

TAPE

RECORDING
AND HI-FI MAGAZINE



**THE PROFESSIONAL SUPER-HIGH
FIDELITY MAGNETIC TAPE**
TRADE ENQUIRIES INVITED

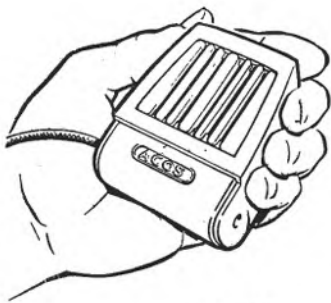
ELECTRO-TECHNO-DYNAMICS

101, Leadenhall Street, London, E.C.3
AVENUE 6982

FIRST AND FOREMOST IN THIS FIELD

FORTNIGHTLY **1/6**
2nd December, 1959

acos.



FOR MIKES

MIC 40

The Acos MIC 40, for instance, is a neat, fold-away microphone, that either fits snugly into the hand, or stands on its own. One of the smallest microphones in the country, in attractive dual colours, the MIC 40 is standard equipment with many well-known tape recorders. It is also available separately from most good dealers. The price is moderate, and the sensitivity and sound reproduction are remarkably good. Acos also make several other, equally successful microphones in different price ranges.

COSMOCORD LTD WALTHAM CROSS HERTS • TEL: WALTHAM CROSS 25206 (London subscribers please dial WS 25206)

Something to Shout About

But please whisper it

IF your announcement is eagerly awaited, there is no need to shout the odds in letters ten feet tall, nor to roll the drums and fanfare the trumpets. Good news travels far fast and the launching of the new WyndSOR portable, the "Victor," really is something to shout about. But a whisper seems to have been enough to set the tape-recording world by the ears and when even the elder brethren in the electronic trade join in the excitement there must be a mighty good reason. And there is: the shapely WyndSOR "Victor," is a quality-all-the-way portable, so beautifully designed and executed as to bring professional-sounding recordings within the reach of the most non-technically-minded amongst us.

Mark these following features, and ask yourself how *does* WyndSOR do it at the price. New readers start here for the answers:—

*** frequency responses:—**

7½ ips : — 50 to 15,000 cps better than ±3db.

3¾ ips : — 50 to 9,000 cps better than ±3db.

1⅞ ips : — 50 to 5,000 cps.

- * full frequency equalisation **AT ALL SPEEDS.**
- * 10 in. x 6 in. elliptical speaker in detachable lid.
- * up to 8 hours playing time on one D.P. tape.
- * monitoring through its own speaker with independent control.
- * finger-tip controls closely grouped.
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- * additional output with automatic speaker cut-out.
- * facility for use as an amplifier.
- * three independent 4-pole motors.
- * unique styling in two-tone grey with gilt fittings.
- * twin tracks * pause control * tone control.
- * guarantee: 12 months (valves 90 days) and the name of WyndSOR.

And how do WyndSOR do it? By the experience that ten years' manufacture of quality tape-recording equipment only can bring. By design-creation only after intensive market research and nation-wide trade inquiries, so that WyndSOR tape recorders virtually sell themselves, without sales-force, without large advertising campaigns, without exhibiting at you-know-where, and with minimum servicing requirements after sales. All these overheads are conspicuous in the price by their absence.

If history is anything to go by, widely publicising the "Victor" would overwhelm the WyndSOR factory. WyndSOR policy is never to sacrifice quality for quantity and the fact is that there have never been enough of the "Victor's" sister model, the "Viscount," to satisfy the demand. So now is the time for all good enthusiasts to inquire at WyndSOR dealers or to send post-cards (clean variety still preferred) to the modestly proud makers for the names of nearest stockists. There is nothing more annoying than hearing a WyndSOR just after buying an ordinary tape recorder.



the new WyndSOR "VICTOR" complete with crystal microphone, 1,200 feet of tape, and spare jackplug, is only 45 guineas

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Telephone : ENTerprise 2226/7
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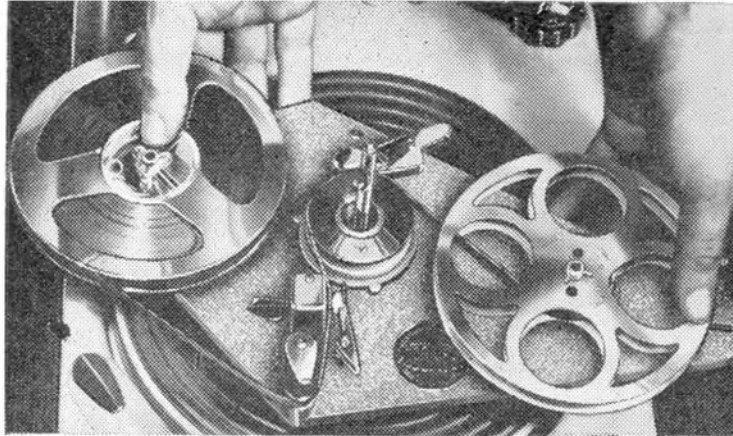
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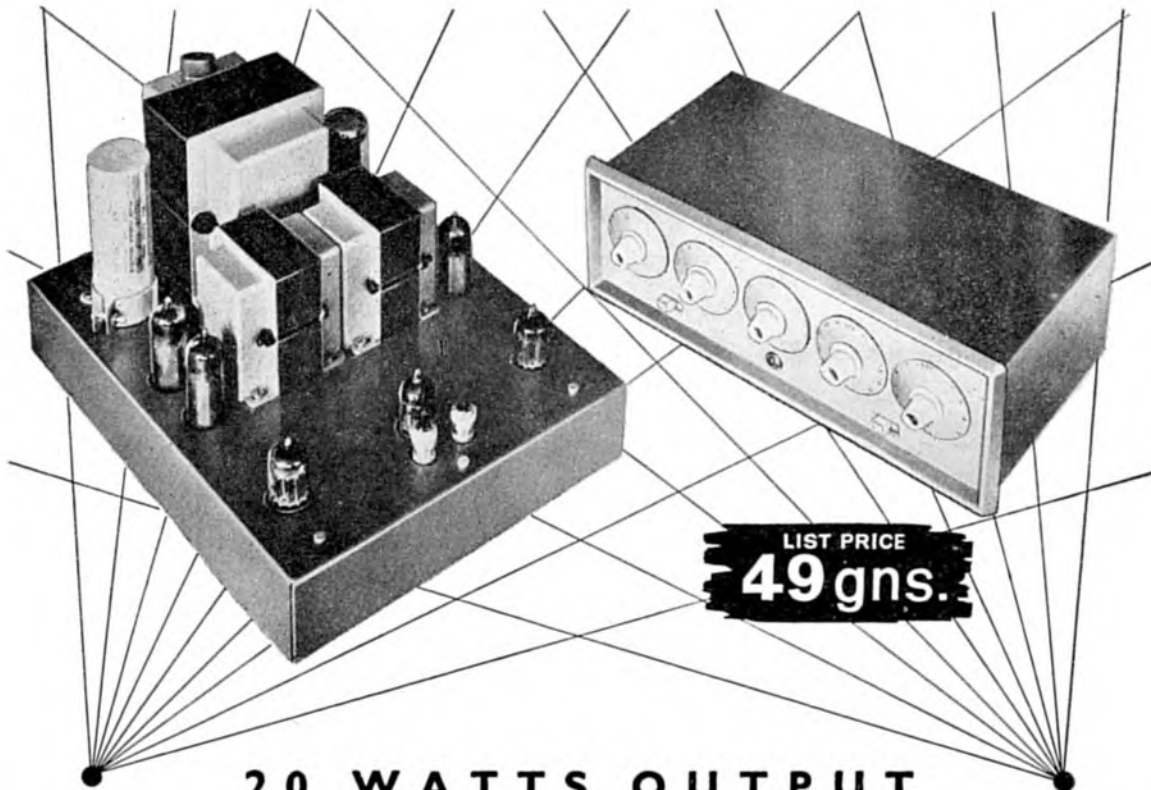
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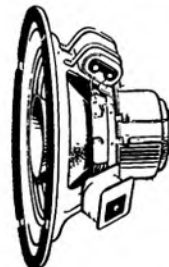
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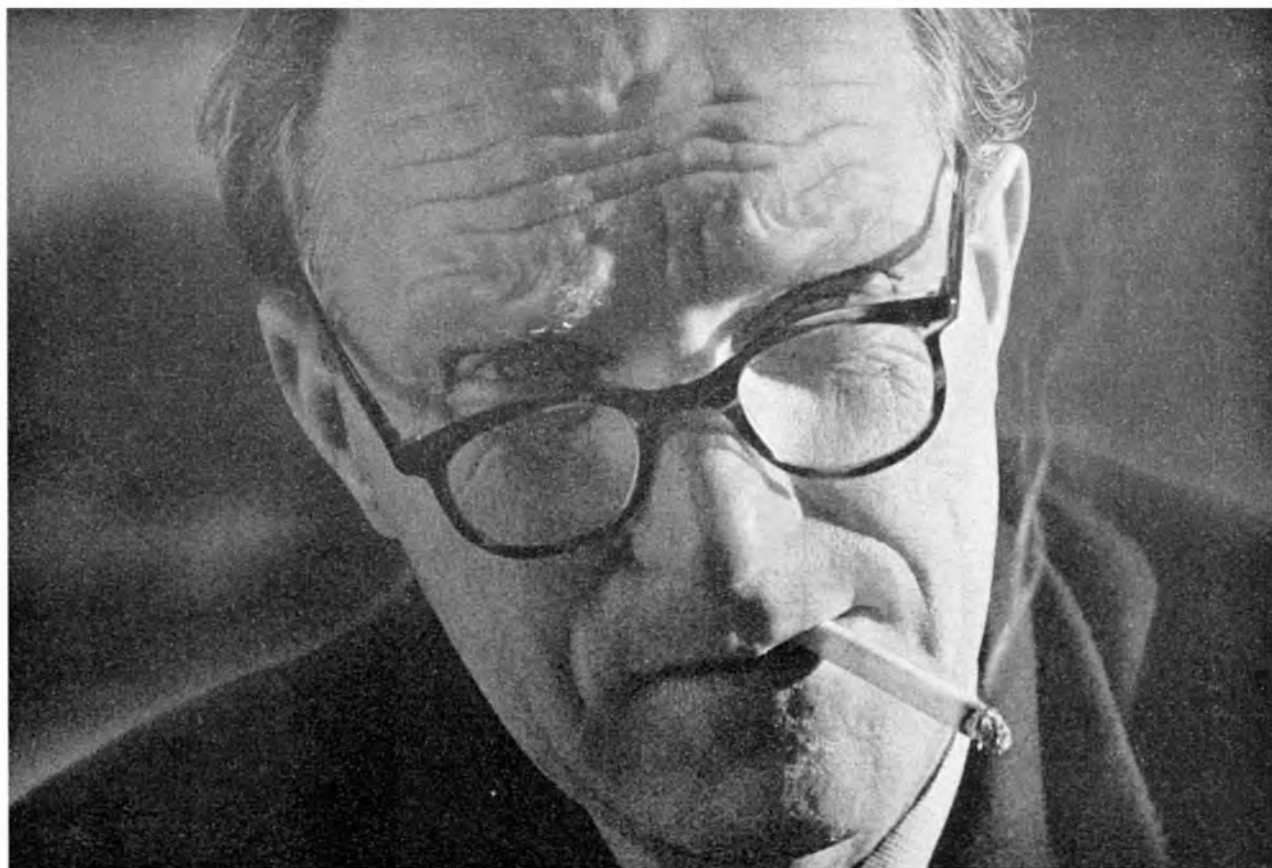
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EDWARD GREENFIELD, recorded music critic of "The Guardian"

A new tape record of Beethoven's Eighth

KLEMPERER'S recorded series of the nine Beethoven symphonies, which is rapidly nearing completion, will stand as one of the monuments of the gramophone. It is an uneven series, admittedly, but I rather think that, in the years to come, Klemperer may well improve on and replace some of the recordings already issued.

Now the stereo tape of Klemperer's recording of the Eighth Symphony has appeared. (B.T.B. 308)

It comes ahead of the stereo disc version, to show how much stereo can enhance the clarity of a score like this. Klemperer himself has helped in this by ensuring that there is as much clarity as possible in the inner parts.

Quite apart from stereo, Klemperer—as he does in Brahms—secures far more separation than do most conductors, with whom Beethoven's comparatively conventional scoring can seem thick. In stereo, the effect is more electrifying still. The engineers have not spread the sound particularly wide, but the effect is immediate and atmospheric.

No one will disagree that this is a great gain, but on the interpretation itself there is room for different opinions. I was at first inclined to think that the slow speed he chooses for the first movement would lead to a stodgy performance, with none of the lightness which this "little" symphony (as Beethoven called it) so obviously needs.

The extraordinary thing is that Klemperer manages to gain both ways round. The slow speed at times conveys eighteenth-century grace, but more often there is a greatly increased feeling of weight compared with more headlong readings. On this, as I have said, there will be differing views. Someone used to, say, Toscanini's interpretation, might well find this intolerably sluggish, even turgid, but once again Klemperer shows how easily he can convince one against one's will.

This, in short, is far from being the definitive Eighth, but, as all the great Beethoven interpreters have agreed, Beethoven's greatest works are open to a wide range of interpretation. Indeed, it is the extraordinary way in which they respond to the widest range of different interpretations that shows their greatness, proving beyond doubt the inner life that burns through every bar.

Klemperer's orchestra is—as usual—the Philharmonia, and that same group of players, perhaps the most highly tuned orchestra in the world to-day, have a much more obvious chance to show off

their paces in the other stereo tape just issued. (B.T.A. 132)

This is a concert of three works conducted by Herbert von Karajan. The first is Respighi's "Pines of Rome."

As it happens, this orchestral picture post-card of various scenes in the Italian capital has an interesting connection with the gramophone. When Respighi wanted to paint the picture of the Pines on the Janiculum Hill, with their nightingales, he realised that—unlike Beethoven in the "Pastoral" Symphony, for example—no conventional instrument could adequately convey their song.

Consequently, he instructed that H.M.V.'s ancient record of nightingales made before the First World War should be played at one point in the score. The result is highly evocative, but does not exactly add to the musical value of the work. Nowadays of course a more modern nightingale record is used, and Karajan's nightingale sings particularly sweetly, with no scratch at all.

On the performance, I am inclined to think that Karajan's teutonic streak, though ensuring the most brilliant ensemble, prevents the final degree of sympathy. Toscanini secured just as virtuoso performance, but conveyed more of the Latin warmth, too, and with music that is not argued with particular cogency that is rather important.

There is the same qualification to make about the other "Roman" piece—Berlioz's most exciting overture "Roman Carnival." Karajan has as much brilliance as anyone could wish and that, in such score, is by far the most important quality; but one rarely feels the impetuosity, *slancio*, as the Italians call it, which subtly, in rhythms slightly pulled about, conveys a warmer, more urgent feeling. Even where Karajan instructs his brass to slur their notes at one point—an exciting effect certainly—it sounds just a little too calculated.

But I am harping. These are both excellent performances which fall short of the very highest level by the narrowest margin. In brilliance of playing they are not likely to be outshone.

The third piece is Liszt's "Les Preludes," the only one of his twelve symphonic poems to have stayed in the permanent orchestral repertory. It is not his greatest work, but Karajan conveys with great urgency the variations of mood which made Liszt, after he had salvaged it from an unsuccessful choral work "The Four Elements," attach to it a quotation from Lamartine's "Les Preludes."

With such brilliant scores I personally would have preferred slightly wider stereo with great ambience, but the sound is sharp-edged, but comfortable on the ears, in E.M.I.'s usual manner.

We take the view .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

Travellers

ROUND the world with a tape recorder seems to be a slogan to inspire would-be travellers these days. A few weeks ago two Somerset youths set off on a tandem for a 40,000-mile trip across Europe, Asia, Australia and America.

And in a trailer behind them they towed—as well as their tents—colour film apparatus and a battery portable recorder.

Now I hear that Mr. Anthony Brooke, whose uncle was the last "White Rajah" of Sarawak, has embarked on a round-the-world journey—with a battery portable tape recorder. He hopes to interview leaders of the great religions.

But the idea of such trips is not as novel as I first supposed. Browsing in a Bristol second-hand bookshop I came across a volume by Sir Henry Lunn, published in 1926, and entitled: "Round the world with a Dictaphone."

It was not as easy then. The author explains that the achievement was made possible by the assistance of the Dictaphone Company in installing their equipment in hotel rooms in all the cities on his global itinerary.

Novel design

A MOST interesting departure from normal recorder design was seen in a Dutch machine shown in London recently, the Timbra 2S58B. This provides for two 7-inch spools, one above the other, moving on concentric shafts.

The recorder operates at two speeds and provides all the normal facilities.

It is claimed that the novel design makes it possible to produce an extremely compact machine—the deck is only about a foot square.

At the time of writing discussions are taking place about marketing the Timbra here and, when they are completed, we shall publish fuller details in our "New Products" feature.

Complaint

A WORD of advice to manufacturers and dealers. During the last few months we have heard more complaints than usual from readers that they have not received the after-sales service to which they are entitled.

I quote from one recent letter, deleting the name of the firms:

"I purchased a recorder made by Messrs. X last Christmas and after about six months a fault developed in the machine. This I found to be a faulty limit switch on the tape deck, which serves as a cut-out on the winding mechanism motor.

"I returned the recorder to the retailers, Messrs. Y, who told me that though the fault was a minor one, they had none of these switches in stock and would have to order one from Messrs. X.

"After a month my machine had not been returned. I telephoned the retailer to inquire about the delay. They told me they had ordered the switch, but had received no reply from Messrs. X, though several reminders had been sent.

"I decided to write to Messrs. X myself to urge delivery of the switch. I received no reply. It is now 14 weeks since the part was ordered. I have again

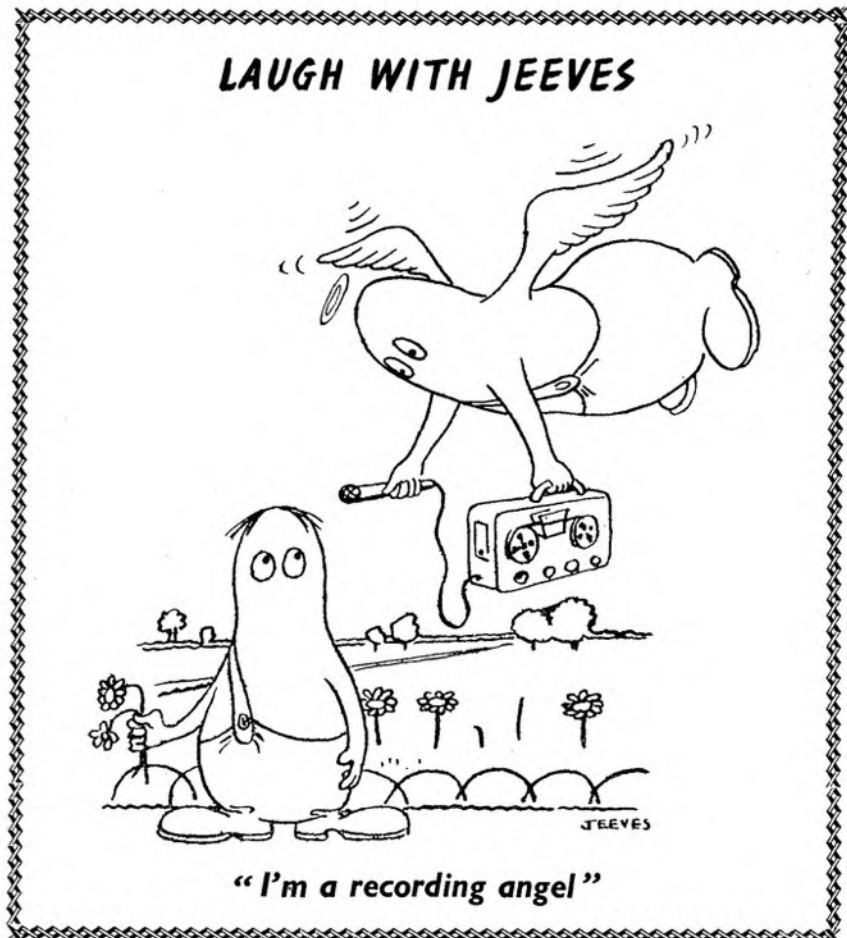
written to Messrs. X, and still I have received no reply.

"To save me waiting any longer the retailers have fitted my machine with a switch from a machine they had in stock."

Now I appreciate the pressure under which many firms are working. But this kind of experience is bound to have a very bad effect on customers and will harm the industry as a whole.

As I say, we have received, not one letter like this, but a number. We are sometimes blamed for accepting advertisements from firms who behave in this way. It is, however, obviously impossible for us to check on the standards of efficiency and courtesy of every firm with whom we deal.

We do make a practice of passing complaints on to the firms named, so that they may investigate them and consider whether their organisation requires adjustment.



THE Rockefeller Foundation recently made a grant of 65,000 dollars—about £23,250—to enable two American scientists to conduct a research project into “The preservation and storage of sound recordings.”

Their 74-page report has just been published by the Library of the United States Congress in Washington.

The researchers set out to establish what is the life of a recorded tape before it begins to deteriorate. They do not offer any clear answer to that question.

They sought, too, to establish the ideal storage conditions to extend the safe life of recordings. On this side, they offer a number of recommendations.

First Such Report

Their report is primarily intended for the guidance of librarians and others responsible for the care of collections of sound recordings. But naturally it will be of general interest to all recording enthusiasts.

It also covers discs, but it is conveniently sub-divided and a special section deals with acetate and polyester-based

magnetic tapes. PVC-base tape is not covered.

This is the first such report to be published anywhere in the world, and its authors describe it as “a preliminary study in this science.”

They explain that they have concerned themselves only with “shelf ageing”, but point out that the interaction of playback and storage is undoubtedly of significance in the ageing process.

In an introduction, they state: “While the short history of the use and storage experience with modern sound recording materials is a distinct handicap to the formulation of precise conclusions as to the future behaviour of these materials, the results of this study indicate that the

potential storage life of existing sound recordings in ordinary library environments is somewhat longer than would be expected by the scientist and considerably shorter than is desirable to the librarian.”

We are left to make the best we can of that riddle!

The report explains that “the resistance of an article to degradation is built into the article at the time of its manufacture.”

It adds: “The uncontrolled variables are the basic resin, the materials added to the basic resin to alter its properties to those desired, and the sound record manufacturing process.”

After discussing the basic resin, it goes on: “The materials added to the basic

The Americans have just spent £23,000 on an investigation into the best way to store and preserve sound recordings. Below we offer a summary of those parts of their report which deal with magnetic tape

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TWELVE RULES FOR CARING FOR YOUR TAPES

resin are even more variable in nature than is the resin. The major sound record manufacturers differ significantly in their formulations, for cost or product improvement reasons.

"An unfortunate choice of lubricant or extender can conceivably decrease the potential life of a stored plastic by several decades, while a change in stabiliser might increase such life by as much as a century, without any noticeable change in appearance or playback quality of a new recording."

Special Tape Wanted

With this in mind, the report argues for special tapes designed to give maximum storage life, even if their production cost is increased.

The American investigators worked with American-made tapes—"new samples of all the different kinds of tapes presently manufactured by the four major tape manufacturers of this country, together with some samples of older tapes."

Their studies consisted of:

1. Investigations of the dimensional stability of the base as it is affected by (a) variations in winding tension, (b) variations in humidity, (c) variations in temperature, (d) reel design and poor winding, and (e) variations in thickness and kind of base material;

2. Investigations of the stability of the coating as it is affected by (a) winding tension, (b) base material, (c) temperature, and (d) humidity;

3. Investigations of the changes in magnetisation induced by (a) temperature, (b) A.C. fields, (c) time, and (d) D.C. fields.

The report contains a mass of detailed technical information. Most readers will, however, be mainly interested in the conclusions and recommendations. We are, therefore, printing below this section of the report in full.

The Conclusions

"Print-through does not need to be a problem.

Use of proper tape, proper recording level, proper storage environment, and proper surveillance will keep print-through below the tolerance level.

In those cases where the library has not had control of these parameters, an undesirable intensity of print-through may develop. In many cases, the recording can be salvaged by curative measures, such as selective erasure.

A further advantage can be obtained by the future development of magnetic powder coatings far less susceptible to print-through than even the best currently produced coatings.

The recommended procedure for storing magnetic tape is to:

1 Use only metal reels with an slotted hub of N.A.R.T.B. dimensions (10-inch reel size). The flanges of these reels must be replaced if they are deformed out of plane.

2 Package reels in sealed metal cans or sealed boxes of a material such as polyethylene / cardboard / foil / polyethylene laminate. The boxes should be stacked on edge in the shelves. Tape should not be packaged until it is in equilibrium with 70° F and 50 per cent R.H.

3 Stack temperature should be maintained at a temperature of 70° plus or minus 5° F for often-used recordings, and storage in special vaults at 50° plus or minus 5° F is recommended for seldom-used and valuable recordings. Stack humidity should be kept at 50 per cent plus or minus 10 per cent R.H., if this is feasible.

4 Playback and packaging rooms should be maintained dust-free and at 70° plus or minus 5° F and 50 per cent plus or minus 10 per cent R.H. Tapes exposed to other environments should be conditioned in the playback environment before playback.

5 Stray external magnetic fields should not be permitted in the stack, playback and packaging environments. The maximum flux density permitted should be 10 gauss. It should be remembered that all current-bearing wires have associated magnetic fields. Ordinary electric circuits, if properly installed and balanced, will cause no trouble because the fields will 'cancel out'.

6 Playback equipment should be maintained as recommended by the manufacturer. This includes cleaning, tape transport adjustment, and component demagnetisation.

7 A rewind and inspection deck, separate from playback facilities, should be used for packaging and inspection. Winding tension for 1½ mil tape should be constant torque of 3-5 ounces at the hub of a 10-inch N.A.R.T.B. reel.

8 The best tape presently available for storage purposes appears to be 1½ mil Mylar base, with some doubt existing as to the coating to base adhesion of this type of tape. Any of the tape manufacturers are presently capable of producing longer lived tapes if there is

sufficient demand for them and it is hoped that one or more of them will do so.

Each of the major manufacturers produce good tape and each product seems to have a slight advantage over the others in one parameter, while being at a slight disadvantage in others. The competition in this market is enforcing rapid advances in tape construction and formulation, which should result in tapes of superior potential longevity in the foreseeable future.

9 Tape should be recorded at a maximum level below 2 per cent harmonic distortion (4 dB below normal recording level is usually satisfactory).

The first and last 15 feet of the tape should not be used for programme recording, but should have a burst of 10 mil wavelength (approximately 750 cps at 7½ ips) signal at maximum recording level, preceded and followed by several layers of blank tape for inspection purposes.

Tape should be aged in the packaging room for six months prior to recording. Recorded tape which has been exposed to other than the prescribed environment should be conditioned in the packaging room for six weeks prior to packaging.

10 Tape should be inspected once every two years, measured from time of last playback and rewind so that the curvature of the base is opposite to the direction of the previous curvature. This inspection should consist of measurement of print-through caused by the toneburst at the end of the tape and a spot check at the tape end next to the hub for coating adhesion or delamination. It need not include playback.

The benefits of rewind are in reduction of creep induced curvature and print-through. The disadvantage is in exposing the surface to oxidative attack. The tape should be inspected and wound after each playback.

11 Storage shelves should be of wood or a non-magnetisable metal free from vibration or shock.

12 Care in procurement and shipment should be taken."

"*Preservation and Storage of Sound Recordings*," by A. G. Pickett and M. M. Lemcoe, available from the Superintendent of Documents, Government Printing Office, Washington, 25, D.C. Price, 45 cents.



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812

Christmas is coming . . .

and a lot of people who have been hesitating about buying a new recorder are about to make their decision. To help them, we publish this review of some representative machines costing up to £50.



Photo by Philips Electrical Ltd.

RECORDERS
are now in the
FAMILY-GIFT
CLASS

JANE CURVELY looks them over

My fiancé's kid brother wants a tape recorder for Christmas. I confess that at no previous Christmas would I have thought of this as a seasonal gift.

Now that I *have* thought of it, however, what a splendid idea it seems.

The cost is no greater than that of a bicycle, or a number of other things that are often bought at this time of the year.

But the tape recorder is peculiarly a family activity and I don't think it matters much just who owns the thing—everyone can join in.

Round about Christmas, I like the thought of something that draws the family closer together.

I know how we shall be spending that weekend. I shall go over to Jim's on Christmas afternoon. Kid brother will be on the carpet, twiddling switches. Pop will be in his armchair, giving advice and looking in the *Radio Times* to see what *he* wants to record.

Sis will give us the odd carol on the piano, and I guess it will all go on to tape.

And a very jolly time is obviously going to be had by all.

Oh, yes, I'm all for tape recorders for Christmas.

I get the impression, stopping to look in shop windows at those on display, that quite a lot of other people feel the same way.

I've been making a check of what's available, and I've

been surprised to find the number that can now be bought for under thirty guineas.

In this article, however, I propose to mention a few representative examples of recorders costing up to £50. I don't know if there's anything specifically feminine about this reaction, but the ones I really go for are those so-compact recorders that are no bigger than my handbag. I'm told they are transistorised, and that sounds fine, but I'm only concerned with what comes out after you've done some recording with them—and that's first-rate. I like something that looks simple and straightforward, and that *operates* simply and straightforwardly. These portable machines do that; there are no batteries of controls to frighten me.

I have been shown a couple that particularly appealed to me. The smallest, and incidentally the cheapest, was the Clarion Transitape, (1) at twenty-five guineas. The other was the Grundig Cub, at twenty-six guineas, which is certainly a stylish job, and a good performer into the bargain.

Now I could carry either of these recorders around with me all day, get what I wanted on the tape, and never be wearied, for they're only about five pounds apiece. I saw another portable that was a little heavier—about nine pounds—but still very neat and compact. This is the all-British Minivox, which runs at only half the speed of the other two (i.e. at $1\frac{1}{2}$ inches per second), and so offers very economical operation.

But if you don't want to be mobile for your tape recording, I suppose a machine that plugs into the mains will save you a lot of trouble in checking batteries and so on. So I looked the mains-operated models over, too. I suppose that the lines of a machine count for rather more with me than the inside of it, which I know is all wrong, but very understandable, I hope. In any case, I've found that when a thing looks right, it almost always doesn't disappoint on performance. Well, I've taken to the Simon Minstrel, which is a recorder only just off the drawing board, and very, very contemporary. At 39 guineas, I thought this was a good buy.

The other big eye-catcher was the Geloso G.256, (2) which comes from Italy. This costs £27 16s. 6d. and has the economical $1\frac{1}{2}$ ips speed and can be used, if you like, for office dictation as well. Elpico have another recorder, the TR400 at £27 6s., which incorporates the British-made Monardeck and plays at $3\frac{1}{2}$ ips. Several firms can each boast that they have a complete range of recorders priced at under £50.

The E.A.P. Elizabethan range, for example, includes the Bandbox at £30 9s., the Princess at £40 19s., and the recently-introduced Avon (3) at only £24 3s. For each jump up in price you get an extra speed to play with—the Avon has only $3\frac{1}{2}$, while the Princess has $1\frac{1}{2}$, $3\frac{1}{2}$ and $7\frac{1}{2}$ ips. All very nice machines.

Tape Recorders (Electronics) Ltd. market four machines in their "Sound" range at prices under £50. The baby of this group is the Sound Belle at £27 6s.—two guineas extra for a larger speaker and extra output. This is a neat and dinky model, but its performance struck me as really impressive.

Then there are the new Sound Prince (6) (£30 9s.) and Sound Studio (£44 2s.), and the well-established Sound 444 at £47 5s. There is genuine variety here, each of them has a different deck, and you feel you have a real freedom of choice.

One of the dealers I called on particularly drew my



attention to the Walter machines, which he explained were very well tested in use over a number of years and have proved the soundness of their basic design.

They are modest in price for so good a specification.

The Walter 101, I discovered, costs only £30 9s., and the 303 de luxe, a two-speed machine with first-rate performance, is £44 2s.

I have also had it explained to me that Truvox, a firm with a very high reputation for quality machines, has recently entered the popular-price sector. I like their two offerings, the Melody (4) at £36, and the Harmony at £44. Both are attractively styled and I had the proof that there is melody and harmony in plenty in them when they are in use.

It interested me a lot to discover how attractive a market we British buyers seem to be to some of the Continental tape manufacturers.

Obviously, those boys out there don't need teaching much about their business. I looked at the new Elektron EMG 9/2. (7) It's priced at 47½ guineas which, when you've worked it out, means all but fifty pounds; but it made me feel that I would have a good £50-worth if I took one home. It sounded rich!

Then there were the Stuzzi machines—the Mambo at £40 19s. and the new Mannequin (5) at only 26 guineas. Nice names, these—and nice recorders.

Philips was a name that I knew very well, and they are old hands at the tape recorder business. So I wasn't surprised to discover how good a machine is their EL 3527, at £40 19s. It looked a sturdy machine, but it handled well under my light touch.

By this time, I confess my mind was jingling with the exotic names with which so many machines have now been christened by their makers. They've made a splendid job of it; who thinks them all up so readily?

The Clarissa, for example; I should never have thought of *that*. I think the effect is spoilt a little by having to add the "Mark I" after the name, but that's the only way you can be sure you see the 42-guinea model—there's a de luxe machine costing rather more.

Of course, some makers skip the catchy names and keep solemnly in mind that they are selling *machines*. Like H.M.V., who have just come into the market with . . . wait for it, the "DSR1." (8) But it occurs to me that the men-folk probably like it better that way. I know they like the behaviour of this particular recorder, because I overheard it being discussed . . . very flatteringly.

No one has more know-how than the E.M.I. concern who turn this out; it is natural that they should have made a top-class job of it. The price is £50 exactly, which is a nice clean sum, too.

In conclusion, three other recorders that caught my eye. The Ferguson 441TR comes from another firm famous in the wider radio field. A very reasonable buy at 28 guineas.

The Argyll costs a guinea more, and is another excellent machine at the price. And, also 29 guineas, there is an alternative in the Sagatone 3S29.

And there I shall leave you to continue your own investigations during the remaining twenty shopping days to Christmas. I haven't tried to give you all the technical gen. You've had most of it in this magazine anyway, and if you've forgotten it, your dealer is waiting to take you in hand right now.

Get on with it, or you'll miss that boost to Christmas fun.



5



6



7

8





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Volunteer team builds up rural archives

SOUND PICTURES OF ENGLISH VILLAGES

THIRD of a series of sound portraits of life in Derbyshire villages is expected to be finished this month by Mr. G. M. Carson, leader of a team of enthusiastic voluntary workers which has been using tape to make permanent records for community archives.

Mr. Carson and his associates are at present completing their record of Calver and Curbar. They have already completed recordings of Ashford-in-the-Water in 1957, followed last year by one on Holmesfield. These recordings were also accompanied by photographic surveys.

The resulting programme on the latter project lasts 2½ hours and involves 125 picture slides. Although the parish concerned has only about a thousand inhabitants, £50 was raised for charity.

More is expected from sales of pictures and there is a possibility of a book based on the recordings.

"The response was overwhelming," Mr. Carson told *Tape Recording Magazine*. "It has served to prove the value placed on this service."

He estimates that to get the information and interviews some 1,500 miles of travel now goes into a production, which takes about six months to prepare.

"The finished result becomes the property of the community and not of any individual," he explained. "In many years to come, future generations will be able to hear and see what life in the village was like.

"They will be able to judge the changes and the realisations, or failures, of our present ambitions."

Mr. Carson tries to cover all aspects of village life. He and his team gather material from inns, churches, chapels, local industries, organisations, and characters.

He finds that the assistance of the local press is "of paramount importance." It creates a spirit of mutual trust and opens the door for the extension of the work.

