hi-Fi News, Gramophone. S.A.E. for list. Moore, 36, Park Road, Spondon, Derby.

Two Grundig GCM 3 condenser microphones, very little used. Cost 12 gns. First offer £8 secures. D. Weaver, 13, Churchill Road, Kidlington, Oxford.

TK32, Grundig's latest 2 speed. Cost £85 with extras two months ago. As new £60. F. Riddle, 113, Church Road, Northolt, Middx.

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

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Telefunken KL75T List 45 gns, my price 26 gns. KL85KL list price 79 gns, my price 55 gns brand new, guaranteed. Search, 57, London Road, Bexhill-on-Sea.

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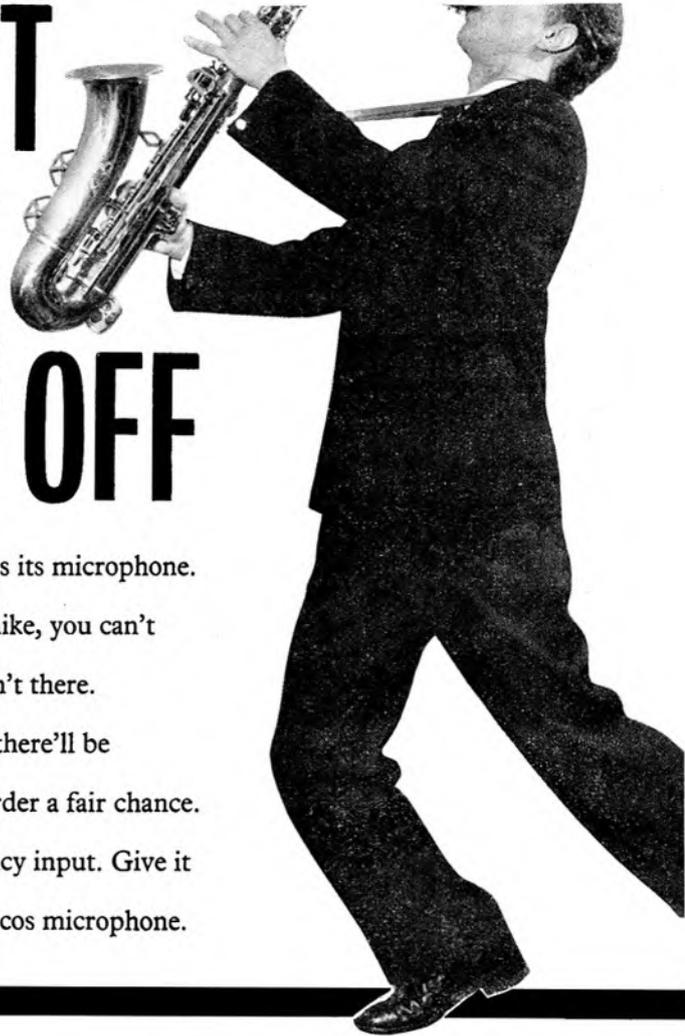
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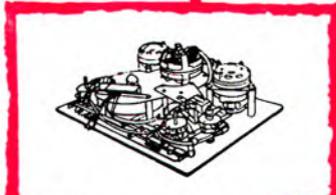
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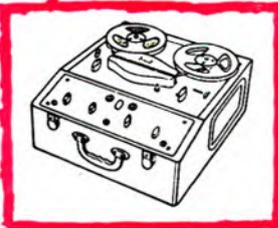
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the home—look at that lovely sapele
mahogany—so easy to use too—those
magazines—simple as putting on a record



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



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FURTHER FACTS:

It is not generally known that the Tape Deck mechanism is virtually re-built in the REPS machines. It is standard procedure to remove all rubber wheels—i.e., re-wind, idle and pinch—and re-grind them to a closer tolerance. Also the Capstan is skimmed to less than ± 0.0001". This has resulted in a very low "wow" factor, especially at $3\frac{1}{2}$ ips which has led to the logical introduction of $1\frac{7}{8}$ ips in place of the 15 ips. The principal cause of "flutter" is due to the eccentricity of the three-step pulleys which control the tape speed. This eccentricity occurs when the pulley is locked to the motor shaft and is due to the off-setting action of the fixing screws. This difficulty has been overcome by manufacturing pulleys over-size and machining to the correct diameter when fitted to the motor shaft. By this method a total variation of less than 0.0001" has been achieved at $1\frac{7}{8}$ ips. Initial measurement indicate total "flutter" content at $1\frac{7}{8}$ ips to be of a lower order than previously associated with $3\frac{1}{2}$ ips.

D. W. Aldous of 'GRAMOPHONE RECORD REVIEW' writes in March issue:—

"The overall performance of this Repls R30 recorder, coupled with its reliability and simplicity of operation, not to mention an attractive styling, must give it a wide appeal to tape recordists seeking an all-British machine of unusual quality."

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Model R.....

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# TAPE

RECORDING  
AND HI-FI MAGAZINE

Vol. 4 No. 10 18th May, 1960

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

EDITOR: **R. D. BROWN**

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

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

**DON WEDGE**  
*News Editor, New Musical Express*

MOVIE-MAKING: **JOHN ALDRED**

NEWS AND CLUB ACTIVITIES: **FRED CHANDLER**

OVERSEAS CORRESPONDENTS:

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

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

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

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

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

## EDITORIAL

Address all communications  
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## ADVERTISING

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# We take the view . . .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

SO the Chancellor has got in a blow against tape recording after all. If you want to buy a machine on the "never-never," you will have to pay an initial deposit of one-fifth of the total price in future.

How is this change likely to affect sales? I have spoken to a number of leading retailers in London, and I report that they do not seem unduly worried.

"I don't think it's going to affect trade one little bit," said one of them cheerfully. "Most of our customers place far more than 20 per cent as an initial deposit. And we are quite happy, of course, to get a little more in the till at the time of the sale."

Of course, there are some retailers who have built up their sales on such slogans as "No deposit" or "You pay one shilling in the pound" (i.e. a 5 per cent deposit). They will have to change their methods a little.

But the market has recently been in such a buoyant state that the Chancellor's new measure need not be taken too dismally.

## Exhibitions

PRELIMINARY reports suggest that the Audio Hall at the 1960 Radio Show may be less extensive than last year. This is a strange development, in view of the expansive mood of the industry, as demonstrated by the recent record Audio Fair.

The organisers of the Radio Show were anxious, too, to make the Audio Hall a more prominent feature of the Show this year. The truth is that the industry is still feeling its way towards the best pattern of exhibition and promotion of its products.

Several progressive firms in the tape and hi-fi fields have decided to show the flag in the first comprehensive all-British exhibition ever to be staged in the U.S.A. It has been fixed for June 10 to 26, in New York.

The American influence is increasingly evident in tape developments here. It is cheering to hear news of the reverse process.

I hear, too, that a new "Tenzer" based tape which is now getting a big boost in the U.S.A. is nothing more or less than PVC tape appearing in America for the first time.

The Old World seems to be holding its own.

## Musique concrete

I SUPPOSE it is because of the time and patience demanded of those who would experiment, but *musique concrete*, fascinating as it can

be, is not catching on quickly in the world of tape enthusiasts.

Now, at last, there are signs of a more serious approach that should set sound professional standards, as an example and an encouragement to the amateurs.

We reported in our last issue the efforts of Miss Daphne Oram, who has rapidly established herself as a pioneer in this country.

So far, sound tracks for advertising announcements on commercial TV have proved one of the main incentives to creative effort in this field.

Other outlets in the field of pure art are appearing. We recently reported, for example, the first public performance of electronic music in London—at an Institute of Contemporary Arts concert at the Wigmore Hall.

Now, in Brussels, an eight-scene ballet, *Orphée*, has been presented with a score that is entirely *musique concrete* pre-recorded on tape. In the *Sunday Times* recently, Mr. Richard Buckle singled out this music as the best thing about the performance.

"This tape-recorded score has a passage of genuine (Indian?) music and a marvellous realistic railway-station scene, besides all the interesting sequences of sound which may be anything from somebody brushing his hair to somebody opening a tin of baked beans, played backwards," he summed up.

It would be interesting if we could hear the performance in London, so that we may judge for ourselves!

## Unrivalled

OUR recent promise to provide in *Tape Recording Fortnightly* an unrivalled news service appears to have been well fulfilled during the last three months. Among the items which, during that period, we have reported more fully than and well ahead of other publications have been the U.S. production of a revolutionary new one-seventh-inch tape cartridge, the British marketing of United Stereo Tapes, the introduction of four-track recorders by Philips and Cossor, the programme for the B.S.R.A. Audio Convention, and the "secret" talks in Europe on tape standards.

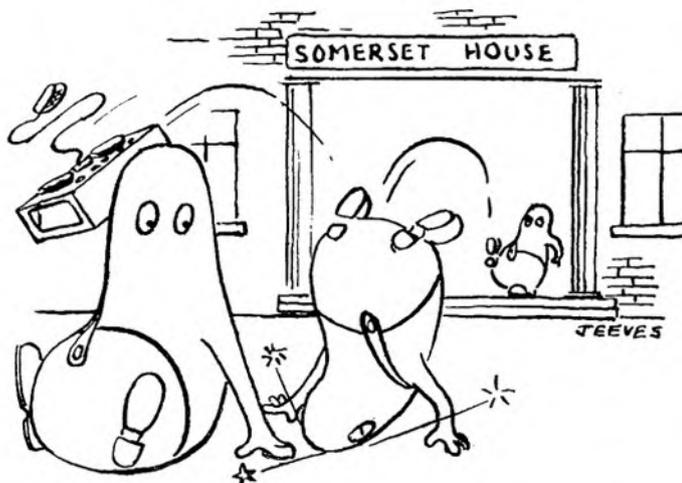
A number of these important developments have not even been mentioned to date in other magazines which claim to cover the tape field.

As for coverage of the Audio Fair, readers of this magazine were given full details of all new models and developments in our two issues in April. Very few of them have yet appeared in other tape journals.

Altogether, *Tape Recording Fortnightly* gave 425 inches of space to the Audio Fair. The other two tape journals together have to date devoted about 150 inches, and most of that space has been used for straight catalogues of exhibitors and their stand numbers.

We hope we may be excused the pride which we take in providing an outstanding service to readers.

## LAUGH WITH JEEVES



"Well, I thought they would have bought a recorder."



The world  
of tape

A NEWS  
ROUND-UP

## TAPE IN THE THEATRE

The splendid new Belgrade Theatre at Coventry is a pioneer in the use of comprehensive tape equipment. It is the first British theatre to use stereo stage effects. Part of the equipment is seen on the right.

The equipment is located in a control room at the rear of the stalls, so that the operator has a clear view of the stage.

During a popular series of "theatre holiday" educational programmes recently, sequences acted by youthful members of the audiences were recorded and played back. Recorded extracts from the performances by members of the resident theatre company are also used for lecture purposes.

Brenell Mark V stereo record-playback rack equipment is used, with a mixer panel. Recordings may be made stereophonically, two-track monaurally, or single-track.



## 70 ministers share tape library

**M**ORE than 70 district ministers of the Methodist Church are now using taped material in their work.

The tapes are supplied by a unique library service started last December by the Rev. John Davis, B.A., of Maple Avenue, Horwich, Bolton, Lancs.

The library provides recorded material for classes and discussion meetings and for special groups such as local preachers and Sunday school teachers. Subject matter already includes "Direct Giving", "St. Paul and the modern world" and "Is the day of the Sunday school over?" and the extent of the library is continually being increased.

Some of the recordings are in the form of talks and others are interviews. In every case the speaker is an authority on his subject and church members in small communities would not otherwise have the opportunity of hearing him.

Typical of the interview type of recording is the one made by a minister talking about his experiences in an Indian leper hospital.

Each of the 70 ministers regularly receiving tapes—for which they pay a nominal charge—administers three churches, so that more than 200 church communities are benefiting from the scheme.

Mr. Davis also uses his tape recorder—a Philips AG.8107—when visiting the house-bound sick and the local hospital of which he is the chaplain. On his domestic visits he takes along recordings of services held in the sick person's own church.

Mr. Davis holds regular 10-minute services in two of the wards of the local hospital and the patients join in the singing of the hymns, recorded on tape by the youth group of his church.

## WEEKLY TAPE NEWSPAPER FOR BLIND

**A** WEEKLY tape newspaper is being produced by an Ilford, Essex, journalist to keep local blind people in touch with events. Mr. Walter Gillings, who is responsible for the idea, explained: "We shall give them a selection of the

latest news from the local papers, supplemented by our own comments and interviews.

"We shall also give them information about other blind groups and any items of special interest."

## WELL DONE, KATIE

**A**NY time you're near Stratbrock Place, in Broxburn, Scotland, take a walk into the Green Tree Tavern and listen to the auld Scots songs—"Afton Water", "Bonnie Lass O' Ballochmyle", "O' a' the Airts"—played on the owner's tape recorder.

A big recording or T.V. star? No, the proprietor will smile and shake his head, and assure you that its local lass, Katie Calder. The strange thing is that Katie does all her singing in bed.