The British Institute of Recorded Sound has now shown interest in the work of Mr. Carson and his colleagues and has asked them to give a performance of one of their programmes.



Lena Horne recorded a message of welcome to Danny Kaye before she left London, and he arrived recently. Peter Noble was there with his Clarion portable tape recorder to take the message from lovely Lena

INTERNATIONAL TALKS

A three-nation group at the recent London F.I.C.S. meeting. Left to right: M. Boissinot (France), Signora Migliardi (Italy) and M. Vallotton (Switzerland).



At the dinner at the West Park Lodge Hotel, Hadley Wood. Left to right: M. Paul Gilson (France), Mr. Douglas Cleverdon (Chairman of the jury of C.I.M.E.S.), M. Rene Monnat (Switzerland), M. Fredy Weber (Switzerland), President of F.I.C.S., and Mr. R. D. Brown (editor of *Tape Recording Magazine*)

FACTS ON TAPE

AS many as twenty questions can be automatically answered by an ingenious machine, based on a tape recorder and a dial telephone just marketed by a Llandudno firm, Automaten Distributors. It is designed as a robot salesman as well as to give stock replies to frequently asked questions.

Externally, the machine, known as a Publiphone, is basically an automatic dial telephone. Alongside it is a card giving code numbers for a series of questions. These are dialled and the operator then presses a button to start the tape mechanism and hears the answer by phone. A variation is to couple the device to a loudspeaker, in which case answers come back as public announcements.

The tape mechanism apparatus can be some distance from the phone and the messages are pre-recorded on endless tapes, the cassettes of which can be changed in a matter of seconds.

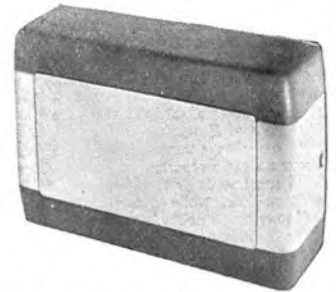
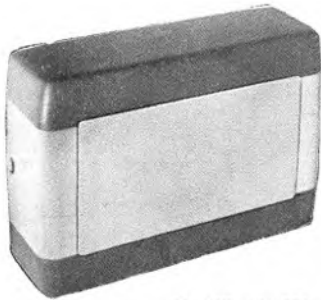
Each tape can contain an hour's speech.

A development of this device is the equally intriguing information. This has basically the same equipment but it is mounted in a mobile cabinet with a glass display case. After hearing the reply to his question the operator can press another button and receive a brochure dealing with the same subject.

The machines have already been installed in big stores and they are likely to be used at exhibitions, transport terminals, hotels and museums.



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V.I.Ps PEOPLE IN THE NEWS

This month we feature the new leaders of the International Federation of Sound Hunters. As we have already reported, **Mr. Fredy Weber**, of Switzerland, is the new President, and **Dr. Jan Mees**, of Holland, the new secretary.

Mr. Weber has supplied this story about himself:—

"When my father hurried in slippers through the town of St. Gall, in Eastern Switzerland, to fetch the midwife, the streets were covered with snow. It was December 23, 1923—and that's why I get so many presents around Christmas time.

"In St. Gall—world-famous for its embroidery and lace industry—I spent my early years. I attended school there and obtained, after 13 years, the Certificate of Commerce.

"I had always wanted, however, to become a radio reporter.

"I spent seven years in Geneva as a bank-clerk, while sound hunting had to remain a hobby. Several small news features of mine were used in the Swiss Network, however, and they attracted the attention of Radio Berne.

"So there I was eventually employed as a news reporter on October 1, 1953. Since then, I have been on the move as a professional radio newsman—but sound hunting remains my favourite hobby.

"Today, as President of the International Federation of Sound Hunters, I am still convinced that our hobby is more than just a technical pastime and involves more than an exchange of technical information. It is, above all, one of the many roads to international contact, to friendship from continent to continent, and towards a better understanding between the nations."

Dr. Mees, the new secretary, was born in Denmark in 1924, of Dutch nationality. In 1938, when his father changed his job, the family moved to France and Jan took the doctorate of philosophy degree at the Sorbonne.

In 1955 he returned to Holland to join the staff of an Anglo-Dutch firm. He now works for them in Belgium, as a works manager. The firm has factories over most of the world, and



Above: Fredy Weber

Jan Mees has therefore equipped himself with several different languages.

In his daily work and in his recording hobby he is concerned with technical matters. But with recording, it is more. He has always been deeply interested in classical music, and he finds that this love of music is an ideal supplementary interest to recording.

As the new secretary of the Federation, he hopes to be able to contribute to an extension of its activities and to be the development of international understanding.

Below: Dr. Jan Mees



they borrow tapes from me. Volume is much weaker, and quality of sound not so good.

Can a small adjustment be made to my recorder to put it right? My model is a Grundig Reporter 700L. (B.M., N. Ireland.)

A Your Grundig 700L tape recorder can be converted to the now-standard tracking—top track running from left to right (at the moment it tracks in the reverse direction).

A conversion kit is still available from Grundig.

Sound Effects

A regular series of hints on how to get satisfactory sound effects at home.

Alan Edward Beeby, the author, has had long experience in this field. If you have a particular problem, send it to us and he will try to give the best advice.

EXPLOSIONS

I know an explosion effect *can* be obtained by blowing on the microphone but, frankly, I'm not keen on the method; it's too ragged. Ask anyone what sort of noise an explosion makes and they will say, "Bang!" Which is quite incorrect.

An explosion would be far more accurately described as a shattering roar, having a sharply defined beginning and a rumbling finish gradually fading away into silence.

A simple and solitary "Bang," therefore, is the last thing we want.

A balloon, if burst, on the other hand, will go "Bang!"; and, as if to illustrate the contrariness of sound-recording procedure, we are going to use a balloon to obtain our explosion effect.

Firstly—and this is important—you will need to record this effect in surroundings which give plenty of echo. Personally, I find the top of the staircase or landing to be ideal. The effect is done in two stages, both recorded at maximum level, one being superimposed over the other.

Blow the balloon up to a reasonable size, hold the neck tightly, and set the tape in motion. Bring the neck of the balloon up close to the microphone; relax your grip on the neck sharply, but keep hold of the balloon itself. This allows the air to escape with a spluttering sound and provides the shuddering, rumbling aftermath of the explosion proper. Stage Two is now completed.

Stage One is superimposed over this, although not in direct line-up with it.

Rewind to the beginning of Stage Two, then run the tape *backwards* by hand approximately eight inches (The exact amount, of course, will depend upon your tape-speed and should be calculated accordingly).

Blow the balloon up once more, press the "Start" button, and the second that the tape begins to move, touch the balloon with a lighted cigarette to burst it.

Advice Bureau

In each issue we shall reprint one specimen question and answer dealt with by our Advice Bureau. Others will be dealt with by post. When sending queries use the coupon on page 44.

Q. I have been loaned pre-recorded tapes by friends, but I find I am unable to play these unless I rewind the tape, glazed side inside and dull side outside; otherwise the tape is played backwards. My friends have to do likewise if

Stereo Notes

By D. W. GARDNER

WITHIN a few days of the publication of this issue of *Tape Recording and Hi-fi Magazine* the bookstalls will be carrying the Winter number of *Stereo Sound and Music Magazine*, its sister publication. The latter will now appear quarterly and will deal more comprehensively than before with matters of stereo technique, in language that should be understandable by the average interested layman. It will also carry the fullest possible information on available stereo units, together with bench tests and home tests, to help the stereo seeker in his choice of equipment.

Our decision to make this change is closely linked with the fact that *Tape Recording Magazine* is now appearing fortnightly, and during the months to come all important developments in the stereo world will be immediately reported to you in this magazine.

The two magazines can, together, provide a perfectly balanced coverage of the really important aspects of sound recording and reproduction, and by taking both of them you will ensure that you are fully informed.

Four-track quality— and economy —will please many

A STRIKING demonstration of faith in the future of four-track stereo recording was provided by the introduction a few days ago by Mr. B. B. Babani (Technical Suppliers Ltd.), of three Continental four-track stereo recorders. He does, I know, believe that this technique is going to become more and more popular—and I am fully prepared to agree with him. The argument of economy is powerful to the point of decisiveness for nineteen out of twenty of us, once we are convinced that the improvements in quality that are always going on have caught up with the narrow-track technique.

Demonstrations of these models, the Harting, Körting and Elektron, at the Hotel Russell, underlined earlier favourable impressions of the Telefunken four-track head, and the machines gave a very good account of themselves generally.

The deficiencies that might arise from the extra handicap of having less tape to record on (such as higher signal-to-noise ratio), cannot be assessed in a short

hearing, but I could detect nothing untoward.

Slow speeds and narrow tracks must reduce quality in comparison with the faster speeds and wider tracks, when operated in otherwise identical circumstances; progress in various directions means, however, that the slow and the narrow must eventually reach the standards demanded by critical enthusiasts. The point of acceptability is a personal matter, but it is already clear that the quality obtainable from four tracks—even at 3½ ips—is high enough to please large numbers of listeners.

Such machines as these will certainly be the turning point for many who are interested in stereo recording but who have been deterred by the thought of using twice as much tape for the same length of recording time.

An important point to remember is that the four-track head can also play dual track recordings, although the output will be lower than it would be with the use of a dual-track head because of the smaller gap.

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PRIZE FOR HUMOUR

Kenneth Miller a 52-year-old New York photographer, whose "Contact microphone" tape won the prize for humour, as well as first place in the "Compositions" section of the Contest.

WHEN I asked Mr. John Weston how long he spent on the production of "Journey So Long"—the tape with which he won premier honours in the International Amateur Recording Contest—he replied: "About one hour for each second of playing time."

The tape plays for sixteen minutes, so you can see how much hard work went into its making.

Mr. Weston, of course, had to lead and direct a team of 23 eleven-year-old volunteers from the Meeching Junior School at Newhaven. Not an easy task.

At the opposite extreme, as we have reported before, Mr. A. Acland, who won the "Tape of the Year" in the British Contest and went on to win the Actuality section of the International event, is a relative new-comer to tape recording. His tape was the result of much patience and persistence, waiting in the night hours for the nightingales to break into song within reach of his microphone. But it was not the result of expert recording or editing technique.

The point is that anyone with enthusiasm has a chance of winning these amateur contests; they do not need to have vast technical knowledge or experience, but if they do have it they can make very good use of it.

Thinking about the fifty tapes we heard when the international jury met at Broadcasting House last month, I am struck by other contrasts.

"Contact microphone," the tape that won the "Compositions" section and the special prize for humour, was very simple in structure and involved no serious recording problems. It was the result of a good, witty idea.

Kenneth Miller, the 52-year-old New York photographer who submitted it, obviously found the germ of his idea in the news that medical men are recording the sounds of hearts and lungs to help their researches. A simple extension of this idea immediately introduces scope for humour.

These were

THE WORLD'S BEST AMATEUR TAPE RECORDINGS of 1959

Mr. Miller saw the possibilities, and exploited them well. He recorded a series of striking effects—sounds of sea-lions, blowing under water (this effect was speeded up and slowed down to give variety), the flushing of a W.C.

Around these effects he wove a simple, almost casual conversation. He told how his contact microphone had proved unsuitable for the purpose for which he bought it. So he had held it against various parts of his body and "fed it into a 200-watt amplifier." Then we began to hear the alleged results. As we heard the rush and clatter that was supposed to be his blood circulating, he remarked disarmingly: "I want you to pay special attention to the sound of the

Cathedral was chosen as the best stereo entry in the Contest.

Listening to this in the studio, it was only necessary to close one's eyes to be convinced that one was in Dijon Cathedral. Abbé Garnier, I hear, is dedicated to his tape recording as well as to the religious life. One of the French judges told me of a visit to his home on the Cote d'Or. It was a very simple place, but the Abbé was found at work in one of the most superbly equipped amateur recording studios you are likely to find anywhere.

Incidentally, there were only a small number of stereo entries in the International Contest this year. And the fact that one of them was recorded on a machine with staggered heads caused a good deal of trouble in arranging re-play. For the future, the Belgians have promised to re-record any entries of this kind; but competitors who think of submitting stereo tapes may like to have in mind that stacked-head recordings are much more easily handled.

The first prize in the Documentary-Reportage section was won by Marjorie and Derek Worman, of Johannesburg, South Africa, for a highly competent ten-minute feature programme called "Africa Sings."

This was the story of Africans moving to, and adapting themselves to the life of, big cities, their morale sustained by their traditional song, which was itself adapted to new forms. This, of course, was rich recording material; the linking narrative was attractively done, and the whole production had a professional standard.

In the third category—Music and Speech—the highest marks went to Mr. Wilhelm Gluckert, of Mainz, Germany, who last year won the *Tape Recording Magazine* shield and who was present in London to hear this year's judging. His winning tape was titled "Kiss Me Once Again" and was a recording of dance music in the popular style. Apart from the quality of the recording, Mr. Gluckert had the credit for composing the piece and assembling an orchestra for a special performance. This, of course, is tape recording on the grand scale.

Mr. Gluckert's tape was bracketed by the judges with a French entry called "The Dragons of Louvois" which ran it close in the marking. This recording,



TRIUMPH REPEATED

Wilhelm Gluckert, of Mainz, won the shield donated by this magazine for the outstanding entry in the 1958 International Contest. This year he was placed first in the Music/Speech section for a recording called "Kiss Me Once Again."

phagocytes as they rush by the red corpuscles."

And then, a final delightful touch, he offered to share his discovery with any medical man with progressive ideas or anyone with some spare cash to invest!

This was a superb piece of leg-pulling. It was basically built about one good idea. *But it could have been realised in no other medium than sound recording.*

The challenge shield offered by *Tape Recording and Hi-Fi Magazine* went this year to Abbé Raymond Garnier, of Trouhans, France, whose recording of the Sanctus et Benedictus in Dijon

The Editor discusses the tapes submitted from four continents in the recent International Recording Contest, which was judged in London.

entered by M. Marcel Casiez, of Paris, gave us the music of a police band celebrating July the Fourteenth, and recaptured all the excitement of that traditional French festival.

There was a category in the International Contest which was not included in the British event this year—for Technical Experiment. Naturally, it attracted some very interesting efforts.

It was won by a German entry called "The Night", submitted by Herr Karl-Heinz Wellinghoff. This was a short tape—only four minutes—but it suggested a long and most agonising night. It was meant to convey the mental processes of a man unable to sleep because of his war sufferings.

Second prize went to a French entry, from M. Roger Pierre Lafosse, of Bordeaux, called "The bagpipes and the laboratory." The bagpipes were out of order; we heard the results when they were attended to in the laboratory!

The titles of other entries in this section—"Laboratoire" and "Journey to a country of abstractions"—will suggest the techniques employed.

For quality of recording technique the judges awarded first place to M. Jan Bruyndonckx, of Herentals, Belgium. He won a prize last year for a very interesting tape called "Rails," in the production of which he used railway sound effects taped on a series of endless loops and re-recorded on top of other effects.

M. Bruyndonckx is now evolving a highly individual technique, so much so that one of the B.B.C. listeners to his tape this year guessed the name of the author before it was announced. It was



JURY IN SESSION

Part of the International Jury—the Dutch, Belgian and French judges can be seen in the photograph—seen in session in the Council Chamber at Broadcasting House.

Photo by Wilhelm Gluckert



A SILVER CUP FOR THE CHAMPION

John Weston, of Meeching Junior School, Newhaven, submitted the tape adjudged to be the best entry overall this year. It had already won the Schools Section of the British Contest, for which the Grundig Challenge Cup is annually awarded. In the photograph above Mr. Weston is seen receiving the Cup from Mr. John Amphlett, who is chairman of the Federation of British Tape Recording Clubs and who was one of the British judges in the International Contest.

a recording called "Nocturne for two," a clever montage of sounds and effects with bold distortions of the normal time-scale.

Now what of the other entries that did not figure in the prize-list?

From Denmark came "The Fairy Tale," an appropriate offering from the land of Anderson. It was a pleasant little cameo of only 1 minute 45 seconds' duration, narrating a simple story of three animals in search of a fairy tale and discovering that they were themselves the story. As with "Contact microphone," the idea was all important, but the skilful use of recording brought it to life.

Germany produced a very funny tape called "This is the WWV Broadcasting Corporation," submitted by Herr. K. Schutze. This unmercifully guyed the technique of commercial sound radio—its brash approach to culture, its oversimplification of serious issues, its adolescent advertising. But it was done with humour, not malice.

Holland submitted a very ambitious effort by Mr. A. van Maaren, which set out to retell the whole story of the creation of the universe, with the aid of electronic effects and a dramatic narration, using liberal echo effects. This tape was built up of four acoustic layers, using traditional musical instruments in blend with the electronic effects.

Two entries from Austria in the Music-Speech category appealed to me greatly. One was called "Kitchen Serenade" and was composed of rhythmic patterns made with kettles and pans, a slicer, a bottle of wine, and suchlike. It ended with a cry from a male heart: "Oh, Marie, I want to eat."

The second was entitled "Water drops intermezzo," opened with water effects, then settled down a steady succession of drips interwoven with pianoforte music.

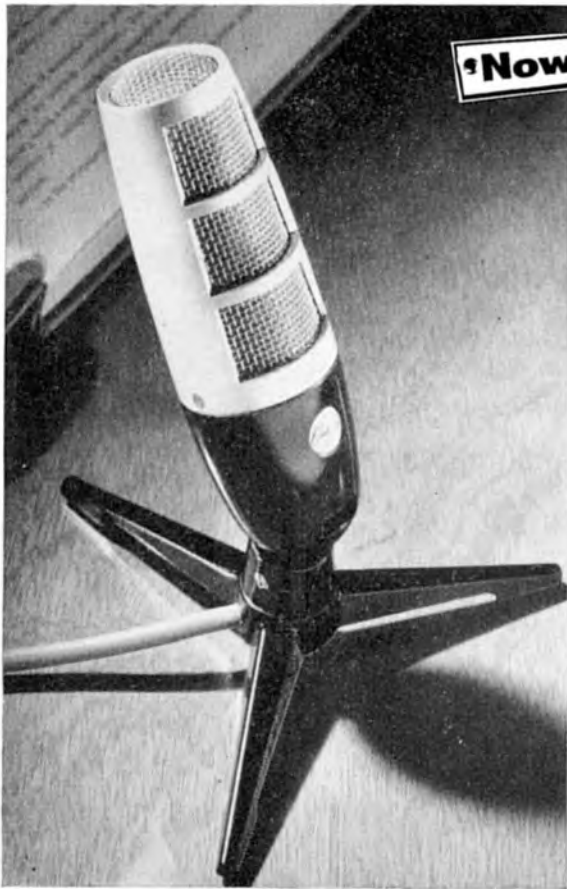
From Australia came a tape play called "Incident in the wet" which was very well done, but probably concentrated too much on stage technique rather than exploiting sound recording possibilities.



IN THE STUDIO

Some of the European visitors seen in a B.B.C. studio when they were interviewed for the "Sound" programme. Left to right: Willy Meeus (Belgium), K. Dannefeldt Bothner (Denmark), Jean Thevenot (France), J. Smits (Holland) and John Kirby, compere of the "Sound" programme.

Two interesting impressions remain with me. One is how much more effective is the French language than any other in achieving intense dramatic effect; the other how much more effective is German and Austrian music than any other in evoking nostalgic emotions.



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TAPE TITTER



NEXT YEAR'S TAPE CONTESTS

Two for amateur drama groups

FIRST details of two big annual competitions for drama enthusiasts with tape recorders have just been announced. They are organised by the National Union of Students and *Reynolds News*, and both carry valuable prizes.

Now in its third year, the Drama-on-Tape contest organised by the newspaper is divided into three classes—for amateur, youth club and school drama groups.

Reynolds News is offering a £40 first prize and £20 to the runner-up in each class. In addition, there will be a £100 prize for the best entry from any group.

Goldsmith's "She Stoops to Conquer" has been chosen as this year's set piece. Competitors can select any 15-minute extract from Acts 4 or 5. There is no entry fee.

Closing date is February 16, 1960, and entry forms and full rules can be obtained from Tape Drama, *Reynolds News*, Pioneer House, Gray's Inn Road, London, W.C.1.

Judges will include Miss Constance Cummings, the actress, her playwright-husband, Mr. Benn Levy, and the editor of *Tape Recording Magazine*.

Contestants have until March 21 to submit entries for the competition organised by the Student Drama Association of the N.U.S. They should be submitted after January 11.

They should preferably be original and last between ten and twenty minutes.

Mr. Bryan Izzard and Mr. R. D. Smith, of the B.B.C. Drama Department, will be the judges. After they have made a preliminary selection, the winners will be chosen and announced at a reception in London on Saturday, April 9.

Grundig have donated the prizes and the winning group will receive a TK 20

recorder with mixer, or alternative equipment of the same value.

Entries, accompanied by a fee of 5s. 0d., should be sent to the Secretary, S.D.A., 3 Endsleigh Street, London, W.C.1. Non-member groups may enrol by sending 10s. 6d. annual subscription with the entry fee.

Work has already started on the 1960 British Amateur Tape Recording Contest, which is organised by this magazine. Preliminary details will be published immediately after Christmas.

IN BRIEF

ENTHUSIASTIC convert to the use of miniature tape recorders for business purposes is Mr. Owen Tannett, managing director of Stanley Works (GB) Ltd., Sheffield. He has just returned from a two-week working visit to Germany and Switzerland with a Fi-Cord as his secretary.

"It saved me hours of valuable time," he said. "It also helped me to set down important points while they were still fresh in my memory."

"I put a microphone in my button-hole and talked as I drove along. It was no more difficult than chatting to a passenger. Of course," he added, "I never used the machine to record actual conversation—that would probably embarrass the people I meet."

THE National Radio and Television Exhibition in 1960 is to be held at Earls Court, London, from August 24 to September 3, with a pre-view for overseas and other specially-invited visitors on August 23.

This will be the 27th National Radio Show.

VARIED PROGRAMME FOR NEXT COLLEGE COURSE ON TAPE

The World of Tape



News of
opportunities
ahead

THE Rose Bruford Training College is holding its third national Tape Recording Course next Easter, from April 20 to 25 or 26, 1960. The course will include the theory and practice of the basic skills, some programme exercises and, on the last day, a final evaluation of the work done and a discussion of the problems raised.

During the first three days members will be divided, according to previous experience, into three groups. John Borwick, I. W. Jarman, and F. C. Judd will conduct the practical sessions in studio operations, editing, and technical skills.

Mr. Borwick will talk on how to get the best from equipment, and he and Mr. Judd will discuss the variety of equipment available to the public. Miss Daphne Oram will demonstrate how the recording of musical instruments and choirs is done.

The programme exercises will give a day each on (a) production of studio drama with Desmond Briscoe, Geoffrey Hodgson and Graham Jones or creating electronic effects with Daphne Oram; and (b) making outside recordings and shaping the results into magazine programmes with Richard Burwood and Jack Singleton.

Plenty of equipment will be available, and the small groups for the technical and programme exercises will ensure individual contact with tutors.

The course will be limited to about fifty members. The fee for the course is £8 10s., including morning and afternoon refreshments. A limited amount of accommodation is available in students lodgings.

The Rose Bruford Training College is a private, non-profit making educational establishment recognised by the Ministry of Education. The Tape Recording Courses have to be entirely self-supporting, and are closely budgeted to allow only a small excess of income to be held in reserve on a full enrolment.

Application forms are available from The Special Courses Organiser, The Rose Bruford Training College, Lamorbey Park, Sidcup, Kent.

PHILIPS EXPAND

TO KEEP PACE with their increasing volume of trade in the area, Philips Electrical Ltd. have opened a new, enlarged headquarters for their south-west region at 51, Victoria Street, Bristol.

An unusual feature is that equipment in the showroom is mounted on movable stands so that the room may be quickly converted for lectures.

Out Now!

TAPE RECORDING

AND HI-FI

YEARBOOK

1959-60

The new edition of Tape Recording and Hi-Fi Yearbook is now available

CONTENTS INCLUDE

Up-to-date catalogue of every tape recorder on the market, with full specifications, price, etc. and many photographs. ★ A full review of tape developments during the past year ★ Advice on choosing a tape recorder, and on how to use a test tape ★ Glossary of technical terms ★ Articles covering microphones, speakers, amplifiers, etc. ★ Directory of tape clubs, manufacturers, dealers ★ Music on tape ★ Tape and cine ★ Making tape features ★ The law of copyright

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MANY recording enthusiasts fail to realise that without going to the expense of buying a radio receiver, or to the trouble of arranging an output from an existing one, they can very easily record radio programmes, or even use their tape recorders as efficient radio receivers.

The modification, which is simple and requires no structural alteration to the recorder, depends upon the fact that tape recorders require amplifiers of fairly high gain, and can be used in conjunction with a diode receiver.

Everyone is conversant with the old crystal set, with its familiar cats-whisker. In the early days, it was necessary to adjust the cats-whisker until a suitably sensitive point on the crystal was found. Today, however, this tedious process has been replaced by the crystal diode, a wartime invention, which is very sensitive, and requires no adjustment at all.

It is only necessary to couple a diode receiver to the appropriate tape recorder input. Such a receiver consists simply of a coil and condenser connected in parallel, to tune to the required wavelength, and a crystal diode to rectify the received signal.

THE RECEIVER

The receiver is built from the three components mentioned, which are easily obtainable.

The coil is a Repanco high gain dual range crystal set coil type DRX 1, and costs but half-a-crown. The condenser should be of the variable type, value .0005 microfarads. Now, there are two types available, the air dielectric, which has air between the plates, or a smaller type which has a tufnol dielectric, and used to be used in early receivers for reaction control. Either type can be used, but the latter are more favourable, as the reduced size makes them suitable for small receivers.

Fig. 1(a) shows the theoretical circuit of a diode receiver. The aerial is taken to one side of the coil, and the earth to the other. There are, generally speaking, three wave ranges over which radio receivers will tune, and while a diode receiver can cover two, a coil is required for each range.

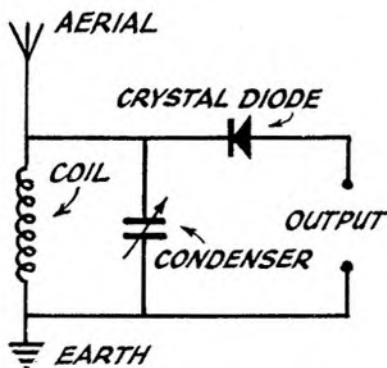


Fig. 1 (a). Diode receiver for one wave-range

B. E. WILKINSON

gives details of how you can . . .

For this reason, the circuit is modified to that shown in Fig. 1(b). The two coils in series form the long wave winding, which tunes over a range of roughly 1,000 to 2,000 metres. By closing a switch across one of these coils we can short it out, using only the other one, which is the medium wave coil tuning from about 200 to 500 metres.

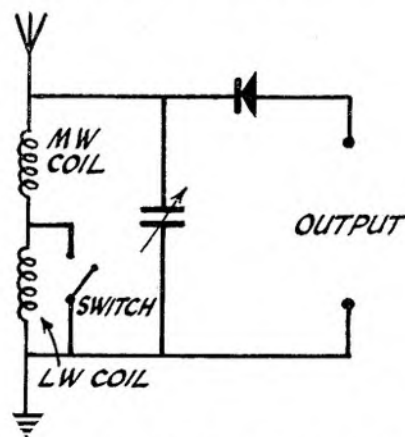


Fig. 1 (b). Diode receiver for long and medium range coverage

The coil we shall use has four tags mounted on a small tufnol disc. One tag is not used, the red and black tags form the medium wave coil, and the blue and black tags form the long wave coil. It is thus necessary when tuning to the medium wave, to short out the blue and red tags by means of a switch.

There are many crystal diodes available, but it is essential to get a really sensitive one. The two recommended are the Mullard OA70 and the General Electric GEX 34. They will cost somewhere between three and five shillings, and can be obtained from radio dealers.

Having discussed the general aspects of the receiver, we can now get down to the actual details.

The set can be built in a small box, or it can be built on a small sheet of plastic, or even plywood.

Take a piece of sheet, as shown in Fig. 2(a), and drill the holes as shown. Fig. 2(b), shows how the components are laid out and wired up on the board. It will be noticed that the earth connection is taken to the moving vanes of the tuning condenser. This is always done to avoid the effect of hand capacity which might upset the value of the condenser when one caught hold of the shaft to tune it.

For wiring up the components, stranded wire with plastic insulation should be used, and it is far better to solder the connections than to twist them around the tags. Care should be taken,

USE YOUR RECORDER AS A RADIO RECEIVER

however, when soldering the crystal diode into the circuit, as these devices are very sensitive to heat, and overheating may ruin them. So the leads should not be cut too near the crystal, and each lead as it is soldered should be held with a pair of thin nosed pliers, to conduct the heat away.

The four terminals are 6B.A. nuts and bolts, the bolts being long enough to take the output leads, and the aerial and earth.

The other aspects of the receiver, which are important, even if they are not actually on the baseboard, are the aerial and earth. Crystal sets depend for their working upon the strength of the signal they receive and, for this reason, must have a good aerial.

A good aerial is not necessarily a very long one, although a very short one is of little use. In practice, about 20 feet of wire, slung from the house to a tree or a pole, is sufficient. If possible, it should be slung from an upstairs window, or as high from the ground as is practicable. Avoid having it very loose, as height is lost in the middle. If 20 ft. is not found sufficient it should be extended, but the longer the aerial, the less selective the receiver becomes—even if it is more sensitive.

An earth may or may not improve the reception. In some cases, an earth introduces noise, while in others it can improve reception considerably. At any rate, the earth, if used, should be a good electrical connection. It should take the most direct path to the nearest water pipe or, if it is more convenient, to a metal rod pushed into the ground.

The set being complete, it is necessary to test it. The aerial and earth should be connected to the appropriate terminals, and leads taken from the output terminals to the tape recorder. These leads should be kept short and, if possible, a length of coaxial cable used, the screen being taken to the earth side.

At the other end of the cable, we have the plug which will fit the appropriate tape recorder input. It will go to either the gramophone pick-up or radio input, whichever gives the better results. It should not go to the microphone input, if the microphone is of the condenser

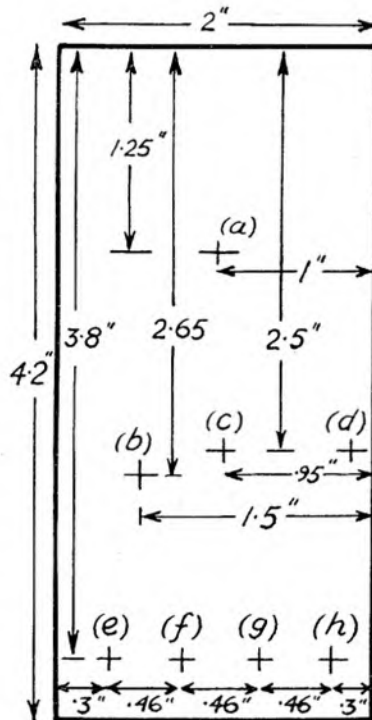


Fig. 2 (a). Baseboard. Drill (a) to receive $\frac{3}{8}$ in. shaft; (b) to receive switch; (c), (d), (e), (f), (g) and (h) to receive 6B.A. bolts

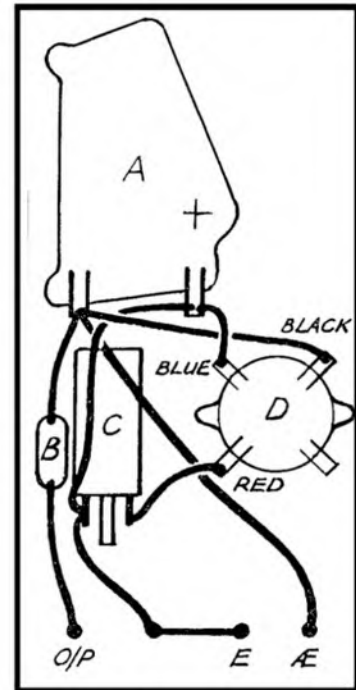


Fig. 2 (b). Wiring of components on baseboard. A = tuning condenser; B = crystal diode; C = switch; D = coil

type, as the polarising voltage will ruin the crystal diode.

For testing, the receiver should play, if possible, through the recorder amplifier, without actually recording; if this is not possible, the recorder should be monitored with headphones. Fig. 3 shows the arrangements schematically.

By rotating the shaft of the tuning condenser, it should be possible to select at least the Home Service on the medium range and the Light programme on the long range.

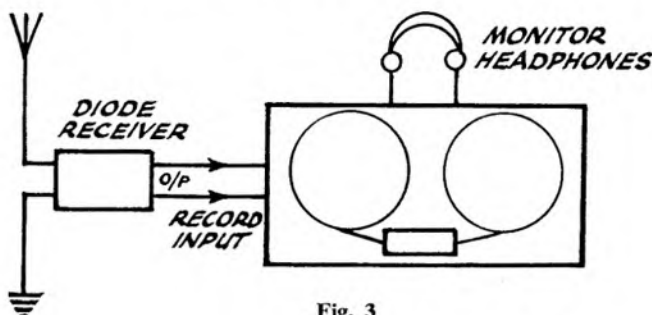


Fig. 3

When first testing, one may be aware of one or more of three undesirable effects:

1. Excessive hum.
2. Condenser cannot be closed far enough to receive required station.
3. Signals may sound exceptionally sharp.

The hum is probably due to the connection of the receiver output lead to the recorder plug. Reversing the connections generally has the desired result. If the condenser cannot quite make the desired station, it is due to the fact that the tuning coil has insufficient inductance, and the iron dust core in the coil should be adjusted by means of a screwdriver.

The sharpness of tone may be controlled at playback by means of the tone control on the tape recorder, or by means of a condenser connected across the output terminals of the diode receiver. One should start with a value of about .001 microfarads, and if this does not improve reception it should be increased by a factor of 10. Too large a value will make the signal sound "woolly," but by experiment a value can be found where reception is most comfortable.

Equipment reviewed

THE GRUNDIG CUB battery portable

S MALL transistorised recorders are becoming as popular as the snapshot camera. Indeed they should be, as there are many holiday events that can be recorded, as well as photographed. Why not combine the two and make that holiday snap album more interesting?

The Grundig Cub is a truly portable recorder; ideal for holiday snapshots in sound, or the weekend in the country, the 21st birthday party, a visit to the zoo, and just about a hundred other occasions when some "new sound shot" can be collected and stored away, like the snapshots in the photo album.

This little recorder has a feminine appeal, too. Its elegant modern-style case, with grey and white finish, should be popular with the ladies, and the designers have thoughtfully included a substantial carrying strap. Spring clips are fitted to the tape spool hubs to prevent the spools falling off when the recorder is held vertically, and I tested the usefulness of these clips by both running and walking with the recorder in operation.

Controls are simple; on this point alone the "Cub" deserves "a child can operate it" tag, as each function can be selected by one control, leaving only the setting of the volume or recording level by the other. A "pause" button is provided, so that tapes can be conserved during recordings where desired sounds are infrequent, and to allow the motor to reach full speed before actually recording.

CIRCUIT AND DESIGN FEATURES

The "Cub" is fully transistorised, its amplifier and components being assembled on a printed circuit board. Four transistors are used, three for the amplifier and one for stabilising

RECORDING TAPE

DOUBLE PLAY

B.A.S.F. 300ft. (3") 14s. 600ft. (4") 25s. 1,200ft. (5") 42s. 1,600ft. (5½") 52s.6d. 2,400ft. (7") 77s.6d.
SCOTCH BOY 200.—400ft. (3½") 17s. 1,200ft. (5") 45s. 2,400ft. (7") 80s.
TELEFUNKEN.—1,200ft. (5") plastic container 40s. 2,400ft. (7") 75s.