All her life she's been crippled by an accident when a child and then later by polio. Despite this she showed tremendous courage and even went to school at seven on her brother's bike. Then she discovered she had a good voice and sang at concerts, where she had to be carried on to the stage and placed in a chair.

Her brother, Robert, had a little organ specially made so that the keyboard stretches across her legs without touching them and she plays it while singing into her tape recorder.

Everyone in Broxburn believes that if it hadn't been for her handicap, Katie Calder would have been a big stage and T.V. star.

Well done, Katie. We salute you!

# TESTING THE SPEEDS

By W. Patrick Copinger

**I**F you have only one tape recorder you may not have realised that its stated speed may not always be accurate. This is not of any great moment if you do not tapespond or play pre-recorded tapes. In other words, speed differences need not concern you if you only record and play back your tapes on your own one tape recorder.

With two recorders, however, you may notice that a recording made on one machine at  $3\frac{1}{2}$  ips sounds slower or faster when played back on the other machine at the (so-called) same speed. This can happen with two tape recorders from the same manufacturer. Sometimes the difference in speeds is enough to be noticed on a speech recording and, if you are gifted with perfect pitch, Beethoven's Emperor Piano Concerto may suddenly come to you in the key of D major. It is not uncommon for two tape recorders to be as much as a semi-tone out in their speeds.

Unfortunately there is very little you can do about correcting the speed of most tape recorders. The Reflectograph is a

Many domestic recorders show speed variations when carefully tested, and this can be important at times—when preparing synchronised sound tracks for cine or playing tape records, for example

notable exception, as this machine has a variable speed control. If your tape recorder is much used and has not been cleaned regularly, it may have lost speed due to wear and possible dirt in the tape guides. The remedy, of course, is to keep it clean.

It is also possible to alter the speed by changing the size of the capstan or pinch wheel, but this is not to be recommended without reference to the makers. Experimentally one might try wrapping a layer or two of tape round the pinch wheel. Unless this is done very carefully and accurately, however, it may very well introduce wow into the machine.

There may be some satisfaction in knowing how accurate your tape recorder speeds are. There are various ways of calculating the speed, one being the system described in *Tape Recording & Hi-Fi Magazine*, January, 1958, over my signature. I have since found that this system,

using an endless loop of tape with a click recorded on it and counting the clicks, is not entirely accurate, as it does not take into account the drag and pull of the feed and take-up spools.

A more accurate system is to use a measured and marked length of tape and a stop watch. At a speed of  $7\frac{1}{2}$  ips, 37 ft. 6 in. of tape will pass the heads in one minute.

For greater accuracy measure a length of tape 75 ft. long (900 inches). This can be done quite simply with a two-foot rule or tape measure (the latter sounds more appropriate!). Measure from the leader pulling the tape off the feed spool and let fall on the floor as you measure. At the 75 ft. mark stick a piece of white splicing tape about an inch long on the tape and trim off the edges with a razor or non-magnetic scissors.

It is not necessary to use a special tape for this. Use any tape, whether with a

## Stoke-on-Trent celebrates its jubilee with a tape recording



G. M. Thomson, B. Coaling and M. I. S. Redman (left to right), three of the team which made "The Voice of a City"

**A** THIRTY-MINUTE tape documentary of Stoke-on-Trent has been professionally produced to celebrate the jubilee of the city. "The Voice of a City," as it is called, is being played at an Industrial Exhibition in Stoke and copies will go to the Commonwealth and to the United States.

Three miles of tape and three weeks of recording, editing and dubbing, on locations ranging from the Lord Mayor's Parlour to Stoke-on-Trent North signal-box went into the making of this documentary.

It presents a broad cross-section of the city at work and at play and introduces the voices of masters and men whose vision and skill have brought international fame to North Staffordshire.

Potteries and glass-works, an engineering works, the local newspaper, the College of Building, the railway station, the Ceramic City Choir—all these are featured.

The tape is recorded at  $7\frac{1}{2}$  ips and was made with three Ferrograph recording desks, linked with a mixing panel. E.M.I. and Fi-Cord battery portables were also used.

This is believed to be the first specially-commissioned professional sound portrait of an English city.

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

A magazine for radio and recording enthusiasts

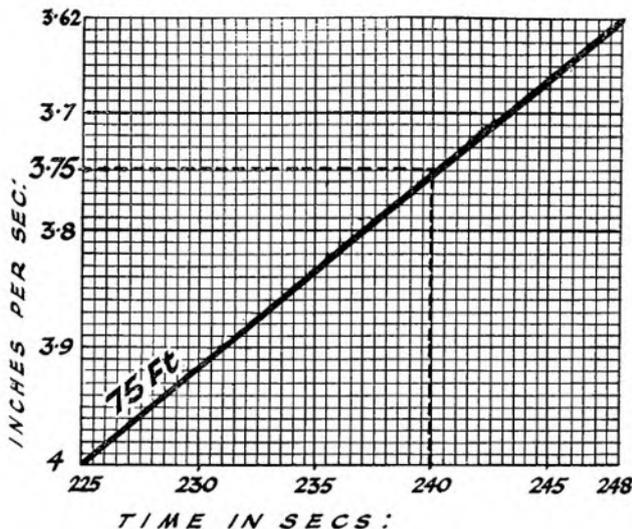
#### **Echo and Reverberation**

*John Borwick describes what these effects are and demonstrates some of the ways to make them.*

#### **Teaching Tape**

*I. W. Jarman gives pupil, Angela Jeffries, the fifth lesson in the series of tape instruction.*

**3 p.m. Sunday, May 22, with a repeat at 6.40 p.m. on Monday, May 30.**



recording on or not, as you do not require to record and it is not necessary to listen to the tape. Your white splicing tape should show up clearly when the tape runs through the machine at  $7\frac{1}{2}$  ips. To get the 75 ft. of tape back on the feed spool simply press the rewind button and guide the tape back on the spool through the fingers.

With the tape recorder warmed up to normal operating conditions (speed may vary from cold to warm) time the run of the tape from the leader to your mark. At  $7\frac{1}{2}$  ips, it should take 120 seconds; or 240 secs. at  $3\frac{3}{4}$  ips.

It is a good plan to do this a few times and to take the average times, as you may find that your timing varies a second or two at the start and finish.

Above is a graph from which it is possible to read off the actual speed as timed to the nearest  $\frac{1}{2}$  sec. and to two decimal points of speed. The graph has been calculated from the usual formula:—

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{e.g. } \frac{900 \text{ in.}}{240 \text{ sec.}} = 3.75 \text{ ips}$$

For checking speed accuracy at  $7\frac{1}{2}$  ips halve the time reading on the graph and double the speed reading. For  $1\frac{3}{4}$  ips, reverse the procedure, i.e., double the time and halve the speed.

## A STROBE TAPE

Readers have sometimes inquired why a speed-test strobe tape is not available on the market. Our inquiries show that such a tape is, in fact, manufactured by one of the major companies, but is only sold for professional use.

It would be quite practicable for strobe tape to be included as a leader to standard recording tape, or as a separate accessory. So far, however, it has been felt its use is of practical value only to those who use professional equipment.

THE EDITOR

## Letter from a Club Secretary

“A test of the speeds of different machines was made, with the aid of a strobe tape used in conjunction with a ciné projector. Of the five machines tested, all were found to be different. I would like to ask the technical advisers if anything can be done to make the standard speeds more accurate among manufacturers. I find it most annoying to find that a tape which has been recorded on one machine, when played back on another, is either too fast or too slow.”

## OR TRY A TALKING CLOCK

By Stanley Jepson

**Y**OU can have a very interesting evening with two tape recorders.

If necessary, co-operate with a friend, which will make it more pleasurable, and the information gained will be useful to both. You need machines with more than one speed.

First try testing the speeds. Record a talking clock for a start. Watching a clock with a large seconds hand, tap your pipe or something similar to record a signal each second, and at ten speak the number. When you come to 30 the initial “th” sound should be dead on the clock hand. As you approach the minute, speak an introductory “5-4-3-2-1-nought,” after the best missile manner! Continue for two minutes.

Now inch the rewind tape along the head, find the places for 0 and, say, 10—and, if you like, 20—and mark them with tiny pieces of jointing tape. By measuring from 0 to 10 you will know whether your recorder is accurate. At  $7\frac{1}{2}$  ips, the distance should be 75 inches.

By placing this tape on the second machine your friend will know about the speed of his machine. It is unlikely that both will be identical to a second, but remember that if you wish to make a dupe cine-film tape for any purpose you can play from A, record on B, then reverse the process from B to A and thus the error is cancelled out. Try this out!

If your recorder is not dead on the  $7\frac{1}{2}$  inches a second, check the pressure bars. Is your felt pad worn and does it need replacing?

Is the capstan turning freely? I have found I can make slight adjustments by winding thin surgical tape about the capstan head, increasing the diameter and making for faster speed.

Next you can test the other speeds

with the talking clock. At 15 ips the two minutes initially recorded should play-back in half the time, of course, with two knocks for each second. At  $3\frac{3}{4}$  ips, it will take four minutes with one knock every two seconds.

By watching the clock while listening you will know if there is any slight variation in speed causing wow (though you can discover this from music recordings, of course) and you can watch for the same defect by having a strobe turned by the tape or on the capstan head.

Sometimes you may get a tape from a friend recorded at  $1\frac{3}{8}$  inches. Don't worry if your machine does not have this speed. Play at  $3\frac{3}{4}$  and record on a second machine at 15 inches, thus expanding it x 4. The music will sound terrible, but don't worry; it will come out all right when “unscrambled!”

Play it on  $7\frac{1}{2}$  speed and see—for this is  $1\frac{3}{8} \times 4$ .

You can do the opposite if you want to send something to a friend to play at  $1\frac{3}{8}$ , which makes for great economy in postage and tape—and for distortion in some music! Having made your recording at say  $3\frac{3}{4}$  play on a machine at 15 and record at  $7\frac{1}{2}$ . It will sound like Mickey Mouse gone mad but don't let that worry you! The final result should be O.K. if your speeds are correct; it is here that the value of testing comes in.

I have a Gramdeck placed on an old-fashioned gramophone with sliding speed control and this I find gives me from three to about nine inches a second.

If you have no 15 ips machine you can still make that  $1\frac{3}{8}$  tape in two stages. Dub the wanted tape from  $7\frac{1}{2}$  to  $3\frac{3}{4}$  and then repeat the process with the resultant tape, and this final dub will play at  $1\frac{3}{8}$ —if your speeds are relatively correct, i.e. one half of the other.

# TELEDEC CHOOSE FOUR-TRACK 3 $\frac{3}{4}$ IPS

## FOR TAPE RECORDS

**A** NEW move in the struggle to establish standards for stereo tapes is to be made next month. From Germany will come a repertoire of four-track stereo issues for play-back at 3 $\frac{3}{4}$  ips. They are to be marketed by Teledec, one of the biggest Continental concerns.

Teledec is associated with Telefunken and the first hint of the new move came in the lecture delivered by H. K. F. Juncke, of Telefunken, who came to London from Hamburg to lecture at the Audio Convention organised by the British Sound Recording Association.

The new system obviously challenges the Ampex-United Stereo Tapes decision to standardise on four-track 7 $\frac{1}{2}$  ips and may have an influence on British concerns which are deciding their future policy.

Herr Juncke gave some interesting information about the techniques of copying tape records. This is now done by copying all four tracks simultaneously—two of them in the normal way, the other two backwards—at four-fold speed. That is to say, tapes for replay at 3 $\frac{3}{4}$  ips are copied at a speed of 15 ips.

He declared that the biggest problems of quality maintenance arose in the recording process, not in reproduction. In America a technique had been evolved using special heads for recording the bass and high frequencies respectively.

### Tape Pioneers

Herr Juncke delivered an interesting account of the history and development of tape recording. The unique pioneering efforts of the Telefunken technicians are, of course, widely known and the lecturer reminded us that "magnetic tape recording was not known outside Germany during the war—it was only taken up by the United States and Great Britain and other countries after the war, after the papers of this system had been discovered."

Touching upon probable future developments, including video-recording, speed measurement and machine tool control, Herr Juncke described new equipment recently supplied by Telefunken to the Bavarian TV studios which uses perforations in a magnetic film *electrically*, instead of mechanically. A photo-electric eye is activated by the perforations.

"I feel that these developments are by no means at an end," Herr Juncke said. "Whatever the further improvements may be, let us hope that they will help to make life easier, more beautiful and more comfortable."

There were some amusing anecdotes in his narrative of the history of magnetic tape technology.

He referred, for example, to the bodily danger to those who stood by some of the early recorders, with their big drums of heavy steel tape. There were occasions when the tape broke and life and limb were in peril.

He told, too, of the accidental nature of a discovery by German engineers in 1940 which opened up the way for the high-quality recorders of today.

Until then DC bias and erase had been used. A breakdown of equipment in a German radio studio, however, suddenly produced "a very clear recording of unknown quality and unknown dynamic."

The investigation that followed led to high-frequency erasing and biasing for the first time.

Herr Juncke began his story with Edison's first success in recording and reproducing the human voice in 1877. He mentioned Valdemar Poulsen's "Telegraphon" of 1891, using wire, pointing out that its reproduction was weak and development was inevitably held up by the absence of amplifier valves.

The development of tape recording in the sense we understand it today began in Germany in 1930 and the work was soon concentrated in the A.E.G. (German General Electric) concern.

The first tapes were made of paper, coated with magnetic oxide, but cellulose acetate and polyvinyl chloride bases were not far behind. I. G. Farbenindustrie worked closely with A.E.G. in the development of the tapes and by 1935 machine and recording medium had taken the form which is now familiar to us.

All the basic principles were worked out—speed control by a capstan and pinch wheel, stable tape tension, braking, suitable heads (the present type were first invented by an engineer who is still working for Telefunken).

The first magnetic tape recorder shown to the public was the "Magnetophon," in 1935, at the Berlin Radio Exhibition.

In 1954 development work was taken over from A.E.G. by Telefunken, a daughter firm.

Even before that it had been realised that there was a need for something less expensive than the big professional recorders and Telefunken produced, first a recorder using two motors, and later a single-motor model. In the early 'fifties, too, the first half-track recorder was produced; it also featured a combined record/playback head.

In the early days, the half-track recorders handled the lower track first,

as the present standard of upper track left-to-right transport was not established until a Philadelphia conference in 1954.

The first Telefunken two-speed recorder appeared in 1950, and the first small domestic recorder was shown to the public in 1951.

Other lectures delivered at the B.S.R.A. Convention were on the history of stereophony, the new Mullard system of stereo radio, and the development of microphones.

### History of Stereo

Mr. Peter Ford, Honorary Librarian of the B.S.R.A., covered the first of these subjects in a very comprehensive survey.

He began with the earliest telephonic, cylindrical and disc efforts before the turn of the century, showing how early the idea of stereophonic reproduction occurred to ingenious minds. Quite early in this century, he recalled, it was possible to buy discs with alternate tracks carrying different tunes.

But the big breakthrough was in 1931, when Blumlein cut two surfaces at right angles to one another in each groove—basically the system now in use.

Other important experiments followed in the United States and in Holland, and then came the war.

Immediately it ended, E.M.I. were securing new patents for a system which gave very effective channel separation.

Mr. Ford described cutting techniques in some detail and mentioned that a patent has been issued for a new technique which uses a 90° angle at the bottom of the groove, but varying to from 60° to 80° at the top, so getting more recorded material on to the disc.

Two-channel recorded tape—it was quarter-inch steel—was first seen at the New York World's Fair in 1939.

The first attempt to keep true sound perspective was by the Bell Telephone Laboratories in 1941, when they made three-channel stereo sound-track for film.

In 1944 the German radio technicians used staggered half-track heads for a stereo tape recording of an orchestral performance.

Two and three-channel stacked heads first began to appear about seven years ago.

Mr. Ford wound up with the observation that stereo techniques had evolved over a period of 80 years, not the work of any one man, organisation, nation or continent. "We have a challenge, an opportunity and a heritage," he said. "It is to be hoped that we shall prove worthy of it."

**R.D.B.**



# TAPE IN THE SCHOOLS

WHO was the first teacher to use a wire or tape recorder in the classroom? This was one of the many thoughts which the three excellent articles by Gordon Pemberton in this magazine recently prompted in my mind. I imagine that several people might lay claim to this, and I shall be pleased to hear from them or about them. Certainly, the first one must have been used at least ten years ago, and it would be interesting to fill in that piece of history.

And yet it is strange that no consistent attempt has been made so far to give a regular news service about the use of tape in schools. This feature hopes to fill that gap. In it I shall pass on items of interest from schools, and there will be reviews of books likely to be of particular interest to tape enthusiasts who are connected in any way with teaching.

I have contended for some time that teachers should pool their knowledge and resources. They need to meet and discuss ways in which they can be of help to each other, to share experiences and problems, and to organise training courses.

THESE THOUGHTS HAD OCCURRED to me when I was the Assistant Speech and Drama Adviser in Kent a few years back and saw tape recorders lying idle in schools. It was with the idea of doing something about it that I organised the national tape recording courses at the **Rose Bruford Training College**, in Kent.

We have just held our third, and once more there has been a wonderful response from people eager to learn more—not

**GEOFFREY HODSON** edits this feature, which is to appear at regular intervals. He has organised and directed the national tape recording courses at the **Rose Bruford Training College**, which have proved particularly popular with schoolteachers.

Mr. Hodson was born in Eccles in 1923, produced his first closed-circuit radio programmes while a radio officer in the Merchant Navy during the war, and trained at R.A.D.A. after his demob.

After some years as a professional actor, including a spell with the **B.B.C. Drama Repertory Company**, he became interested in teaching and went to the **Rose Bruford College of Speech and Drama**. His duties as a tutor there include instruction in radio acting and production.

only inexperienced teachers and others, but some with a fair amount of knowledge and experience.

There is evidence that more local courses and meetings are being held. For instance, in **Kent** last January, Miss Daphne Oram gave a one-day lecture and demonstration to teachers from all over the county, at the Music Centre in Maidstone. Over seventy teachers attended, and many more had to be disappointed. Miss Oram (who was featured in an article in the last issue) is an excellent example of how the professional can help the amateur. Kent teachers hope to have other courses with her in the future.

A SECOND MEETING IN KENT earlier this year was held at **Tonbridge**. Four teachers from local schools put forward their ideas and experience, not in any way as "authorities," but to provoke discussion. Mr. Peters, the headmaster of **Cage Green County Primary School**,

and his assistant, Mr. Machen, said that the tape recorder was a luxury item to them and they gave priority to Visual Aids. They then took us through an imaginary day at their school, however, illustrating the variety of uses to which they put their machine.

One excellent idea—new to me, anyway—was its use for training the choir to sing descants. They practised with a recording of the whole Assembly singing the hymn and so gained considerable confidence for actual services. I hope to return to the other ideas which came out of this meeting in a future issue.

THE WILLESDEN TEACHERS' Visual Aids Committee is another group which has felt that the tape recorder is not yet sufficiently recognised as an invaluable teaching aid. John Carr reports that some twenty Willesden teachers attended a meeting on a cold February evening to discuss the possibilities of this instrument in the classroom, but that a far wider interest exists than a mere mechanical counting of heads would indicate.

And a most interesting and stimulating evening it proved to be. The main credit for this success must be accorded to Mr. John Amphlett, Chairman of the Federation of British Tape Recording Clubs, who braved a long journey across London to relate his own experiments and triumphs in tape recording as a teaching technique. The Willesden Committee are now planning a short course in the practical uses of the tape recorder, and they hope this will attract an even greater number of enthusiasts and potential enthusiasts.

TWENTY-ONE TEACHERS and educationalists from thirteen overseas countries attended a nine-day course organised by the **Oversea Visual Aids Centre** earlier this year, which included a lecture on tape recorders and the use of recorded material for teaching purposes given by a member of the **School Broadcasting Council**.

These examples give adequate proof of the increasing interest in the use of tape in schools.

## REQUIRED READING

"Broadcasting with Children," by Kenneth Methold (University of London Press). 9s. 6d.

To the best of my knowledge, this is the first book to be published by a schoolteacher dealing practically exclusively with the use of tape in schools. And Mr. Methold deserves to be read with respect, because he has tried out a variety of techniques and ideas, and he has put down very fair reports of his work which are of great interest and use to other teachers.

He is very level-headed in his comparison of professional and amateur work making a clear distinction between the two, but indicating where the amateur has something to contribute which could be better than the professional's contribution in schools.

The chapter called "A Broadcasting Club" outlines the development of his work from the early botch beginnings to the variety of projects he eventually introduced into the class-

rooms. I found it most interesting to discover that his development closely paralleled that of a colleague of mine in Kent, Mr. Graham Jones, who has been working for approximately the same time. One of the values of this chapter is that he illustrates points with scripts used in school.

Much of the work attempted has been derivative of B.B.C. programmes which give scope for the whole class joining in creatively. For instance, "The Eyewitness" gives the children exercises in writing detailed reports and descriptions. All the children have to prepare short scripts, and, as a further exercise in selection and editorial judgment, the brighter children also act as producers.

The technical side of producing tape programmes in schools is clearly presented and should encourage the newcomer. The more experienced hands will probably make their own reservations.

Altogether this is an admirable book which I can safely recommend.

# Letters to the Editor

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## Continental equipment

**Y**OUR correspondent Mrs. Paola Meekins (April 20 issue) holds our club to task primarily, it would seem, because a large number of our members prefer continental equipment.

I would ask Mrs. Meekins to bear in mind that the E.T.E.S.S.A. club is one of the largest in Britain. It stands to reason therefore that a large variety of recorders will be in use.

But the basic fact that there is a preponderance of foreign machines is due to British manufacturers' inability to produce a "quality" tape recorder capable of sustained usage and high quality performance. Until there appears on the market a model reasonably priced having the above qualities, the enthusiast will turn to West Germany and Holland for equipment that is an example of first-class workmanship.

Mrs. Meekins obviously speaks from a lack of technical "know how" on the subject. Tape recording is rapidly assuming international proportions; small wonder that the best in that field is always chosen.

I would hasten to assure your correspondent that our members are fully aware of Britain's contribution to the world's markets in many fields, and look to the day when a British recorder will meet all the standards required today.

To conclude, I hasten to add that we know our National Anthem and respect our national flag deeply, but bear in mind that perfection is the prerogative of many nations, not just one.

A. C. A. HOWARD

Chairman,  
E.T.E.S.S.A. Tape Recording Club.

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## TAPING HISTORY

**I** SEE in the March 9 issue of *Tape Recording Magazine* that Mr. Magnus has taken a recording of the last tram in Leeds. It may interest readers to know that I recorded the opening ceremony of Conway's new bridge on December 13, 1958.

My equipment was situated on the bridge, below the level of the road, with a microphone on the dais. I used two recorders, an Elizabethan 56 and a Walter 303, with a 250-foot microphone lead, the microphone feeding both recorders.

Copies of the tape were accepted by both the Conway Borough Council and the Caernarvon County Council.

J. W. BEVAN EVANS

Conway.

## RECORDING IN THE TROPICS

**Y**OUR editorial contains excellent technical reviews of current tape recorders available on the British market. As a tape enthusiast of some years standing I am writing to suggest that you open a correspondence from readers regarding working conditions of recorders they possess. Not only will this give other readers an insight into operating difficulties, but also lead to a fuller working assessment for the prospective buyer of a new tape recorder.

I am the proud possessor of a Grundig TK830/3D. This I purchased in October, 1958. It has been in use for an average of four hours playing time daily and has been operated in tropical conditions. As it is used at sea on a Merchant Navy vessel, my go-between for A.C. current is a Valradio Vibrator Converter 220 D.C./220-240 A.C., 150 watts output.

Working in the tropics, I expected trouble with the pulley belts. Happily, I have only been obliged to change these once, although I understand that others have not been so fortunate.

The manufacturers' assessment of maximum consumption is under-rated. This is the reason that my converter has an output of 150 watts. It is required for "fast re-wind."

I have experienced tracking trouble with some U.S.A. and continental pre-recorded tapes, but following a recent overhaul of my machine and renewal of guides this has been overcome. Grundig guides, I am given to understand, are made to a very close tolerance.

Twice the same mechanical trouble has occurred. This has been the "stop" control going out of order.

On a recent overhaul by Grundig's the pressure pads and roller have been renewed. Once again, in view of working conditions in the tropics, this does not appear to be undue wear for materials of this nature.

Recently, I noticed a falling off in frequency and volume on track two. This has been put to rights by the manufacturers by a renewal of the head.

With regard to the life of tapes under damp tropical conditions, I am not so happy. Certain U.S.A. tapes tend to get brittle but are free from curl. Grundig's tapes P.M. 15 and T. 3 have curled badly. BASF, Gevaert, Philips, Emitape and Scotch have stood the test very well.

All my tapes are kept in airtight containers with polythene inner bags. I might add that I bought a pre-recorded Columbia tape in Singapore which was covered in fungus. As the tape end was sealed there was no room for the fungus to have settled on the oxide inner surface and I found nothing wrong with it. I do suggest, however, that export tapes should be despatched in sealed containers.

To return once again to the recorder mechanism, the fast wind does not cope happily with 1,800 feet spools. This is slow, and sometimes cannot complete the wind to the end.

I have tried to sum up my experience with this machine, operating under conditions such as I have stated. All in all, I have little to complain about and I hope that what I have stated will be of interest and help to other tape recorder owners.

H. J. CUBITT.

London, W.13.

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## Two odd experiences

**M**AY I relate two experiences which may be of interest? Recently I took my portable recorder into some woods not far from here and on a *high point* of the countryside. The microphone was hung on a branch of a tree about six feet above ground, and the recorder allowed to run for nearly the full length of a 5-inch LP tape.

At the beginning of the tape a brief recording of some sheep had been made at a different location a few minutes earlier.

Now this was virgin tape and so you can imagine I was rather surprised when I listened to my recording later that evening and heard a man's voice mixed up with the bird songs. It was not very distinct, but I thought I could recognise it.