LONG PLAY

B.A.S.F. 210ft. (3") 9s. 850ft. (5") 28s. 1,200ft. (5½") 35s. 1,800ft. (7") 50s.
EMITAPE 99.—250ft. (3½") 9s.6d. 850ft. (5") 28s. in Emicase 30s.6d.
1,200ft. (5½") 35s. in Emicase 37s.6d. 1,800ft. (7") 50s. in Emicase 52s.6d.
2,400ft. (8½") 72s.6d.
GELOSO.—430ft. (3½") 16s.
GRUNDIG.—1,200ft. (5½") 35s. 1,800ft. (7") 50s.
MSS.—225ft. (3") 8s.6d. 450ft. (4") 14s.6d. 850ft. (5") 28s. 1,200ft. (5½") 35s. 1,800ft. (7") 50s. 2,400ft. (8½") 70s.
PHILIPS.—850ft. (5") 28s. 1,800ft. (7") 50s.
SCOTCH BOY 150.—300ft. (3½") 9s.6d. 900ft. (5") 28s. 1,275ft. (5½") 35s. 1,800ft. (7") 50s.

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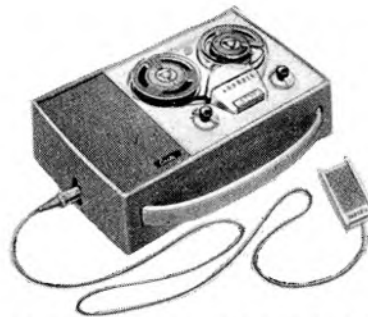
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By
F. C. JUDD
A.M.Inst.E.



When closed for carrying, the Grundig "Cub" is one of the neater and most stylish machines on the market

the motor speed, which is remarkably constant; "wow" is low enough to be almost unnoticeable when listening to a recorded steady tone.

Dry, low leakage batteries are used for powering the recorder, and provision is made for direct connection to a car battery, in which case some of the internal batteries are automatically disconnected.

This recorder has no capstan drive. Consequently, the record/playback speed varies as the tape is used up. Although the "mean" speed is $3\frac{1}{2}$ ips, tapes recorded on the "Cub" are not suitable for direct reproduction on a standard machine. One could, however, re-record on to another tape at standard speed. The quality of reproduction compares favourably with that from a small radio receiver, as a built-in miniature elliptical speaker is used for direct playback, driven from the push/pull transistor output stage with a 100 milli-watts of audio power.

The method of biasing the tape for recording is quite unique. A low current D.C. bias is used and is taken from the collector of one of the output stage transistors, which also does duty as output valve when recording. Despite the fact that erasure is also D.C. (magnetic), very little noise is left on the tape after erasing or recording.

GENERAL

Up to 15 hours' continuous operation is possible with a fresh set of batteries and, as the conventional twin-track system is used, a single L.P. tape can be used for a running time of 15 minutes per track.

The recorder is supplied complete with a microphone, a reel of tape, one empty spool and a special dual lead for connection to an external amplifier, radio tuner or gramophone pick-up. The same lead can be used for patching the "Cub" directly to a larger recorder for dubbing purposes.

Changing batteries is a simple operation, as the back of the recorder comes off after releasing a single screw catch. The whole chassis may be removed for servicing by unscrewing only four pillar nuts, while access to the recording head for azimuth alignment is gained by unclipping the plastic head cover.

FUNCTIONAL TESTS

As one can hardly expect "high fidelity" performance from this type of recorder, functional tests were applied accordingly. The quality of reproduction is most acceptable taking into account the small speaker, small case and low audio output. Mechanical noise is low enough to be inaudible during quiet recordings, and electrical noise is within the makers' specification of -40 dB. The recorder was tested by measuring the noise level at full gain and was found to be well below -35 dB. There is no electrical noise from the D.C. motor, which is fully suppressed against interference.

The frequency response of the amplifier on playback is level from 150 to 7,000 cps, which is better than the makers' specification of 150 to 5,000 cps. The overall recording/playback response is still quite favourable, being substantially level from 180 to 4,000 cps. Many recorders fail on a test of this nature and generally only meet the response specification when the test is made from a special test tape or directly from a signal generator.

The recorder will operate satisfactorily whether lying flat or held vertically. The microphone supplied has ample sensitivity for recording quite distant sounds. It is small enough to be used as a lapel instrument if it had a suitable clip, a point that might be considered by the makers.

The instrument was tested on recordings from a radio tuner, which were replayed via an external amplifier. This showed

that the quality of recording is surprisingly good, and comparable with larger standard machines. The main control for selecting record, playback, re-wind, etc. is sure and certain in operation. Reverse re-wind is provided for, but it is slow, taking $5\frac{1}{2}$ minutes to fully re-wind the tape. There is no forward re-wind facility.

The performance of this recorder compares very favourably with the makers' specification, which is given below:—

Current consumption: Motor, approximately 200 mA. Amplifier, approximately 15 mA.

Operating time per set of batteries: 10-15 hrs., approximately, depending on freshness and quality of batteries.

Battery complement: 4 x 1.5 volt Monocells Leak-Proof, Ever-Ready Type LPU2, Drydex Type T21, Siemens Type T1/LP, 1 x 3 volt battery Ever-Ready Type 8, Drydex Type 2T10, and Siemens Type T8 or equivalent types.

Amplifier: Printed circuit.

Transistors: 2 x OC71, 2 x OC72.

Playing time: Approximately 2 x 15 minutes, using tape Type TDP6.

Spool size: Three inches.

Recording sense: International.

Mean tape speed: $3\frac{1}{2}$ inches per second.

Frequency response: Approximately 150-5,000 cps.

Signal to noise ratio: Approximately 40 dB.

Output power: Approximately 100 mW.

Loudspeaker: 3.5 ohms Elliptical.

Socket: Input (pins 1-2), Output (pins 4-3), and Pin 4 shorted to centre pin.

Dimensions: 11 x $6\frac{1}{2}$ x $3\frac{1}{2}$ in.

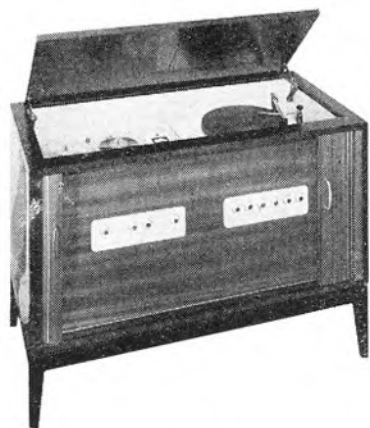
Weight: $5\frac{1}{2}$ lb., with batteries.

Finally, I should like to make one or two observations on this type of recorder generally. One must not expect sixty-guinea performance from a twenty-six guinea machine designed for complete portability rather than fidelity reproduction. It should be remembered that frequency response, low distortion, low noise and all the other requirements of a good recorder are functions of much more elaborate circuit designs, requiring the use of valves, higher operating voltages and larger loudspeakers, none of which can be incorporated in small portable equipment.

Limitations must also be imposed on mechanical features and such functions as fast wind and re-wind, together with constant tape speed, can only be achieved in larger recorders where there is sufficient space for additional motors or mechanisms and for a capstan and conventional tape drive system.

Grundig have produced a fine little recorder, which will undoubtedly be a leader of its class. It is very favourably priced at 26 guineas and should prove invaluable, both as an addition to the keen recordists' static equipment and for its uses as a "soundshot" recorder of almost everything—from teenagers' pop records and party fun to serious collections of bird calls by keen students of ornithology.

My only criticism is the lack of a capstan drive, which would have permitted direct playing of recorded tapes on another machine. But, in all fairness, on this point, I must remind the reader of my comments above on limitations imposed by design problems and price.



Astronic market luxury hi-fi

ASSOCIATED ELECTRONIC ENGINEERS, manufacturers of the well-known Astronic products, introduced a complete new range of hi-fi equipment at the recent Northern Audio Fair. Most interesting is the "Pinner" stereo tape, disc and radio reproducer and recorder.

It has been developed to provide the highest quality in each of the three methods. The recording amplifier allows stereo and single channel recording while listening to the primary source.

Included are a type A1434 control unit and pre-amplifier used with two 20-watt amplifiers. A Truvox tape deck is fitted with stereo head, push button control and footage indicator.

The transcription type record unit is complete with stroboscopic turntable and speed control, using a Decca pick-up and a calibrated lowering device. Additional features are speaker, phase and channel controls and interior lighting.

The cabinet has a flush fitting lid and roll-away doors which cover the control panels. The finish is in veneered walnut. The cabinet size is 42 in. x 22 in. x 30 in. and the cost £231 18s. 9d., plus £83 14s. 4d. purchase tax.

Two new radiograms are the "Edgware" and the "Stanmore." The former uses an Astronic 10 watt amplifier and costs complete £121 11s. 7d., including tax. The "Stanmore" is equipped for stereo discs and has a 12 watt Astronic twin-channel amplifier. It costs complete £153 12s. 0d., including tax.

The fourth new item in the Astronic range is the "Kenton," a stereo record player with an A1444 amplifier and costs complete with speakers £84 6s. 11d., including tax.

Associated Electronic Engineers Ltd., Dalston Gardens, Stanmore, Middlesex.

New Products

PHILIPS ANNOUNCE TWO NEW MODELS

TWO NEW PORTABLE models have been added to the range of tape recorders marketed by Philips Electrical Ltd. They are the EL.3515 and the EL.3538, selling at 32 guineas and 57 guineas respectively.

Described as a family recorder, the EL.3515 weighs only 18 lbs. It takes reels up to 7 in. diameter, plays at 3½ ips, giving, with double-play tape, four hours' playing time. There is generous storage space for cables and microphone.

It is equipped with a 4 in. speaker. It claims a wide frequency response (50-14,000 cps), and has a foolproof braking mechanism.

The new "Magic-ribbon" recording level indicator is incorporated and there are separate inputs with mixing facilities. The amplifier can be used separately with microphone or gram, and recordings can be monitored by headphones.

It is housed in a robustly-made carrying case of polystyrene, finished in two shades of grey. Output is 2.5 watts.

The EL.3538 is a three-speed (1½, 3½ and 7½ ips) tape recorder which will provide up to eight hours' recording, using double-play tape. A four-digit indicator enables any point on the tape to be selected with accuracy.

Weighing 30 lbs., it has about the same output as the EL.3515. The standard carrying-case, however, is in blue-grey finish.

Push-button controls are grouped at the front of the machine. There are sockets for extension speaker, radio/gram pick-up, and headphones to monitor mixed signals of speech and music during recording.

To enable easy maintenance, there is a detachable plastic hood which can be removed for cleaning the mechanism.

Both machines are supplied with microphones, reel of tape and spare take-up spool.

Philips Electrical Ltd., Century House, Shaftesbury Avenue, London, W.C.2.



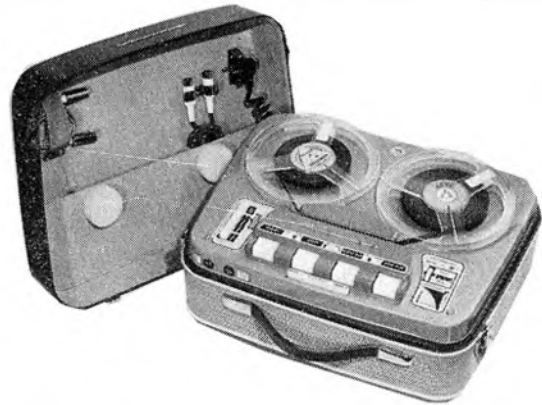
The Philips EL 3538



The Philips EL 3515



Above: *The Harting HM8.*
Right: *The Körting.*



T.S.L. LAUNCH FOUR-TRACK STEREO DRIVE

FOUR-TRACK STEREO is here in a big way—from the Continent. And one firm, Technical Suppliers Ltd., is setting the pace in introducing this equipment to Britain.

They have been handling the Tandberg four-track stereo machine for some time. They now announce that three other machines are available.

One is a new version of the highly-regarded Harting. This is the HM8, which embodies two separate pre-amplifier and amplifier stages, with four-track heads. This machine can be used monophonically—up to eight hours' playing time from a 7-inch reel—or stereophonically, or two tracks containing entirely different programmes can be played back simultaneously by putting one speaker in an adjoining room.

Another facility is that one track can be used for sound and another to trigger the controls of a film projector.

PLAYS TAPE RECORDS

The machine plays all commercial pre-recorded tape records, stereo and mono.

The HM8 provides speeds of $7\frac{1}{2}$ and $3\frac{3}{4}$ ips, with claimed frequency responses of 30 to 20,000 and 30 to 16,000 cps respectively, in each case ± 3 dB. Wow and flutter is quoted at less than 0.1 per cent combined.

Output is $2\frac{1}{2}$ watts per channel.

One of the two Lorenz elliptical speakers is built into the recorder cabinet, the other into the detachable lid.

Automatic stop operates at the end of the tapes; superimposition facilities are provided. All control operations are carried out with only five keys, three rotary knobs and two press buttons.

Monitoring can be carried out on each or both channels during recording.

The HM8 is housed in a wooden cabinet covered in weatherproof simu-

lated leather, with gilt embellishment. The weight is less than 30 lb.

The price of the machine is 86 guineas (without microphones and tape).

Another new four-track stereo machine now available from T.S.L. is the Körting, which costs 68 guineas (excluding microphones and tape).

This has a similar specification to the Harting in all essentials, but is a single-speed machine, operating at $3\frac{3}{4}$ ips. It also has only one built-in speaker, and a second one will be necessary for stereo.

The third new four-track stereo machine introduced by T.S.L. is a new Elektron model.

Technical Suppliers Ltd., 63 Goldhawk Road, London, W.12.

NEW 'TAPEJAK'

A TAPEJAK is now being marketed by Teletron designed to convert a recorder into a radio receiver. It is a transistorised A.M. radio tuner powered by a 9 volt PP4 battery.

It is linked to a recorder by inserting the jack plug into the microphone socket.

Internal pre-set condensers permit the unit to be adjusted for the reception of any two medium-wave programmes, plus the permanent reception of the 1,500 metres long-wave programme.

The Tapejak is priced at £5 9s.

Teletron Co. Ltd., 112b, Station Road, Chingford, London, E.A.

CLARISSA MAKES A BOW

Two new popular-price machines

PERTH RADIOS have introduced a new range of tape recorders, the Clarissa MK 1 and the Clarissa Twin De Luxe MK 2. Both are equipped for three-speed playing ($7\frac{1}{2}$, $3\frac{3}{4}$ and $1\frac{1}{2}$ ips) and take spools of up to 7-inch diameter.

They are built into carefully-styled cases, with olive green Spanish hide finish, gilt fittings, and a cream plastic front. Designed to be easily portable, they have hand straps for lengthways

carrying. The overall dimensions are $18 \times 13 \times 7$ ins.

The unit construction gives easy accessibility and servicing. Both models are fitted with full mixing and superimposing facilities. There are separate, compensated inputs for microphone and gram or radio.

The extension speaker sockets allow for automatic muting of the internal speakers. The speed changes have automatic compensation and wow and flutter is claimed to be better than 0.15 per cent at $3\frac{3}{4}$ ips.

The Clarissa MK 1 costs 42 gns. and has a large elliptical high-flux speaker giving 3 watts undistorted output. It has a frequency response of up to 10,000 cps. There is a magic-eye for visual monitoring and a full-range tone control. It is supplied with a crystal microphone.

The Twin De Luxe MK 2, which is priced as 56 gns., has an elliptical bass speaker unit with matched tweeter unit giving a 4 watt output. A virtually straight-line frequency response from 40-12,000 cycles is claimed.

It has independent treble and bass controls and is fitted with monitoring earphone sockets. A moving coil microphone is supplied and the unit weighs 26 lbs.—3 lbs. more than the MK 1.

Perth Radios Ltd., Marten House, 39-47, East Road, London, N.1.



The Clarissa MK 1

Studio Quality

**NO OTHER TAPE
RECORDER HAS ALL
THESE FEATURES**

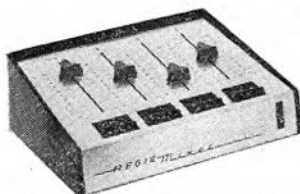
SABA

- ★ Automatic tape reversal enables the recorder to play continuously.
- ★ The SABA "Trick Switch" enables blending and synchronisation of voice over music and other combinations.
- ★ Frequency range 30 to 20,000 cycles at 7½" per sec.: 40 to 16,000 cycles at 3½" per sec.
- ★ Relay operated switches give feather-light control.
- ★ Re-winds at 30 times normal playing speed.
- ★ Speeds 3½" per sec. for general use. 7½" per sec. for studio-quality recording.

The Saba is the only Tape Recorder that has all the features necessary for Professional Recording, while its simplicity of operation allows even the most inexperienced user to obtain Studio Quality Results. **Price** Microphone 9 Gns Extra **89 Gns.**



REGIEMIXER The perfect mixing unit



This new mixing unit for SABA and other tape recorders enables four sound inputs to be blended accurately to individual tastes. Battery operation cuts out mains hum. Fully transistorised. Maximum can be pre-set and individual inputs varied. Ideal for recording bands and vocal groups, where correct balancing is essential.

Price 18 Gns.

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SECOND-HAND MACHINES ★ 200 machines, 35 models in stock ★ Mail Order
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Full Demonstration Facilities include
Record/Replay through
High Quality Equipment

122 Bristol Street, Birmingham, 5.
Tel.: MID 1359



“Scotch” Brand are marketing their new Accessory Kit gift wrapped in a gay “to-and-from” Christmas sleeve. The sleeve can be easily removed after the festive season is over

A RECORDER AT 21 GUINEAS

THE NEW Portadyne TD 100 costing 21 guineas is the cheapest tape recorder on the market fitted with built-in amplifier. The price includes a crystal microphone and the design incorporates many of the features found on more expensive machines.

Input sockets are provided for high impedance microphone and diode radio or gram pick-up. Each has its own compensation. There is an adjustable tone control for playback and this incorporates the mains on/off switch. An automatic locking device prevents accidental erasing.

A magic-eye recording level meter is fitted and the design incorporates five valves.

A single tape speed of 3½ ips on spools of up to 5½ inch gives 2 hours 8 minutes playing time using LP tape. 850 feet of tape can be dealt with on the fast rewind in three minutes.

The built-in high-flux loudspeaker measures 7 x 4 ins. Amplifier output is 4 watts. The frequency response is quoted at 60 to 8,000 cps, signal-to-noise ratio at 50 dB, and wow and flutter at 0.4 per cent.

The standard model is supplied for AC only with a 200-250 volt range.

The cabinet, measuring 16 x 12 x 6 ins., is made of wood, covered in two-colour leather cloth. There is room for storage of microphone, reels and leads.

Portadyne Radio, Portadyne Works,
Gorst Road, North Acton, London,
N.W.10.

REPORTED STOLEN

Wyndors Recording Co. report that Wyndors “Viscount” serial number 7551, has been stolen from the stock of Messrs. Mainsets Limited, 17/18b, Market Place, South Harrow, Middlesex, and the matter is in the hands of the police.

TAPE TO DISC SERVICES

TAPE RECORDER HIRE

TAPE TO DISC 78-LP
RECORDING STUDIO
SALES—EXCHANGES

MAGNEGRAPH

1 Hanway Place, London, W.1.
s.a.e. for leaflet or
telephone LAN 2156

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Recording Studio equipment with new Steinway
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SSS Private gramophone records made from your own tape

Microgroove LPs from 20/6
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Choirs, Meetings, etc. S.A.E. for full details:—
John Leviss, Sunderland Sound Services,
28, Viewforth Terrace, Sunderland S7032
■ If you can hear it — We can record it! ■

TAPE TO DISC SERVICE

78's or L.P.

QUEENSWAY RECORDING STUDIOS

123, Queensway, London, W.2
Tel.: BAYswater 4992

Inquiries must be addressed direct to us

TAPE TO DISC RECORDING

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78 rpm from 11/-

Also 45 rpm

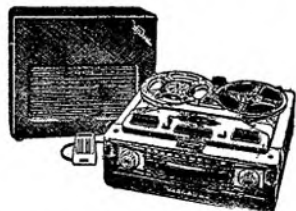
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Marsh, “Deroy” Sound Service, Little
Place, Moss Delph Lane, Aughton, Orms-
kirk, Lancashire. Tel.: AUG 3102

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Agents for Wyndson,
Grundig, Philips, Sovereign
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Have you heard the WYNDSON VISCOUNT with the latest mechanical Conversion on the Collaro Mark IV Deck. This modification to the deck gives $1\frac{1}{2}$ i.p.s. in place of/in addition to 15 i.p.s., thus giving $8\frac{1}{2}$ hours playing time, with the reversible track change.

Why not purchase your WYNDSON VISCOUNT from us, or any model incorporating the Collaro Mark IV Deck. We will convert your Recorder to 15, $7\frac{1}{2}$, $3\frac{1}{2}$, $1\frac{1}{2}$ i.p.s. or $7\frac{1}{2}$, $3\frac{1}{2}$, $1\frac{1}{2}$ i.p.s. FREE. To all owners of Tape Recorders with the Collaro Mark IV Tape Deck, we can convert your recorder for only 3 gns.

All tape recorders can be obtained for a minimum deposit and up to two years to pay. R.B. TAPES CO. LTD. give their own 12 months guarantee with free after sales service.

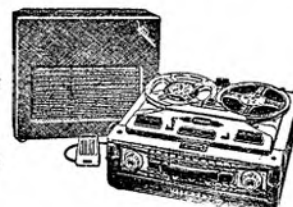


26 GNS 66/- Deposit
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Two pairs of recording, playback
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Pause control for momentarily
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Conforms to C.C.I.R. specifications.
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Three knobs for simple operation
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volume;
 - (3) radio/gram volume.
- Complete with Acos mic.

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*The finest recorder for price and
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This remarkable machine offers amazing
results for all home entertainers

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monthly payments
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A well-designed, constructed and finished
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An extremely popular recorder —
simple to operate—easy to carry—ideal
for family use

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ments of **£4. 4. 0**

TAPE HELPS IN WORKS SAFETY

IN the never-ending fight to reduce factory accidents, a team of French industrial safety experts has developed a device using a warning message on tape.

They felt that factory workers get so used to notices plastered on workshop walls and notice-boards urging constant care that they paid no attention.

But an audible warning would be different. It could be timed to coincide with the actual offence against regulations.

Now, in factories using the device, when an operator approaches his machine or bench and passes the safety limit, he crosses an invisible ray operating a photo-electric cell.

This in turn brings into action a tape-recorded message: "Be careful! This is dangerous apparatus. Make sure nobody is standing near. Where are you?"

The warning is almost infallible.

MINIVOX

Since Mr. Burrell Hadden's review of the Minivox (*November 4*), the manufacturers have modified the magnetic erase system. They claim that hiss generated in the modified version compares very favourably with orthodox oscillator erase systems.

With regard to the same review, we apologise for two inaccuracies. The playing time of the machine is thirty minutes, and the price is 37 guineas.

New products reviewed

American "Soundcraft" Tape

THE American "Soundcraft" tape, which has just been introduced to the British market, has a Mylar base. This provides great strength, although the approximate thickness is only 0.0014 inches.

The exceptional smoothness of the coated surface is also in the tape's favour, for it helps to keep down the wear of the record/replay and erase heads and to minimise surface noise.

Home tests have been made with this Soundcraft Plus 100 tape, using four different recorders—Vortexion, Brenell 3-star, Telefunken KL85, and Fi-Cord. Live recordings were made using ribbon, moving-coil and crystal microphones. Recordings were also made from VHF/FM broadcasts.

At a tape speed of 7½ ips, reproduction from the Soundcraft tape left nothing to be desired.

The frequency of all magnetic tape is, of course, limited by the equipment used, but in these tests an effective frequency response of 12,000 cycles was obtained at 7½ ips, and 9,000 cycles at 3½ ips.

Speech, at both speeds, was crisp and clear. No hiss was audible. The ad-

hesion of the oxide coating seemed to be good—there was no deposit on heads after many hours of use.

Print-through cannot be judged on the basis of short-term testing.

With the tape both loaded and unloaded, it was found that the noise content was low, even at high gain.

Soundcraft tape is claimed to be splice-free up to 2,400 feet, and the 1,200 feet tested was certainly free of splices.

The tape tested was free from drop-outs.

The spool is of fibre-glass, and uses the centre "C" slot—not the usual slotted edge.

The tape comes in a box with provision for detailed indexing.

There was a slight tendency to curl on one edge at the beginning of the particular 1,200 feet of tape tested, but there is no evidence that this is a general characteristic. Otherwise, I could not fault it.

It is marketed here by William Fuller & Co., 15, North Audley Street, London, W.1.

G. P.

MOTEK

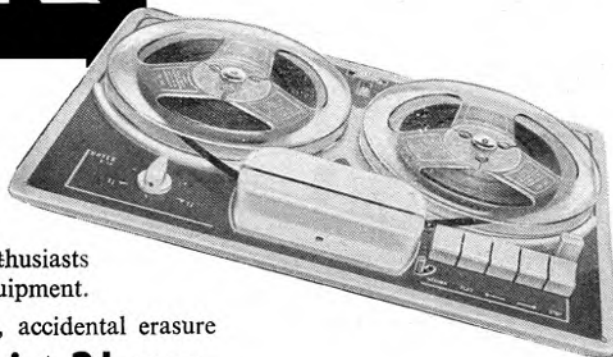
Patents Pending. Details of K10 (as illustrated) on Request.

3 SPEED TAPE-DECK

The Motek tape deck is both the heart and backbone of a multitude of recording machines.

Confidence in Motek, felt by manufacturers and enthusiasts alike, grows with the technical excellence of Motek equipment.

Three speeds, pause control, push button operation, accidental erasure prevention, positioning counter . . . these are a few of the outward signs of internal quality. **List 21 gns.**



MODERN TECHNIQUES

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Dimensions:
10½" × 5¼" × 9"

Only the new
MINIVOX has all
these advantages

Standard Radio Batteries power the new Minivox, and they'll give you at least 100 hours of regular recording.

Seven Transistors in the new Minivox give high sensitivity and first-class reproduction.

Three governed motors ensure constant tape speed until the very end of the life of the batteries.

Standard Tapes are used with the new Minivox, unlike most portables which need special tapes.

1½ hours Playing Time with the new Minivox, using extended-play tapes.

Magic Eye Level Indicator not usually found on portables is another example of the careful design that has gone into the Minivox.

Mixing and Superimposing Facilities are features normally found only in high priced mains-operated machines—yet the portable Minivox has them.

Extension Speaker Socket enables you to play back the Minivox through any external amplifier.

First-ever
British battery
Tape Recorder
gives
PORTABILITY
AND
PERFORMANCE—
AT THE
RIGHT PRICE

Here at last, in the all-British Minivox, portability and performance come together.

The new Minivox is the only portable that gives first-class results at a tape speed of 1½" per second. (It's twin track, of course.) The audible frequency response extends to 8,000 cps. Wow and flutter are inaudible. The case combines accurate acoustic performance with a most attractive appearance.

The total weight is only 9 lbs. Yet, although the new Minivox is so portable, it is really robust and precision engineered. The deck is of ½" duralumin. (No flimsy plastics have been used!) The circuitry has the same high standard of quality. The Minivox employs **seven** transistors and **three** constant-speed motors. All this for only 37 gns. including microphone! Get your Dealer to show you the new Minivox. This is a case when one demonstration really will convince you.

MINIVOX

37 gns

(INCLUDING MICROPHONE)

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News from the Clubs

Club Personalities No. 7



JOHN
PENMAN

Edinburgh
Tape
Recording
Club

RUGBY introduce the news once again, this time with details of a Tape Recording Course being organised by them in the New Year. The course, a series of lectures and demonstrations covering the essential parts of tape recording, starts on January 7 and will be held on six consecutive Thursdays at the Red Lion, Sheep Street, Rugby. A lounge has been reserved for this purpose.

The course is designed to bring the Rugby members up to a level standard in recording technique, and is also open to any other person who desires impartial tuition in this field. A charge of five shillings is to be made to non-members.

There will be two sessions each evening, excepting the first and the final week. The course will commence with a lecture on the history and development of tape recording. The following sessions deal in turn with equipment and its maintenance, advice on programme construction, and interviewing technique.

Among the lecturers will be Mr. W. Parrington of Walter Instruments Ltd. who will speak about the manufacture of tape equipment; Mr. G. Dawson of G.E.C. Ltd., who will advise on the importance of the right microphone; a representative of "Scotch Boy Tape" manufacturers describing "The tape itself"; and Mr. L. Skinner of Coventry Club and the National Federation. His subject will be "The technique of interviewing."

All inquiries should be addressed to the organisers, Mike Brown, 219, Clifton Road, and Mrs. V. Tilcock, 53, Fleet Crescent, Abbots Farm Rugby.

Jersey Tape Recording Club, who feature very rarely in this section, are nevertheless very active in their unusual way. They devote a great deal of time to producing plays on tape. Now approaching the end of their second year, they have managed during this time to write and produce some 37 plays, dispatch ten editions of a special sound magazine for the blind, and produce 48 editions of *Audiomag*, the club's own magazine on tape. Much of this is due I should imagine to the unceasing work of the President, Graeme Ahier. Details of his activities will appear in the personality section in our next issue.

Members of the club recently invaded his home and converted a spare room into a recording studio. I gather they have made a very good job of this, even down to the final trimmings. During playback sessions, curtains screen off the recording equipment and the sound is

JOHN PENMAN claims he is a comparative newcomer to tape recording, having been an active enthusiast only since May 1958. This was the date when he joined the Edinburgh Club.

When Alex Whyte resigned in January this year, he accepted the post of Secretary, and was launched into a period which he has found "interesting, but at times rather harassing."

He is very fond of classical music, with special preference for Mozart, Handel and Italian Opera. For a change, he listens to the Flamenco music of Spain, and to Gilbert and Sullivan.

His equipment comprises a Ferrograph 3A/N recorder, a Philco FM tuner, and a Wharfedale SFB3

speaker. These are put to good use to satisfy his needs in the musical sense, for he is in full agreement with the remarks made by Alan Stableford about corresponding by tape.

He is keenly interested in drama and has been on the professional stage for ten years.

Aged 41, a "bachelor gay," he is a Traffic Officer in the Telecommunications branch of the General Post Office.

relayed through two separate loudspeakers. Amber wall lights are brought into use, and these, combined with the colour scheme of the studio create a subdued listening atmosphere.

They have acquired a Grundig Cub portable recorder. This is to be used to collect material for a programme in operation capturing local sounds and events.

Bournemouth club members have also made some recent acquisitions, namely, new club rooms and an extended title. The new club rooms are situated in the Civil Defence Centre, Holdenhurst Road, Bournemouth, and the new name is recognition of the fact that club member-

ship envelops the neighbouring town of Poole.

Members are looking way ahead and are busy preparing the tape which will eventually be entered in the National Contest for 1960. Several five-minute tapes have been submitted by members for criticism. The outstanding production, sound effects and typical patter arranged to present a "commercial," came from the only lady member, Mrs. J. L. Lawson.

A demonstration of the Stereophoner was recently provided by Tape Recorders of Westbourne, a local dealers. Visits are planned to the local police headquarters and to the museum. A new Chairman has been elected, he is Mr. W. Rawlins and it has been decided that the annual subscription should be reduced to fifteen shillings, or twenty shillings for man and wife.

London members listened to an interesting and convincing demonstration of the Walter Instrument range of recorders provided by Mr. Parrington, at their November 5 meeting. This was followed by a talk by Ken Blake with illustrations of the tapes he entered in this year's contest. A talk on recorder design and construction is planned for the December 3 meeting.

Tape competitions have been one of the main items enjoyed by the **Blackpool** club members. Interviewing holiday-makers, mystery hunts and manufacturers' demonstrations have all helped to create a full diary for this club which is only four months old. At their recent A.G.M., the twenty members elected Mr. Heys, President, Mr. M. Barlow, Treasurer, and Mr. J. Wells, Chairman. The Secretary is Eric Wallis.

Another new club has leapt straight

(Continued on page 45)

FORTHCOMING MEETINGS

BIRMINGHAM: December 7, at the White Horse Cellars (Meetings weekly).

BOURNEMOUTH: December 15, at the Civil Defence Centre, Holdenhurst Road.

GRIMSBY: December 8, at the R.A.F.A. Club, Abbey Drive West, Abbey Road. (Alternate Tuesdays).

IPSWICH: December 5, at the Art Gallery Committee Rooms, High Street, (1st Saturday in month).

LEEDS: December 10, at The Hope and Anchor, The Calls, Leeds 1. (Weekly).

LONDON: December 3, at the Abbey Community Centre, Marsham Street, S.W.1. (1st Thursday in month).

LUTON: December 8 and 22, at 17, Dunstable Road. (2nd and 4th Tuesdays).

RUGBY: December 10, at the Gatehouse, North Street, (visit by Nat. Federation Secretary); December 17 at the Red Lion, Sheep Street. (Tuesdays fortnightly, alternating venues).

WEST MIDDLESEX: December 10, at the Co-operative Hall, Station Road, Hampton. (2nd Thursday). December 24 at St. Andrew's Church Hall, Uxbridge. (4th Thursday).

WEYMOUTH: December 16, at the Waverley Hotel. (Weekly).

Classified advertisements

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

Sonomag Adaptatape. March '58. Microphone and Tapes. £25 o.n.o. Streatham 3802.

Special purchase! 1,800 ft. Agfa-Wolfen L.P. tape on 7 in. spools, only 32s. 6d.; 1,200 ft. 7 in. Ferrotape 26s. 6d.; P. & P. 1/6; send for complete list of tape (including American Audio Tape, BASF, etc.) and tape recorder bargains. E.C.D. Kingsley & Co., 132, Tottenham Court Road. London, W.1. Eus. 6500.

Spectone 161. Used only few hours. 39 guineas. Telephone Ladbroke 5899.

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

JOHN HASSELL RECORDINGS. Tape/Disc. All speeds. CCIR Studio. 21, Nasau Road, London, S.W.13. Riverside 7150.

1,800 ft. Scotchboy long-playing tapes at 35s. 1,200 ft. E.M.I. tapes at 25s. Medium Coercivity tape made by E.M.I. at 17s. 6d. All on 7 in. spools—unboxed. Postage and packing 1s. per reel extra. Olympic Sound Studios, Carton Hall, Carton Street, London, W.1. Tel. HUNter 1635-6.

Stuzzi Recorder almost unused, complete with carrying case, telephone adapter and microphone, price £45. Telephone CHAncery 2651. Ext. 21.

BULK ERASER: perfect erasure to 7 in. spools. £3 7s. 6d. Ellitt, "Hermitage," Wadhurst, Sussex.

Vortexion W.V.A. Recorder. Film Industries microphone. 8 months old, only 4 hours recording. £85 (£17 under list price). D. P. Andrews, 3, Rosecroft Avenue, London, N.W.3.

TAPE RECORDERS: for the BETTER CLASS machines (FERROGRAPH, BRENNEL, etc.), you go to "EROICA" studios. You discuss your choice with EXPERIENCED RECORDISTS and buy wisely. COMPLETE RECORDING SERVICE: private studio (also Industrial and Commercial). Tape/Disc (Postal and Callers), Tape, Accessories, Mixers, Erasers, etc. Good Microphones improve recorders! "EROICA" Recording Studios (1949) Peel Street, Eccles, Manchester (ECCles 1624) on route A57. Open Saturdays. Motorists calling can avoid Manchester centre. Easy Parking.

ACCESSORY BARGAINS. 7 in. 1,800 ft. L.P. guaranteed unused in cases leading make 37s. 6d. inc. postage. Wearite Defluxer (no instructions) unused 37s. 6d. High quality stetho list £3 13s. 6d. only 45s. also s/h Truvox Radio jack 45s. Fotogene Studios 91, Mayfield Road, Sanderstead, Surrey.

PSYCHO-TAPES. A Psychotherapy service for owners of tape recorders. Tapes individually made for each patient by a well-known Psychotherapist for stammering, nervous fears, blushing, insomnia, and all psychological problems. Write for full particulars. Psycho-Tape Institute, 27 York Road, Ilford, Essex.

BINDERS

An additional service for readers

We are pleased to announce that special binders for *Tape Recording and Hi-Fi Magazine* will be available shortly. We are now taking orders for binders to hold 1959 copies of the Magazine. Orders received now will be delivered at the end of January.

No more torn covers and dog-eared edges ★ No more hunting for those mislaid copies ★ Each copy is inserted as received to form a completely bound volume for permanent reference ★ All pages open flat and effect secure binding with steel bars from first to last copy ★ Strong board binders covered with rexine with the title and year printed in gold on spine.

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Special illustrated review of the

TRUVOX

Mk. VI Deck

★

RECORDER

REVIEW

In which we take a look at recorders in the over 50-guinea range

★

PANTOMIME ON TAPE

Thomas Maddox discusses ways to tackle this festive problem.

And all the usual features.

On sale DECEMBER 16

Price **1s. 6d.**

TAPE RECORDING AND HI-FI
MAGAZINE ADVICE BUREAU
DECEMBER 2nd, 1959

(Continued from page 43)

into an active role. In West Wales, the hospital tape service organised by members of the club has proved very popular. Many locally recorded programmes have been played over the loudspeaker systems of the six hospitals catered for in their area. At a meeting held on October 15 at the club rooms of Messrs. Morgan, Wynne, Owens, several members played their tapes. Of those heard, the tapes provided by Islwyn Nicholas and Percy Moore of animal and bird noises were very entertaining.

The visit paid by members of the Weymouth Club to the B.B.C. Studios in Bristol, proved such a success that they are hoping shortly to arrange a tour for those who were unable to be present.

They have received a tape from the Edinburgh club, giving them some ideas for club activities. The Secretary would like to hear from other clubs on this score. Their activities at present are being supplemented by fortnightly competitions.

The A.G.M. of the Edinburgh club was held on October 6. With the exception of committee and founder-member George Latus, all the officers were re-elected.

At their October 18 meeting, the President Mr. Young gave a demonstration of BTH equipment. This was followed by a general quiz. This club has also been visiting. A few of the members were

invited to a tour of the Scottish Independent Television Studios in Glasgow at the end of September.

The Staffordshire Tape Recorder Society has now held three open meetings, each with an increase in attendance. Total membership is now sixteen and it has been decided that future meetings will be "closed" and non-members charged an entrance fee of 2s. 6d. Members intend to operate a public-message service from premises in the centre of the town. The service will be free to the sightless, aged and infirm. Details from the Secretary, Mrs. M. J. Tasker, 7, Creswell Grove, Stafford.

At the A.G.M. of the Chesterfield Society, the following officials were elected. President, Mr. W. Kemp, Treasurer, Mr. J. Clayton, and Secretary, Mr. R. J. Darby. The Society has moved to new premises and now holds meetings every third Monday at the Yellow Lion, Saltergate.

Coventry members heard Mr. Friend, a local weather expert, describe the methods used in weather prediction at their October 15 meeting. Mr. Friend dwelt for some time on the theories and sayings on this subject and pointed out the fallacies.

The Stuzzi Magnette was demonstrated by new member Mr. Day at the following meeting on October 29, and Roy Reynolds introduced another quiz tape. During general discussion afterwards,

the possibility of the club having a stand at the Audio Fair proposed by R.E.S. (Coventry) Ltd., was announced. This was followed by a spirited attack by Dave Reynolds on members who criticised the work of others but never provided a tape themselves. This, of course, brought a great deal of comment from members and the air was cleared considerably.

Members of the club in Ipswich had a busy time a short while ago, recording speeches made outside the Town Hall during a World Refugee Year Rally. They also organised and operated a public address system for the meeting. More recently they welcomed Alan Stableford to one of their meetings. He is continuing his tour giving talks on the development of the clubs.

A visit was made to a local theatre to obtain recorded interviews of the cast of the Marty Wilde Show. On a return visit, the members secured a thirty-minute interview with the manager during the theatre's thirtieth birthday celebrations.

The Millom and District Society now meets every Monday evening at the new Comprehensive School, the opening of which, by Princess Alexandra, was recorded by members. A tape of African music, sung in Zulu and Swahili, has been received from the club in Durban. An exchange of tape/slide shows is proposed between the two clubs. Another tape

(Continued on page 46)

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(Continued from page 45)

received, a personal message from Australia, was sent by John Wallen of A.T.R.A.

There are two alterations to be made to the list of clubs as published in our last issue.

Lee Lacy is the English and Welsh Representative for **The Voicеспondence Club**. The Scottish members are represented by Sir Mark Dalrymple, Newhailes, Musselburgh, Midlothian.

Around the World Tape Pals, a subsection of The Voicеспondence Club, has been discontinued.

From the *Newsletter* of the **Australian Tape Recordists Association**, I learnt that an American TV Station announcer would like to exchange tapes with someone in this country. He is Frank Teresi, aged 33 of 440E, Fountain Way, Fresno, California, U.S.A. His interests are radio and TV, sports, theatre, and general conversation.

Mr. T. L. Bullock is keen to start a club in his area. His address is 30, Kirkstall Road, Urmston, Lancs. Another enthusiast, Mr. W. T. Smith of London, would also like to hear from persons interested in forming a club. Contact him at 97, Great Arthur House, Golden Lane, E.C.1.

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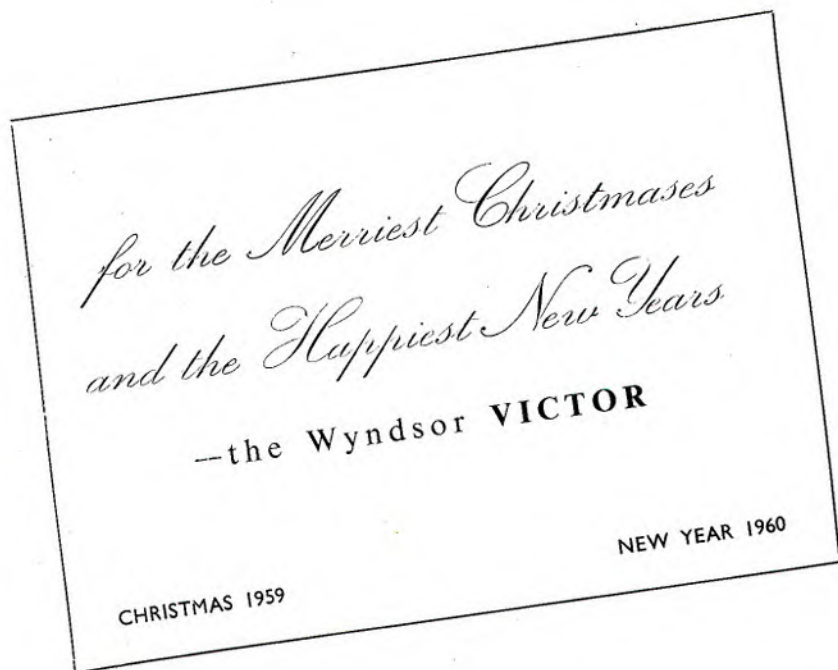
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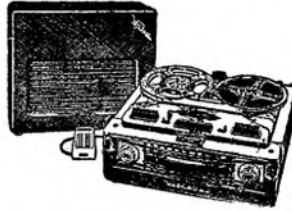
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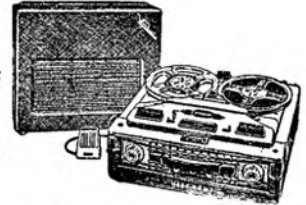


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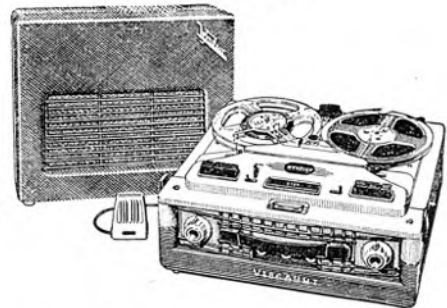
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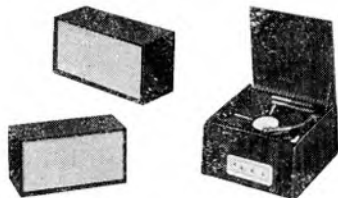
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Gives perfect reproduction. You simply plug the 'Tapelet' into the two gram sockets at the back of your radio and the recorder plays back tapes at 3½ I.P.S., using the radio's own amplifier circuit and speakers. Size: 13" x 15" x 7". Weight 13 lbs. Price **19 Gns.**

3S29

With full record, over-record and replay facilities, this Recorder has a built-in elliptical speaker and provision for an extension speaker. It operates at 3½ I.P.S., and is attractively finished in Rexine with a choice of two-tone colour schemes. The case is equipped with a carrying handle and provides storage for spare reels of tape and a microphone. Size: 13" x 15½" x 19½". Weight: 19 lbs. **29 Gns.** complete with microphone and demonstration tape.

3S49

Fitted with Garrard T.A. Mark II, 4-speed player with stereo cartridge, the Stereogram has two matching speakers with Bass reflex cabinet for wide frequency response; Size: Record Player: 18½" x 9½" x 8½". Speakers: 10" x 6". For A.C. Mains operation, 110-250 volts. **49 Gns.** complete with two speakers.

3S38

Playing at 1½, 3½ and 7½ I.P.S., this recorder produces 3 watts undistorted output and the instrument is specially aligned to amplify the full richness of all tapes. The newly styled Collaro Studio Tape Deck makes operation extremely easy and the all-wood-casework enhances the elegance of a recorder you'll be proud to own. Size: 15½" x 16" x 19". Weight: 25½ lbs. **38 Gns.** complete with microphone and demonstration tape.

3S75

A high quality stereo replay and monaural record machine, providing 2 hours playing time at 1½ I.P.S., 1 hour at 3½ I.P.S., and 30 minutes at 7½ I.P.S., for standard 1,200 foot reels of tape. With Wow and flutter better than 0.4 per cent R.M.S. and output of 4 watts at high quality, this magnificent model ensures the finest reproduction you have ever heard on stereo or monaural tape. **75 Gns.** complete with twin speakers, microphone and demonstration tape.

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YOU'LL LIKE THE SOUND OF SAGA**

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“Without a shadow of a doubt the right deck makes all the difference to performance—that’s why a Brenell Mk. 5 is included in my equipment.”

says MR. R. A. MARGOSCHIS
of Atherstone, Wars.

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British Amateur Tape Recording Contest

Documentary Category B RUNNER-UP (2nd)

International Tape Recording Contest

MK. 5 DECK—Four recording speeds: $1\frac{7}{8}$, $3\frac{1}{2}$, $7\frac{1}{2}$ and 15 i.p.s. Permits use of $8\frac{1}{4}$ in. reels (3,600 ft. of D.P. tape at $1\frac{7}{8}$ i.p.s. plays over 12 hours): three independent motors (B.T.H.). Special foolproof interlocking controls. Instant stop without spillage. Pause control. Digital rev. counter. Fast rewind (1,200 ft. in 45 secs.). Mk.5 Deck with provision for extra heads. **28 Gns.**

other models

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64 GNS

Portable 3 star
58 GNS

Portable 3 star
Stereo rec/playback
89 GNS

Or with two micro-
phones **95 GNS**

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TAPE

RECORDING
AND HI-FI MAGAZINE

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We take the view .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

Flavour

WE have tried to give a distinctively Christmas flavour to this issue. We hope this will prove popular. We recognise that a proportion of readers prefer to take its tape recording seriously, come what may. We can, at least, promise them this: *Tape Recording and Hi-Fi Magazine* will cater for them at a level which excludes pin-ups.

We go further: in 25 other issues during the year we shall offer them the fullest, most authoritative and most up-to-date coverage of the world of tape recording available in any publication in the world.

In our next issue we shall give a preview of our plans for 1960.

Hectic months

FOR those responsible for conducting this magazine, it has been a hectic period these last few months. The Radio Show, the British Amateur Tape Recording Contest, the International Congress and Contest, the production of the *Tape Recording Yearbook* which is now on sale, and the switch to fortnightly publication have kept us breathless most of the time.

Now we are moving into smoother waters and all our efforts will be concentrated in the next few months on what we intend to make a spectacular demonstration of magazine enterprise.

We offer one word of advice to readers: if they wish to secure copies of *Tape Recording Magazine* regularly, it is very important that they place a standing order with their newsagent now.

As is usual during the early days with new magazines, we supplied newsagents with copies freely in our early days. But the magazine is now distributed only against firm orders.

Lecturers

DEMANDS on the Editor's time increase continually. I am now writing a weekly column called "Audio Fare" in the *News Chronicle* on Saturdays; I have been invited to take part in two of the recent B.B.C. "Sound" programmes and I have agreed to serve as one of the judges in next year's "Drama on Tape" competition just announced by *Reynolds News*.

Now requests begin to arrive from provincial tape recording clubs for my

services as a lecturer. I must regretfully decline such invitations. Much as I should like to accept, it is not possible for me to get away from London during the week.

We are considering, however, whether we can organise a service of lecturers for clubs. The monthly lectures which we have organised at Olympic Sound Studios have catered for enthusiasts in the London area, but it seems time to extend this service.

We are discontinuing, for the present, the London lectures. We shall endeavour to draw up a list of lecturers available to speak outside London.

Each club has one or two members with the knowledge and ability to give an interesting address on some aspect of tape recording; will those such who are willing to travel to other clubs let us have their names, with information about the distance they are prepared to go, on what days of the week, and whether payment is required?

We will make the information gathered generally available.

Tape humour

I MUST add a postscript to my remarks in the last issue about unconscious tape humour. This story has been passed on to me by Mr. Chitnis, who is the agent in this country for Elektron recorders.

At the Hanover Trade Fair, he reports, two enthusiasts studied a certain microphone for a long time. When they began asking questions, the young lady in charge quickly sensed that they needed a technical expert. One was brought on the scene.

The visitors paid particular attention to the perforated microphone casing. They studied the size of the holes, and the gauge of the metal.

The technical expert did his best to satisfy them, until suddenly one of them remarked: "But do you believe you can really get a good shave with all that?"

Mr. Godfrey C. Davies, honorary secretary of the Hereford Cine Society, reports another tape recording joke. It was produced by Mr. R. Hook, principal of Hereford Technical College, at a recent dinner.

An American of British descent, visiting the Old Country, returned to the village of his ancestors and, in a moment of emotional generosity, promised to meet the cost of a new organ for the parish church.

When the new organ had been installed, the donor was invited back to England to be present at its blessing. He was unable to come, but asked for a recording of the event.

This having been provided, he replied with a curt note: "Dear Sirs, Thanks for your insolent tape recording, Yours, etc."

Complete mystification in the village. Someone suggested a copy of the tape be played back.

It opened with the Bishop, praying: "We thank thee, Lord, for this American succour. . . ."

At sea

FROM Naples comes news of great enthusiasm for tape recording on board the Sitmar line vessel "Fairsea," which sails between Australia and Europe. Miss Mollie L. Smart, the ship's Welfare Officer, tells me that the crew is almost 100 per cent tape recorder-minded.

There are about 50 recorders on board—in use in the public rooms, supplying light music and symphony concerts.

In addition, many of the crew have their own machines for use in their off-duty hours. These help to bridge the gap between ship and shore life.

Miss Smart says that manufacturers who wish to tap the potentially valuable market for recorders on board ship should see that their machines are available for use on 60 cycles and 110 volts.

£50,000 deck

MR. D. W. WILLIS, of Decca Radar Ltd., recently contributed a fascinating article to the *Manchester Guardian* on "tape for computers."

The tape transport in a computer, including the associated electronic equipment, may cost anything from £5,000 to £50,000, he revealed. Most systems contain four or more tape transports.

Mr. Willis explained that with these machines rented at hundreds of pounds per hour for automatic data processing, almost any expense in the construction of the tape unit is justified if it leads to improved performance.

Peter Pan

LATEST stage star paying tribute to the value of the tape recorder in learning a script is Julie Lockwood, this year's Peter Pan.

A photograph of this talented young actress, with a microphone in one hand and the script in the other helped to brighten the pre-Christmas season.

"I know the lines backwards," she summed up.

By THOMAS MADDOCK

I'VE just talked to a man who has put two popular pantomimes on tape, and is in the process of completing two more. He is Mr. J. R. Traynor, a Civil Servant in Gloucestershire.

With a cast of one hundred people in his first one, *Cinderella*, it proved to be impossible to get them all in the one place at the one time. So the system of film-studio "shots" was employed. Some of the cast lived as nearby as the next street, while others lived hundreds of miles away; the difficulties of casting may be imagined!

The system used at first was to get one person to speak his lines and leave room on the tape for the others.

This proved unsatisfactory for two reasons: in spite of careful timing, the second speech sometimes cut out a few words of the first one, or else—at the other extreme—left an awkward gap with no sound at all.

The other reason was the inevitable difference in volume. A hearty speaker, hugging the mike with volume up, might give the effect of shouting, whereas the person he was talking to, a reticent type, might appear to be whispering in reply!

A better way, it was found, was to record the shots on different tapes and feed them in turn on to another tape. The hearty type can be toned down a bit, and the reticent tones of the other speaker turned up to match.

One of the cast took a little time to get into the proper mood for his part in the panto. He was Dick Whittington's cat, played by a prize Siamese belonging to a friend. This feline performer treated the proffered mike with complete disdain, and refused to utter the merest "miaow" into it. Until the producer hit on a scheme.

He knew that one of the other female cats was a particular friend of the animal performer, so, after letting him have a look at her, he shut her in another room. Next he placed the mike on a cushion just outside. As the Siamese expressed his indignation, one hundred and fifty miaows were recorded, and each was subsequently classified according to mood and emotion!

When replies indicating particular emotions were required for the panto, the producer ran through the collection and picked the most appropriate one for each occasion. He is adopting the same scheme, although on a smaller scale, for the dog in "Robinson Crusoe."

"I have been writing pantomimes for the commercial stage for over thirty years now," Mr. Traynor told me. "So, when I started putting them on tape, I naturally started off with my favourite, 'Cinderella.'

It and the following two, 'Dick Whittington' and 'Babes in the Wood,' are all stage pantomimes. In changing sight into sound, one naturally requires a lot of description.

"I found that my interpolated

TAPE PANTOMIMES

in instalments for hospital patients



Mr. J. Richard Traynor, producer of the tape pantomimes described in this article, is here seen talking to young members of the "Metronomes" Orchestra, of Broadway, Gloucestershire. The Philips AG.8107 seen in the picture is the veteran of the nine machines used in the production of these pantomimes; it has been in regular use for the past four years

narrations were taking up thirty-five minutes of the full-length four hours of the pantomime. Altogether too much!

"I am writing two more pantos specially for tape—'Robinson Crusoe' and 'Aladdin.' In these the narration will be reduced to a minimum."

He reckoned that the best way to introduce a new character was either to have one of the existing ones call him on by name, or to introduce him with some characteristic catchy little tune, which would be repeated each time he entered.

"My object in producing these pantomimes," said Mr. Traynor, "is to amuse the children in hospital. The first two are ready for distribution. Each tape can be split up into sections—six daily instalments of forty minutes each. Six days is probably long enough for the panto to last, otherwise some listeners may be cured and gone before the end!"

"Here are a few facts about my first panto, 'Cinderella', which may be of interest to intending panto producers. It took me three months of spare-time work to complete the 507 separate recordings up and down the country, of

which only 250 shots were used in the final version.

"There were twenty-eight speaking parts. If you can find enough talent in your own street, it will save a lot of chasing about with your tape recorder.

"We had fifty-three musical numbers (including four accompanying pianists in different parts of the country), eight speciality acts, and a chorus of fifty-six in various combined numbers.

"Figures are very similar for the other pantos. 'Dick Whittington' is the longest and most elaborate. The shots are, of course, in every possible kind of order, depending on the availability of the various members of the cast.

"So I must have a working script. As we record, I keep a note in a book of each individual shot—the tape number, the side and the reading on position indicator (Tape 26, side A, reading 125—and so on).

"It's a good idea to have someone to call out these instructions.

"Two recorders are used—one for taking off and the other for taking on. We join the recorders by lead, so that we can talk or monitor as we please."



***A new
recorder
for
Christmas?***

THEN WHY NOT

**MAKE
A
SPLASH**

All ears for the recording he has just made—And all eyes for the parent who brought home this magic machine. The tape recorder really comes into its own at a family festival like Christmas.

By JANE CURVELY

As far as I am concerned, there are two types of tape recorders—the ones I would like to own, and the ones I can afford. I belong to the under-fifty-guineas class myself, for there are many competing claims when one is trying to fill a bottom drawer. But for many young single folk and, even more, for many established families, it is common sense to go for the best.

If you are such and you are about to buy, why not make a splash this Christmas?

If you spend more than you had originally intended, you will get value for your money, increased satisfaction from your recording, and you should have no regrets over a bold decision.

Let's suppose, therefore, that money isn't *your* problem. Lucky you!

I should go for stereo. There is quite a dazzling choice now—it is the first Christmas that the dealers have been able to offer a real range of stereo machines to choose from.

There is the magnificent Reflectograph 500, with its unique variable speed and great flexibility in operation.

For stereo playback there is the popular and well-established Ferrograph, with its associated Stere-ad.

Then there is the Simon SP/4, (2) which also now has its stereo replay adaptor.

There is the new Grundig TK60, impressive and elegantly-styled as all this firm's products, offering stereo recording and replay.

Brenell offer two machines with similar full stereo facilities (5) Veritone have their stereo version of the established "Venus" recorder (8) and there is a Sagatone stereo machine just available.

In addition, there are now the four-track stereo models from the Continent handled here by T.S.L.—the Tandberg (1) the Harting, the Körting, and the Electron.

I have not quoted the price of each machine. If you are going to choose one of these, you will obviously want to study all the detailed information available from your dealer. But you will have to have available something between £75 and £160.

Perhaps, though, there are reasons why you do not want stereo.

Your interests may lie in other directions—for example, in outdoor recording. In that case, you may prefer to spend your cash on a good-quality battery-operated portable recorder.

You will like the professional-standard E.M.I. L2 if you have a little over £100 to spend.

If not, you can choose between several other very successful machines—the Stuzzi "Magnette" at £78 15s., the Fi-Cord at £61 19s. (9) or the Steelman Transitaape at £55.

I'm pretty sure that many enthusiasts who already own a mains recorder for use in the home will be buying a battery portable this Christmas, so that they may use the two types of machine together.

So far I haven't even mentioned what is still the biggest single class of tape recorders—the medium-priced, monophonic machines, which incorporate all the well-tested and most popular features resulting from the last ten years of research and practical experience.

1



2



3

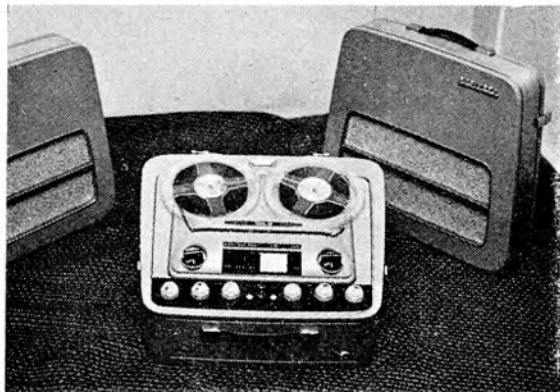


4



5





There really are some splendid machines available now. If you get one, you will certainly experience the pride of ownership.

I am thinking of recorders like the monophonic Reflectograph, the Ferrograph, the Vortexion, the Grundig TK35 and TK55, the Simon SP/4, and the Saba TK75.

All these cost more than £85, but they offer superb quality of performance.

Coming down the price range, there are some most attractive machines between £50 and £85.

It simply isn't possible to mention them all.

There are the two fine Brenell models at £67 and £60; the three Grundig machines in this price bracket; the Perth Saja MK5 at £62; the Philips AG8108 at £65; four good Reps recorders—the R10 (4) at £59 and the R40 at £73, and two others between; the Sound 555 at £68; the Spectone 151 (3) at £80; the Stuzzi Tricorder (7) at £78, four popular Telefunken models at £54, £67, £78 and £83 (10); the Truvox R2 at £62; and the Walter 505 at £60.

I repeat: this is not intended to be a complete list. These are models that happened to catch my eye as I made a tour of four London dealers recently.

I should explain also that the prices I have quoted are in round figures, so do not get into an argument with your dealer if he quotes a few shillings more or less.

Console recorders do not seem to have caught on yet, but I rather fancy them myself—they can look really handsome in a living room. One of the most handsome of them is the Walter 1000, if you can afford £136 10s.

One of the most attractive in the contemporary style is the Veritone Venus.

And, just as I am completing this article, I get news that the Wyndor Recording Co. are producing a special console version of their "Viscount." (6) This is a strictly limited run, using the cabinet and stand of the Wyndor "Dauphin," which is, alas, no longer in production.

The "Viscount" console is available in oak and ivory rexine at 58 guineas, or in sapele mahogany veneer at 60 guineas.



7s. 3d.—EASYSPLICE SPLICER



10 GNS.—SIMON CADENZA MIC.



30 GNS.—LUSTRAPHONE STEREO MIC. VR 65



£7. 18s. 6d. -WAL BULK ERASER



8½ GNS.—GOODMANS S 23 STEREO BOWL SPEAKER



5 GNS.—DEKTRON MONITOR UNIT

FROM HALF-A-CROWN TO TWENTY GUINEAS

Presents for every purse

There are Christmas presents for tape recordists at every price.

A dozen polythene "tape protectors"—transparent envelopes to take 7 in. spools—cost only 2s. 6d. They are available for all other sizes of reel. (1)

Tape Recording Handbooks—there are several titles—cost 3s. or 3s. 6d., and the new *Tape Recording Yearbook* is priced at only 6s. (2)

"Emicases"—attractively styled polystyrene cases for storing and indexing tapes—are 3s. 6d. (5 in. and 5½ in.) and 4s. (7 in.). (3)

Splicers make ideal presents. The "Easysplice" is one of the simplest and cheapest, at 7s. 3d. including postage. (4)

"Klenzatape," a recently introduced device for cleaning tape heads, costs 12s. 6d. (5)

There is, of course, no safer or more welcome present than a spool of recording tape, and here you can pay anything from six or seven shillings to two and a-half guineas.

A defluxer or depolariser to magnetise tape heads is a valuable accessory. They are available at 35s. (6) and 50s. (7)

Waterproof covers for most models of recorders are available at prices up to 46s. (8)

A complete editing kit, including a splicer and tapes, costs £3 12s. 6d. (9)

For £4 19s. 6d. you can get a "Stereo-phoner" with which to experiment in getting sound spaciousness—without two channels. (10)

A monitoring unit will be a boon to anyone with a machine without this facility—and one is available at five guineas. (11)

A little more expensive, but invaluable to the enthusiast, is a bulk eraser, costing £7 18s. 6d. (12)

For those who are converting to stereo and who need a second speaker there is a wide range of units around £10.

At this point in the price range there is a range of microphones—and an extra mic is always valuable.

At £13 12s. the "Gramdeck" will be a useful auxiliary to anyone who already has one recorder and a gramophone. (13)

From sixteen guineas upwards there are a number of electronic mixers available.

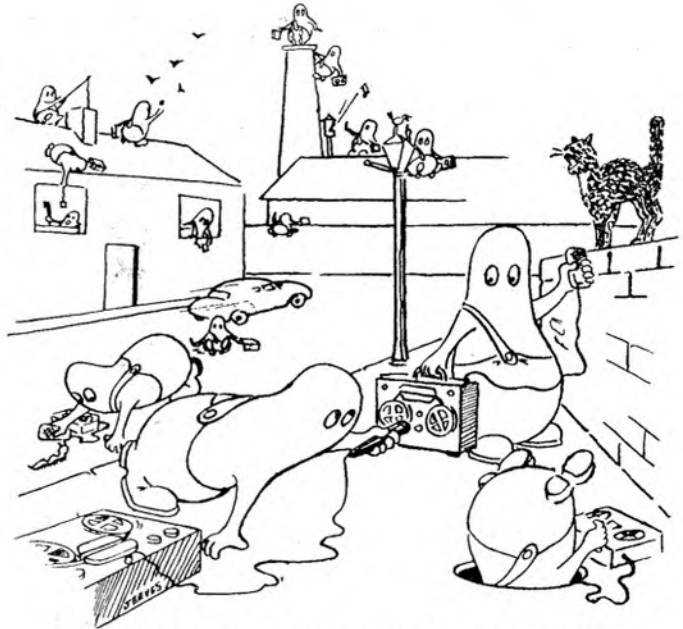
And a little more will secure a tape deck which the enthusiast will welcome for incorporation in his existing set-up.

1. Swains Papercraft Ltd., Buckhurst Hill, Essex.
2. Print and Press Services Ltd., 7 Tudor Street, London, E.C.4.
3. E.M.I. Sales and Service Ltd., Hayes, Middlesex.
4. Easysplice Co., 30 Lawrence Road, Ealing, London.
5. Metro-Sound, 19a Buckingham Road, London, N.1.
6. Cinesmith Products, Regent Street, Barnsley.
7. British Ferrograph Recording Co., 131 Sloane Street, London, S.W.1.
8. A. Brown & Sons, 24-28 George Street, Hull.
9. Tape Recorders (Electronics) Ltd., 784 High Road, London, N.17.
10. Northern Radio Services, 11 King's College Road, London, N.W.3.
11. Dektron, 2 Westbourne Road, Weymouth, Dorset.
12. Wellington Acoustic Laboratories Ltd., Farnham, Surrey.
13. Gramdeck, 29 Wright's Lane, London, W.8.

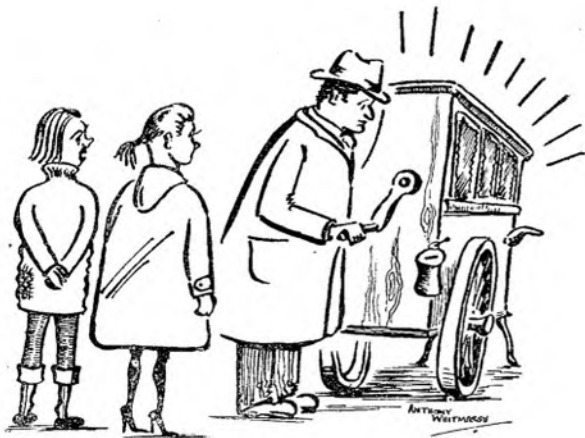
relax! it's Christmas



"Must be one of those
new Chinese restaurants"



"I just record tape recorder motors"



"I think it's an
old-fashioned tape recorder"



"Henry, why must all those
sound effects be so realistic"

By

BILL RAWLE

REVEALING—DRAMATIC—UNCENSORED

Gripping adventures in the tape jungle

I'VE had an interest in sound recording since the old days, when we used wire. At that time I used piano wire; but I found it was only suitable for recording piano music and I got tired of the same thing all the time.

The Italians were experimenting with spaghetti. Some good recordings were made, but the heads were messed up pretty thoroughly. There was a gadget available called a Defluxio, for removing the spaghetti. It looked like a trowel to me, but I never said anything.

The German electronics engineer, Von Smooh, made several tests involving boot lace. No-one took any notice of him, so he packed in.

Eventually, along came tape.

This is fortunate. Instead of subscribing to *Tape Recording Magazine*, we might well have been asking our bookseller to reserve a copy of *Spaghetti Recording Magazine* or *Boot Lace Recording and Hi Fi Magazine*. You see what I mean?



Well, I took the plunge and bought my first tape recorder. The price was 48 Gns. I have to write "Gns." I do not know how to spell guinees, ginuies, gineas . . . oh, hell, GNS!

I have often wondered why prices are quoted in Gns.

If only the unsuspecting public knew that 95 Gns. is £99 15s. 0d. they would wow and flutter in their boots!

Coming back to my new tape recorder, the sales literature was not very appealing.

"Hear Baby's voice at the touch of a switch."

For Tweet's sake, who needs a switch to hear Baby's voice? Baby's voice is already everywhere. In the garden, under the stairs, in the bedroom, the bathroom and the kitchen. Even if you are on the roof fixing the new Miracle FM aerial (price 12½ Gns., bracket and screws extra) Baby's voice is clearly audible.

This should have put me off. But it didn't. I think I bought the machine because it hypnotized me. It was switched on and the spools were going round and round, and so were my eyeballs. My left eye-ball was winding off and the right one taking up, and I was in a kind of trance when I signed the hire purchase agreement.

Pretty soon I got to be a real Bug, talking about "Frequency Response" and "Wow and Flutter" and "Azimuth" in a very nonchalant manner, as if I knew what they meant.

One day I was in a pub, sipping a beer and wondering how I could find

the time to reply to thirty-seven tape friends in twelve different countries without repeating anything I'd said before, when I walked a R.A.F. chap and stood next to me at the bar.

I discovered he was stationed at the local airfield as a navigator in jet aircraft.

"What exactly do you do when you're in the air?" I asked.

"Well," he replied, "I simply set the aircraft's course and, after that, me time's me own."

"Haven't you anything in the plane to pass the time away with?" I asked. "Such as a ping-pong table, or billiards, or something like that?"

"Oh, no," said he, "but I have my own hobby—tape recording."

Well, I tell you, this made my ears cock up and I suddenly felt as happy as an Unprecedented Frequency Response.

When I calmed down and my knee caps ceased revolving (3½), I discovered there is a big snag about having a tape recorder in a jet plane.

"Sometimes," explained my R.A.F. friend, "the pilot is in a bit of a hurry, he puts his foot down, and eventually we break through the sound barrier."

"So?" I queried.

"Don't you see? The aircraft is travelling faster than the speed of sound; so is my tape recorder, consequently there is nothing coming through the loudspeaker at all."



The following day I felt quite sad at the thought of all these chaps in jet aircraft having to put up with silent tape recorders.

So I got down to thinking, and soon began construction of a new machine to overcome this Faster-than-Sound problem.

It was powered by three 10 h.p. motors. The spools consisted of two cart-wheels (ex Darlington Corporation). These details are given to help you visualise the size of the recorder.

There were two speeds—Mach 1 and Mach 2.

Mach 1 to record current conversation, and Mach 2 to record what you will get around to saying in a fortnight's time.

One of the biggest problems was tape, which had to withstand the stress and strain of passing through the heads at such terrific velocity that, on one

occasion, the draught blew my neighbour's greenhouse into the next street and through the front entrance to the police station (Fined £5).

To give you some idea of the size of tape, go to your local Fire Station and ask to borrow a coil of fire-fighting hose. Uncoil the hose upon the ground and flatten out same with your big feet.

Now procure a tin of brown shoe polish and polish one side of the hose until it is shining. There, now do you see what I was using?

No, you fool! I wasn't recording on water hose, it was the same size as . . . oh, never mind.



Tape spill gave me a lot of trouble. Everytime this happened it demolished the front of my workshop. After four or five occasions, the builder fixed up camp-beds for his workmen, so they could live on the premises.

At this point I must pause (pause control, 1½ gns. extra) to pay a tribute to the Brittle Tape Company, without whose co-operation and assistance this work would have been completed months ago. This Company were scrupulously fair and refused to charge me any less for their tape than any other tape manufacturer with exactly the same price.

A friend came along to see how the new machine was developing.

"Let's give her a test run," I said.

So we hauled up the microphone with block and tackle and pushed it along the gantry, into a suitable position.

I switched on.

"Say something," I said

"What shall I say?" (I could understand his mic fright on this occasion—it weighed 15 cwt. and hovered over his feet).

"Say 'Hello'," I suggested.

"Hello, hello, hello," he shouted.

"HELLO, HELLO, HELLO, HELLO,"

On playback there was no response.