On checking the *Radio Times*, my suspicion was confirmed—it was artist Adrian Hill talking on BBC TV Children's Hour. When I allowed the tape to run on, I heard the Midland TV News and there then followed the unmistakable tune introducing "Gardening Club"—all mixed up with the birds!

The point at which the recording was made was some 15 miles from, and within viewing distance of, the BBC transmitter at Sutton Coldfield. Evidently the microphone lead acted as an aerial. The short earlier recording was not affected.

The other experience occurred last summer and concerned a young jackdaw. This bird was evidently being taught to speak by somebody in the neighbourhood. It got into the habit of coming along and sitting on the top of the kitchen window frame when it was open, particularly when my wife was in the kitchen, and it was persistently saying "Hello" to her.

After this had occurred several times, I made a recording of his "talk" and was ready when he came again next day.

Through a speaker unit in the kitchen I replayed the recording. Never have I seen such an astonished bird! There he was on top of the open window, bending as low as he dared to poke his head into the kitchen to find out where his voice was coming from.

RICHARD MARGOSCHIS

Atherstone, Warks.

# Sound Effects

ALAN EDWARD BEEBY, who has had long experience in devising and recording sound effects, continues his regular column of advice.

*If there is an effect you want, and which is causing difficulty, write to him for guidance.*

THE Sound Effects series has now been running for six months and a reader writes to remind me that I have not yet dealt with the subject of the Sound Effect Man, his Studio and Equipment.

Let's take the Man and the Job first of all. Every tape recording society or club should, in my opinion, appoint one person to be in complete control of the Effects Department, with an assistant. Other members may, of course, contribute towards the locating of various items of equipment that may be needed, but this is as far as it should be allowed to go.

I know that quite a number of clubs operate on the "let's all have a bash" principle but, in my experience, this does not make for the best results. It's rather like a play, the interpretation of which has suffered (literally) at the hands of two dozen enthusiastic but inexperienced producers!

"Effects" is a specialised department; it always has been and it always will be. Take my tip, and keep it that way.

Now, the Effects Studio. I find there's often a great deal of unnecessary worrying over the question of "sound proofing," "deadening" or "insulating," and that sort of thing. Personally, I've used a converted rear-bedroom with bare, distempered walls for the past six years without experiencing a scrap of trouble in this direction.

Use a good quality linoleum or rubberised tile for the floor, with a cork underlay. This stuff will take some pretty hard wear; cheap material will tear easily and cause accidents.

The accompanying diagram shows how my own studio is laid out. As you enter, the opposite, far, wall has a window; beneath this is my writing-desk with a standard-lamp set to the left. By the right wall, one recorder is rack-mounted and sided by the record-player. The desk is extended a few feet further to accommodate a second recorder (free-standing) for dubbing purposes.

The rear wall holds the "rough" work-bench. On its tough, hardboard surface, most of my table-top effects are devised. Below is a cupboard which houses books, magazines, records and tapes. Above, a wall-mounted pegboard panel carries tools, etc. The bench itself is fitted with castors to enable it to be wheeled within easy reach of the recording-desk when required.

The left wall has a small water-tank fitted with an outlet pipe. There is no tap, the tank being filled by hand. Next to this is a large store cupboard in which the various effect-producing items are kept.

These items should be as small as possible. It's surprising how many people imagine that large and unwieldy pieces of equipment are needed to produce even the most simple effects. For example: the sound of a heavy iron girder being dropped can be imitated quite well by bouncing an ordinary dessert-spoon on the floor and recording this at double speed.

You'll find that one or two squares of silk are useful for use as "mufflers." Drawn tightly across the mouth of half a coconut-shell, they will change the sound of hoof-beats on a roadway to a "turf" surface most effectively.

In the "bell" department, assorted lengths of brass tubing sounded in tuned sequence make ideal "church bells." Use a wooden mallet to strike these; an ordinary hammer will either dent them or distort the tone-value.

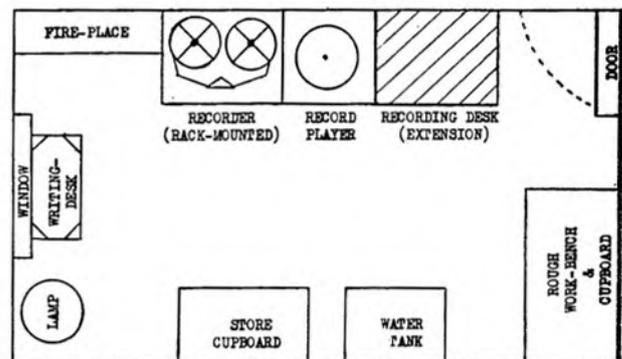
Two more bells, a "twist" type door bell and an electric model can be mounted on an empty cigar box with the battery concealed inside. Telephone bells which have that peculiar "B-r-r-r" sound can be reproduced by placing the hand on the dome of the bell. The ring of an alarm clock played at half-speed makes a good fire-alarm.

Another indispensable item is the "door-box." This is a wooden box measuring about two feet square, the four sides being hinged in the form of miniature doors, each one having a different latching device. I suggest an old-fashioned thumb-latch; a modern, slick-sounding mortise-latch; a squeaky door-knob type and a small, ball-and-socket click-catch.

Any of these "doors" can be made to creak simply by rubbing a little resin on the lower edge and on the "floor." The two surfaces must, of course, meet to produce the creak, but a fairly heavy hand-pressure on top of the box will normally do the trick.

By the way, fit a *real* door-knocker on the inside of one of the doors; there's no substitute for it in my opinion—try it and see for yourself!

A blank-cartridge revolver is useful, too. I use a .45 calibre gun for which, incidentally, a police certificate is necessary. When recording the report in a small room, you'll get the best result if you "screen" the gun itself by firing it into a large cardboard carton with the barrel held below the level of the rim. (See also "The Sound-block Problem." May 4th issue.)



Mechanically-operated devices used to produce a sustained machinery noise or a rumbling effect need a rather lengthy explanation and I shall deal with these items in a later article when we shall be taking a look at some more useful pieces of sound effect equipment.

Meanwhile, I want to answer a query from another reader who asks for my views on "spot" effects. This refers to the practice of operating sound effects "on-the-spot" whilst the actual subject-work is being recorded.

I do not like this method; it has too much of the hit-or-miss flavour about it. Not only do the effects have to be operated dead on cue, they must also be perfect first time. If they're not, it means an irritating session of repeated "back-peddalling" with the pre-cue section having to be recorded over and over again until the effect is placed properly.

My preference is for the effect to be recorded on to a separate tape beforehand and then dubbed into its correct place at the precise moment. I've heard this called the "lazy man's way." For my money, it is also the *best* way!

In a fortnight's time, I shall be inviting you to join me in an Echo-to-Voice experiment. After that, I'm hoping to get a week's holiday and my wife will be taking over for an issue. The Editor wouldn't listen, you see. . . .!

## British Amateur Tape Recording Contest 1960

We have sent out already fifty per cent more entry forms for the British Amateur Tape Recording Contest this year than in any previous year, and a record entry is assured. The first tapes have, in fact, already arrived.

But there is still time for those who have yet to begin work on a tape. The closing date is July 1. If you have not yet written for your copy of the conditions and entry form, do so now. The address is 7, Tudor Street, London, E.C.4.

There are categories in the Contest catering for every conceivable type of tape, including features produced by Club and School groups.

No matter how much of a beginner at tape recording you may consider yourself, you have a chance of a prize. The results in previous years show that newcomers to the field can produce outstandingly good tapes.

An exciting programme is being arranged for Saturday, August 27, when the prizes will be presented at a special celebration at the Radio Show at Earls Court.

Full details will be announced shortly.

## THERE'S SCOPE FOR THE TEEN-AGERS

*A semi-humorous account by NIGEL REES of the way he made a "highly-commended" entry in last year's contest. Mr. Rees was also highly-commended for an entry in the 1958 contest. He is sixteen.*



AN American tape recording magazine regularly advertises "All about tape on tape"—described as the world's first *tape book*. My entry in last year's British Amateur Tape Recording Contest, which was highly commended, was called "All about tripe on tape," and is presumably the world's first gutter press on tape.

When I first conceived the idea of the tape over a year ago, its purpose was to have a light-hearted dig at the whole business of recording.

We started off with a programme named after the well-known "Sound" series on Network Three, introduced by an announcement that there would be a tuning signal for listeners to check their equipment. One of a host of unidentified voices which continually cropped up on the tape then interrupted: "What about copyright?" and "What about the rest of the programme?"

The tuning signal, when it came, conveniently ruined the studio equipment, which was just as well, for it helped to explain the necessarily poor quality of the rest of my programme!

After that, we were saddled for the rest of the tape with a fruity-voiced gent who kept observing "I've come to mend the equipment" or "Oops, there goes my soldering iron."

There was a moment when the entry looked like being "All about tape on tripe." I edited the tape into 144 sections and it looked at the time rather like 60 yards of tripe.

I worked in a few notes on the history of sound recording, and some examples of early recordings played through an elliptical bass-reflex ear-trumpet.

Then there was a discussion of tape recording as a "creative medium," the typical man-in-the-street's view being collected from a chap in the street while he was laying slabs of Music Concrete.

A recording of a grand piano, sounding rather like a barrel-organ, was neatly presented as an example of "bad recordings of good material," and it was not difficult to follow up with an example of a good recording of bad material—that well-known phrase: "I'm in the same boat, ah-ah, I don't know what to say either, ah-ah."

The tape ended with my return to the asylum from which I had come.

All this, in a nutshell, is why my entry was only *highly commended*. If, by now, you feel you'd like to hear the recording, send a tape recorder, sixty yards of unspliced tripe, and a S.A.E., and I will gladly cook you a copy.

To be serious, though, the programme taught me three things:

1. Do not have a complicated script. My repetitive telephone interruption called for a splice every five seconds.

2. Don't have any assistants—unless you want to drive them round the bend; but a good studio audience is helpful.

3. Complete the contest tape and then leave it to cool for a month. After that interval, you will be able to judge it almost as objectively as a stranger.

## THE KING AND I

"What's in the mail?" asked Bill, my husband, stifling a yawn over breakfast.

"Two bills and an invitation," I told him.

He groaned. "Who has invited us to what?"

"Your old friend Charlie," I replied. "Another of his fabulous fancy dress do's. On the 27th."

Bill's face lit up. "Whom shall we dress up as this time? Let's see if we can do something sensational."

I looked thoughtful for a moment. "I could always go as Lady Godiva."

"No-o," he said, seriously, "it wouldn't work—we haven't got a horse.

"I was thinking though—couldn't we work our tape recorder into the act somewhere? These days you need a gimmick."

"You mean we should go as a couple of tape-worms?"

Ignoring this, Bill explained, "It's only a hazy idea yet, but if we can conceal the recorder somewhere, and craftily play back a pre-recorded piece just as we make an entrance, that should knock them cold."

"And us, too—the recorder can't weigh any more than five or six stones."

"Mm—of course, it's a bit on the bulky side. But we'll think of something."

And think of something he did. He borrowed a tiny transistorised tape-recorder.

Charlie's fancy-dress parties were swell affairs, taken seriously by all who attended, if only because Charlie offered a fairly expensive gift to the couple with the cleverest costume idea.

We decided that Bill would go as King Henry VIII, and I would don the costume of the hapless and headless Anne Boleyn. We planned to rent a head of plastic, and plant the tape recorder inside, so that when I swept into the party, with my head in my hands, a flick would set the recorder in motion.

Obtaining the costumes wasn't too difficult, but we had a little trouble with the head. Finally we took the portable recorder and built a head around it.

The next day we staggered, resplendent in our costumes, to our pre-war sports car. Our dog, Napoleon, wasn't deceived. He sniffed off-handedly, looked us over with an expression of boredom, and trundled behind us to the garage. We pushed him into the rear seat alongside the plastic head, and he fell asleep immediately.

For Bill, his costume strongly padded to resemble the portly Henry, driving wasn't too easy. The beard didn't help either.

# THEY TOOK A RECORDER TO A FANCY DRESS PARTY

Jean Rogers relates an amusing tale, which she entitles

## THE KING AND I



My vision was restricted to two pinholes in the neck of my costume. I felt as though I had completely lost my head!

When we were about three miles from our destination, in the middle of bleak moorland, the engine spluttered and the car rolled to a halt. Bill tried to re-start it, but nothing happened.

I popped my head out through the gaping neck of my costume. "You're wasting your time, I'm a married woman."

"Oh, be quiet," Bill snarled, "this is no time for jokes."

"All right, all right, you don't have to snap my head off."

He got out and examined the engine. After a few moments, he banged the bonnet down and stepped over to my window. "No sign of life anywhere. We'll have to walk it!"

"Oh no, Bill Rogers. If there is one thing I will not do, that is walk a step in this ridiculous costume, and that's final!"

"Well, take it off," he said with a leer.

"Very funny! Very funny!" I said with anger. "I suppose—"

The sound of a bell interrupted us, and we swung round to see the local

constable on his push-bike bearing down on us. Saved! I let out a sigh and sank back into my costume again.

"Well, well, well," said the long arm of the law, eyeing us suspiciously, "what have we here?"

A policeman should be prepared for anything, but I doubt if the Police Manual contained a paragraph designed to cover this situation.

Bill and the policeman looked at me—the policeman with stupefied incredulity. I crouched down and eyed them through my peep holes.

The constable turned to Bill. "May I see your driving licence, please?" Bill handed it over, and the policeman scrutinised it carefully. It would have served him right if it had been made out to "King Henry VIII."

Napoleon must have been having one of his doggy dreams and chose that moment to growl in his sleep. The constable's eyes switched to him, his mouth agape.

"His name is Napoleon," Bill said, with a very straight face. "Perhaps you'd like to see his licence, too?" and began searching his wallet.

I wasn't going to be left out of this.

"He's even got a licence for me. I'm his wife." I nearly added, "Anne Boleyn, you know."

The policeman didn't appreciate our sense of humour, and was going very red in the face when Napoleon gave a lurch and tumbled off the seat, knocking against the plastic head.

The movement was enough to set the tape recorder in action. From the bodyless head of Anne came a deep commanding voice, "Pray silence for their Majesties, King Henry the Eighth and Queen Anne."

Bill and I scrambled over to the back seat in an effort to silence the recorder, but not before my off-key voice had rendered:

*"With her head tucked underneath her arm,*

*She waaaaalks the Bloody Tower,  
With her head tuck—"*

Bill switched it off, but things had gone too far. I closed my eyes and groaned, with visions of being charged with everything in the book, including the use of obscene language.

No one spoke for a long time. Then the constable, with his little black book at the ready and pencil poised, delivered what must be the understatement of the year. "I think," he said slowly, "I'm due some sort of explanation?"

About an hour later the whole affair was cleared up, including our car, which turned out to have nothing more seriously wrong than a faulty high tension lead.

Cold, tired and not feeling the part, we continued our journey in silence. I would gladly have thrown the plastic head, complete with recorder, into a deep ravine and gone home, but Bill insisted that we see it through to the bitter end.

As we swept into our entrance at Charlie's, I resolved that there would be changes in the Rogers' household—the recorder had to go. I had had enough!

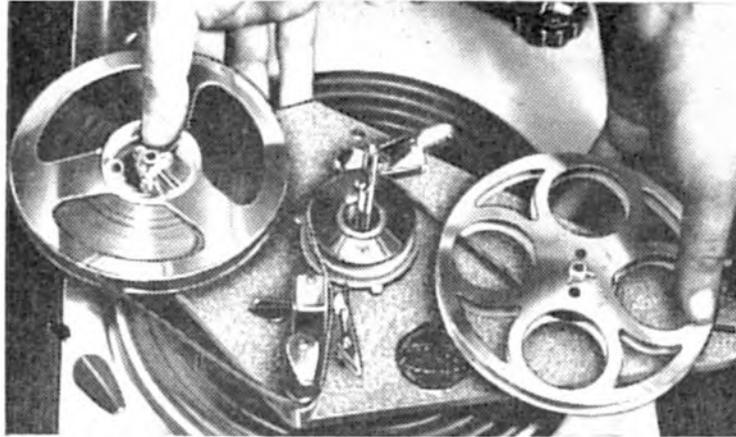
As in some nightmare amateur theatricals, we went into our act; more by luck than anything else, I pressed the button at the right time.

The effect was sensational. Without dissent, we were awarded the Prize.

Charlie had selected as his prize that year a tiny transistorised tape recorder.

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SAYS

**TED  
HEATH**

*"Far better than anything  
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"Do let us keep this search for quality within the bounds of reason . . .

"Let us not under-estimate the extraordinary high quality

that can easily be attained on a modern, cheap, domestic recorder."

**A**FTER buying my first tape recorder I had to make an immediate choice between three different types of microphone, as none was included in the purchase price of the machine. The instruments offered varied in price from five to fifteen guineas. On being assured by the salesman that speech would be as intelligible on the cheaper as on the most expensive, and that the only difference between them was in the degree of the quality of their reproduction, I cheerfully parted with my fiver, making some cutting remarks about the mentality of those prepared to pay three times that price to acquire something of absolutely no account.

What does quality matter? So long as my voice sounds like me and so long as the noises made in front of that mystic disc of wire gauze are registered on the tape for subsequent reproduction through the speakers, I am satisfied. Delighted, in fact. *I was satisfied; I was delighted.*

### From one extreme to another

That purchase took place just three years ago. Today I own, on the latest count, no fewer than eight microphones, and I would regard the purchase of a Neumann condenser instrument, at whatever fabulous price is asked for it, as a good investment which regrettably I cannot afford. In the relatively short space of thirty-six months, I have completely reversed my opinions and have moved from one extreme point of view to take up a position with or near the vanguard of the fanatics.

This transition has been paralleled by a similar metamorphosis in my wife, who, from a frightened distrust of the simplest mechanical thing, has come to be known as "The Girl with the Fi-Cord," from her habit of carrying one of these admirable little machines slung over her shoulder wherever she goes.

Our lounge screams to the highest audible limits of the highest high fidelity we can afford, while in a sound-proofed room set apart as a recording studio we thrust those elusive top frequencies down the gullets of sullen, unresponsive microphones in a futile attempt to achieve the impossible. From countless books and magazines, we are assailed on all sides as the manufacturers fire their broadsides of publicity, while the shrapnel shower of promises of even better things for ever-so-slightly more money sends us impoverished, innocent readers cowering away to hide our bewildered heads in shame, and to wonder why we ever started on this crazy chase up the audio spectrum.

# WE HAVE BEEN SPOILED

SAYS DENYS G. KILLICK

In brief interludes of comparative sanity, we ask ourselves, "Is it worth it?"

A few days ago, in a somewhat dejected mood, I sat down and listened again to one of my earliest recordings. It was a short drama for three voices. The technique employed was simplicity itself. That very first five-guinea microphone, the only one I had, was placed in the centre of a coffee table in the lounge, while we three "actors" sat as nearly in front as we could comfortably get and read our scripts, blissfully unaware of the noises off rising in profusion from the street below as the recording level on the machine looked after itself from somewhere behind us.

The quality of that recording was shocking. But even through that appalling reproduction could still be sensed the spontaneous enjoyment and excitement felt at the time by we who took part, and I sadly wondered what the result would be if I recorded that play again. Technically it would be far superior, but in this search for better and still better quality, would we have lost that vital human element of careless rapture which shines through the cacophony of the early production?

### Contradiction

Only last night I had an experience which made me think again on this question of quality. A friend of mine, a pianist of some distinction, asked me to play for him a recording I had taken of his own broadcast performance of a piano concerto given during the promenade concerts last season. Having heard the tape frequently myself, I was much more interested in his reactions to his own music than to listening myself, and within the first few minutes I could see from the look on his face that something was wrong.

"Can you give it more bass?" he asked.

Obligingly, I twiddled the knobs until he indicated that I had found a level of which he approved. Most of my precious top had gone. The quality now delighted him. The sound was very close indeed

to the sound he had originally heard as he sat at the piano on the platform, yet my amplifier controls were set to give a far from level response at the speaker, and I groaned to myself as I considered the implications.

Here was one of the most highly trained ears in the country flatly contradicting the jargon of the so-called experts. He did not attempt to explain it, but dismissed the whole thing with a shrug, saying "It sounds better this way."

There is an old story of an engineer from the B.B.C. extolling the virtues of the condenser microphone, and, after proving mathematically and at great length its superiority over all other available instruments, he is supposed to have concluded by saying "But we always use a ribbon microphone for speech—because it sounds better!"

### Keep it within reason

So where do we go from here? Does quality matter? Of course it does. Quality matters a great deal. But do let us keep this search for quality within the bounds of reason, and, what is even more important, let us not on any account permit ourselves to underestimate the extraordinarily high quality that can easily be attained on a modern, cheap, domestic tape recorder.

The great danger today is that the amateur will read in magazines and journals of so many wondrous and desirable things that, by comparison, his own twenty-six guinea machine will appear so insignificant and inadequate as to make serious tape recording out of the question. After the first flush of enthusiasm his machine is allowed to gather the dust of the years, condemned to neglect, not because of its own shortcomings, but because of the failure of its owner to appreciate the true value of his possession.

Value here has nothing whatever to do with price. Little more than a genera-

*(Continued on page 24)*

BOOK REVIEW

# Visionaries dreamt of talking machines centuries ago

THE growing popularity of domestic tape recording in France has at last produced a comprehensive handbook on the subject in French—*Mon magnétophone*, written by P. Hémarquinquer and M. Aubier, and published by Editions Chiron, of Paris, with which the greatly-respected monthly *Revue du Son* is associated. The address is 40 rue de Seine, Paris—6eme.

Messieurs Hémarquinquer and Aubier know their subject thoroughly and the book has been put together with considerable skill and artistry.

It gives a history of sound recording and is not content simply to go back to Edison. These authors have tracked down a visionary of nearly 1,000 years ago who played with the idea of talking machines, and they quote a forecast by Cyrano de Bergerac, writing at the beginning of the 17th century, which is almost startling!

But the history with which we are all more familiar is faithfully recorded, as

are the principles of tape recording and a description of the various types of machine available on the French market.

There follows advice on buying a machine, on how to operate it, and on how to use it creatively. Use with ciné equipment is dealt with very fully. Microphone technique, editing and dubbing, and stereo practice are dealt with.

Finally, there is a glossary of tape recording terms, which is very well done indeed.

The book is generously illustrated and well printed. But, with a thin card cover and 160 pages, its price (8.70 francs—about 13s. 4d.) is high by the standards to which we are accustomed in this country.

British enthusiasts who read French, however, will find it a very interesting exercise to compare the book and the advice it offers with comparable exercises which have been made here.

R.D.B.

## WE HAVE BEEN SPOILED

(Continued from page 23)

tion ago no amount of money, however large, could have purchased a recorder as good as that modest little box of tricks so many of us now consider to be just not good enough. A very, very short time ago Ludwig Koch was using a great van-load of equipment as he went about gathering his superb collection of natural history recordings; today my wife carries a dainty little box on her shoulder which almost certainly gives her as good a recording facility as Mr. Koch then enjoyed, and very much better indeed than his early equipment.

The truth is, we have been spoiled. We get too much that is too good too easily. Like children, we cry for that which is out of reach even before we have begun to explore the possibilities of what we already have. By all means, let the manufacturers produce as fine and as wide a range of products as their ingenuity can devise, but let us, their public, remember that the umpteenth kilocycle on the top is not the be-all and end-all of recording, and a tape with a frequency range of up to 10,000 cps is just 10,000 times better than no tape at all.

Funnily enough, cycle number 10,001 is rarely even missed unless your listening audience happens to be hyper-critical, and if they are you can remind them that many screeching bad discs with heavily overloaded top are at present on sale in the record shops, and it is not your intention to lower your standards to that level.

During the course of a very interesting

tape correspondence I had with a family in Los Angeles, they read out to me the instruction manual supplied with their machine, which was, of course, American. It consisted of the usual rigmarole of do's and don'ts, but, right at the end, at the bottom of the last page, there was printed in heavy type the words: "The uses to which you can put this machine are limited solely by your own imagination."

An exaggeration? Perhaps. And yet within the scope of the purpose for which the machine, any machine, was designed, the limiting factor is indeed its owner's imagination.

If you should hear of someone who "doesn't often record from the wireless, because we get all the noises of the doors banging coming on," why not show them how to do the job properly? And if you are fed up yourself with recording innumerable pops, why not have a word with the local vicar, for a church organ is one of the most thrilling instruments in the world to record. You might, as I have done, graduate from the parish church to the cathedral, and then you will have recordings you will cherish for the rest of your life.

Go out and meet people. Get your equipment out of the house and start recording "on location." You will be surprised at the helpfulness and co-operation of the general public. Then, should some carping, pedantic critic disparage your efforts you can reply, "No, it hasn't got a lot of top, but it's got bags of imagination!"

By

**CHARLES LANGTON**

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

Our Technical  
Advisory Editor

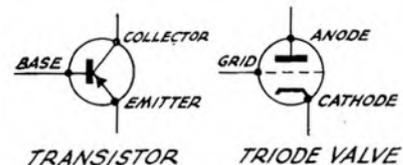


Fig. 1 --- Symbols

IT is interesting to compare the circuit of a transistor amplifier with that of a valve amplifier. As the emitter, base, and collector of a transistor correspond loosely with the cathode, grid, and anode, respectively, of the valve, the circuits have several points in common, although some very important differences also exist. Fig. 2 shows the circuit of a triode amplifier which may be compared with its transistor counterpart in Fig. 3.

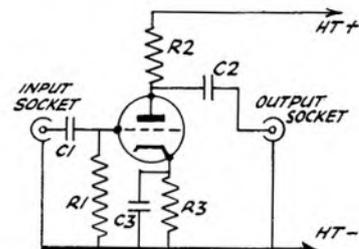


Fig. 2 --- Valve amplifier

R1 = 1 meg.                    C1 = 0.01 mf.  
R2 = 47 k.                    C2 = 0.01 mf.  
R3 = 1 k.                      C3 = 25 mf.