The next morning I wondered what had gone wrong and decided to give the tape another run-through.

A voice said "HELLO."

At last, I thought jubilantly, success at last!

You can imagine my disappointment when I discovered it was only the Milkman, who had come through the back door for the empties.



By
**F. C.
JUDD**
A.M.Inst.E.

THE TRUVOX MARK 6 DECK

Third article in a new illustrated series

THE tape drive of the new Truvox Mark 6 deck is powered by three, shaded pole BTH motors and stabilised by the largest flywheel I have yet seen on a domestic tape deck, which undoubtedly accounts for the steady and almost wow-free performance. The drive and control mechanism is robust, well arranged, and assembled on a solid cast deck which is finished in two colours, one a biscuit shade and the other a light chocolate, which my wife insisted was the latest in fashionable colours and called "mink."

Above the deck is a raised panel which carries the five main control keys, a speed changeover switch (3½ and 7½ ips), the interlocking pause button and tape position register. The two tape speeds are provided by separate drive wheels so that the speed can be changed while the drive is stationary or running.

Braking is achieved by D.C. injection, which stops the tape at a desired position quickly and positively, but operates in conjunction with a mechanical braking system that locks the spools when the "stop" control is pressed. The "brake" and "stop" buttons are, therefore, used almost simultaneously. While I do not favour this arrangement, the D.C. injection system does provide an easy method of "inching" the tape for editing.

Wind or re-wind time is about one minute for a 1,200-ft. reel of standard tape, but I did find that the tape was a little loose and not evenly stacked after fast winding. Take-up on normal replay is, however, nice and even.

Playing times are standard—30 minutes per track at 7½ ips for 1,200 ft.

A new feature of the Truvox Mk. 6 are the "Hublocs" which secure the tape spools firmly to the hubs. The tape head cover is removable to facilitate cleaning of the tape heads and azimuth alignment.

Now a few words on practical use. The deck requires only seven connections to the associated amplifiers and the various connecting tags are fully colour-coded.

The D.C. braking current can be drawn from the amplifier power supply via a limiting resistance and,

although the instantaneous current is about 150 mA, most power supplies will cope with this since the duration of heavy current is only one to two seconds.

A clearly-written and illustrated instruction leaflet gives full details for connecting up and testing and includes much useful information on checking for hum level, azimuth alignment and simple maintenance.

The Truvox Mk. 6 decks MD.1 and MD.6 (200-250v, 50 and 60 cps respectively) are supplied with a half track head for monaural record and playback. The Mk.6 TD1 and TD6 are for mains voltages and frequencies as above, but are already fitted with the Truvox TR.2049 stereo head.

The Mk. 6 is an ideal tape transcription unit for playing pre-recorded tapes and for this purpose requires only a playback amplifier system with the necessary C.C.I.R. correction for tape. For recording, the deck requires a recording amplifier and a bias oscillator.

TECHNICAL SPECIFICATION

The record and erase heads are manufactured by Truvox and performance figures for these are as follow:

Erase Head: High impedance. Current, approx. 7mA and 48 Kc/s. Erase volts, approx. 180v.

Record Head: High impedance (single track on MD.1 and MD.6) 50K.ohms at 10 Kc/s. Bias current approx. 1.5mA. Bias voltage approx. 120v.

Other performance figures are as follow:

Frequency Response: This depends on the amplifier design but attainable

response is given as: 30-17,000 cps ±3 dB at 7½ ips and 30-10,000 cps ±3 dB at 3½ ips.

Wow and Flutter: 0.2 per cent at 7½ ips, 0.3 per cent at 3½ ips.

Tape Speeds: Within 2 per cent ± 1 per cent of stated speeds.

Dimensions: 14½ in. long x 13 in. wide x 4½ in. deep.

FUNCTIONAL TESTS

The deck was tested in conjunction with a Mullard Type C recording amplifier and a wide frequency range tape playback amplifier.

Mechanical performance, apart from the reservation already made about fast re-wind, was up to standard. My only criticism is of the "stop" and "braking" controls, which may at first be a little confusing to those who have been used to operating a deck with a single control.

The mechanism generally is smooth in operation, with quiet drive motors, accurate tape-position counter, and no vibration from the spools on fast winding, and the control buttons are easy to manipulate. Very slight flutter was apparent at high audio frequencies, but within specification.

The low wow percentage is gratifying, and is no doubt due to the well-arranged tape drive system and nicely-finished tape guides and pressure-pad mechanism. I did, however, notice slight tape vibration, due to just a little too much pressure between the pads and the tape heads on the particular deck I was testing.

FREQUENCY RESPONSE

Frequency response tests were carried out with an E.M.I. TBT1 test tape, a *Tape Recording Magazine* test

The New Decks

Three views of the Truvox Mark 6 deck.

Top, a bird's-eye impression, with the spools removed.

Centre, side view.

Bottom, an angle shot from the under-side, showing the motors.

Photos by Brian Worth

tape, and a Mullard 510 amplifier system. On playback a substantially level response of 40 to 15,000 cps was obtained for a tape speed of $7\frac{1}{2}$ ips and 40 to nearly 10,000 cps at $3\frac{1}{2}$ ips. The response in each case was within 2 dB of the reference frequencies of 1,000 and 160 cps for each speed respectively.

The makers quote a signal to noise ratio of 50 dB, but this would depend rather on the amplifiers, bias oscillators and tape.

Those who decide to purchase one of the decks fitted with a single track head are assured that the TRUVOX TR.2049 twin-track stereo head can be fitted easily and quickly at a later date. I have had one of these heads in use on my own equipment for some time and can vouch for the excellent stereo performance obtainable.

The frequency response from the TR.2049 head, as tested via Mullard amplifiers, is flat from 40 to 15,000 cps (at $7\frac{1}{2}$ ips) so that nothing by way of performance would be lost in changing from a single to a double-track system.

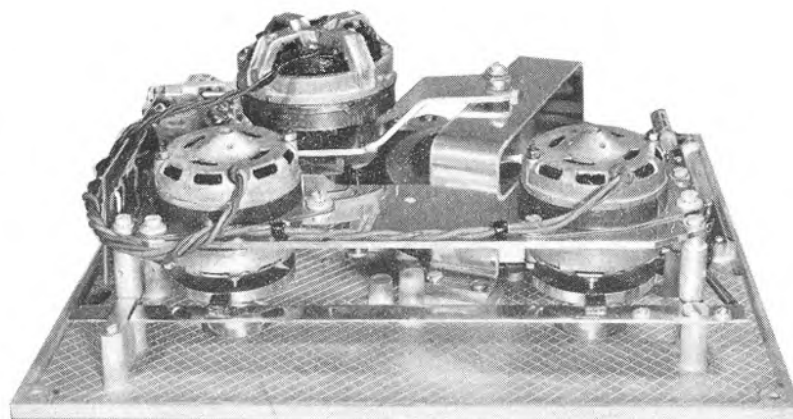
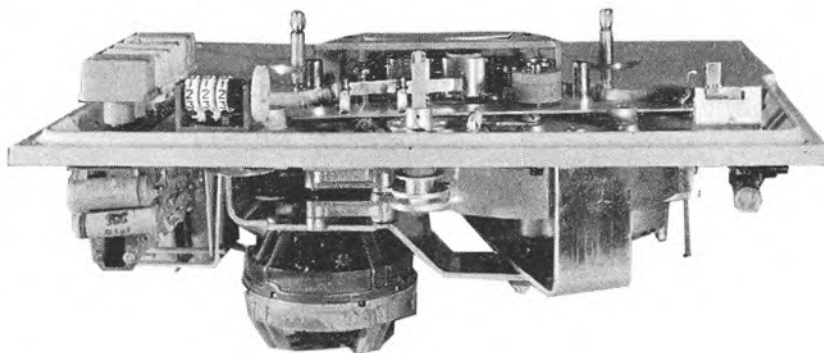
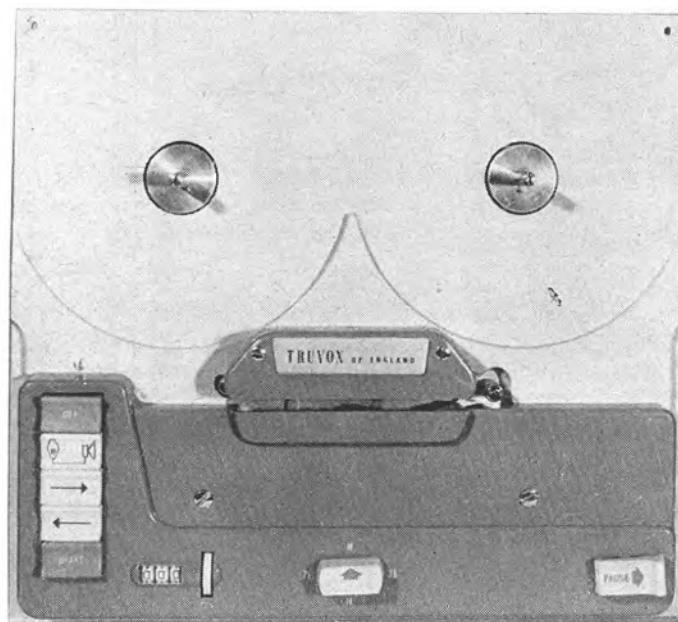
SUMMARY

On its merits, this deck is well worth a recommendation; it is an ideal deck for the home constructor—those who like to build their own amplifiers, etc., or for the enthusiasts who prefers to assemble and connect up component units such as deck, complete amplifier and speakers.

It is also a deck that, like its predecessor, is designed to withstand hard wear and to give a good performance with the various types of amplifiers and auxiliary equipments likely to be attached to it.

All the earlier range of Truvox decks have enjoyed great popularity with the "construct your own recorder" enthusiasts. For those who wish to use a ready-made amplifier, the Truvox type "K" tape equipment is available and has been designed expressly for use with the Mk. 6 decks.

Full details of the new decks are available from Truvox Limited, Neasden Lane, London, N.W.10. (The MK6 retails at £26 5s. in its monaural form. Fitted with a stereophonic head the price is £38 17s.



Now! it's easy to edit tapes — economically



USE A PROFESSIONAL TYPE RECORDING TAPE SPLICER FOR EDITING AND MENDING RECORDING TAPE

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"As a test I asked a non-technical person to splice some tapes and, after a couple of practice joints, perfect splices were made. A really useful gadget." D. W. ALDOUS, M.INST.E., M.B.K.S., Gramophone Record Review.

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Elizabethan Princess	39	4 19 0	3 0 0
Saja Standard	45	6 5 0	3 8 4
Electron	47½	6 17 6	3 12 2
Wyndson Viscount	49	6 19 0	3 14 2
Spectone 161 (Ex Tape)	49	6 19 0	3 14 2
H.M.V.	50	7 0 0	3 15 10
Telefunken 75KB (with microphone)	56	7 6 0	4 5 10
Brenell 3 Star	53	7 10 0	4 9 0
Veritone Portable	58	7 10 0	4 9 0
Fi-Cord	59	7 19 0	4 10 0
Elizabethan Major	59	7 19 0	4 10 0
Grundig TK25*	62	8 2 0	4 15 0
Telefunken Deck (with Pre-amp.)*	63	8 3 0	4 16 8
Philips 8108	62	8 2 0	4 15 0
Veritone Venus*	66	8 9 0	5 2 6
Korting	68	8 8 0	5 5 0
Brenell Mk. V (with microphone)	69	8 11 0	5 5 6
Grundig TK30*	72	9 12 0	5 10 0
Telefunken 85* (3w.)	75	9 15 0	5 15 0
Telefunken 85* (6w.)	79	9 19 0	6 1 8
Grundig TK35*	82	10 12 0	6 5 8
Harting HM8	86	12 6 0	6 10 0
Sabafon Automatic*	89	13 19 0	6 13 4
Simon SP4*	95	14 15 0	7 1 8
Tandberg 4TR*	124	20 4 0	9 3 4

Take Recorders into D. P. Camps

—Belgian proposal

M. Rene Monnat is consulting with the International Red Cross, on behalf of the International Federation of Sound Hunters, to see if recording enthusiasts can help to bring a little cheer to refugees and displaced persons living in transit camps in Europe.

M. R. Remi, of Belgium, submitted a proposal to the recent Congress of F.I.C.S. in London that the organisation should arrange a recording service for those living in these camps.

They contrive, despite their difficulties, their family lives, with births and weddings, celebrations and sorrows.

They have relatives scattered in other parts of the world.

Why not, suggested M. Remi, arrange to record messages from those in the camps and villages for transmission, through the International Red Cross, to relatives elsewhere?

This, he wrote, would be a useful contribution to the efforts of World Refugee Year.

The idea has been greeted enthusiastically by representatives of all Western European countries.

It is known that the International Red Cross is already using tape recorders for its work, but it is now being asked if F.I.C.S. members can help in this way.

Handicapped himself, he offers others aid

FROM Stockton Heath, near Warrington, comes a moving story of a 15-year-old youth who is not only using a tape recorder in his own battle against physical handicap, but who wants to use the machine to help others.

John Thompson has suffered from muscular dystrophy since birth. He is unable to write with comfort, nor has he the muscular power to depress the buttons on a standard tape recorder.

But a machine has been successfully adapted for him and he is using it to take notes for his studies. He has just started to tackle his G.C.E. examinations.

Now John Thompson is anxious to help other handicapped folk. He has offered to record anything on tape for the benefit of any blind person who owns a recorder operating at 3½ ips on international track.

His address is Dale Nook, Birch Dale, Appleton, Stockton Heath, near Warrington.

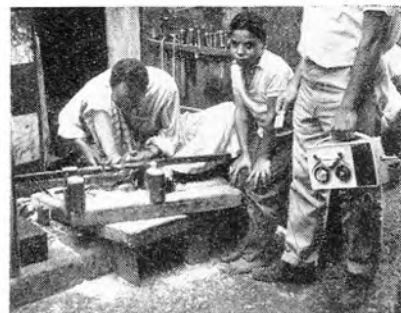
BATTERSEA STUDENTS USE PORTABLE CUB-IN EGYPT

AT the invitation of President Nasser, a group of students from the Battersea College of Technology recently made a concentrated four-week tour of Egypt, to study social, industrial, agricultural, tourist and educational progress since the revolution.

Among the equipment they took with them was a Grundig "Cub" battery-operated tape recorder, which was in almost constant use for recording interesting interviews, events, and providing the sound track for the cine film of the tour.

The "Cub" gave excellent service throughout, even when the temperature was 120° in the shade, and recordings of particular interest included President Nasser's speech in the Republic Square at the Seventh Anniversary Celebrations and the radio commentary at a military parade of the United Nations Forces in Gaza, when the microphone picked up and faithfully recorded the noise of helicopters, MIGs and Illusion bombers.

The "Cub" attracted widespread interest among the people of Egypt, many of whom had never seen an instrument of this kind before.



The "Cub" records an Egyptian craftsman at work

An amusing incident occurred in the famous bazaar streets of the Mouski in Cairo, when the "Cub" was switched on while the students were bargaining with one of the shopkeepers.

When they played it back to him, he started bargaining with them; but this time the boot was on the other foot—he wanted to buy the "Cub."

Articles for the B.B.C. Arabic Service are now being prepared from the recorded material.



A doctor from Ilford Public Health Department makes a tape recorded appeal for people under 25 to register for inoculation against polio
Mr. Stuart Barker, of Unique Radio Service, Goodmayes, seen watching, later toured the district relaying the message through a mobile public address system. An endless loop was used for the recording

Nottingham staged last month what was described as the first Tape Recorder Fair in the country. It was organised by Nottingham Tape Recorders Ltd., and ten firms exhibited.

MILES OF TAPE

About 800 reels of recording tape, each containing 2,400 feet, are used each week by the Home, Light and Third Programmes.

This is 375 miles, roughly the distance from London to Edinburgh.

The B.B.C. - Recorded Programmes Library holds 25,000 reels, or about 11,000 miles.

—Radio Times.

CHRISTMAS BOOST

Tape recorders were among the products of Philips Electrical Ltd. featured in a 15-minute advertising magazine programme, "Go Modern This Christmas," produced by Associated-Rediffusion, and screened over the entire nation-wide ITV network on November 30.

ARRANGED

The Fifth London International Audio Fair will be held at the Russell Hotel, W.C.1, from April 21—24.

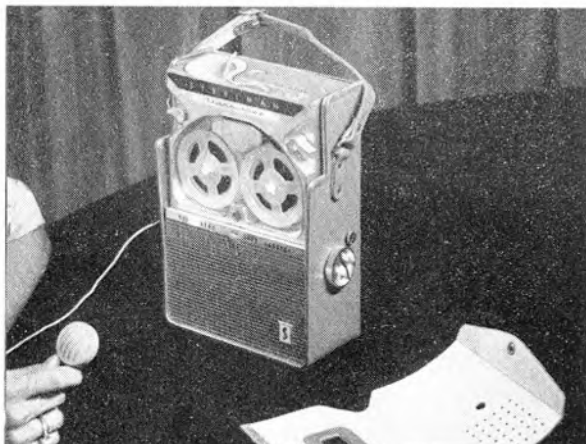
POSTPONED

THE annual dinner of the British Sound Recording Association has had to be postponed until May 21 next year—the same date as the annual general meeting.

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Only 6½ pounds of smartly-styled ingenuity, the TRANSITAPE two-speed portable tape recorder offers 64 minutes of continuous speech-quality recording anytime, anywhere. Built-in speaker for playback . . . or the microphone can be used as a private earphone. Look at these features!



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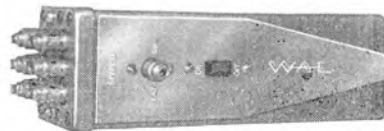
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P.W., Gramophone, Nov., 1959.

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Sound Effects

EDWARD ALAN BEEBY, who has had years of experience in devising and recording sound effects, continues his regular column of advice and ideas. If there is an effect you want, and which is causing difficulty, write to him for aid.

FOLLOWING my recent notes on Water Effects, a reader writes to ask why no mention was made of the continuously running water effect, such as may be required to represent a flood or a mountain torrent.

In my earlier article I was offering a few abbreviated tips, which meant that an effect requiring a lengthy explanation had to left to be dealt with by itself.

My correspondent says he tackled the problem by turning the household water-tap on at full blast and hoping for the best.

Upon play-back, however, his ears were assailed by what he described as "a sound resembling background-hiss gone mad."

This is not surprising; you can't expect a thin jet of water forced at pressure through a hole half-an-inch wide, to do justice to the fierce and abandoned splashing of a mountain-torrent!

Here then, is my way of obtaining the effect.

First, the sound of the running tap must be cut out altogether. This involves the use of a short length of rubber tubing, one end of which is attached to the tap, the other end being allowed to rest inside a bucket standing in the sink.

Around the base of the bucket, arrange bunched-up layers of old rags, etc., to cover the surface of the sink completely.

Now run sufficient water through the tubing until the bucket is filled to the brim; turn off the tap. You are now ready to produce your "Cascade of Water" effect.

Turn on the tap fully and switch your machine to "record."

The water is fed, silently, into the bucket via the rubber-tubing, while the combined running and splashing sound is made by the water continuously overflowing from the bowl and cascading down into the sink.

The purpose of the rags around the base of the bucket is to muffle the flow of water in the final stage, where, if allowed to hit the surface of the sink direct, it will produce an unwanted hissing sound.

By the way, the higher the bucket can be raised, the more natural will be the effect.

Two cautions. Don't forget to leave the sink-plug out while recording. And do make sure that the rags are arranged fairly loosely, to enable the water to filter through to the waste-hole. Some build-up of water is inevitable in the sink, although if this happens you may find it best to alter the position of the rags slightly; otherwise water will cascade

down on to water again causing hiss.

Finally, a few brief, general tips.

MUD: A thick mixture of flour and water manipulated with a "hand-washing" motion gives a good impression of squelching mud.

CREAKING TIMBERS: These may be imitated by screwing two pieces of resined wood together in the centre and twisting them about.

STRIKING MATCH: Always use safety matches for this effect. The hard rasping sound of the other sort doesn't register truthfully when done close to the microphone.

TELEPHONE RECEIVER being picked up and replaced can be imitated by using an ordinary cup and saucer. Place the saucer face downwards on the table and rest the cup upon it in the same way. When handling the cup (receiver) spread the fingers to cover it as much as possible to muffle the normal "chinking" sound.

MOTOR VEHICLE: The sound of an approaching motor-car may be reproduced by lighting the gas-ring of an ordinary household cooker and recording this at a fairly high gain. For vehicles of a heavier type, record at double speed and play back normally. Fade up or down as necessary.

ROWING BOAT: This is simply the creaking-timber effect done in conjunction with the water-lapping effect. The creaks (rowlocks) are produced fairly slowly but rhythmically, and followed immediately by the water-lap.

A SHIP'S SIREN: An old one, this, but nevertheless quite effective. Blow as hard as you can across the mouth of a narrow-necked bottle. The pitch of the note can be varied by filling the bottle with water.

LION'S GROWL: A lion's growl or roar can be made vocally as follows. Place the microphone close to the mouth, almost close the back of the throat and release the breath by a "pushing" action, at the same time mouthing the vowel sound, "OWWW." Record at double-speed and play back normally.

ROOKS AND CROWS: Again, as in the previous effect, by closing the back of the throat but this time drawing the breath in sharply, the screeching of rooks and crows may be imitated. In this case, the vowel sound, "ERRR" is used. Suitably sustained, this effect will also serve as a passable car-skid. No need for a recording-speed change here.

That's all for this time. In the next issue, I shall be dealing with the old problem of echo-effects. See you in a fortnight.

V.I.Ps PEOPLE IN THE NEWS

Major J. F. E. Clarke, chairman of the Audio Manufacturers' Group of B.R.E.M.A. and chairman of the Clarke and Smith group, has been appointed Managing Director of The Gramophone Company Ltd.

Except for magnetic recording materials and office equipment, this company will now handle products hitherto the responsibility of E.M.I. Sales and Service Ltd.

In 11 years Major Clarke, still a young man, built up Clarke and Smith from small beginnings into a firm with a very high reputation.

He now takes responsibility for the conduct of one of the most important firms in the industry.

His many friends will wish him success and good fortune.

Mr. Peter Kempster, sales manager of Saga Records, has left to take up a similar, newly-created post with Rank Records. Born in Bristol in 1923, Mr. Kempster took a Trinity College degree and became a concert pianist.

During the war, he was a member of the R.A.F. Central Band and since then has been a technical representative with Hohners and Selmers, before becoming sales manager for John E. Dallas and Sons Ltd.

Advice Bureau

In each issue we shall reprint one specimen question and answer dealt with by our Advice Bureau. Others will be dealt with by post. When sending queries use the coupon below.

Q. My set has not been serviced for nearly two years, and I find that the amplification is getting weak both on recording and playback.

I have purchased a new EL84 valve, but when I switch on, the monitor leaves immediately overlap and the machine emits a horrible noise. I have had the new valve tested and it is perfect. It is an awfully costly job returning my set to London, and I wondered if you could possibly explain my problem?—**F. J. R. C., Wiltshire.**

A. The trouble you are having with the loss of signal on recording and replay of your tape may be due to the incorrect setting of the pressure pads, or to dirty heads.

Try cleaning them with a piece of soft rag and methylated spirit. It sometimes happens that the oxide coating adheres to the head and covers the fine gap. Apart from this we can only advise you to have your recorder serviced by a competent mechanic.

TAPE RECORDING AND HI-FI
MAGAZINE ADVICE BUREAU

DECEMBER 16th, 1959

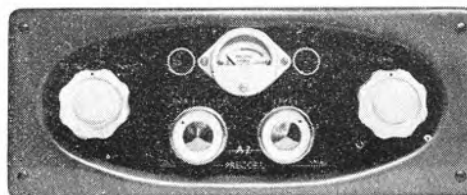
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GRUNDIG TM 60 STEREO DECK

THE GRUNDIG TM 60 stereo tape deck is now available on its own, costing—with 1,800 feet of long-play tape—ninety guineas. It can be used with any good amplifier, radio or radiogram, but was primarily designed for use with the Grundig "Gainsborough" radiogram.

The TM 60 is, of course, the deck used in the new Grundig TK 60 stereo and monophonic recorder. The deck includes the whole electronic equipment of the TK 60 except power amplifiers and speakers.

A separate box attached to the main unit by a connecting lead contains three sockets for microphone inputs.

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

A UNIQUE TUNER

Mainly to meet the demand for a tuner that will take advantage of the high quality of FM radio, the Leak organisation has added the "Trough-Line" to its range.

The oscillator using a trough-line as a tuning inductor is thought to make the receiver unique. With the application of automatic frequency control, the inductor gives a tuning stability of 3,000 cps from the instant of switching on.

The tuner's sensitivity is such that full limiting is obtained for an input of 2 micro-volts at the aerial terminals. A ratio detector is not used. The discriminator is a Seely-Foster type employing thermionic diodes.

It costs £25, plus £8 15s. purchase tax.

H. J. Leak and Co. Ltd., Brunel Road, Westway Factory Estate, London, W.3.

COLRICH TAPES

Colrich Audio Ltd. announce that a number of Colrich pre-recorded tapes are now available. First titles include Salutes to Tommy Dorsey and Glen Miller, the Dis Disley Jazz Group, and TV personalities Dorita and Pepe in a programme of South American folk songs.

Colrich Audio Ltd., 92 Buckingham Palace Road, London, S.W.1.

Audiomaster's stereo tape amplifier

AUDIOMASTER announce a series of new amplifiers of special interest to tape enthusiasts, including the Stereo tape amplifier illustrated below, £33 15s.

This is a special model intended for use with the Harting deck, using Telefunken heads. It contains two record channels, which are easy to monitor by means of a one-inch cathode ray tube.



Play-back is via a suitable pre-amplifier capable of accepting a signal direct from the tape head.

This unit is supplied with a switch for mounting on the Harting deck to the right of the push-buttons. The wiring on this switch is carried out, so that nothing more is necessary than to connect the leads provided to the heads.

Audiomaster also bring into their range the "Conway" stereo control unit and the "Colwyn" stereo pre-amplifier, both of which accept a signal direct from tape heads. With the "Colwyn," full equalising is provided not only at 7½ ips, but also at 3¼ ips. The "Conway" control unit is priced at £28 10s., and the "Colwyn" pre-amplifier at £20.

W. & N. Electronics Ltd., 80-82, Uxbridge Road, Ealing, W.13.

New Products

STACKED SPOOLS

New Dutch model now available

TECHNICAL SUPPLIERS LTD. have introduced another tape recorder to the British market. Recent discussions gained for them the distribution of the Dutch recorder with the unique design, the Timbra.

High claims are made for this compact little machine which incorporates many of the features normally found on recorders of standard design. The greater compactness of the Timbra, 6½ in. x 11¼ in. x 12½ in., is achieved by the reels having been placed one above the other on concentric shafts. The loading of the tape, however, is not the difficult task it would seem.

The supply reel is loaded first. About twenty inches of tape is then unwound, threaded through the tape channel in the normal manner and threaded on to the empty reel. The difference in height of the two spools is overcome after the tape has passed the heads. A guide pin tilts the tape smooth side uppermost, and after a short incline a second guide brings the tape upright again. These guides do not function until the tape is set into motion.

The quoted frequency response is 40—16,000 cps at 3¼ ips, and 50—11,000 cps at the lower speed of 1½ ips, both ± 3dB. Response at 3¼ ips, when an external amplifier is used, is given as 45—18,000 ± 3dB. Wow and flutter is given as better than .05 and .06 of 1 per cent, and signal-to-noise as within 64dB.

Facilities are provided for monitoring and mixing. Inputs for microphone, radio/gram are included, and it is also possible to superimpose recordings. Other features are the clock type indicator, safety erase lock, tone control, recording level indicator and a rewind speed of ninety seconds for 1,800 feet of tape. Three heads are fitted, erase, record and playback. An output of three watts is obtained from the 6 in. x 4 in. built-in loudspeaker.

A seven-inch spool of tape is provided, although a microphone is not. The price of the machine, contained in a handsome rexine-covered case, is 89 guineas.

Technical Suppliers Ltd., 63, Goldhawk Road, London, W.12.

WALTER HEADPHONE

WALTER INSTRUMENTS Ltd., have introduced a new type of feather-weight headphone. It is for use with their 505 and 303 de luxe tape recorders for monitoring recordings and for the transcription of dictation recorded on these machines.

They are supplied fitted with a four-pin plug, suitable for connection with Walter recorders. This is fitted into the amplifier/extension socket and automatically reduces the volume from the machine's loudspeakers to a very low level. After disconnection volume automatically returns to normal.

The cost of the headphones is £2 12s. 6d.

Walter Instruments Ltd., Morden, Surrey.



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IN BRIEF

Associated TeleVision have developed a mobile television unit which can tape record British programmes for use in America. Until now there has been no system in Britain for tape recording any television programmes except on the British system of 405 lines. The new unit, costing £100,000, will record complete television shows on the American system of 525 lines.

One American T.V. network has already said it will use the mobile recorder to tape some of its ninety-minute productions in Britain.

* * *

E.A.P. (TAPE RECORDERS) LTD., announce that the price of the Avon Tape Recorder has been increased to £28 7s.

E.A.P. (Tape Recorders) Ltd., Bridge Close, Oldchurch Road, Romford, Essex.

* * *

TAPE RECORDERS (ELECTRONICS) LTD., also announce price increases.

Improvements in performance and reliability, and an increase in the cost of raw material and components, are given as the reasons for the higher prices of their two new models, the Sound "Prince" and "Studio."

The "Prince" will now retail at £35 14s. and the "Studio" at £44 2s.

Tape Recorders (Electronics) Ltd., 784-788, High Road, Tottenham, London, N.17.

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When writing to manufacturers for information about new products, please mention that you "saw it in Tape Recording and Hi-Fi Magazine"

Stereo Notes

By D. W. GARDNER

BEFORE long we should know a lot more about stereo drama. I am convinced that it is one of the things that is going to develop rapidly among amateur tape recording enthusiasts, as soon as they discover its possibilities. People with displaying equipment will be able to learn a great deal from the stereo records of the plays of Shakespeare that are now being issued by the Argo Record Company, under the auspices of the British Council.

Those available now are *The Merchant of Venice*, *Macbeth*, *King John*, *Measure for Measure* and *The Two Gentlemen of Verona*, all being made by the Marlowe Society and professional players. The prices are £4 10s. for three discs and £6 for four discs (plus 9s. 9d. purchase tax per disc in the U.K.).

I have not yet studied them closely, but some extracts I have heard bear out my contention that stereo makes an enormous contribution to the effectiveness and validity of plays in sound.

Atmosphere is all-important, even in the live theatre, and it is atmosphere that we have in full measure in stereo. In other words, we already enter our new world with straightforward stereophonic reproduction of the dialogue as it occurs naturally; pronounced movements and extra effects are a further enhancement when used judiciously, but they are not the whole story, and should not be in the slightest way irrelevant.

The Argo samples I have heard employ some beautiful effects, all blending well with the action. It appears that one of the rules the producers have adopted is to avoid the use of effects which might detract from the clarity of the spoken word. One of the reasons for this is that the recordings are destined for use on a large scale in other countries to help students who are learning English.

The principle is a good one, however, in all circumstances. Related to this point is the fact that when several people are speaking in such a way that words are likely to overlap, stereo helps considerably to separate and clarify the lines.

On the subject of drama, the current issue of *Stereo Sound and Music Magazine* contains details of a scheme which will interest everyone with stereo recording facilities. Harold Rottesman, whose excellent monophonic work is known to many, is starting from scratch to learn about stereo drama recording, his experiments culminating in the recording of a play specially devised for stereo.

You can help by sending suggestions; and a spool of tape is offered for the best script or story-idea submitted by January 31. Send your entries to The Editor, *Stereo Sound and Music Magazine*, 7, Tudor Street, London, E.C.4.

NEW 4 TRACK STEREO

Latest stereo machine from the Continent — the Elektron 4/ST four-track stereo



CHECKING YOUR STEREO WITH A TEST TAPE

THE final section of the *Tape Recording Magazine* Test Tape is for setting up tape replay stereo equipment. Each track, upper and lower, is recorded to the same level and contains first an "in phase" 80 cps signal, and secondly, an "out of phase" 80 cps signal.

If the playback system, including the loudspeakers, is in phase, the first band (80 cps "in phase") should appear louder than the second band. If this is not the case then the connections to one speaker will have to be reversed.

The next section of the tape contains speech that should appear to come first from the centre, then from the right and then from the left. If the left and right channels are the wrong way round it will be necessary either to reverse the position of the loudspeakers, change over the tape head connections, or reverse connections to the main amplifiers. Those who use a stereo-adaptor for coupling the two channels, or a combined stereo pre-amplifier, need only alter the stereo function switch from "stereo" to "reverse stereo," or vice versa.

The next section contains a real and false centre test which again will show whether the loudspeakers are in or out of phase. Finally, music and sound effects complete this test tape (which was produced by Olympic Sound Studios); they are excellent examples of good stereo recording.

As each frequency test band is recorded on both tracks of the tape it may, of course, be used for checking and balancing the outputs from a stereo

amplifier system as well as for plotting response curves.

To check the output level from each channel, simply connect an output meter across the speaker terminals of one channel and run the test tape through at say 1000 cps (7½ ips) or one of the near middle frequencies on the other bands.

Set the main gain control for a meter reading of 0dB or some other convenient reading. Without altering the gain control, connect the meter to the other channel and run the test tape over the same frequency section again.

The meter reading should be identical to, or at least within 1 dB of, the first. If not, the "balance control" will have to be altered to increase or decrease the output from either channel as required, until each channel produces, as nearly as possible, the same output from the same frequency section of the tape.

Although fairly accurate balancing of the amplifiers is possible by using the tape and an output meter, the final test should be by listening and using the demonstrations and music on the tape for fine adjustment of balance between the two channels.

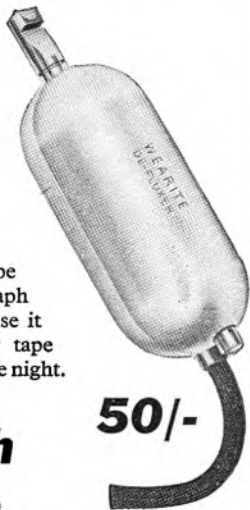
If no output meter is available, quite accurate balance between channels can be effected by very careful listening. Choose a tone between 250 and 1000 cps and adjust the balance control until the tone appears to be coming from between the loudspeakers. The listening point for this, and for any final adjustments for balance and spatial effects should be midway between the two loudspeakers, and about 6 to 8 feet away from them.

It is best to have someone alter the controls while this test is being carried out, as considerable confusion can arise from not listening continuously and intently while controls are being altered.

F. C. JUDD.

Don't let *hiss-s-s* spoil your recordings

The recording head of any Tape Recorder tends to become magnetised in use. Small at first but gradually building up, this residual magnetism can seriously affect the quality of your recordings by progressively increasing the hiss level. It can also impart a noisy background—which can never be removed—to any pre-recorded Tape at the first time of playing. Fortunately residual magnetism can be instantly removed with the Ferrograph De-fluxer. Get one to-day and, if you use it from time to time, you'll always enjoy tape recordings with a background as silent as the night.



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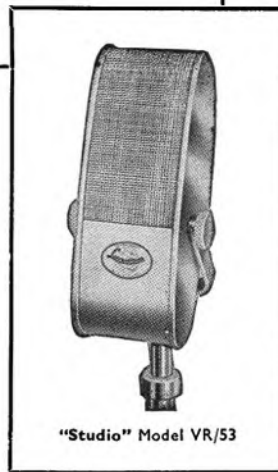
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Jason FM	22	17	1	Jason J.2-10 Mk. III	37	10	0
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News from the Clubs

HOSPITAL tape services are becoming increasingly evident among the new as well as the old clubs. One of the latest groups of enthusiasts keen for this sort of work has been formed in Manchester. Joe Kerrs, Secretary of the **Manchester Tape Recording and Hospitals' Society**, informs me that his club is now well under way and contact has been made with a number of other clubs who are organising similar services. He has been in personal contact with the clubs in Birmingham and Huddersfield, and has received a tape from the hospital section of the Bristol club.

It would appear members are to concentrate a great deal on this type of activity and they would like to hear from any club which is willing to assist them to help patients by replaying message tapes in their respective areas. Write to him at 20, Naylor Street, Hulme, Manchester 15.

Meetings of the club are held at that address every Saturday evening from 6-11 p.m. Membership is free and an added inducement, although I am sure none is needed, is that tea is provided.

The second great activity popular among clubs is again publicised by the **Rugby** members. Further material for their documentary tape was gathered during a recent tour of the Rugby Radio Station. There they obtained interviews with the Chief Engineer and some of his staff and recorded sound signals being transmitted. An impression from the top of one of the twelve 820-foot masts was recorded by Bill Tilcock, who climbed up with a Stuzzi Magnette.

Some weeks ago Mr. D. E. Wearing presented slides of his Swiss holiday to members. He has been busy since then adding a tape commentary and the finished show was produced at a meeting held on November 12. The same evening saw casting for the tape play being organised. Miss Ray-Linger, an amateur theatre producer, was again present to keep a watchful eye on the proceedings. To wind up the evening Mr. Lovett presented a memory test on television commercials.

The production of a tape play upset the proceedings of the **Walthamstow and District Society** recently. Members were concerned by the appearance of a startled owner and a dog who seemed very interested in their attempts at producing a dog-fight on tape.

The fortnightly meetings of this club have been regularly attended by a group of enthusiasts who, if rather small in

GRAEME AHIER has television to thank for the formation of the Jersey Tape Recording Club. For eight years until its formation he had been very active as a producer in the amateur film world. Unfortunately when television was introduced to the island in January, 1958, attendances at their public film shows dropped off. Rather than close down they decided to go over to tape.

At first the members consisted only of those who had taken part in the film activities, but he soon built the club into the position it is in at the moment.

A few months after the formation of the club he started "Audiomag" for the blind. This was in the form of a sound magazine and consisted of plays and short stories. Soon after this he took on the responsi-

Club Personalities No. 8



GRAEME AHIER

Jersey Tape Recording Club

bility of producing the fortnightly club magazine, which is presented solely for the entertainment of members and often runs for as long as eighty minutes. No mean feat for a fortnightly production.

His main interests are play production on tape, and the club concentrates on these subjects, and keeps up a regular flow of tapes to the mainland in tape exchange to various clubs in the U.K.

He owns three tape recorders, a Snectone 161, a Walter 101, and a Grundig Cub.

number, are not short of ideas. A variety of talents are evident among members. A journalist, a writer and a number of technicians are just a few of these.

The journalist, Maurice Dudley, who is responsible for reporting the society's activities, also initiated the Connaught Hospital service. The first of these request programmes was broadcast in November. Leonard Chanter compered the show and is currently occupied building a control panel to simplify the interchange of recorders used. These controls will be installed permanently.

Alan Stableford recently visited the club and a blind member, Don Couper, gave an enlightening demonstration of the uses to which he puts his recorder.

FORTHCOMING MEETINGS

BIRMINGHAM: December 17 at the White Horse Cellars (meetings weekly on Mondays).

BLACKPOOL: December 23 at 173, Church Street (Wednesdays, 7.30).

BOURNEMOUTH: December 29 at the Civil Defence Centre, Holdenhurst Road (Alternate Tuesdays).

CHESTERFIELD: December 28 at the Yellow Lion, Saltergate (Every 3rd Monday).

COVENTRY: December 24 at Rotherham's Social Club (Alternate Thursdays).

EDINBURGH: December 20 at 23, Fettes Row, Edinburgh 3 (1st Tuesday and 3rd Sunday in month).

GRIMSBY: December 22 at the R.A.F.A. Club, Abbey Drive West, Abbey Road (Alternate Tuesdays).

GRANTHAM: December 17 at the Technical College, Eisham House, Avenue Road.

LEEDS: December 17 at the Hope and Anchor, The Calls, Leeds 1 (Thursdays).

LUTON: December 22 at 17, Dunstable Road (2nd and 4th Tuesdays).

RUGBY: December 17 at the Red Lion, Sheep Street; December 31 at the Gatehouse, North Street (Tuesdays fortnightly, alternating venues).

WEYMOUTH: December 30 at the Waverley Hotel (Alternate Wednesdays).

WINCHESTER: December 18 at the Ship Inn (Fridays).

Future plans include the production of a feature tape from the wealth of recorded material collected with their battery portables, a Christmas party, and the setting up of a "record your voice" stand at a bazaar to be held soon in aid of the World Refugee Year Fund.

Six of the members of the **Bristol** club were invited recently to the B.B.C. Studios, where with the help of the staff they were able to produce an interview programme based on the West Regional programme *Round-up*.

Treasurer and Secretary Royston Beaton would like to hear from anyone who is adept in the organisation field. At the moment a scheme has been adopted whereby each member in turn plans the activities for one evening. A grand start was made by Alan Lovell who presented members with an entertaining and informative evening with a talk on hospital broadcasts. If anyone feels they can help in the club organisation contact Mr. Beaton at 12, De Clifford Road, Lawrence Weston, Bristol (Avonmouth 2350).

Members of the **Catford** club ventured out with a Stuzzi Magnette during a recent meeting, to put Catford's night life on tape. Exact details of the recordings obtained were not given, but I understand a great deal of amusement was provided for all. It seems a popular enough activity.

One of their following meetings was effectively devoted to a dubbing session. This allowed members to have a good sort out of their tapes. Other activities included a competition to produce a three-minute tape of original sound, and the production of a humorous tape on prisons.

The November 3 meeting of the **Edinburgh** club was devoted to a talk

(Continued on page 33)

Classified advertisements

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

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(Continued from page 31)

given by Sir Mark Dalrymple on the elementary operation of a recorder. Twelve days later members heard an interesting talk on speech therapy given by a member of a brain injuries unit.

Their Festival tape is now in a more coherent form. At the moment members are held up on its production while the Lord Provost visits the Canadian Broadcasting Corporation who are interested in the tape. The next step will be to ask the Director of Education to provide the commentary.

A demonstration of home-assembled hi-fi equipment by Mr. M. Murray was the highlight of the November meeting of the **Sheffield Tape Society**. A Garrard record-player and a Pye amplifier had been neatly housed in an old radiogram cabinet. With a Celestion speaker salvaged from a cinema and built into a Prelude cabinet, and a Wharfedale tweeter which had ousted the works of an old-style tapestry covered clock, the finished set-up made an admirable compromise of elegance, quality and price. Demonstration music played to prove the quality included arias by Maria Callas and tunes from "South Pacific" and "Carmen Jones." At the same meeting, arrangements were made to accept the invitation of a visit to the Chesterfield Society.

Sheffield members have also been having dog trouble. During members' tape time, a tape letter from America was played. Loud cheers greeted the correspondent's efforts to record his dog which had been growling in the background.

When it was offered the freedom of the tape, the dog promptly shut up.

A frantic search is now being made for a new meeting place. Their usual venue is no longer available.

The **West Middlesex** club had the same headache recently. Just before their November 26 meeting they had to relinquish their meeting place at St. Andrew's Church Hall. Cecil Pearce, however, performed valiantly and found a hall in Southall just in time for 38 members to gather for a talk on the various aspects of recording given by Mr. Wilson of the BASF Tape organisation. Colour slides and recordings, including the 30 ips recording made in 1936 of the London Philharmonia Orchestra, were used to illustrate the talk.

Mr. Wilson took along a variety of equipment, but time did not allow demonstrations of each item. An Audio Generator producing frequencies from 10-100,000 cps proved very popular among members. An audio test was carried out and some members claimed they could hear up to 19,000 cps. Their ages were not divulged.

Members of the **Coventry** club were treated to demonstrations of three recorders at their November 12 meeting. The first of these was the Reflectograph, shown by Eric Phillips. Henry Hopfinger introduced the second recorder, a Telefunken, when he played some church service tapes, during a demonstration of microphone technique. The first recording had been made in St. Martin-in-the-Fields and the other was of a wedding service recorded for a friend. Some of

the members were mystified at the results obtained, until Mr. Hopfinger pointed out he had used a 19-guinea microphone.

The third recorder was shown by new member Mr. Walker. His Verdik with a third head monitoring device impressed everyone with the ease taken to produce an echo effect.

Among other tapes heard at the meeting was one from Maurice Martin who had sent along recordings of his band for members' comments, and a tape from one of Roy Penfold's American contacts.

Mr. Lovegrove of Fi-Cord Ltd. put his firm's battery portable through its paces for members of the **Crawley and Sussex** club at their November 16 meeting. He also gave a tape and cine demonstration using the Brenell Mk. V and a Eumig P. 8 projector. The film used in the illustration included shots of the Trooping the Colour ceremony, motor racing and a bowling alley in Switzerland. The commentary had been recorded on the Fi-Cord.

Their December 7 meeting was also their A.G.M., and the guest speaker was Alan Stableford.

No sooner had I laid down my pen from writing of the progress the **Staffordshire Tape Society** had made than I received news to the effect that they now have twenty members and are holding fortnightly meetings.

They have decided on a subscription rate and it seems to be directed towards encouraging the younger enthusiasts. An initial fee of 10s. 6d. is charged for those under eighteen, rising to 17s. 6d. until

(Continued on page 34)

.....CUT ALONG DOTTED LINE.....

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(Continued from page 33)

the majority is reached, and a guinea thereafter.

At their latest meeting Mr. Fitch of Beam-Echo Ltd. used stereo discs and tapes to provide a demonstration of the Avantic range of speakers and amplifiers. The range of Grundig recorders, including the new stereo TK 60, was also shown. The demonstrator was a representative of Kay's Business Services, a local retailer.

A news-sheet designed to meet the needs of the U.K. Section of **World Tape Pals** has made an appearance. Len Watkins, representative of this section, edited the first issue. He tells me that future issues will be compiled by a team of members from material gathered in their Newsroom. This central sorting office is now in the process of formation. The news-sheet will be issued to alternate with *Tape Topics*, the house journal of W.T.P.

A new club was formed in York during November. The **York Tape Recording Society**, sponsored by the Literature and Speakers' Association, is affiliated to the R.A.F. Tape Society. Club officials elected include Godfrey Macken as Chairman, Robert Severs as Vice-Chairman and Mr. E. Edwards as Secretary. Membership is to be extended to anyone living in north-east England, and all inquiries should be addressed to the Secretary at The Shambles Cafe, York, where for the time being all meetings are to be held.

A second **RAF Tape Society** has been formed. The new club is at RAF, Bally-

kelly, Limavady, in County Derry, Northern Ireland. The Secretary is Mike Edser and he would like to hear from other clubs and in particular from service enthusiasts.

In our last issue I mentioned that Mr. T. L. Bullock was seeking to form a club. I now hear that he has been very active advertising his hopes, and that he has even managed to secure the showing of a slide at the local cinema. Meanwhile, he has also been busy with two other enthusiasts recording the choir of a local church. The finished tape will have a Christmas message added and will be made available to Old People's Homes in the vicinity. His address is 30, Kirkstall Road, **Urmston, Lancs.**

There must be dozens of enthusiasts in the **Hemel Hempstead** area. Mr. P. Holloway of 29, Fishery Road, Hemel Hempstead, who has been searching unsuccessfully so far, is keen to hear from any persons interested in forming a club.

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TAPE

RECORDING
AND HI-FI MAGAZINE

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A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

New fields to conquer

THERE are now more different models of tape recorders on sale in this country than there are disc-players. And the Christmas season demand for the new cheaper recorders has outstripped that for many record-players. Some manufacturers report that they have been unable to keep up with this exceptional demand. Many dealers are making a reassessment of the 1960 tape recorder prospects.

The contributions to the symposium in this issue on "The Prospect for 1960" make clear the unlimited optimism in the world of tape recording.

It is indeed going to be an exciting year: we hope all our readers are looking forward to it as keenly as we are ourselves.

The great thing is to have bold hopes and plans. Elsewhere we lift the curtain on a few of the plans we have for this magazine; there are many more in the making.

For our readers, 1960 will be a year of unique opportunity. With the ranges of new battery portables and stereophonic recorders, two entirely new fields of activity open up for many enthusiasts.

To give direction and purpose to their activities, the fourth annual British Amateur Tape Recording Contest will be expanded in scope. The first announcement will appear in our next issue.

* * *

Ghosts on tape

PART of my Christmas tape listening was (very appropriately) a ghost story. But this one was, according to Mr. F. Terry Newman, of Camberley, who recorded it, a true ghost story.

Mr. Newman is a journalist and psychical researcher, and he has just completed the first of a planned series of tapes on ghostly phenomena, spirit healing, and mediumship.

It is entitled "The Haunting of Borley Rectory" and runs for about 80 minutes.

Most of the tape is narrative, but it is seasoned with appropriate atmosphere music, and I found the story of the now-famous nun ghost quite fascinating. Tech-

nically, Mr. Newman has made a very good job of the tape.

He has copies available for loan, for a nominal fee. His address is: 5, St. Mary's Road, Camberley.

* * *

Take a tune, Miss Smith

THE typists at the Shirehall at Bedford must have thought the festive spirit had got out of hand when they switched on a recorder to transcribe correspondence the other day.

Instead of the voices of the departmental chiefs, they heard Kenneth Horne and a dance-band, in a B.B.C. Light programme.

One or two readers have written to us recently expressing perplexity because their recorders have suddenly transformed themselves into radio receivers in this way.

This is usually the result of dirt or some fault at an input socket. The microphone lead acts as an aerial.

Could tape help your job?

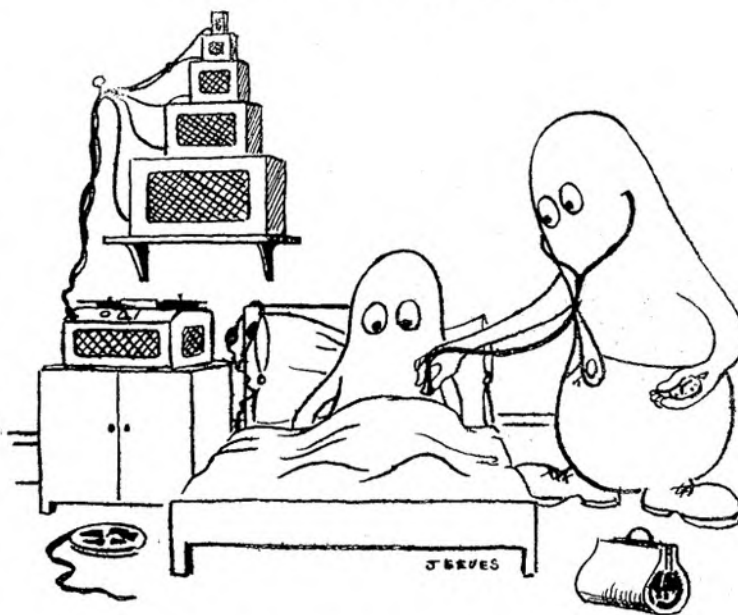
THERE is scarcely any field in which the tape recorder cannot be effectively used to help solve problems. It is an interesting exercise to think out ways in which it can help you in your job.

I have just received a letter from a retired inspector of the Aberdeen Corporation Transport Department, Mr. P. G. Oliphant, who has been going through this exercise.

He has devised a number of methods of using a recorder in a transport undertaking—for recording the basic information in a traffic census, for recording the observations of an inspector travelling over a new route, and for routine duties in depots, repair shops and offices.

In the control box at the main timing point of a transport undertaking, a pre-recorded tape could be synchronised with the official time-piece. At the appropriate times it could announce the routes and duty number of all vehicles due for departure.

LAUGH WITH JEEVES



"I'm afraid you have a tapeworm!"

Let this New Year bring increased friendship across frontiers

By FREDY WEBER

President, International Federation of
Sound Hunters

TO be able, as President of the International Federation of Sound Hunters, to introduce the New Year to the readers of this magazine gives me special pleasure. I feel a very particular affection for the City of London since the end of October, when the Eighth International Tape Recording Contest was held there and the delegates of ten countries elected me their new president.

During that contest we saw—or, rather heard—that many tapes showed in their recording-quality a marked improvement, in some cases approaching a degree of perfection hardly distinguishable from professional work.

I believe that this trend will continue, and that sound hunters—by their participation in the various national federations—will keep on improving their work.

In the year of 1960 it will remain our chief task to keep furthering international contacts between our members and to function as a sort of intermediary in establishing new friendships across the borders. For it is a sad fact of our time that, in its rush and confusion, many people are left lonely without being able to reach their fellow-men. There are thousands trying in vain for such relations. And it is in this field that we are best able to accomplish something worthwhile.

Within his national federation and, beyond that, on the international plane, the sound hunter will find friends who share his wish for an exchange of ideas.

In many countries our membership-figures have sharply risen during the past few months, a development which I believe will continue through 1960, for sound hunting is a rewarding pastime and a continuous source of new impressions, instructive discoveries, and memorable hours of leisure.

We acknowledge gratefully that the radio stations in many countries are sure to continue throughout 1960 to support our work by devoting special programmes to it, and that the UNESCO, in facilitating the international exchange of tape-recordings, will remain one of the most important contacts of our Federation.

I conclude with my best wishes to every sound hunter for continued rewarding work with his recorder and for every success in his professional duties. To the sound hunters' family members go my wishes for kind tolerance and the best of health.

WE HAVE INVITED LEADING FIGURES IN THE WORLD
OF TAPE RECORDING TO GIVE THEIR VIEWS ON

THE PROSPECT FOR 1960

Through three exciting years of spectacular progress, this magazine has recorded news of the industry, of the clubs, and of the activities of individual enthusiasts. All the evidence points to a much more dramatic and fast-moving year ahead than any of those which have gone before. We have, therefore, asked ten representative men in the field to look into the crystal ball and to tell us what they see as the probable significant trends in 1960.

Clubs will watch those gimmicks

By ALAN STABLEFORD

Honorary Secretary, National Federation
of British Tape Recording Clubs

IN order to forecast future developments in the field of tape recording equipment, one may simply survey the current trends in design and carry each to its logical conclusion. Applying this method, I predict—More and more “electronics,” crammed into smaller and smaller cabinets.

Many of the latter will achieve an ineffable vulgarity in appearance, and the tape recorder-cum-cocktail cabinet may well rear its unlovely head.

Gimmicks will multiply to a degree which will demand the employment of a resident service engineer. Speeds will become ever slower, until on certain machines it may even become possible to distinguish the “Fast Wind” speed from that used for recording and playback!

Claimed frequency responses will range from the sub to the ultra-sonic, and manufacturers will continue to rate the services of a good copy-writer above

those of a good electronics designer. All of which serves to illustrate the danger of extrapolation which is unaccompanied by a knowledge of all the factors involved.

If we are, as I believe, to be spared the worst of the horrors which I have outlined, to what influence shall we owe our salvation?

The answer, of course, is that we have in Great Britain a flourishing, active tape recording club movement, represented by a progressive Federation. The members of such clubs demand, for their job of producing creative sound recordings, efficient, functionally-designed tools.

Although the new tape recorders of 1960 may not all live up to this description, at least the influence of the clubs will, to some extent, help to stem the flow of quasi-contemporary juke-boxes, with their coyly fluttering magic eyes and their coyly fluttering performance.

THE DAY OF THE MIDGETS IS COMING

THE rapid rise in popularity of tape recorders has jogged manufacturers into a state of urgency, in order to exploit this new domestic field, which has resulted in a confusing selection of machines which, between them, contain almost every combination of functions and degrees of quality.

In trying to forecast a pattern for the future, one is tempted to study the progress of similar apparatus in a parallel field. The nearest neighbour to a sound recorder is surely a vision recorder, or camera. (Sound reproducers are already so well established that it is unnecessary to look to a different field in order to establish their relationship in the complete equipment.)

With the exception of certain professional equipment, it is safe to say that an essential requirement of a camera is portability. The ease with which a camera may be carried everywhere, so as to take snapshots at a moment's notice, is now taken for granted.

So it should be with a tape recorder.

There are far more people who own cameras merely for the sake of snapping landmarks through their lifetime than there are those who make photography a serious art.

Already there are several excellent miniature portable tape recorders on the market, and there is every indication that the recent introduction of transistors and higher efficiency electric motors has encouraged many other manufacturers to turn their attention to this very specialised field.

Improved magnetic heads result in good fidelity at low tape speeds and this, combined with thinner tape, allows smaller reels to be used, which in turn enables the overall dimensions to be reduced.

* * *

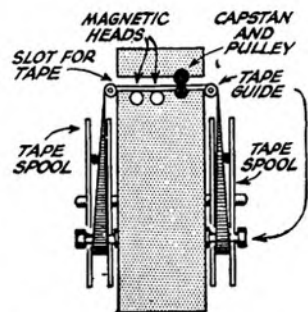
I can envisage a greater reduction in size if the layout of the deck were changed so that the reels were positioned on opposite sides of the chassis or cabinet, as shown in the diagram. Alternatively, this method would lend itself to the use of larger tape spools in a portable recorder.

A basic difference between cameras and tape recorders is that a tape recording, once made, needs no further processing or developing, and can be played back immediately. Thus, although extremely small recorders could be made without playback facilities, very little extra room is taken up by the addition of at least a transistor monitoring amplifier to give a low level output into a tiny speaker. When back at home, this speaker could be switched out and the low level input plugged into the pickup socket of the radio receiver, or any other power amplifier.

Despite copyright laws, a subject which has been fully investigated and explained by *Tape Recording and Hi-Fi Magazine*, there is no doubt that a large number of owners of popular-priced tape recorders are today using their machines to record popular tunes from the radio, to be replayed for their own private use.

By **CHARLES LANGTON**
A.M.Brit.I.R.E., A.M.Inst.E.

Our Technical Advisory Editor



END VIEW OF RECORDER

If and when the situation can be properly regularised, there will be a wide market for a simple combined radio plus tape recorder, at a price not more than about £30. This will allow recordings to be made at the touch of a switch.

For the connoisseur of realistic reproduction of music, the Audio Fairs of 1959 gave ample indication that stereophony is here to stay, and it can be predicted with confidence that all good quality machines will be fitted for stereo reproduction.

The demand for stereo recording facilities is not likely to be so great.

Although more use will undoubtedly be made of tape cassettes, it is earnestly to be hoped that a standard of design is reached before the market is flooded with many shapes and sizes of cassette, each of which will fit one machine only.

While on the subject of design, I would like to plead for the abolition of metal knobs, push-buttons, and plugs from mains-operated machines. These are un-

necessary in this plastics age, and are a potential source of danger to the layman, especially when used in conjunction with additional apparatus such as amplifiers and radio receivers.

Finally, it would be a great step forward in 1960 if manufacturers could reach further agreement over the methods used for measurement when arriving at performance figures for their products.

The practice of measuring the frequency response of an amplifier designed for a high impedance microphone, by using a low impedance signal generator, for example, will give an enhanced, but erroneous, response curve.

Better tapes – and more cassettes

By **K. S. CHITTY**

*Product Sales Manager, "Scotch" Brand
Magnetic Tape*

THE 3M Company's intensive research programme over the years has been a major contribution to its enormous growth in many fields, not least in magnetic tape. During 1959 this research background has enabled "Scotch" Brand to produce tensilized polyester "double play" tape, for general domestic use, a logical step, having been first in the field in 1958 with polyester "extra play."

Also, the acceptance in this country of magnetic tape to record vision, as well as sound, in the television industry has meant a tremendous growth in the sale of "Scotch" Brand Video tape. The quality and performance required of such a tape was, until very recently, considered an impossibility, but it is now a reality and many thousands of reels of "Scotch" Brand Video tape are in constant use in the major television networks of the world.

Magnetic tape associated with computer equipment has brought the requirement for materials which will give longer service and harder wearing qualities.

The introduction of "Scotch" Brand sandwich construction tape for computer use has increased the wearing properties of a standard oxide coating as much as

ten times, and recent developments in oxide manufacture have perfected a material which will operate at temperatures considerably in excess of a normal magnetic oxide performance.

While these latter materials are manufactured for specific uses, they are not basically different from the standard magnetic tape which is available to the general public.

The year 1960 will obviously bring an enormously wider acceptance of the tape recorder for the home. Inexpensive recorders with good reproductive capabilities will be bought by the hundreds of thousands.

The "quick-load" tape cassette will come into its own.

The introduction of the new materials and new techniques necessary for perfecting magnetic tapes for video, scientific, industrial and professional uses means that this greatly increased manufacturing knowledge will be reflected in domestic tapes of better quality and uniformity than was ever considered possible a few years ago.

"Scotch" Brand magnetic tape will, in 1960, continue to play an important part in utilising to the full the highest fidelity of sound reproduction which is now available to the domestic user.

A TURNING POINT FOR TAPE RECORDS

W. H. BARRINGTON-COUBE

Saga Records

I THINK that 1959 could well prove to be the turning point for tape sales in this country. Even our greatest competitors have been forced to admit that Saga have really pioneered and exploited the possibilities of pre-recorded tapes and in the past twelve months four very big steps have been made:—

1. The introduction of $3\frac{1}{2}$ ips as a playing speed giving acceptable results for monaural has opened a vast new market, as it is estimated that over 40 per cent of the total number of tape recorders sold in this country to date play at $3\frac{1}{2}$ ips.

2. The introduction of stereo tapes playing at $3\frac{1}{2}$ ips proved of considerable interest on our stand at the Radio Show.

3. Perhaps the most important of all, the introduction of first-class packaging, i.e. pictorially designed, coloured and laminated boxes so that now the pre-recorded tape does not appear a poor relation of the long playing record.

4. The attractive price range makes tape available in monaural form at a price well within reach of all and even if, in some cases, the tape equivalent of a long playing record is still a few shillings dearer, the many recognised advantages of tape outweigh this factor.

With the maintenance of high quality, marked by consistently good reviews, and by the lowering of prices, Saga have already shown the way, and it would be natural to expect others to follow.

We at Saga look forward to the competition that 1960 must bring, feeling confident that Saga will find the answers required of them and that by the Radio Show of 1960 we shall have some further surprises up our sleeve!

OUTLOOK COULDN'T BE BRIGHTER

By G. S. TAYLOR

Grundig (Great Britain) Ltd.

ALTHOUGH we of Grundig are sharing the market with a larger number of competitors than previously, our own output nevertheless continues its steady upward climb. These facts alone prove that the public is turning increasingly to the use of tape recorders. The trend appears to be a steady one and may be expected to continue.

We anticipate that the largest numerical increase in the market will be of the popularly priced instrument giving a high standard of popular quality.

We believe that this trend will be further stimulated by the introduction of more pre-recorded tapes and an increase in their popularity.

Arguments coming over standards

BY H. A. LEWIS, M.B.E.,
T.D. B.Sc.(Eng.), M.I.E.E.

Managing Director, E.M.I. Sales and Service Ltd.

THE last two years have seen three important developments in the field of magnetic tape recording—the introduction of instrumentation and video tapes and the need for slow speed audio tapes, with the ultimate object of producing, at an economic price, cassettes loaded with pre-recorded tapes.

The demand for instrumentation tapes has not yet reached, in this country, the level which has already been attained in the U.S. However, since the sales of computers within the U.K. are now rising rapidly, this situation can well change next year.

British manufacturers have already obtained considerable experience in the production and use of these tapes and should have, by now, been able to build up adequate capacity to deal with any demand which might arise.

During the last few months a British manufacturer has been the first, outside the U.S., to produce a tape suitable for recording television programmes. The usual teething troubles have been experienced, but there should be no problems in meeting the demands which are likely to arise in 1960 from the B.B.C. and the Commercial Television programme contractors.

Incidentally, the search for video and instrumentation tapes has led to the introduction of base films and coated materials with greatly improved properties.

There seems no doubt that in the near future audio tapes will also benefit from these developments. In fact, one such case has already arisen with the introduction of double-play tape which has been specially designed to meet the requirements of slow speed recording.

While on the subject of slow speed recording, this is likely to prove the most

important and most controversial development in 1960. The ultimate aim here is, undoubtedly, the production, at competitive prices, of cassettes filled with pre-recorded tapes.

However, before this can be achieved there is likely to be considerable argument over the standards to be adopted—e.g. whether the tape speed should be $3\frac{1}{2}$ ips or $1\frac{1}{2}$ ips, or whether 2-tracks or 4-tracks should be recorded on one tape and, now, whether the width of tape should be $\frac{1}{4}$ in. or considerably less.

From the point of view of the tape manufacturer, there are no fundamental difficulties involved in meeting any of these requirements but, until international agreement is reached, equipment manufacturers are likely to be very much inhibited in their designs.

It is doubtful, therefore, whether in 1960 there are likely to be any radical departures from conventional equipments, although some very valuable pioneering work has already been undertaken by one or two leading manufacturers in the U.S. and U.K.

1960 will see an upswing in demand

By J. MAURICE

Lustraphone Ltd.

THE interest shown during 1959 in the recorder has been so great, in almost all walks of life, that it is quite reasonable to expect a very appreciable upswing in demand during 1960.

The applications of a recorder are many and varied, but the possibilities are often neglected, or perhaps unrealised. This may be due to the fact that the user often fails to appreciate that even the highest quality equipment will only reproduce what is applied to its input terminals.

In short, microphone selection, having due regard to the characteristics of the recorder, is of paramount importance.

It has further to be appreciated that no one microphone does everything equally well; different applications require different types and careful selection is, therefore, most advisable.

The selection of British manufactured microphones is wide and of high standard; there is little, if any, need for an imported purchase. Models are available to match any domestic or imported recorder and moreover highly qualified technical advice and after-purchase service is directly available from the actual manufacturer.

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See the next issue of *Tape Recording*
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 - (3) radio/gram volume.
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RADIO-TV FIRMS WILL MOVE IN

By **RICHARD ARBIB**
Multimus Ltd.

AS 1960 will be the first year in which British manufacturers will be able to purchase inexpensive proprietary brands of tape decks for incorporation in tape recorders, I think that many of the leading manufacturers of television and radio will be marketing popular-priced tape recorders.

In fact, in the years to come one or more tape recorders will form part of the range of practically every radio and television manufacturer, just as record players and radio-gramophones are now included in the ranges of these manufacturers.

Comprehensive marketing arrangements, with large advertising campaigns, will result in a much wider public becoming aware of the potentialities of tape recorders. Consequently, a small proportion of users will take up tape recording as a serious hobby and require more ambitious equipment. I believe there will be a small but ever-increasing demand for high quality tape recorders.

I think that the experience of the photographic industry will be repeated in the tape recorder industry, namely that, whereas the bulk of photographers use popular-priced cameras costing a few pounds, there is a band of enthusiasts who purchase precision instruments costing many times the price of the cheaper cameras.

As far as technical development is concerned, there is little doubt that 1960 will see the introduction of a number of machines which provide recording on four tracks and there will be an increased interest in stereophonic recording.

On the other hand, it is clear that there is no short cut to good quality and, despite the introduction of cassettes and magazines, it is likely that a wide band of serious enthusiasts will still find it essential to adhere to making recordings of at least $7\frac{1}{2}$ ips on two tracks, although it should be possible to obtain results on four tracks at this speed which are comparable with those obtained on two tracks only a few years ago.

OUR PLANS FOR NEXT YEAR

And what does 1960 hold for readers of **TAPE RECORDING AND HI-FI MAGAZINE**.

In the next issue we shall publish preliminary information about the 1960 British Amateur Tape Recording Contest, which will be the biggest event of its kind ever organised.

We shall also begin a regular series of "build-it-yourself" articles.

Two other specially-commissioned series will deal with tape recording in the world of science and in the schools.

We shall continue to offer fuller and more up-to-date news and photographs of all new products than you will find in any other publication.

TAPE RECORDING AND HI-FI



*Hi-Fi
Harry
(see below)*

Four-track as the standard!

By **G. G. CHITNIS**

*Representative for Great Britain of
Elektron Co. in West Germany.*

IN 1960 the tape recorder industry is bound to take a major step ahead by adapting the four-track system as standard. The last years have seen a considerable change in tape speeds, from 15 ips to $1\frac{1}{2}$ ips, and 15 ips speed has now become obsolete, while $7\frac{1}{2}$ ips is on its way out.

On the other hand, the twin-track system has lingered for a long time and so far the balance between tape speed and track width is not maintained.

The obvious reason for this was the inability of head manufacturers to produce a good-quality four-track head on a mass scale at a reasonable price. But this difficulty is now overcome and a number of models with four-track system are bound to come to the market in 1960.

The second major development will be in the field of stereophony. There will be quite a few machines in the market offering stereophonic recording and playback facilities.

MAGAZINE will maintain its tradition for the most authoritative and most numerous test reviews of tape and associated equipment.

As one part of this service, we shall continue our descriptions of "the new decks."

We shall continue, too, to publish reviews of all new tape records. We have hitherto provided the only comprehensive coverage available anywhere; our reviews will remain unrivalled.

There will be increased attention to stereo. The clubs will continue to be helped in every way possible, including regular reports of their activities.

All the proved and popular features, will be maintained at the highest level—editorial comment in "We take the view"; Sound effects advice; "People in the News"; the Advice Bureau.

We have now appointed correspondents in many countries overseas and we shall publish their regular reports.

To flavour this diet, we shall publish the work of the most talented artists and cartoonists. A new series beginning in the next issue will feature "Hi-Fi Harry," who makes his bow above. Our old favourites, "the soggies," will go on providing opportunities to "Laugh with Jeeves." And we hope to use more of the distinguished work of David Myers and Roland Lindup.

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LETTERS TO THE EDITOR

Why not a speed-test strobe tape?

MAY I suggest an accessory which I think many would find useful, and which could be produced very easily. Some tape recorders, especially battery-driven models, have tape speeds which can be adjusted (either by a governor or a variable resistor). It is normally only possible to set these to a standard speed, say 3½ ips, by playing a recorded tape, and adjusting the speed until it sounds right.

What I am contemplating is a stroboscopic tape consisting merely of a white plastic tape of standard width, with black segments, so that when run through at the correct speed in artificial light, the segments appear stationary, due to the 50-cycle variation.

A tape could be produced, which could be used for checking all the standard speeds.

B. E. WILKINSON.
Yeovil, Somerset.

BUT HOW MANY LICENCES?

THE vexed business of copyright, insofar as it affects the owner of a tape recorder, seems to get more complicated every day, and the efforts of the Federation of British Tape Recording Clubs and of *Tape Recording Magazine* to get the position clarified are to be applauded.

The statement of the law by Syrett & Sons, Solicitors, published on November 4, rather added to my confusion on the subject.

Two points seem to emerge quite clearly:—

1. Every owner of a tape recorder must infringe some facet of the Copyright Act nearly every time he uses his equipment but, while he confines his activities (and his tapes!) to his own home, the likelihood of his being convicted for it is so remote as to be almost impossible!

2. Some alert organisation may, before long, try to make an example of some unfortunate club, whose enthusiastic members, in ignorance and confusion (no defence in law), have infringed some aspect of the law.

This would be terribly discouraging to any club just getting organised and experiencing the thrills of creative production. All club members, therefore, should master as much as they can of the Copyright Act to avoid, as far as possible, the more obvious pitfalls.

What, for instance, is a copyright "work," and what is not? And how

does one find out? Then there is the matter of performing rights.

It has been suggested that a club could pay a fee for a licence which would cover the members for a definite period. But how many licences should one have? Who can say? I visualise a club having such a licence and still finding itself in trouble over the Copyright Act through infringing the interests of some totally different organisation.

No club at present can afford to obtain legal advice and it calls for little imagination to see this licensing business developing into quite a racket; and who, other than a legal specialist, shall determine the sheep from the wolves?