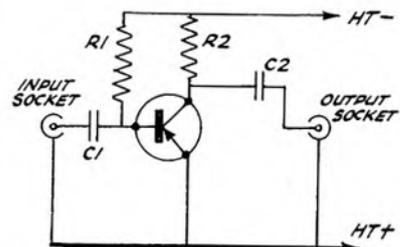


Fig. 3 --- Transistor amplifier

(Note that HT+ is connected to chassis)

R1 = 470 k.                    C1 = 10 mf.  
R2 = 3.9 k.                    C2 = 0.01 mf if the following stage is a valve, or = 10 mf if followed by a transistor.

# The use of transistors in amplifier circuits

AN INTRODUCTORY ARTICLE, ON THE NATURE OF TRANSISTORS, APPEARED  
ON APRIL 20

In each case,  $R^2$  is the output load resistor, being the anode load in Fig. 2 and the emitter load in Fig. 3. A most important difference lies in the fact that, whereas a valve requires its anode to be connected to HT positive, the emitter of a transistor must be fed from HT negative. The HT positive, therefore, is connected to chassis in a transistor receiver. Furthermore, while the valve requires a HT supply of a hundred or more volts, the transistor only requires a few volts.

## Grid bias

The grid of a valve must be maintained at a small negative potential with respect to the cathode. This is known as grid bias. In practice it is a simple matter to make the cathode voltage slightly positive with respect to the grid, which is virtually the same thing. This is achieved by the cathode bias resistor  $R^3$ . The audio frequency currents are by-passed through the comparatively easy path provided by  $C^3$ .

In a similar manner, the base of a transistor must be supplied with a steady current, which is derived from the HT negative line through  $R^1$ . The greater the base current, the greater will be the collector current.

As the current drawn by a transistor fluctuates somewhat with changes in temperature (as when the amplifier is moved from a cold room to a warm room), it is important that the current should be stabilised. An improvement in this respect may be obtained by connecting  $R^1$  to the collector instead of HT negative (Fig. 4). Thus if the collector current increases (say, due to an increase in temperature), the collector voltage will fall, which in turn reduces the base current. This has the effect of lowering, or counteracting, the original rise in collector current.

Improvements in stability may also be achieved by two other methods, both of which are shown in the practical amplifier circuit shown in Fig. 5. In the first stage,  $R^2$  and  $R^3$  form a potentiometer across the HT supply which maintains the base of the first transistor at a fairly steady operating point. Secondly,  $R^5$  in the emitter lead provides a form of current stabilisation.  $C^2$  offers an easy AC path so that the AF currents may bypass  $R^5$ .

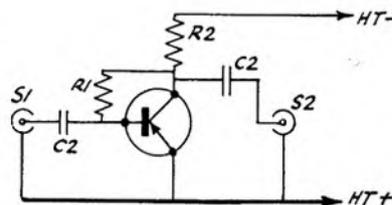


Fig. 4--- Improved circuit---valves as for Fig. 3.

Similar circuits are employed in the second stage.

The circuit is that of a useful pre-amplifier which may be used in many situations when the gain of the existing equipment is not quite enough. If, for example, the replay head of a recorder is connected directly to the input socket  $S^1$ , the output from socket  $S^2$  should be great enough to feed into the gram sockets of the average radio receiver, allowing the recording to be played back through the radio. Although tone correction is not included in this circuit, results are quite good, especially if use is made of the receiver's tone control.

Again, the circuit could form the basis of an intercommunication system, when the studio director, for example, wishes to remain in contact with the recorder operator some distance away. Almost any microphone, high or low impedance, may be used, while high resistance head-

phones (about 2,000 ohms) should be used for best results.

The quality of reproduction and the volume of sound will depend largely upon the value of  $R^1$ . For good quality this may be increased to as much as 500 Kilohm, although the sensitivity of the amplifier (and hence the volume) is improved when  $R^1$  is made small.

When the maximum output is required  $R^1$  may be shorted out altogether. There is scope for experiment here, but always start off with a high value, gradually reducing this until optimum results are obtained.

## A warning

A few words of warning will not be out of place. Care should be taken when working with transistors not to subject them to high temperatures, particularly when soldering the leads in place. It is essential to hold each wire by means of a pair of pliers when soldering, so that the heat may be conducted away into the pliers and not up the wire into the transistor itself. Pliers used in this way are performing the function of a *thermal shunt*.

Great care should be taken to ensure that the collector or emitter current is not too high, or the transistor may be instantly ruined. This may sometimes happen if either the HT connections are reversed (positive to negative), or if one or more resistors have the wrong value.

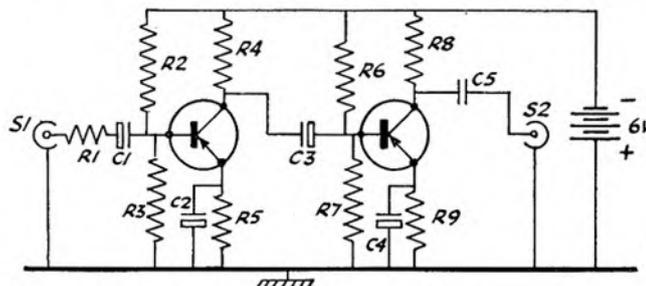
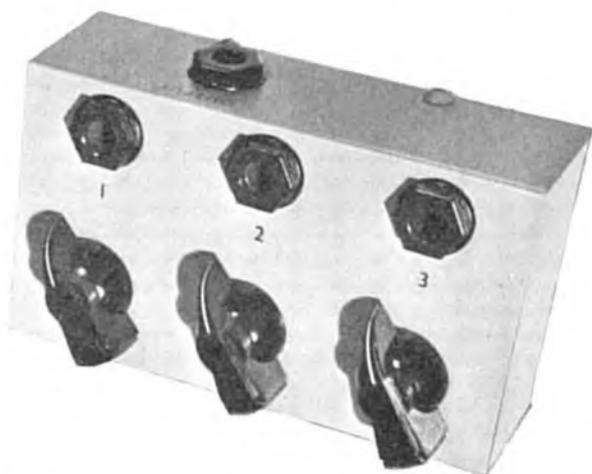


Fig. 5--- Amplifier using two OC70 transistors (or similar).

- |                   |                |                 |
|-------------------|----------------|-----------------|
| $R^1$ = sec text. | $R^6$ = 47 k.  | $C^1$ = 10 mf.  |
| $R^2$ = 68 k.     | $R^7$ = 10 k.  | $C^2$ = 100 mf. |
| $R^3$ = 10 k.     | $R^8$ = 4.7 k. | $C^3$ = 10 mf.  |
| $R^4$ = 4.7 k.    | $R^9$ = 1 k.   | $C^4$ = 100 mf. |
| $R^5$ = 1 k.      |                | $C^5$ = 0.1 mf. |

# Are you getting the most out of your recorder?



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

## 2 THE MIXER-FADER

With this mixer-fader you can blend together three separate input sources to produce a single recording. Items can be faded in or out in professional style. Skilful use of this instrument can save you hours of tedious editing work, too. This is the smallest mixer-fader on the market (it will slip into your pocket)—and the cheapest and most efficient. The price is 39s. 6d.

## 3 THE MONITOR

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

## 1 THE TELECON PICK-UP

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



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

Telephone : Weymouth 1987

**TERRY NURSE** offers advice  
to enthusiasts in the clubs :

# *Yes, we should try to be artists*

*Tape recording should be a creative hobby, productive of minor works of art.*

These are the words of Mr. Alan Stableford, of the National Federation of British Tape Recording Clubs, and they have formed the essence of every speech he has made during his marathon tour of the clubs.

The tape recorder is, indeed, unlike any of the other electrical "magic boxes." If you seek to use it properly, you must become a creator, an artist. This is a basic fact that must influence the activities of all tape recording clubs.

I suggest that every club should decide either to produce a documentary tape or to start a hospital service.

If you choose the former, you have only one programme at a time to contend with. To spur your interest, there are competitions in which you can enter your effort—such as the biggest British Contest, organised by this magazine. Since there are very general categories, admitting almost any type of production, you can choose your initial effort quite freely.

If you decide to start a hospital service, go into your town and bring back the sounds of the fun-fair, of the local football match, of church services. *These* are just the things hospital patients want to hear: familiar sounds they miss. Simple, straightforward sounds—the church clock chiming, pigs squealing and vendors shouting in the market.

Once the creative spark is kindled, it can be kept bright at the normal weekly meetings of the club. You can have your own club competitions, such as the popular "five minutes—or else. . ."

## **TAPE TITTER**



Members must prepare and bring along a tape for playback, or else pay a shilling to the club funds. It is a great incentive, but soon, you will find, members will need no pushing.

You can, alternatively, produce strange sounds for a guessing game, which helps to develop an awareness of sounds, which is necessary in a keen tape recording enthusiast.

Why not produce a play which will bring in some of these sound effects?

Still seeking creative outlets, a club should construct equipment, such as mixers and bulk erasers. Pool the knowledge of members. The Midland Amateur Radio Society has built its own television camera, which shows what is possible.

From time to time, invite the public to see club work.

Now for a golden rule. Whatever your club does, aim at producing a *finished* product. Aimlessness spells death.

**IN**  
**OUR**  
**NEXT**  
**ISSUE**

We greet the Summer with a special illustrated supplement on  
**BATTERY PORTABLES—AND HOW TO USE THEM**

Our technical advisory editor, Charles Langton, gives aid to the layman  
**HOW TO READ A CIRCUIT DIAGRAM**

Cecil H. L. Andrew presents an idea for the "do-it-yourself" enthusiast  
**A MONITOR FOR TAPE COPYING**

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\*

# *The treasure house*

A Grundig tape recorder does more than open up new vistas of intellectual pleasure: it provides a permanent treasure-house. A source of delight from which you may draw as constantly as you wish, never depleting the contents.

Whether it be an aria from a little-known opera, a notable broadcast of a symphony, or a Third Programme production of a dramatist you admire—it can be yours for a lifetime when you own a Grundig.

However specific your tastes or however catholic, you can pace them effortlessly—and inexpensively. You can experiment and afford to. You can sample and decide unhurriedly. You can take your pick from amongst the richest entertainment the world has to offer, browsing where and how you will.

There is a superb range of Grundig tape recorders with a model to suit every pocket and every need. Ask your Grundig Approved Dealer for details.

**GRUNDIG (Great Britain) LTD.**

39/41 New Oxford Street, London, W.C.1

\*

## British and American pick-ups— new pre-amplifier by Leak

**T**HE Audio Fair brought several important contributions to high quality stereo reproduction, and the E.M.I. stereo pick-up was one of these.

Designed in the E.M.I. laboratory and made at the Hayes factory, this instrument commended itself right away by its appearance, its specification and its initial demonstration performance. Test reports will follow in due course, but there are many very interesting features of design that deserve immediate attention.

The instrument is built as a single unit and can be used with any transcription type turntable unit, a sliding pillar allowing for height adjustment over a wide range. Freedom of movement is vital for stereo reproduction, and to this end the pick-up is carried on a single hardened steel point. The absence of guide plates avoids friction in a vertical direction.

There can be no question about determining the playing weight, for the E.M.I. arm is precisely set at the factory to the optimum playing weight of 2.5 grams. It has always been known that the problem in the case of stereo is not so much that of achieving lightness but of doing so without sacrificing groove holding. In this case both lateral and vertical movements are damped by means of a viscous fluid, which stabilises the stylus in the record groove and also controls arm resonance.

The viscous damping is also turned to use in conjunction with the integral raising and lowering device. Moving the lever enables one to lower the stylus on to the record at any point, and the makers claim that it is virtually impossible for

anyone to damage either the stylus or the record by the operation. This advantage should not be underestimated, for equipment of the highest quality can do nothing to rectify the damage and distortion that may result from a stylus that has become damaged without the knowledge of the user.

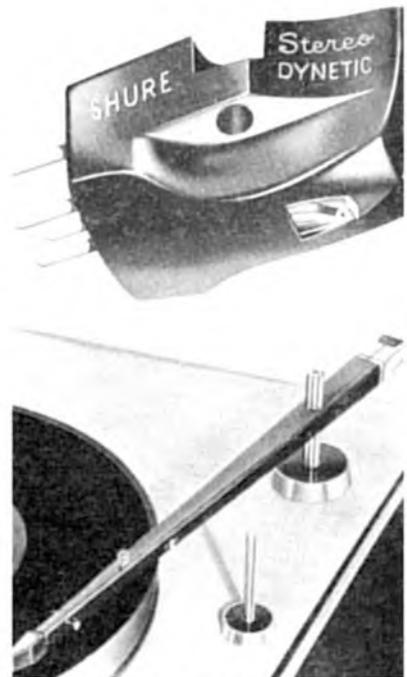
The pick-up movement is of the variable reluctance type, operating on the sum-and-difference principle and it is claimed to be the first complete unit to employ the "minimum distortion" offset angle rather than the "minimum error" angle.