Plainly, there is needed a major job of clarification. Now it is becoming urgent.

L. SKINGLEY.
Coventry.

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ALAN EDWARD BEEBY answers a question for New Year's Eve

What do you do with a recorder at a party?

*I took my harp to a party,
But nobody asked me to play,
So I took the darned thing away!*

IN eight years I have never, to the best of my knowledge, met anyone who was not, at least slightly, interested in tape recorders. They appear to be a sure-fire recipe for enjoyable entertainment. Yet when, some months ago, I attended a 21st birthday party to which one of the guests had brought along his newly-acquired machine, after only an hour had passed it was lying, packed up, in the hall ready to be taken home.

The once-proud owner sat huddled mournfully in a corner.

Why? The answer is perfectly simple.

You don't normally take an instrument of *any* kind to a party—unless you are capable of *entertaining* people with the thing!

It wasn't that he didn't know how to work it; far from it. He told them all about wow-and-flutter and super-imposition, signal-to-noise ratio and acoustic-feedback—the lot!

Then he set it going. Suddenly, the room became as quiet as a deserted grave-yard. A dozen yards of virgin tape flowed fruitlessly past the recording-head.

Then the door-bell rang. (Talk of being saved by the bell!)

This broke the ice and everybody began talking at once, while the tape-recorder wound on, faithfully soaking it all in with the recording-control set well above saturation level, so as not to miss anything!

Finally, the tape ran off and, the Genius having re-wound it, we all sat down to listen to the play-back.

Play-back? Imagine, if you can, two heavy goods trains full of angrily shouting foreigners, banging and screeching its way over an ancient and decrepit cast-iron bridge.

Someone spoke the fatal words: "It's not very *clear*, is it."

The Genius muttered something about "over-modulated," but nobody was listening. The radiogram was switched on, one or two couples got up to dance, the conversational atmosphere reverted to its normal, carefree level, while the Genius sat gloomily studying the carpet and wondering what the devil had gone wrong!

Like so many other things, you can get only as much out of a tape-recorder as you are prepared to put into it, and



planning an evening's entertainment with one should involve more than just switching the thing on, sitting back, and expecting the assembled company to amuse itself.

First and foremost, remember that the chief attraction for the guests lies in being able to hear their own voices, so try not to monopolise the conversation. On the other hand, don't leave it entirely to them. Quite a number of otherwise good talkers "dry up" when a live microphone is thrust under their nose.

Avoid the blunt and uninspiring command, "Say something!"

Interviews are quite a good thing for overcoming self-consciousness. Frame your questions carefully and clearly and try to appear genuinely interested in the answers you get, however trivial.

"Have you any special interests or hobbies?" is usually a safe bet. Having found it, draw them out on it. Profess ignorance on their pet subject. It's surprising how even the shyest person will blossom forth if they think they're teaching you something!

A word of warning here. Keep your questions well away from personal issues, unless you know the person intimately.

When all the guests have been interviewed, play it back to them before going on to the next item. This prevents the danger of anyone becoming bored by having to sit and listen to an hour's play-back in one go.

A quiz, similar to those on television, is another reliable ice-breaker. Questions on general knowledge may be prepared beforehand, points given for correct answers, and a small prize awarded to the winner.

If an experienced entertainer is present among the guests, naturally you will invite him or her to perform their

favourite piece before the microphone. This often provides encouragement to other would-be performers to try their hand at recording.

You'd be surprised how many people have a secret party-piece up their sleeves!

By the way, if anyone should decline your invitation to take part in the recording, do not try to coax or press them into doing so against their will. Some people are terribly shy by nature. To insist impresses nobody and indicates a deplorable lack of manners and a total disregard for other people's feelings.

If the party is being held for a very special occasion and speeches are made, you could, of course, record these and afterwards have the recording transferred to disc for later presentation to your host or hostess as an original and acceptable gift.

Whatever you decide to do, be sure to plan your programme well ahead. Having obtained permission to take your recorder along, visit the house a few days before and check on such details as existing plugs and sockets, voltage-supply and how much room is available.

Now, one or two hints for the party itself.

If you decide to introduce your demonstration with "a few words," don't get too technical. Comment on the design and the facilities of the recorder rather than give a long-winded account of the mechanical and electrical specifications of the thing.

Keep a careful eye on domestic pets. I nearly came to grief on one occasion when a small terrier dog was discovered sitting quietly under the table, happily trying to chew its way through a live mains-lead! Fortunately, it had only had enough time to make a slight impression on the outer cover.

If you should leave your machine unattended for any length of time, say, during a meal served in another room where you are unable to keep your eye on it, replace the lid and *lock it*.

Politely ignore well-meant assurances of "Oh, it'll be all right, there!"

Say quite simply but firmly that you always make a practice of being careful and lock it just the same.

Properly planned and carried out with care and attention to detail, the tape-recorder owner can be sure of providing a completely satisfying and enjoyable session of original entertainment when invited to a party.

So much so, that very soon, with a couple of successful "dates" behind him, the rule will be, "Let's invite him along and ask him to bring his tape-recorder again!"

Therein lies social prestige.

Stereo Notes

By D. W. Gardner

Which instruments where?

SOME American companies have taken to including on stereo record sleeves a diagram of the orchestral layout used when the recording was made. The intention is to provide a means of checking for balance, and there is no doubt that this can be very helpful.

Most music lovers have a fairly good idea of the normal location of the first violins, the woodwind and some of the other instruments, but one can never be sure that the norm has been adhered to strictly, and there is considerable room for variation in detail. Knowing the exact positions of all the instruments during the work actually being played enables one to decide quickly and positively whether the balance is correct.

The practice deserves to be adopted generally, however, for other reasons. The superiority of stereo to monophonic reproduction stems partly from the fact that the various instruments are more easily identifiable, and a diagram of the orchestral layout used emphasises the advantage.

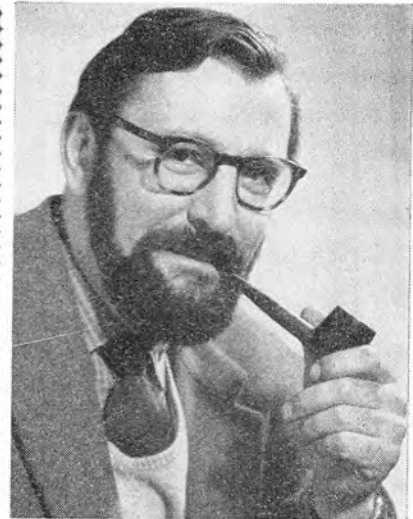
Many listeners who are quite capable of distinguishing the sound of one instrument from another, and locating the position of each, may still be clueless on the subject of which instruments are, in fact, involved. With the diagram in front of him the listener can identify the instruments and can, in consequence, more easily relate his various musical experiences and increase his musical understanding.

More and more tape recording enthusiasts are sampling the pleasures of stereo recording and feeling their way towards a full exploitation of its possibilities. The advance can be all the more rapid through the exchange of ideas and, as a way of furthering this, arrangements have been made for a special series of reports in *Stereo Sound and Music Magazine* (and, more briefly, in this column) dealing with the adventures of Harold Rottesman in search of a stereo drama. His first article appears in the Winter issue of *SSM*.

On the way towards his objective he will experiment with all kinds of stereo effects, getting down to a specific production only after a wide field has been covered. All those interested in stereo recording are invited to join in this experiment by contributing ideas, such as promising effects, that may help the scheme forward. Harold Rottesman will report on them and try them out where possible.

In particular, we are inviting readers to submit ideas for the ultimate production.

Your suggestion may be in the form of a synopsis or a script, or a combination of the two. A spool of tape will be awarded to the sender of the best idea received by January 31 next. Address your letters and contributions on this subject to: The Editor, *Stereo Sound and Music Magazine*, 7, Tudor Street, London, E.C.4.



TRISTRAM CARY

Contributes about creative aspects of recording—musique concrète, electronic music, and a generally creative attitude to sound. Prefers to discuss the subject from the artistic, rather than the technical, viewpoint. Uses equipment designed and built by himself. First and foremost a composer, and regards electronic techniques more as an extension or addition to his normal composing methods than as media in themselves. Among forthcoming radio programmes, a score for "Macbeth," also using both techniques.

TAPE RECORDS REVIEWED

BY DON WEDGE

Spanish folk songs

A NEW release from Music on Tape, "Dorita y Pepe" (CA 367), is a fine set of Spanish and South American folk songs, forms of folk music which are currently gaining an increasing following.

I know no Portuguese or Spanish. But I find this record quite captivating with its exotic rhythms and imaginative guitarist. It is obviously a dedicated recital which won me over immediately I had seen the first title, "Historia del Cha Cha Cha!"

The amazing thing about the record is that it is entirely British. Dorita y Pepe are a London couple. Mr. and Mrs. Peter Sensier! They formed their act five years ago and are now our leading exponents of Latin-American folk music.

They are regularly heard in such programmes as "Guitar Club" on radio, frequently televise and are in great demand for more intimate cabarets. A new activity has been concert recitals.

"Recently we gave a 90-minute recital in Rochdale, of all places," Dorita told

me. "We were booked to add variety to a series of classical music concerts the Corporation had organised.

"We chose a programme of nothing but the purest South American music. It was amazing how well it went. The strange thing is that when we started we emphasised my dancing—all the tummies and things. But we are much more successful now the act is strictly music."

This serious approach extends to the length of Dorita and Pepe making their own instruments. Recently finished are a Mexican Requinto and a Columbian Tiple. "We found we could not buy them, but we wanted them, so we built them," Dorita explained.

The Music on Tape record was made in 1958. The duo is now under contract to Saga and early this year is to make a new LP, which will doubtless be issued on tape, also.

Music on Tape, incidentally, are making all new releases available in three versions—stereo at 7½ ips, and monaural at both 3¼ and 7½ ips.



JOHN BORWICK

Member of the "Questions and Answers" team, and first compere. Learned something of the technicalities of recording and hi-fi at Edinburgh University and as a R.A.F. Signals Officer. Musical background includes piano (slow movements only), and playing the clarinet in a jazz band. Eleven years with the BBC as Studio Manager and later Studio Operations Instructor. When not writing (or talking) about hi-fi or tape recording, he is out making recordings or adding refinements to his bungalow-full of stereophonic equipment.

THE BBC "SOUND" TEAM



MARGUERITE CUTFORTH

Plans and produces the programme. Started as a theatre designer, but joined the BBC in 1941 as the first woman technical assistant in the Engineering Division. First used tape during a visit to Prague in 1945.

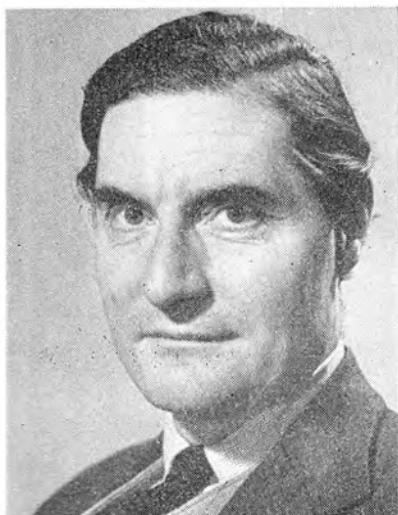
Has produced a number of BBC programmes using a midget recorder, including a portrait of Dylan Thomas. Married to Rene Cutforth, radio writer and broadcaster.

With its programme next Sunday, the BBC Network Three programme "Sound" will celebrate its first anniversary. During the year it has achieved a consistently high standard and has won a large regular audience. We congratulate all those responsible and, to mark the occasion, we feature leading members of the "Sound" team.



JOHN KIRBY

Compère of the present series. Professionally an electrical power engineer. His hobby is recording natural history sounds out of doors. For this he has designed and built his own equipment. A number of his recordings are in the BBC permanent library and he has contributed to "Witherby's Sound Guide to British Birds."



TIMOTHY ECKERSLEY

Nephew of the great radio pioneer, Captain P. P. Eckersley, and another enthusiastic initiator and supporter of the programme from its conception. Organiser of all BBC Permanent Recording Libraries and as such has helped to build up its collection of historical recordings. With Hugh Greatorex and Dick Gundry of the Engineering Department sits on the Advisory Panel to the programme.



ALEC NISBETT

Is associated with the programme principally to supervise illustrations. Before he joined the BBC in 1953 he read mathematical physics at Birmingham University, where he became chairman of the University's Theatre Group.

Since then has been a Studio Manager—and one of the first programmes he worked on was creating "spot" effects for Dylan Thomas' "Under Milk Wood."



I. W. JARMAN

Gives tape editing lessons in the programme, and is the BBC's Tape Editing Instructor. Joined the BBC in 1941 and, apart from three years in H.M. Forces, in which he was the senior wireless officer, 3 GHQ Sigs. in the Middle East, has been in the BBC Recording Department ever since. Has just had published his book, "How to Splice Tape."

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THE WORLD OF TAPE • A NEWS ROUND-UP

U.N.E.S.C.O. LIBRARY WANTS YOUR TAPES

Recordings with 'national colour'

BRITAIN is to take a leading part in a big international drive to widen the scope of the U.N.E.S.C.O. (United Nations Educational, Scientific and Cultural Organisation) Sound Library. Amateur as well as professional tape recordists can submit tapes of sounds which are typical of this country.

The Federation of British Tape Recording Clubs has undertaken the responsibility of organising Britain's contribution, but enthusiasts who are not members of affiliated clubs can enter.

The collection will be described as "sound recordings of distinctive national, regional or local colour." They have been divided into three sections.

These, complete with examples, are:—
Unique sounds: the chimes of Big Ben, Niagara Falls.

Typical sounds of daily life: school-children at work or play, regional work sounds.

Exceptional noises: already in the archives is a German recording of the song of swallows momentarily drowned by a passing bomber.

Contributions have to be submitted to the F.B.T.R.C. before March 31, accompanied by a special form, obtainable from the Federation, giving a complete description, the locality and, if possible, the time of the recording. The exact length of play must also be stated.

They can be sent individually or collectively by clubs.

The British contributions will then be sent to the International Federation (F.I.C.S.) which will retain all the tapes submitted by member countries until May, when they will be sent to U.N.E.S.C.O.

Those of a sufficiently high standard will be kept in the Sound Library, and copies made available to broadcasting organisations throughout the world.

U.N.E.S.C.O. intends to supply only complete collections of sounds for broadcasting. The payment for copies will be sent to the International Federation.

After deduction of a small expenses charge, the fees will be passed on to the national organisations, in proportion to the amount of material which each has contributed.

For Britain, the Federation has decided to pass its share to the contributors whose material has been accepted by U.N.E.S.C.O.

Further information can be obtained from the B.T.R.C. Secretary at 9, Normandy Terrace, London, E.16.



photo by Brian Worth

"Miss South Africa," Moya Meaker, is seen right, recording a bon voyage message from Anne Rogers, star of "My Fair Lady" at Drury Lane. Miss Meaker visited the show on her last night in London, and afterwards went back stage—with her tape recorder—to meet the stars

DEATH OF A. E. JOHNSON

WE announce with great regret the death of Mr. A. E. Johnson, chairman and managing director of Grundig (Great Britain) Ltd., after an illness lasting several months.

He was the founder of the British firm, in 1952, and before that he already had 25 years' association with the radio trade.

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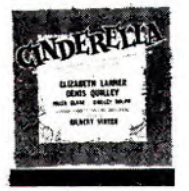
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Joyce Hatto—Piano
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Conductor—George Hurst

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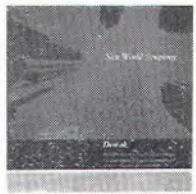
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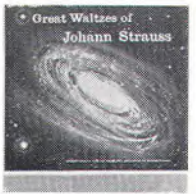
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Linking tape recorders with photographic projectors



Photo by D. M. Smith

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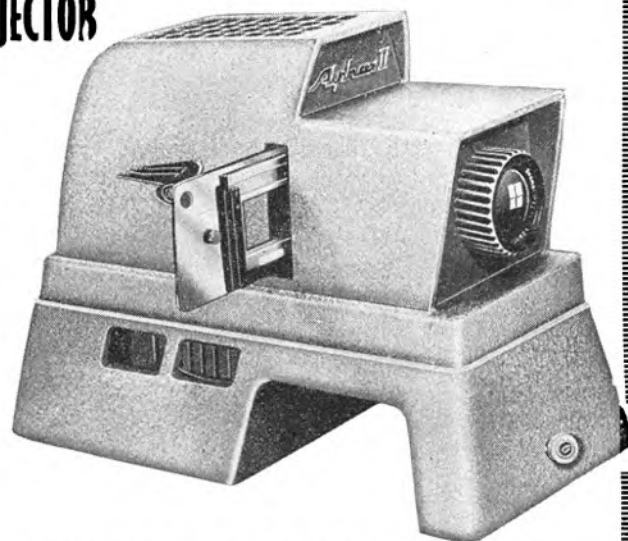
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ALDIS 303. A 300 watt 35 mm. slide projector which is exceptionally popular. The 303 is smart, cool running, easily portable and has a convenient carrying handle fitted to the base. Projector is supplied with a protective cover. Aldis 303, including cover £19 19 0 300 watt lamp extra £1 13 0

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An old and popular entertainment brought bang up to date

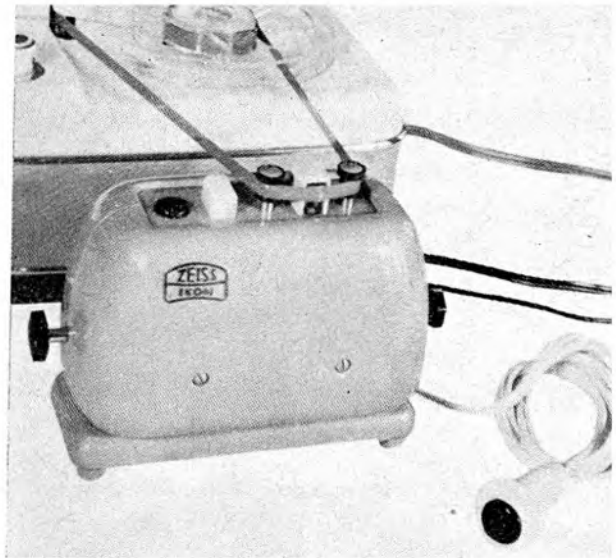
LANTERN slides are one of the oldest forms of optical entertainment, and magic lantern shows in Victorian days were numerous and as popular as movies are today. The slides were presented in much the same way as the old silent films, with a piano accompaniment and decorative palms surrounding the screen. There were sub-titles to help the story along, and occasionally a live commentator or master of ceremonies who held the audience spell-bound. The lantern itself was a monstrous affair in mahogany with brass fittings and usually had acetylene gas for illumination. The size of the slides used was 3½ in. square, a size which is still in existence today.

Just as sub-standard films are used in cinematography, so are sub-standard slides used in the modern approach to this side of photography, today known as transparency projection. Every year more and more amateur photographers are taking up transparency projection as a means of entertaining their family and friends on a social evening. The popular slide is 2 in. square which caters for several negative sizes by appropriate masking. First there is the 35 mm. Leica size of 36 x 24 mm., the square Robot negative 24 x 24 mm., the Kodak Bantam size 40 x 28 mm., the 40 x 40 superslide, and the standard cine frame which is 24x18 mm. Owners of Rolleiflex and other cameras which take 12 or 16 negatives on a roll of 120 size film require a larger size transparency frame. The next standard size is 2½ x 2½ in. and needs a larger type of lantern or projector than the smaller slide.

In the face of all this competition the old 3½ in. square slide has declined in popularity; so much so that this size is seldom seen outside the lecture room today, although projectors are still available.

PREPARATION AND CARE

All colour films are expensive and should be handled with even greater care than black and white negatives. Most films use a reversal system of development which means that the actual piece of film which you expose in your camera is returned to you as a positive ready for viewing. So avoid the possibility of damage to your film as there will be no negative from which to obtain a reprint. Kodak and Ilford normally return your 35 mm. transparencies in individual cardboard mounts, unless you request that they be returned uncut. If you do get them back in one roll unwind it very carefully for inspection. In order to avoid any scratches or abrasions don't let the film fly back into its natural coil. Even the smallest mark will show up alarmingly when projected on to a large screen.



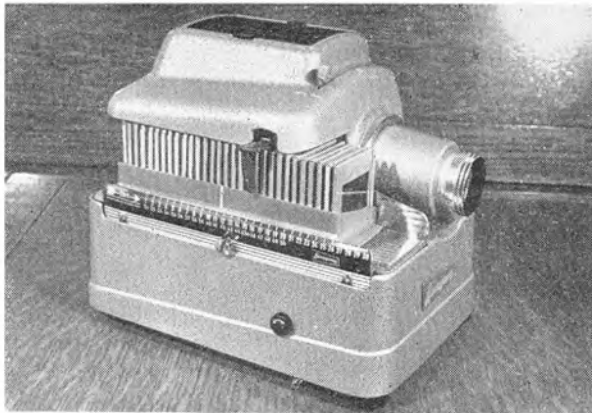
The Zeiss Ikon "Diatakt," a control unit to link recorder and projector. As you record the sound, you press a key every time you want to change the slide. This automatically registers an impulse on the second track of the tape. During projection, the "Diatakt" automatically controls the sound reproduction as well as the slide change at the right intervals.

It is essential to view the transparencies in front of the correct light source. A correct colour balance can only be obtained in artificial light and not daylight. This is because the colours have been balanced to give a correct rendering by ordinary tungsten light, and when viewed by daylight they will appear to have a large excess of blue. There are several pocket viewers available, some with their own illumination. An ordinary lamp with a white shade is suitable for viewing, or better still hold a piece of white cardboard at an angle to reflect the light through the transparency.

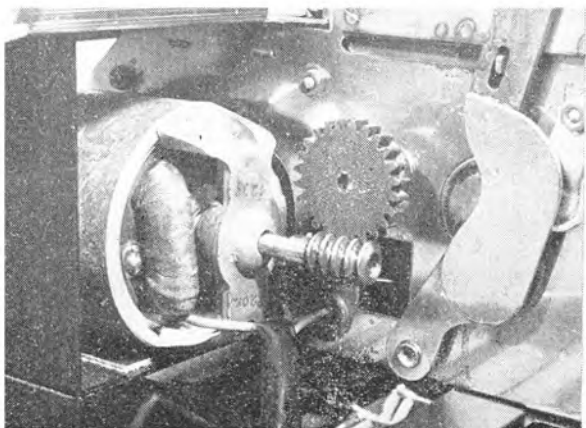
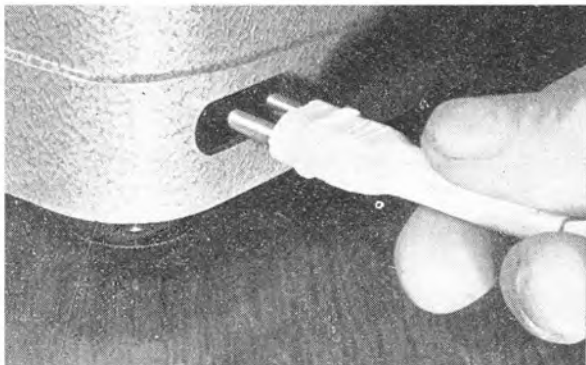
Selected transparencies usually require more protection than that given by the cardboard mount if you intend to keep them in good condition over the years. There are now quite a large variety of slide holders available in either metal or plastic which hold the film securely between thin cover glasses, thus excluding all dirt and dust as well as eliminating the bug-bear of greasy finger marks. An alternative holder is made of 2 x 2 in. glasses hinged together and masked with adhesive paper. The film is inserted and centred up, then the slide is bound all round. This method is more economical and makes a completely dust proof slide. Dust is one of the worst enemies of transparencies as you will find out when you project a speckled slide. So try and do all your mounting in a room with all windows and doors closed.

Sizes larger than 35 mm. are usually returned to you in individual transparent envelopes, sometimes containing two or three pictures. They can be mounted in the same manner as 35 mm., either in cardboard or between glasses for greater protection.

Although a small hand viewer is almost essential for the initial examining of your transparencies, all the fine detail can only be appreciated by projecting them on to



Four shots of a typical automatic projector, the Leisegang-Fanti, with a magazine to hold 30 slides. Top picture gives a general impression; the next shows how the condenser lens can be removed for cleaning; the next illustrates a convenient socket on the projector; and the bottom picture shows the induction motor, with part of the slide-changing mechanism



a large screen. A good slide projector will last a life-time, but a cheaper one is certainly better than not having one at all.

SLIDE PROJECTORS

There are a large variety of slide projectors to choose from, both of English and Continental manufacture. Prices vary almost directly with the wattage of the projector lamp employed, but if you are thinking of buying one of the cheaper models choose a well known make. Unlike a movie projector there is no shutter to cut off part of the illumination from the screen, so even a 100 watt lamp of mains voltage will give a reasonable picture two or three feet in width. For normal home use it would be wise to consider one of the 300 watt models in order to have a bright picture and at the same time a little illumination in reserve should you wish to use a large screen occasionally.

Lamps of 250 watts and over usually have some form of forced cooling. A small induction motor is housed in the base of the projector and fitted with a fan, which is practically noiseless in operation. Even so a heat-resisting filter is added to avoid overheating the slide when projecting it for any length of time. This filter takes the form of a special piece of glass behind the condenser lens.

It is difficult to calculate accurately the maximum size of picture obtainable with different wattage bulbs, since the density of the transparency has to be taken into consideration as well as the efficiency of the whole optical system. The type of condenser system used to collect the light and direct it evenly on to the transparency has to be taken into account so that two different makes of projector with the same wattage lamp do not necessarily give the same light output.

The aperture of the projection lens also has a bearing on screen brightness. The majority of lenses have an aperture of f3.5, although lenses of f2.8 and f2.5 are found on the more expensive models. The lens should be coated to minimise internal reflections which spoil definition as well as brilliance. The projected picture should always be crisp from edge to edge, so reject any machine which gives soft definition at the edges of the picture whilst remaining sharp at the centre. It may be found worthwhile to take along one or two of your own known transparencies for this test.

The focal length of the lens can also affect your final choice of a projector. In a normal sized room a lens of 85 mm. focal length would be most suitable for projecting 2 x 2 in. slides. For a long room choose a 100 mm. lens which will give you an increase in distance between projector and screen for the same size picture. Projectors taking the larger size of slide, 2½ in. square are not so

numerous and generally cost a few pounds more. A lens of 150 mm. is the usual focal length for this size.

SLIDE CARRIERS

There are numerous designs for slide carriers, apart from the usual horizontal slide holder of the push-pull variety. This type of holder makes the slide change visible on the screen, although there is one model which masks off the light during the change. There is also a vertical carrier which is gravity fed so that by pressing a button the used slide drops beneath the projector. Another vertical type masks the light from the screen during the change and returns the used slide to the top. Some of these carriers are not entirely suitable for use with cardboard mounted slides, so check on this point before you decide which one to buy.

To avoid mistakes in presentation by having slides thrown on to the screen wrong way round or out of sequence, the magazine type of carrier may be your choice. Although there are several to choose from, some will only fit a particular make of projector. Usually thirty or thirty-six slides can be pre-loaded into a magazine which is then fixed on a runway on the projector and the slides changed by the simple movement of a lever. One magazine will take up to fifty slides, a useful feature for lectures. It is preferable to keep all slides in the same type of mount when using magazines so that there will be no alteration of focus due to the varying thickness of cover glasses and mounts. Slides in cardboard mounts can be used in most magazines quite successfully. Plastic magazines should be protected from excessive heat or long exposure to direct sunshine, as a warped holder will not travel correctly along the special runway and jamming will occur.

AUTOMATION

This familiar word has found its way into transparency projection and refers to the magazine type of projector with a motorised slide change. In this case the magazine is built-in as an integral part of the projector and the slides changed by merely pressing a button. An extension lead can be taken any distance to your favourite arm-chair and the slide change made from a comfortable viewing position. At least one model has a built-in timing device which pre-selects the number of seconds you wish each slide to remain on the screen. Once started, projection of the whole magazine is completely automatic.

In all these automatic projectors the slide changing is accomplished by a small induction motor, separate from the usual cooling-fan motor. Once the slide motor has started, a sequence timer makes contact so that you need not keep your finger on the button for more than one second. A mask covers the lamp during the actual slide change and the motor automatically switches itself off at the end of the sequence.

AVAILABLE APPARATUS

Slide projectors cost from £10 or £11 to £50, including the lamp which is always priced as a separate item. There are several models with 100 or 150 watt lamps in the cheaper range made from moulded plastic. All contain a heat filter to keep the slide cool, and prevent those in cardboard mounts from buckling and going out of focus. The Kinderman 150 projector has a built-in magazine slide changer holding 36 slides. Aldis make a very comprehensive range of projectors with lamps of 100 watts to 1,000

watts, catering for use at home, school, or large halls with screens of from 12 to 15 ft. in width. But the most popular model is the new styled 303 with a 300 watt lamp and fan cooling for £21 12s. There is a magazine-type holder available for this machine, and a fully automatic model is sold for £52 10s. The Leitz and Zeiss projectors give an extremely good picture although they cost slightly more than a similar powered projector made in this country. The Hi-lyte, manufactured by Rank Precision Industries, is a very sturdy machine with a fan-cooled 300 watt lamp. The Hi-lyte remains quite cool even after a prolonged running.

For 2½ x 2½ in. slides the choice is between an Agfa Aldis, Alphax, Noris, Hi-lyte, or Unoscop. The Unoscop is extremely compact and sells for just under £20. All slide carriers on these projectors can be adapted to take the 2 x 2 in. slides, so that although you have to pay a little more for a projector in this size it does serve a dual purpose.

Automatic projectors for the 2 x 2 in. slides include the Braun, Leisegang, Leitz Pradovit and Paximat S. Prices range from £35 11s. 9d. for the Braun with a 150 watt lamp, to £49 12s. 6d. for a Leisegang with a 300 watt lamp. The Leitz Pradovit is neatly styled and compact, holding 30 slides and selling for £40 2s. 6d. There are no automatic projectors or magazine type slide carriers for the 2¼ x 2¼ in. size.

The accompanying chart shows at a glance the current range of projectors together with the lamps and lenses fitted to each model.

Several projectors also incorporate remote focusing so that there is no need to leave your arm chair at all during the run of a magazine. All types of slide holders can be loaded in each magazine, cardboard, metal or plastic, and every one brought into correct focus at the touch of a button.

SCREENS

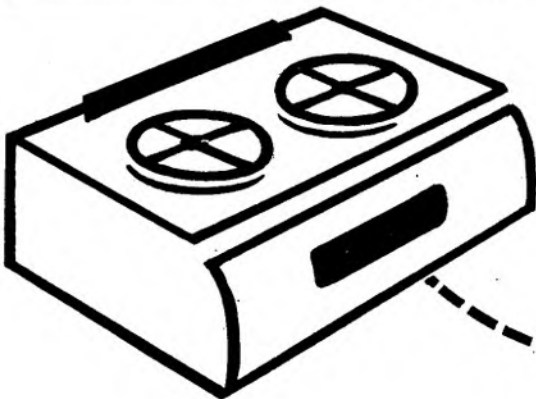
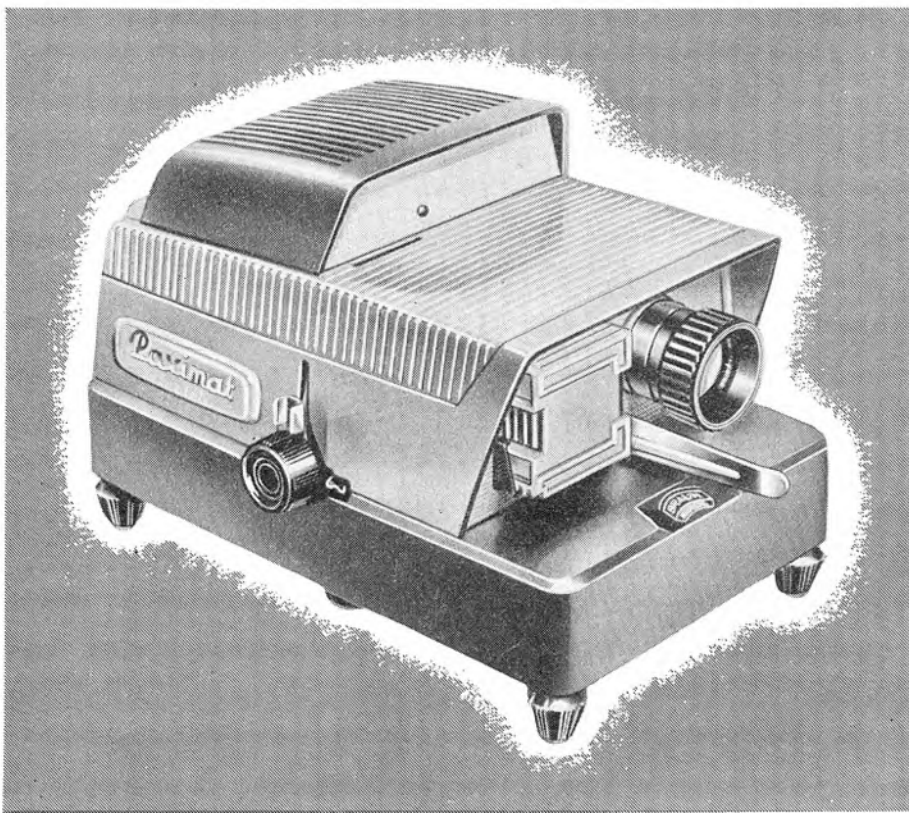
It really is essential to have some kind of proper screen on which to show your slides. A tinted wall is not a suitable substitute however flat the surface may be; neither are sheets and pillowcases the right things to use. You just have to buy a screen. Don't forget that in order to show slides with a vertical as well as a horizontal format you will require a square screen. One about 4 ft. wide will be suitable for the average home. You can buy a simple screen on rollers with side stretchers, or one of the self erecting variety which automatically fold away in a case like a roller blind. The more expensive ones have their own tripod stand, which is very convenient if you have no pieces of furniture or shelf at a suitable height which can be pressed into service. The type of surface to choose depends on the viewing conditions and the shape of the room.

The choice lies between Matt White, Glass Beaded and Silver. Matt White is to be preferred as this gives the best picture over the widest viewing area. It is also the least reflective so that you need plenty of illumination. Glass beaded screens give a good bright picture but are reflective only over a small viewing area. Those sitting near the projector will get a brighter picture than with a matt white screen, but those sitting at an angle will receive only a dim picture. Silver screens fall in between the other types as regards reflective properties and do not give such a satisfactory colour rendering. So providing you have a 300 or 500 watt lamp a matt white screen will serve you best.

(Continued on page 28)

Double the *when you*

Sit back among your guests, while music and spoken commentary come pleasantly over. Signals on Tape change the slides. Simply done, it is not expensive with the PAXIMAT S remote-controlled slide projector.



Paximat S

There are several ways of linking this projector with your tape recorder. Whichever "linkage" you choose, you can put on an uninterrupted show of 36 slides of various standard sizes in the 2 in. by 2 in. format. The PAXIMAT magazine takes them as they come! High quality f/2.8 lens, turbine-cooling, impressive styling and finish.

PAXIMAT S remote-controlled Slide Projector (with provision for tape recorder link-up)—£34 18s. 6d.
300 watt lamp—£1 13s. extra

THE PULLIN OPTICAL CO. LTD., LONDON, W.1.