Crosstalk is given as better than 20 dB at 1,000 cps and the stereo response as substantially flat between 40 cps and 15,000 cps. On monophonic reproduction the response figures are 30-20,000 cps. The stylus is a high-quality diamond with 0.0005 to 0.0006 in. radius. The price of the complete pick-up is 19 guineas.

I have previously referred to the value of comprehensiveness and flexibility in stereo amplifiers. Leak, with their new "Varislope Stereo" pre-amplifier have produced a piece of equipment that well qualifies for these descriptions.

When used with any combination of two Leak monophonic power amplifiers or with a "Stereo 20" or "Stereo 50" power amplifier, the makers state, it reproduces stereophonically or monophonically from records, tape, radio and microphone, using any pick-up, any tape head, any tuner and any microphone in the world. Reproduction is possible direct from tape head. All controls are of the single-knob dual-ganged, close-tolerance type for ease of handling. The price is £25.

Other news in this important field is the release in this country of Shure pick-ups and cartridges (as well as microphones). Anyone who studies the



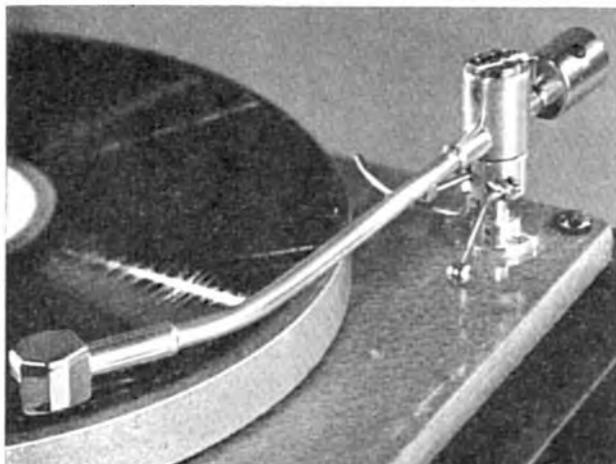
Top picture: Shure Brothers' Model M3D professional stereo dynetic cartridge

Bottom picture: Model M212 studio stereo dynetic integrated tone-arm and cartridge

American hi-fi scene will know that Shure products are highly regarded by U.S. enthusiasts. Their M212 Studio Stereo Dynetic integrated tone-arm and cartridge tracks at 1½ to 2½ grams and is fitted with a 0.0007 in. diamond stylus. The arm counterbalance floats on a damped suspension bar. The price is £36, plus purchase tax.

The Shure Model M3D professional stereo dynetic cartridge, tracking at 3 to 5 grams is priced at £18, and the Model M7D custom stereo dynetic cartridge, tracking at 4 to 7 grams (5 grams optimum), and with a high output to aid the reduction of noise, is priced at £9 10s. plus purchase tax.

These new products, together with the splendid Decca pick-up, and others that have already proved their worth, will help to ensure that the tempo of improvement in this key area is maintained in the future.



The E.M.I. stereo pick-up (left) and (below) the Leak "Varislope Stereo" pre-amplifier. Both were seen for the first time at the Audio Fair



## THE WORLD OF TAPE

### A NEWS ROUND-UP

**T**APE equipment to record flight data in airliners, produced by Royston Instruments Ltd., of Byfleet, Surrey, is claimed to be "at least three years ahead" of any comparable equipment in the world.

Six tracks on a magnetic tape are used to record every detail of flight performance. A recording capacity of 160 hours is provided.

In addition, a duplicate recording is taken, but automatically erased after one hour. In the event of an accident, the duplicate recorder would be ejected from the plane and would preserve full information about the period immediately before the emergency.

**S**IX recorders have been presented to the education committees of Glasgow, Ayrshire, Lanarkshire and Renfrewshire by the National Deaf Children's Society, to be used in schools for the deaf.

**M**AGNETIC tape is at the heart of a new robot machine used in South Africa to provide answers to gardening problems—obviously comparable equipment could be made to cover any field.

The pioneer machine has a series of buttons, combinations of which can be pressed to compile a question. The answer then comes, first in English, followed by an Afrikaans version.

Answers include how to grow roses and vegetables, how to plant seeds, and how to prune trees.

**I**NTERVIEWS with old residents in Walthamstow have been recorded by members of the Walthamstow and District Tape Recording Society and are being made into half-hour programmes for dispatch to former residents now overseas.

Contacts in Australia, South Africa and America will be able to hear old familiar sounds and accents.

**A**T THE END of April the first of a series of five-day courses for their Approved Dealers' Service Engineers was held at Grundig (Great Britain) Limited's Sydenham Factory.

The course had been specially designed to give to trained Radio and TV engineers a thorough insight into Grundig tape recorder, dictating machine and radio service.

Examinations were held at the end of each course and successful candidates qualified for the Grundig Service Diploma.

### CORRECTION

We regret that we omitted to state that the photograph of Daphne Oram on page 14 of our last issue was a *Radio Times* Copyright Photograph.

# DOUBLE - PLAY TAPE AND THE TRUTH ABOUT PRINT - THROUGH

*The following notes have been issued by the 3M Company, the manufacturers of "Scotch" Brand magnetic tape.*

The introduction of Double Play Tape has led to suggestions that this type of tape is unsuitable for high fidelity recordings because of excessive *Print-through*.

This is not true, but as with any other types of Magnetic Recording Tape, it is necessary to understand what is meant by *Print-through* and its causes, if any trouble is to be avoided.

ANY recording on a Magnetic Recording Tape results in a small magnetic field appearing at the surface of the tape—in fact this field is the recording. When the recorded tape is wound onto a spool, this field will in turn magnetise a small por-

tion of the magnetic material nearest to it, which means a small portion of the layers immediately above and below. The amount of magnetisation effected is very small indeed, but it is always there. It also depends upon the strength of the original recording.

If you imagine a single tap on a kettle-drum recorded very heavily half way through an otherwise "silent" tape, it should be possible, when playing the tape, to hear a faint echo of the drum tap, just before and just after the reproduction of the tap on the drum.

If, however, a light finger tap on the drum had been recorded, on replay the echo—or *Print-through*—although still there, would be so faint that it would be masked by the background noise from the tape recorder.

So in order to measure *Print-through*, it is necessary to state the peak level which should not be exceeded during recording.\*

"Pips" of a single frequency—usually 1,000 cycles/second—are recorded, and the resulting *Print-through* measured as so many decibels† below the level at which the pips are reproduced.

With "Scotch" Brand No. 111 Tape this usually works out at about -54dB, or five thousandths of the replay level.

With "Scotch" Brand No. 200 Double Play Tape, recorded under the same conditions, the *Print-through* level is about -49dB, or two and a-half thousandths of the replay level, and it requires a very good recorder indeed for this *Print-through* to be heard above the general background noise.

Remember, however, that this test is based on the PEAK recorded level, and a good recording should only reach this level very occasionally.

It takes about 24 hours under normal conditions for *Print-through* to reach nearly its maximum level and the test is usually carried out after this interval. Subsequent increase, even after many days, is very small indeed.

Increased temperature can also increase *Print-through*, but the temperature has to be way over 80° C (180° F) for a noticeable effect. Similarly, vibration can produce an increase, but there has to be a lot of it.

Summing all this up—if you want to avoid trouble due to *Print-through*:—

**DON'T**—Record with an excessive level.  
—Store your best records in the oven or on the spin dryer!

\* This is usually defined as that level which results in 2 per cent third harmonic distortion.

† The decibel scale is a convenient way of measuring the difference between two levels, and is calculated as twenty times the logarithm of the ratio of the two levels.



## V.I.Ps PEOPLE IN THE NEWS

**Mr. W. L. HEWITT** has been appointed a director of Birmingham Sound Reproducers Ltd.

A former senior member of the electronics staff of Sir W. G. Armstrong Whitworth Aircraft Ltd., Mr. Hewitt is secretary of the Birmingham company, which he joined 18 months ago.

**Mr. L. A. NORMAN** has been appointed assistant sales manager of Stella Radio and Television Co. Ltd.

Mr. Norman has spent nearly thirty-two years in the radio industry. He joined Philips in 1928.

# Equipment Under Test

## THE SIMON MINSTRELLE



**T**HE Simon Minstrelle recorder, for its price, has quite an outstanding performance and definitely scores over other machines at a similar price. It uses the new Garrard deck, which has a low hum level and almost imperceptible wow and flutter.

The machine is housed in an extremely handsome cabinet, finished in high-polished Sapele mahogany wood. The neat legs and the design of the front of the cabinet, and also the position of the knobs, make it both elegant and easy to use.

One of the most remarkable features of this recorder is the idea of having a microphone *inside* the tape recorder, fitted on to the front panel behind the fret material. On the machine reviewed this microphone picked up no noise from the deck itself, which, incidentally, ran very smoothly. The microphone has, I understand, the identical crystal insert used in the Simon crystal Cadenza. It is spring-suspended and is housed in a sponge-filled box to damp motor distortion and noise.

The controls on the Minstrelle are as follows: on the extreme left is the mic. recording level control, and then, from left to right, the radio record level control, playback level control and tone control, and, on the extreme right, the on/off switch combined with the erase cut-out switch, which is spring fitted for super-imposition.

On the back of the recorder are the recording inputs and outputs. The external mic. input has a high impedance jack socket, and the radio input is for wander plugs. The external loudspeaker output can be used by plugging in, again by wander plugs, and the internal speaker can be switched off when the external speaker is plugged in. There is also a mains adjustment so that the recorder can be used between 190 volts and 250 volts AC.

In my opinion, a jack socket for the radio input would have been more popular, and I also feel that a jack socket is regarded as standard in tape recorders for an external loudspeaker; with such a socket it would be possible to mute the internal loudspeaker when the external loudspeaker is plugged in. Incidentally, the output impedance for this recorder is correct for driving 3 ohm

external loudspeakers, but is not suitable for use with 15 ohm loudspeakers, unless a lower minimum output power is acceptable.

The recorder was taken out of its cabinet and, underneath the deck at right angles to it, the recorder replay and oscillator amplifiers were found to be very carefully wired up, the components used being of very good quality. The internal loudspeaker is a 4 x 7 in. moving coil unit.

The playing time of the cassette, using double play tape, is 35 minutes in each direction, and I understand from an owner of one of these machines that the cassette can be stopped, changed and re-started in under 1½ seconds, which is quicker than using the track change button of the Simon SP4 recorder.

The monitor playback amplifier has a pair of EL 84s connected for triode operation, giving at least 3 watts output of very low distortion. The hum level of the playback amplifier itself is low indeed—certainly lower than that of comparable products. In addition to tape playback, the recorder may be used for amplifying an output from a VHF tuner or gramophone, using either internal or external loudspeakers, and it performs this function very successfully.

The record level indicator is a type EM84, which presents the recording level as a variation in the length of two strips of light.

The machine is biased for the tape supplied by Garrards, which is understood to be E.M.I. double play tape, and other makes of tape are suitable if the bias level on the recorder is adjusted.

The recorder was first tested by plugging in an external mic. and then by recording from the radio input from a professional tape machine running at 15 ips. All the listening tests were made with tapes actually recorded on the Minstrelle.

In every case the recordings made were of a quality which would have been good for 7½ ips about eight years ago. The frequency response from record to replay extends from 60 to 12,000 cps, although the response does vary very minutely from one loading to another with the cassette. On measurement, it was found that, with reference to the response at

1,000 cps, the recorder was flat to 7,000 cps, and this fell gradually and was 2 dB down at 10,000 cps and 4 dB down at 12,000 cps. Similarly, the response fell very slightly from 100 to 60 cps, where it was minus 3 dB, and then it fell off quite rapidly.

The signal-to-noise ratio of the recorder over-all was found to be minus 49 dB which I thought a most creditable figure. The hum was practically inaudible, even on the quietest passages. The oscillator used is very neatly designed and gives an extremely quiet background, and despite attempts to "mag up the head" by continually switching from record to playback no such event occurred.

The slight bass cut on replay that is evident has been provided for two reasons, to give a lower hum level, and to avoid cabinet boom at low frequencies, which is found on so many machines. The hum that was detected on the machine under test was seen to be 100 cps on an oscilloscope and so the hum level would not be appreciably reduced if the response at 50 cps was increased. The absence of an on/off pilot was noticed, and I definitely feel it would be advisable for the manufacturers to fit this as a standard item.

The owner of this machine will learn very quickly the action and position of the controls, although there is a plastic cover on the fret of the recorder which is not very well fixed and can easily be dispensed with. The small feet of the recorder have got rubber tips so that the machine can be placed on any polished furniture. The weight of the recorder is 30 lb, making it easily portable, although it is a table model.\*

This machine has been demonstrated by the reviewer to a large number of blind people, who found it extremely easy to operate, and after only a few

*(Continued on page 33)*

\* A portable model, with carrying handle is now available, at the same price—THE EDITOR.

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# JOHN LEWIS ENTER THE TAPE FIELD

The John Lewis Partnership announce the imminent release of a new single-speed recorder priced at only 23 guineas.

This machine, the "Jonell Playdek," is aimed primarily at the teenage market, is compact, easy to operate and portable.

A B.S.R. TD2 deck is incorporated, with the customary 3½ ips playing speed. 5½-in. spools can be accommodated, giving a playing time of 64 minutes on long-play tape.

Facilities include a magic-eye recording level indicator, monitoring, super-imposition, and inputs for microphone, radio or pick-up. An external loudspeaker socket will automatically cut out the internal 7 in. x 4 in. elliptical speaker when brought into use.

Output is given as 2½ watts, and mains consumption—AC 200-240v. 50 cycles—is estimated at 70 watts.

The dimensions of the machine are 14½ x 14 x 8 inches; weight 19 lb. There is a choice of two-tone finishes, red with white polka dots, white with black polka dots, and white polka dots on a black background. A crystal microphone, spool of tape and a connecting lead is supplied.

*John Lewis and Company Limited,  
19, Bolsover Street, London, W.1.*

## Simon Minstrelle

*(Continued from page 31)*

moments they were able to operate all the controls successfully. The only difficulty was knowing how much tape was on each spool. Perhaps at some time Garrard or Simon might consider a modification to provide such a device.

One last point about the Simon Minstrelle: many manufacturers claim a response at 3½ ips to 16,000 cps. Such a response can only be obtained by the use of heads with an extremely small gap. With such heads the output is considerably lower, and thus amplifier hiss becomes more prevalent.

I think that Simon have stretched the Garrard deck to its limit and it might be interesting for readers to know that no professional tape recorder used by recording studios (as against "semi-professional") has a response extending beyond about 10,000 cps, because of reasons of signal to noise ratio. If any attempt is made to put frequencies on to the tape higher than about 12,000 cps to obtain a flat response at the higher frequency, the only result must be distortion, unless a lower recording level is used, which results in a bad signal-to-noise ratio.

All in all, the Minstrelle can most definitely be regarded as an excellent baby brother to the Simon SP4.

**ANGUS McKENZIE.**



**JONELL PLAYDEK**

## NEW NAME— ANOTHER RECORDER

TAPLIN-HIRST & CO. LTD., manufacturers of the Balmoral TH12 tape recorder, announce that the name of the company has been changed to Balmoral Electronics Ltd.

The address of their offices remains as before, at Oxford Circus House, 245, Oxford Street, London, W.1. The telephone number is Regent 3311.

With the change of name comes news of their second recorder, the TH20.

This machine is similar to the earlier TH12 and incorporates the B.S.R. Monardeck. Two speeds, 3½ and 7½ ips, are provided by the use of a capstan sleeve.

A single amplifier gives 3 watts output through a 8 x 3 inch elliptical built-in loudspeaker.

Housed in a two-tone shaped vanity case style cabinet measuring 13 x 10 x 6 inches, the TM20 will retail at 27 guineas.

## GRUNDIG CUB

A NEW RECORDING lead, SL 142 R, with built-in resistive attenuator has been specially designed for use with the Grundig Cub.

The lead, which is said to greatly improve recordings made from the extension speaker sockets of a radio, is being issued with all new Cubs, in addition to the existing lead the SL 154.

The price, if bought separately, is 18s.

## Symphony Mk3

We regret that in our review of the Symphony Mk3 recorder (April 20 issue) the loudspeaker size was incorrectly given as seven inches. This machine is, in fact, fitted with a full 9 in. x 5 in. elliptical unit.

# New Products

## Three speeds for 39 guineas

Another machine due for release this month is the Carousel Radiotape recorder.

Three speeds, 1½, 3½, 7½, are available on this new model and the maximum spool size is seven inches.

Features include digital counter, pause control, separate bass and treble controls, straight-through amplifier operation, and a record level indicator.

Inputs are provided for microphone, radio or pick-up, and it has a separate monitoring control on the amplifier.

Three 4-pole induction motors are incorporated, with frequency compensation on all speeds. Power output through the 9 in. x 5 in. loudspeaker is 3 watts. An external 15 ohm speaker socket is provided.

Valves used are: EF86, ECC83, two EL84, EM81, EZ81.

The price, including tape, spare spool and legs is 39 guineas. Microphone with stand is a 3-guineas optional extra.

The Radiotape has a console table veneered walnut cabinet measuring 22½ x 15 x 25 inches, which will also house an optional FM Tuner with plug-in connectors.

*Stereosound Productions Limited,  
Capital Works, 12-14, Wakefield Road,  
Brighouse, Yorkshire.*

## STUZZI

RECORDING DEVICES LTD., announce a second version of their Stuzzi Magnette. The new recorder, 75 gns., has an increased speed of 7½ ips, with a frequency response up to 14,000 cps corrected to C.C.I.R. standards.

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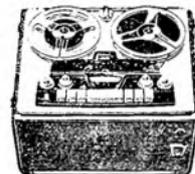
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# News from the Clubs

Edited by

**FRED CHANDLER**

A STORY I am proud to pass on comes from the **Coventry** club. Regular readers will remember that the members have been in contact recently with a club in San Francisco.

At their April 14 meeting, they settled down to hear a tape from the American club and before long learned that it comprised half-a-dozen persons who met in the recording studios of a Mr. Terry and Mr. Eric Slater, two Englishmen who emigrated to the U.S.A. The studios, they heard, are used for making commercial tapes for radio stations.

The American club members went to some lengths to convince the Coventry members of the superior nature of their equipment. Henry Hopfinger's face is said to have been a sight when he heard his 19-guinea microphone referred to as "the cheap mic used when making your tape."

Despite their claims, however, it was apparent that professional standards of recording in the U.S. are not up to British professional standards. As evidence of this, a pronounced 60 cycle hum was audible on their tape.

The frustration of the Coventry members can well be judged as with true British reserve, a number stated a desire to make a reply tape to the "San Francisco perfectionists."

Membership of this ever-active club continues its uphill climb. During the evening a number of visitors were present, some of whom elected to join the same evening, taking the total to 42. Others professed interest, including a Mr. Tisdale who had taken along a Telefunken recorder. He proceeded to give a full-scale demonstration of the machine which took up most of the evening.

There was time for one more tape to be heard, and this was of extracts from a tape which had journeyed around the world and in which Chairman Roy Penfold participated. Of particular interest was the contribution made by a 65-year-old Englishman in charge of a refrigeration plant in Chile. He admitted to having 78 tape pals.

Plans for a full scale publicity drive were made at the April 8 meeting of the **Acton** club. Club organiser Mrs. Rusty Chapman reported she had made arrangements for a "Tape Recorder Week" to be held in conjunction with a local dealer, and had obtained a promise of a "write-up" in the local press.

After the general discussion following this announcement, Mrs. Chapman gave

**PHYL COPINGER** became interested in tape recording about six years ago, two years after her husband Pat bought a tape recorder for fun. Phyl started messing about with it on her own, instruction book in one hand and microphone in the other, and since then has never looked back.

She is particularly interested in poetry, literature and the theatre, has written some poems, is a member of the Poetry Society, and in 1956 wrote a play for tape. Being a mother of three teenagers, she used her husband and three youngsters as cast, and played the part of the parrot herself!

She joined the London Club with her husband a couple of months after it was formed and narrated in a feature tape prepared for the *South Goodwin Light Vessel*.

In 1958 she helped form the *West Middlesex Club* and her voice is still heard on the club's *Magazine on Tape "Journey into Sound."*

Phyl is an active member of the *Voicespence Club*; talks to a

a second demonstration of her new Philips EL3536 stereo recorder. This in turn was followed by a minute examination of Len Gore's Repts R40.

At their April 22 meeting, members elected a new Chairman, John Mewitt. Secretary Dave Wiseman then read a letter from the Editor of the Danish *Band Amatoren* tape magazine. This asked for a list of persons willing to exchange tapes, and offered to publish an article on the club's activities.

Honorary membership has been granted to Bob Molyneux, a local enthusiast who has gained a number of similar contacts for the club, and to Bill Fraser of Miami, Florida, who is responsible for the Ampex recorded stereo tapes used for the club's demonstrations.

Rusty Chapman announced she had finally arranged a hospital entertainment service and had arranged for the club to provide a stereo demonstration on June 13, for the local branch of the International Friendship League.

Having concluded the business of the evening, members made their first attempt at amateur dramatics—in stereo. Modestly they describe their effort as "the world's worst recording!"

A demonstration of the Simon SP4 and the Simon Minstrelle provided the basis of the April 7 meeting of the **Rugby** club. Members were very impressed with the performance of these machines, and thanked Mr. Thompson of Simon Equipment Ltd., who provided the chance of a detailed examination.

Present during the evening was Jack Willis, the blind ex-member of the

## Club Personalities No. 11



**PHYL COPINGER**  
Glasgow  
and  
District  
Tape  
Society

blind poet in Boston, Mass., and carries on French conversations with a member in Paris.

She also helped her husband produce, and took part in, the prize winning tape in the Composition section of the 1958 National Tape Recording Contest.

On moving to Kilmarnock at the end of 1958 she joined the Glasgow Club. She is now writing the script for their tape "The City of Glasgow."

She is also planning a tape/slide show on Scotland using a 35 mm camera and two tape recorders, to send to friends in U.S.A.

She uses her husband's Sonomag Adaptatape and Simon SP/4 tape recorders and will soon be having her own battery portable recorder.

Warwick and Leamington club, enjoying his first evening as a member.

A debate is in progress with members of the **Wakefield** club. During the April 21 meeting, a tape on the subject of stereophonic in preference to monaural music, received from Mike Storey of the Yorkshire club was heard. Afterwards, the Rugby members recorded their own comments and views and returned the tape to Wakefield.

News of a possible scheme for lonely or aged people who find it difficult to get out into town, was heard at the April 13 meeting of the **Warwick and Leamington** Society.

Members agreed it would be a good idea if tapes of various events recorded during the past year, or of interesting musical items already in the club's possession, could be replayed in the homes of the lonely in an effort to overcome this serious problem. Anyone wanting to be included in this scheme is invited to contact Secretary Brian Race at 30, Ashford Road, Whitnash, Warwickshire.

The main item of the evening was a demonstration of equipment, including the Dulci Harting recorder. This was presented by Malcolm Horne.

A number of members came up to London for the last weekend in April, and spent an interesting day at the Audio Fair. The scheduled trip to the Leamington Scooter Club was carried out as planned. Members provided their neighbours with a short history of sound, a stereophonic demonstration, and a sound quiz on tape.

(Continued on page 37)

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Simon SP4, May 1959, cost £100, accept £75 o.n.o., going stereo. Full details without obligation; demonstrations arranged. Please write: A. J. Leisk, Stephenson Hall, Oakholme Road, Sheffield 10.

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(Continued from page 35)

Two tape exchanges are in progress, one to Tanganyika, the other to the club in Barnsley.

The two ladies intending to form a club in Ware, Hertfordshire, were disappointed by attendance at the first meeting. Undaunted, however, they immediately set to to distribute leaflets in the district announcing their ambition.

April 25 was the date set for the second meeting, but at the time of writing I have had no news of success or otherwise. Interested persons are invited to contact the organiser Mrs. Campbell at 12, High Street, Ware.

Dover members are really having bad luck with their intended recording of a skiffle group. Following the disappointment on March 21, they arranged a second session for April 4. Again the group were unable to attend but Secretary G. Newey straightaway set about arranging the presence of a substitute group.

I like his reference to the evening. "Apart from the older members, everyone enjoyed themselves."

They are gradually sorting themselves out into a well organised group, and have decided to hold meetings every fourth Monday. The next is scheduled for May 30.

Mr. Newey intended to visit Birmingham during the latter half of April, and while there he hoped to drop in at the White Horse Cellars to see the Birmingham club members in action.

A thirty minute interlude of technical queries and answers was held at the April 4 meeting of the Crawley and

Sussex club. This was the first of a regular series of half-hour features.

It was followed by a talk on loud-speakers given by Dan Archer. With help from his wife Naomi, at the mixer, he was able to demonstrate very clearly just what to expect from various types of speakers.

As the club's existence becomes more generally known locally, they receive more requests for co-operation from other organisations. One of their May dates is to record the Duke of Norfolk when he pays a visit to the New Town.

Last month, they were called upon to record a farewell lunch when Sir Thomas Bennett retired as Chairman of the Crawley Development Corporation. Members, led by Mrs. Archer, set up their equipment in the hotel pantry, and were able to make some interesting recordings of the occasion.

In our last report of the Ilford Club's activities, we referred to Mr. J. E. Hunter's sound magazine for the blind, and stated that it included recorded reviews from this magazine.

This was an error on our part, as Mr. Hunter does not include *Tape Recording Magazine* extracts on his tape magazine.

We regret any inconvenience or embarrassment that may have been caused him by our mistake.

*We are in the process of compiling a fresh list of club addresses for publication. We would like to have the following details on a postcard, please, from Secretaries:—Secretary's name and address, regularity of meetings and club-room address.*

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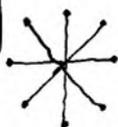
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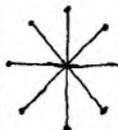
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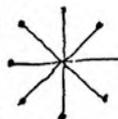
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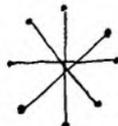
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