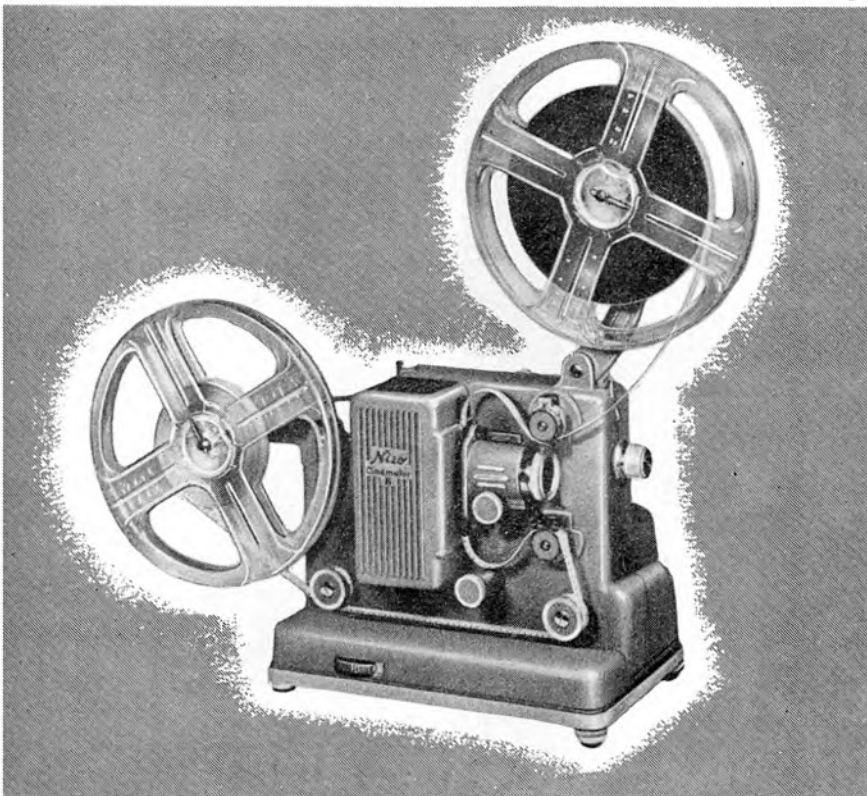
enjoyment *link eye and ear*

Now you can put on a cine show with sound—in the comfort of your own home! All you need is a Nizo CINEMATOR 8 mm. projector, a tape recorder and a reliable synchroniser. Completely modern in design and details, the NIZO CINEMATOR has many superior features such as f/1.5 lens, the latest type low-voltage lamp with self contained mirror-optical system, simple framing

and accommodation for 400ft. spools. In every respect this fine projector is built primarily for synchronisation—to give your home cinema shows the professional touch.

NIZO CINEMATOR 8 mm. Projector
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£34 7s. 6d.

8-volt 50 watt lamp £1 15s.



Nizo

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NIZO SYNCHROVARIO Coupling device—
Electro-mechanical connection between NIZO CINEMATOR
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projector speed. £15 10s.

WALTER CINE STROBOSCOPE
Projector controls WALTER 303 de luxe or 505 tape recorder through
reflector, stroboscope disc, and fine speed control in series with mains.

£8 8s.

THE PULLIN OPTICAL CO. LTD., LONDON, W.I.

Three of the latest models are, top, the Paximat S remote-controlled slide projector; the Agfa Diamaton S, seen with the press-button remote control and remote focusing attachment, and the Bell and Howell Hi-lyte 707

(Continued from page 25)

PROJECTION REQUIREMENTS

Although it is a relatively easy task to project a few slides on a screen, it is worthwhile taking a little extra trouble in preparation if you are going to show them to other people. First, always arrange the projector at a convenient height so that the beam will clear the heads of your audience and at the same time is level with the screen. There are several light-weight projector stands which will accomplish this if you do not possess a suitable piece of furniture. Most projectors have a tilting device for centring up the picture, but if the angle of the beam is too steep the picture will not be in focus all over. The only remedy for this is to tilt the screen so that it is square on to the beam.

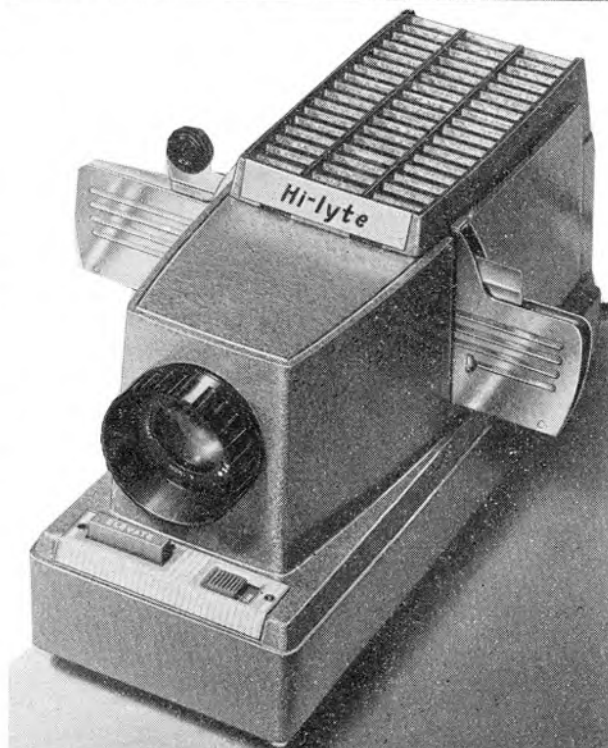
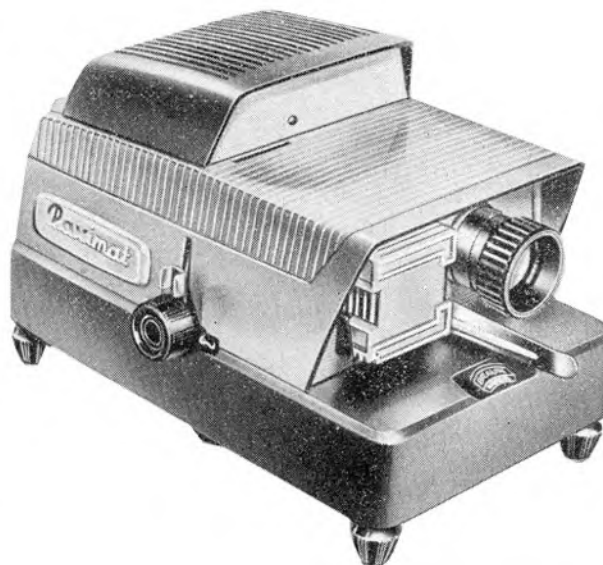
You will probably find that the mains lead supplied with the projector is seldom of sufficient length to reach to the nearest wall socket, so it is wise to have an extension cable ready made up. Avoid a tightly stretched mains cable which is always guaranteed to trip people up. The room chosen for viewing should be blacked out as much as possible and the screen shielded from any stray light, such as a flickering fire. You will be surprised how much brighter your transparencies look in a well darkened room, even with a projector of low or medium power.

When arranging a show, line up the picture on the screen in advance, and ensure that the focus is correct. Even if all your slides are in the same type of mount it is necessary to be alert for any slight adjustments in focus after a slide change. Projectors with a magazine type slide carrier are much easier to use, since they permit a regular showing of selected transparencies without having to fumble around inserting each slide in the ordinary type of carrier.

ADDING SOUND

Projecting your transparencies with a background of commentary and music will considerably improve their presentation in the home. A few verbal comments spoken off the cuff are what one usually expects: But this method can never match the polish of a carefully written recorded commentary. Here is another use for your tape recorder. A magazine of thirty-six slides and a reel of tape can combine to make an interesting half hour show. If you are considering buying one of the fully automatic projectors there is no reason why your tape recorder should not be modified so that the tape itself carries out the slide change for you. Some of the new recorders are already equipped with this facility, and on others it is an optional extra. Zeiss Ikon have introduced a control unit called the Diatakt which can be used with any domestic tape recorder and any automatic slide projector.

There are several methods of providing the remote switching to operate the slide motor on the projector. A simple way is to stick a piece of silver paper on the base of the tape at the point where you wish the slide change to occur. Arrange a split pillar in the tape path connected to an ordinary relay. When the silver paper reaches this pillar the circuit is completed and the relay operates. A pair of contacts on the relay will then close and switch



on the motor to commence the slide change. This system has been employed in the Stuzzi Tricorder.

Another method employs a 50 cycle pulse which is obtained from the heater supply and recorded on the tape in the appropriate places. When playing back, the pulse is amplified and made to operate the relay. This requires a little more circuitry and an extra valve. Since the pulse is recorded on the same track as the commentary, the loud speaker should be muted during the period of the pulse which rather prohibits the use of any continuous musical background. This is the system fitted to REPS tape recorder as an optional extra, and to be used in a new version of the Stuzzi Tricorder.

To avoid cutting off the loudspeaker the pulse must be recorded on the other half of the tape using a separate record/replay head. The recorder must then be fitted with a full width erase head instead of the normal half track head. Alternatively the pulse can be rendered inaudible by using a frequency of over 15,000 cycles, but this is only possible on the new tape recorders with super-line heads. All Telefunken recorders can be fitted with a Telechron Unit which records a synchronising pulse.

AFTER THE SHOW

When you have finished projecting your transparencies it is wise to keep them in one of the proper storage boxes which are grooved and numbered for easy reference. In this way they will not only be kept free from dust but also away from daylight. If your slides are in magazines with a transparent cover keep them in a cupboard or drawer. Prolonged exposure to any bright light will cause the colours to fade. If your screen is a beaded one be careful not to expose it to sunshine for any length of time. The glass beads are liable to become discoloured.

Regular cleaning of the projector optical system is also necessary, especially on those machines with forced cooling. Care should be taken when returning the projector to its case or box against being accidentally knocked. The lamp is most fragile when hot and susceptible to the slightest shock. Do not attempt to take the lens apart, but merely clean the external glass surfaces with lens tissues. A handkerchief really will not do instead.

In this way you will preserve all your equipment and receive a maximum of pleasure from projecting your colour transparencies.

EQUIPMENT ON THE MARKET

A comprehensive list

PROJECTORS FOR 2" x 2" SLIDES

Make	Model	Lamp Wattage	Lens Focal Length	Lens Aperture	Price
ADEMCO	Vigil	8v. 50w.	100 mm	f/3.5	£ s. d. 20 13 0
AGFA	Optifocus	100	85 mm	f/3.5	12 5 3
ALDIS	Aldisite	100	85 mm	f/3.5	11 11 9
ALDIS	Aldisette 2	150	85 mm	f/2.5	16 16 9
ALDIS	Aldisette 2	150	130 mm	f/3	20 17 9
ALDIS	Aldisette 3	300	85 mm	f/2.5	21 12 0
ALDIS	303	300	85 mm	f/2.5	21 12 0
ALDIS	Super Aldisette	500	85 mm	f/2.5	27 19 6
ALDIS	Super Aldisette	500	100 mm	f/2.8	30 3 6
ALDIS	5 Star	1000	100 mm*	f/2.8	32 18 0
ARGUS	200	200	100 mm	f/3.3	16 0 0
ARGUS	Han-o-matic (Magazine)	300	100 mm	f/2.8	27 3 3
HI-LYTE 707	300	300	100 mm*	f/2.8	18 10 6
GNOME	Alphax 1	150	75 mm	f/3.5	10 1 3
GNOME	Alphax 2	150	75 mm†	f/3.5	13 13 9
KINDERMANN	Junior (Magazine)	150	100 mm	f/2.8	17 11 9
KINDERMANN	300 (Magazine)	300	85 mm	f/2.8	35 3 0
KODAK	Kodalide	150	100 mm	f/3.5	11 11 9
LEITZ	Prado S	150	85 mm	f/2.5	24 15 9
LEITZ	Prado SM	300	100 mm	f/2.5	34 6 0
SPECTO	Colorslide	150	85 mm	f/3.5	11 1 3
ZEISS	Ikolux	150	85 mm	f/2.5	24 19 9
ZEISS	Ikolux	150	100 mm	f/2.5	25 13 9
ZEISS	Ikolux	300	85 mm	f/2.5	33 4 6
ZEISS	Ikolux	300	100 mm	f/2.5	34 5 0
BRAUN	Paximat (Magazine)	300	85 mm	f/2.8	26 11 6
ARGUS	Han-o-Matic	500	100 mm	f/2.8	30 5 0
GNOME	Alphax 3	300	85 mm	f/2.8	19 0 6
SPECTO	Colorslide	300	85 mm	f/2.5	16 19 6

*Other lenses available

†Ditto with Silver Reflector

MAGAZINE ATTACHMENTS FOR 2" x 2" SLIDES

AIREQUIPT—holds 36 slides, suitable for ALDIS projectors	£ s. d. 4 15 0
Adaptors for other projectors	0 7 6
PAXIMATOR—holds 35 slides, suitable for ALDIS projectors	6 10 6
VISTAMATIC—holds 30 slides, suitable for HI-LYTE projectors	5 15 0
ROSCOPE—holds 12 slides in circular holder. Changes slides every 6 or 12 seconds automatically. For ALDIS projector	16 10 0
HAN-O-MATIC—holds 36 slides, suitable for Aldis, Argus, Alphax, and Hi-Lyte projectors	4 15 0

AUTOMATIC MOTORIZED PROJECTORS FOR 2" x 2" SLIDES

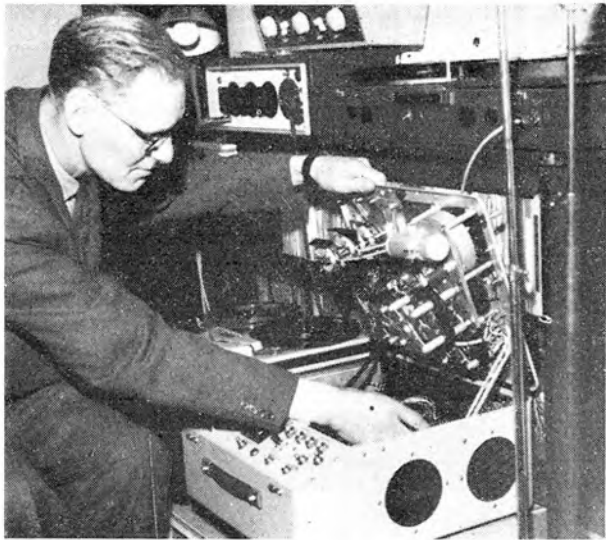
Make	Lamp Wattage	Lens Focal Length	Lens Aperture	Price	Number of Slides
ALDIS AUTOMAT	300	85 mm	f/3.5	£ s. d. 50 11 6	36
BRAUN PA 2	150	100 mm	f/2.8	35 11 9	36
KINDERMANN ROBOMATIC	300	100 mm	f/2.8	46 3 0	36
LEISEGANG FANTII	150	85 mm	f/2.5	41 1 3	30 or 50
LEISEGANG FANTII	300	85 mm	f/2.5	49 12 3	30 or 50
LEITZ PRADOVIT	300	85 mm	f/2.5	47 1 6	30
LEITZ PRADOVIT	300	100 mm	f/2.5	49 16 0	30
PAXIMAT S	300	85 mm	f/3.5	36 11 6	36

PROJECTORS FOR 2½" x 2½" SLIDES

Make	Model	Lamp Wattage	Lens Focal Length	Lens Aperture	Price	2" x 2" Adapter
ALDIS	Super 6	300	150 mm	f/2.8	£ s. d. 30 9 3	£ s. d. 1 17 0
ALDIS	1000	1000	150 mm	f/2.8	44 19 6	1 17 0
HI-LYTE	66	750	150 mm	f/2.8	37 11 0	1 12 6
NORIS	66	150	150 mm	f/3.5	22 8 6	1 7 9
UNOSCOPE	100	100	150 mm	f/3.5	19 17 6	Included
UNOSCOPE	Focal	250	135 mm	f/3	26 12 9	Included
UNOSCOPE	Focal	500	135 mm	f/3	31 19 6	Included
AGFA	66	150	150 mm	f/3.5	23 6 6	
GNOME	Alphax Maj	300	100 mm	f/3.5	26 10 6	Included

PROJECTORS FOR 3¼" x 3¼" SLIDES

OPTISCOPE 500—500 watt lamp, lenses up to 12" focal length	£ s. d. 34 10 0
ELITE EPIDIASCOPE—750 or 1000 watt lamp. 8" f/4 lens and 14" f/4.5 lens	91 10 0
ALDIS EPIVISOR—500 or 1000 watt lamp. Can be adapted for 2" x 2" slides as well as 3¼" x 3¼" and opaque objects.	Basic price 65 0 0



THIS TAPE-SLIDE SHOW HAS HAD 200 PERFORMANCES

Mr. Bradley Dixon makes an adjustment to his stereophonic tape recorder. In the background are the other units of equipment which he uses in presenting his "sound and film" documentaries.

Recorder manufacturers offer new facilities

TAPE recorder manufacturers are very much alive to the tremendously growing interest among amateur photographers and cine-photographers in the automatic linking of sound with vision.

In this country, for example, Repts (Tape Recorders) Ltd, were among the first to concentrate on the problem. Today a number of Continental machines are arriving with facilities for tape-projector linkage.

An outstandingly successful example of an automatic projector for use with a recorder is the Paximat, illustrated on page 28.

This was the first on the market to incorporate remote control of focusing. This, together with slide changing at the touch of a button from the user's armchair, makes transparency viewing extremely simple, efficient and pleasurable.

When the new Grundig-designed Sono Dia becomes available shortly, it will enable the Paximat to be linked with any tape recorder. As well as facilitating the recording of a verbal commentary and/or

musical accompaniment, provision is made for registering an impulse which will operate the slide-changing mechanism.

The design of a growing number of tape recorders makes provision for ready coupling to a Paximat-type projector.

An example of the trend is the Telefunken 75-15KB, which has connections for the synchronised control of automatic slide projectors.

Photo enthusiasts can order the Stuzzi Tricorder already equipped with the contact arm for projector control. All that is needed to connect to a Paximat slide projector is the addition of the Stuzzi projector control cable, and the necessary plugs on the projector itself. Slide changing is effected by marking the tape with a little cue foil. This is self-adhesive, and is placed on the back of the tape.

Thereafter the slide will change whenever the cue foil enters the tape slot and, additionally, it shows at a glance where slide changes are intended.

KODAK OFFER COLOUR PHOTO SCHOLARSHIPS

KODAK Colour Scholarships to America are awarded by Kodak Ltd. annually. Applications for the six scholarships to be awarded in 1960 must be received by February 29, 1960. Applications and requests for details should be addressed to: The Secretary, Kodak Ltd., Kodak House, Kingsway, London, W.C.2.

An exhibition of colour photographs made by the first six scholarship winners during their three-month course in America was seen in London earlier this month.

During their course the group worked in the various departments concerned with colour photography in the Eastman Kodak Company. The course included lectures at a very advanced theoretical

level and a considerable amount of practical work. The scholars underwent part of their training at the Rochester Institute of Technology. On their way home from Rochester they visited leading colour studios in New York.

Watch for our next special survey, giving an up-to-date picture of cine developments that will interest tape recording enthusiasts.

BY synchronising up-to-date sound recording techniques with a film transparency projector, Mr. Frederick Bradley Dixon, of Chester, is bringing a new dimension—and a new lease of life—to the venerable "lantern slide lecture."

His sound and colour slide documentary of the "Royal Charter" shipwreck tragedy 100 years ago, in which over 400 lost their lives off the Anglesey coast, is the result of many months of work.

Mr. Dixon's father was one of the pioneers of film shows in the early "silent" days—the days when a piano, often played by an indifferent pianist, was the only sound accompaniment. Mr. Dixon was in his teens then, and he spent much of his time experimenting with improvised sound effects to synchronise with the silent movie.

One of his first, self devised, pieces of sound equipment was a double gramophone turntable with twin horns. As a complete contrast, Mr. Dixon's present sound equipment includes stereophonic tape recorders and stereo amplifiers.

Mr. Dixon's first attempt at marrying still slides to sound was in 1953, when he covered the Coronation festivities in his home village of Farndon, near Chester. The result was a documentary lasting an hour, in which many familiar local characters starred.

Soon afterwards, he extended his activities to North Wales—an area rich in historical and scenic subjects. His "Sands of Dee"—a documentary on the River Dee estuary—became exceptionally popular and has been shown 200 times over the last six years.

An experienced rock climber, Mr. Dixon put his skill to good use in "The Mountains of Wales"—one of the most difficult documentaries he has made. The technical difficulties involved in taking sound recordings and film shots of the cliff faces—often from points above and alongside the climbers—were numerous but not insurmountable.

It was while making "Mona's Isle" in Anglesey that Mr. Dixon first became interested in the romantic and tragic story of the "Royal Charter." With Mr. Edwin Price, who is also a Chester man, of the British Sub-Aqua Club, he started work on a documentary which was to include several under-water shots of the wreck.

Members of Chester Theatre Club provided the voices for the commentary, much of which was culled from historical documents and contemporary newspapers. A three channel mixer gives Mr. Dixon ample opportunity to exploit to the full the dramatic possibilities of the 100-year-old tragedy.

Mr. Dixon has resisted the temptation to adapt his techniques and equipment to showing movie films, primarily because he feels that the "Still and sound" method is growing, rather than diminishing, in popularity.

FERROGRAPH OFFER STEREO RECORDING



A NEW STEREO tape recorder has been introduced by Ferrograph. The Stereo 808 is designed to give both monaural and stereo recording and reproduction on conventional track tapes.

It has complete recording amplifiers but Ferrograph decided to omit power amplifiers and loudspeakers, to save both

weight and space and so to keep the machine an easily portable unit.

They felt that most hi-fi enthusiasts would, in any case, possess standard stereo amplifiers.

The output of each channel, therefore, ends at low level. This is rated at 1.5 volts across 5,000 ohms. Variable tone controls, normally included in amplifier circuits, are also omitted.

The machine is equipped for operation at $3\frac{1}{2}$ or $7\frac{1}{2}$ ips. At the former speed its frequency response is quoted at 60-80,000 cps \pm 3 dB; at $7\frac{1}{2}$ ips this increases to 14,000 cps.

Used for stereo, the track separation is approximately 40 dB, and for monaural is equal to, or greater than, 60 dB at 400 cycles. The signal to noise ratio in the 200-12,000 cps range is better than 50 dB. Wow and flutter is less than 0.2 per cent at $7\frac{1}{2}$ ips.

The machine is fitted with three independent motors—two driving the tape reels and the third driving the capstan. The main drive motor uses Ferrograph's "Octoquad" synchronous principle and is resiliently mounted for quiet operation. The total power consumption of the unit is 110 watts.

The recording level meter is of unique design to bring transients into proper relativity. It can be switched into upper or lower channels for stereo work.

There is an automatic stop switch which instantly cuts off the motor drive when the spool is empty or if a tape breaks during recording or playback.

The Ferrograph Stereo 808 is supplied in a standard two-tone grey finish in a transportable cabinet with detachable lid.

The overall dimensions are $18\frac{1}{2}$ x $17\frac{1}{2}$ x $9\frac{1}{2}$ in. It weighs 51 lbs.

The cost is £110 5s.

The British Ferrograph Recorder Company Ltd., 131 Sloane Street, London, S.W.1.

New Products

Rotech tape accessories

A STEREO-ADAPTER unit for use when converting a hi-fi monaural system to stereo suitable for use with all makes of pre-amplifiers and main amplifiers has been marketed by Rotech at £3 3s.

It is fitted with dual-tandem volume control and gives a balance control of \pm 8-10 dB per channel. There are two inputs and two outputs, all of high impedance, for left and right-hand channels. The insertion attenuation gives approximately 3 dB at half gain.

The volume control incorporates a mains on/off switch. All functions can, therefore, be carried out from the adaptor unit which may be used as a remote control box as far as 15 feet from the main amplifiers.

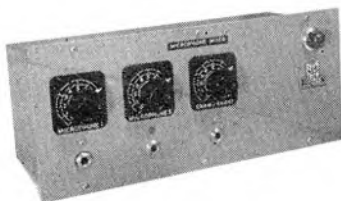
impedance microphone inputs and a high level input, with built-in power supply, and high tension outlet for external amplifier, costs 19 guineas. Other models cost 18 and 20 guineas.

Rotech have developed a telephone pickup adaptor. It incorporates a filter to exclude telephone line noise and the frequency response is level over the speech range. It is only necessary to place it near the phone. The cost is £1 9s.

Among other items of Rotech equipment are a set of dials and lettering transfers for home constructors (3s. a set), and a transistor output meter for all kinds of alignment tests (supplied complete with battery, tested and wired, for £5 17s. 6d., with a suitable transistor £1 4s. extra).

The stereo adaptor, the mixers and the meter were designed by F. C. Judd, A.M. Inst. E., a technical adviser to *Tape Recording Magazine*.

Rotech Office and Technical Services, 152 Maybank Road, South Woodford, London, E.18.



The R.M.I. Mixer Unit

The adaptor is one of several new accessories now being marketed by Rotech. Others include a three-way microphone mixer, available in four models, each of which may be interconnected with another.

Two of the input channels are suitable for microphones, while the third accepts output from a radio tuner, equalised tape amplifier, or crystal pickup.

The mixing and fading on each channel is entirely independent and cross-talk between them is given as nil. The negative feedback preserves a high frequency response and reduces hum and distortion to a minimum.

Model RM 1, designed for two high

An oyster-shaped recorder

A NEW-STYLE tape recorder called the Norfield Consolette has been introduced by Birmingham Electronic Products. It has a distinctive external design—an oyster-shaped casing which can be fitted with legs to make it an independent furniture unit.

A Motek deck is incorporated, equipped for three-speed operation ($1\frac{1}{2}$, $3\frac{1}{2}$ and $7\frac{1}{2}$ ips). Using double-track tape at $3\frac{1}{2}$ ips, it gives up to 2 hours 8 minutes recording time.

The frequency response at this speed is given as 40—10,000 cps and the signal to noise ratio is better than 50 dB. It has a 7 in. x 4 in. elliptical speaker and the output is 3 watts. The machine is suitable for operation on a 200-250 volt A.C. mains supply.

It is supplied with a magic-eye

recording level meter, mixing facilities, and digital revolution counter. There are input points for microphone and radiogram pick-ups and there is an output point for an extension speaker. It can also be used as an amplifier.

The cabinet is finished in two-tone coffee and cream leatherette. Stub-feet are enclosed in the three detachable legs to avoid damage to polished floors or carpets. With legs erected, it stands approximately 2 ft. high—to give arm-chair level control.

It is also equipped with a carrying handle to aid portability.

Complete with microphone and legs, the Norfield Consolette is priced at 61 gns.

Birmingham Electronic Products Ltd., 1 Lodge Road, Birmingham 18.

ARTISTIC NEW COVERS FOR SAGA TAPE RECORDS



AN EXCITING new development in the field of tape records is reported by Saga. In future, their issues will be marketed in boxes covered in glossy and colourful art designs comparable with those used on disc sleeves.

A few of the new covers are illustrated on the left, although the photograph naturally cannot do justice to the colour.

Saga are also providing all their tape records with leaders, and the stereo issues will each contain a four-page booklet about the recording.

Some Saga recordings are now coming forward on tape before they are available on disc and a big boost for tape is planned. Sales through 5,000 photographic and record shops are now being organised.

Over 100 Saga titles are now available; about two-thirds of those sold are recorded at $7\frac{1}{2}$ ips and the remainder at $3\frac{1}{2}$ ips.

Nine new monophonic issues—each available at either speed—have just been made, and nine new stereo titles at $7\frac{1}{2}$ ips. Further details of these will be published later.



REQUESTS for the "Scotch" brand playing time indicator (above), offered free to enthusiasts by the Minnesota Mining and Manufacturing Company, have been so overwhelming that a second printing had to be ordered.

This, too, was quickly distributed and the firm has now arranged for a third large supply to meet the demand.

JOINS E.A.R.

Mr. J. I. MacKereth has become Sales Manager of Electric Audio Reproducers Ltd., and is handling distribution of their tape recorders, amplifiers and record reproducers.

Mr. MacKereth was previously Sales Manager of Portogram Radio Electrical Industries Ltd. and was earlier with Goodmans Industries Ltd.

Classified advertisements

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

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

JOHN HASSELL RECORDINGS. Tape/Disc. All speeds. CCIR Studio. 21, Nassau Road, London, S.W.13. Riverside 7150.

BULK ERASER, perfect erasure to 7 in. spools. £3 7s. 6d. Ellitt, "Hermitage," Wadhurst, Sussex.

Special Purchase! 1,800 ft. Agfa-Wolfen L.P. tape on 7 in. spools, only 32s. 6d.; 1,200 ft. 7 in. Ferrotape, 26s. 6d.; P. & P. 1s. 6d.; send for complete list of tape bargains (including American Audio tape, BASF etc.) and list of new and second-hand tape recorders. E. C. D. Kingsley & Co., 132, Tottenham Court Rd., London, W.1. EUS. 6500.

Tape Recorders. Large selection of used models mostly as new with Three Months Guarantee. Part exchange with cameras, binoculars, etc. Good quality recording tape on spools—3 in., 7s., 4 in., 8s. 6d., $5\frac{1}{2}$ in., 19s. 6d. and 25s., 7 in., 25s. Cooks Store, 159-187, Praed Street, W.2 (opposite Paddington Station). PAD 6464.

Tape recorders, players, radios etc. (modern) wanted for cash. Callers or particulars Cooks Store, 159-187, Praed Street, W.2 (opposite Paddington Station). Tel.: PAD 6464.

TELEFUNKEN KL.75K. $3\frac{1}{2}/1\frac{1}{2}$ ips. Nine months old. Perfect condition. £35. SHEpherds Bush 8177.

Electronic Technician; H.N.C. with Electronics or exceptional practical experience; maintenance & operation magnetic playback systems; geophysical field or playback experience an advantage; Hayes-Orpington area. Box No. 326.

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In the next issue

BUILDING A TAPE LIBRARY

Have you thought of filing your book reviews on tape—or the best speeches you hear—or your family history? William R. Phinney, of New York, makes some suggestions on these lines in a fascinating article.

★

MAKING A MIXER

F. C. JUDD begins a new "do-it-yourself" series, in which he will describe the construction of a three-channel electronic mixer.

★

EQUIPMENT REVIEWED

The Grundig TM 20 deck will be considered in our regular series, "The new decks." There will also be a full test review of the Gram- pian DP 4 microphone.

★

And all the usual features.
Out January 13th. Price 1s. 6d.

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ADVERTISEMENT ENQUIRIES SERVICE

This is a special service for readers of TAPE RECORDING AND HI-FI MAGAZINE. It enables you—without cost—to get fuller information about those products in which you are particularly interested. Fill in one coupon below for each inquiry, writing in your name and address in each case. Then cut out the whole of this half-page, following the dotted line, fold as indicated, and post to us.

<p>I should like further information about the..... (product) mentioned on page.....of the issue of <i>Tape Recording and Hi-Fi Magazine</i>.</p> <p>NAME</p> <p>ADDRESS.....</p> <p>December 30th, 1959</p>	<p>I should like further information about the..... (product) mentioned on page.....of the issue of <i>Tape Recording and Hi-Fi Magazine</i>.</p> <p>NAME</p> <p>ADDRESS.....</p> <p>December 30th, 1959</p>	<p>I should like further information about the..... (product) mentioned on page.....of the issue of <i>Tape Recording and Hi-Fi Magazine</i>.</p> <p>NAME</p> <p>ADDRESS.....</p> <p>December 30th, 1959</p>
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NEWS FROM THE CLUBS

THE last ordinary meeting of the **Coventry Club** was divided between members' tape time and a demonstration by Alan Marston of his Telefunken. Among the tapes heard on Ron Longmore's Spectone was a particularly humorous recording presented by Howard Freer of a story told by Gerald Hoffnung. Tom Bagley produced the second tape, which had been received from one of his American correspondents. The tape contained one of the winning entries in the International Contest and proved very popular. Another tape, played by Roy Reynolds, demonstrated the art of a telephone conversation. The evening was rounded off by the playing of further extracts from the winning tapes from the International Contest.

The technical group has completed the multiple plug strip with an extended cable. This, together with the de-fluxer purchased some time ago, will be available to all members.

A selection of recordings taken from the B.B.C. *Sound Programme* was heard at a recent meeting of the **Huddersfield Tape Society**. This provoked a great deal of discussion on future activities and the form they should take. A number of members obtained good recording experience during a visit to a local church at the end of November. After recording the organ and choir, they leapt at the chance to record a wedding rehearsal. The club is steadily increasing its membership and four prospective members have been

regularly attending their meetings. Descriptive literature is available from the Secretary for those interested. He is George Parks, 175, Newsome Road South, Newsome, Huddersfield.

Membership of the club in **Blackpool** is also on the increase. A hospital service is planned and the Secretary would like to receive some advice on the organisation of this service. The club also welcomes tape exchanges with other clubs.

A sound effects library for members' use has been organised by **The Voicesspondence Club**. The Librarian, Bill Woodrow, will supply *almost* any effect on receipt of a tape and return postage. He can be contacted through Lee Lacy at 15, Fentons Avenue, London, E.13. Details of The Voicesspondence Club and the latest edition of their three-year-old magazine *Voices in the Post* can be obtained from Lee Lacy.

The club section is very minute this issue, mainly because so many clubs are organising parties and social gatherings in place of their normal meetings. By the time this is being read yards of recorded tape is probably being sorted out and edited from the mass of material gathered over the Christmas period. Judging by last year's post Christmas reports, this should provide a hilarious time for all.

In closing this section for 1959, I would like to wish all club members a very Happy and Prosperous tape recording 1960.

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Elizabethan Avon	27	6	0	2	15	0	2	5	0	1	11	5	1	4	7	Reps R.20	64	2	0	6	12	0	5	5	3	13	6	2	17	6	
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Sound Belle	27	6	0	2	15	0	2	5	0	1	11	5	1	4	7	Brenell Mk. 5	67	4	0	6	16	0	5	10	9	3	17	3	3	0	5
Elizabethan Bandbox	30	9	0	3	1	0	2	10	3	1	15	1	1	7	5	Telefunken 76	67	4	0	6	16	0	5	10	9	3	17	3	3	0	5
R.G.D. Fidelity	30	9	0	3	1	0	2	10	3	1	15	1	1	7	5	Sound 555	68	5	0	6	18	0	5	12	6	3	18	5	3	1	5
Minivox (Battery)	35	14	0	3	14	0	2	18	8	2	0	11	1	12	0	Veritone Venus (console model)	69	6	0	7	0	0	5	14	3	3	19	8	3	2	5
Sound Prince	35	14	0	3	14	0	2	18	8	2	0	11	1	12	0	Reps R.30	69	6	0	7	0	0	5	14	3	3	19	8	3	2	5
Truvox Melody	36	0	0	3	12	0	2	19	5	2	1	5	1	12	5	Stuzzi Magnette (Battery)	72	9	0	7	6	0	5	19	6	4	3	3	3	5	2
Elizabethan Princess	40	19	0	4	2	0	3	7	7	2	7	1	1	16	11	Reps R.40	73	10	0	7	8	0	6	1	3	4	4	6	3	6	2
Truvox Harmony	44	0	0	4	8	0	3	12	8	2	10	8	1	19	8	Elizabethan Mayfair	75	12	0	7	12	0	6	4	8	4	6	11	3	8	0
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Balmoral TH.9	47	5	0	4	14	6	3	18	0	2	14	4	2	2	7	Telefunken KL85 (push/pull)	82	19	0	8	6	0	6	16	11	4	15	5	3	14	8
Wyndor Viscount	51	9	0	5	3	0	4	4	11	2	19	2	2	6	4	Harting HM8 Stereo	90	6	0	9	1	0	7	9	0	5	10	3	4	1	3
Spectone 161	51	9	0	5	3	0	4	4	11	2	19	2	2	6	4	Reflectograph 500	98	14	0	9	17	6	8	2	11	5	13	6	4	8	10
Regentone R/T.51	51	9	0	5	3	0	4	4	11	2	19	2	2	6	4																
Telefunken KL75/15	54	12	0	5	10	0	4	10	1	3	2	9	2	9	2																
Bromley De-Luxe	59	17	0	6	0	0	4	18	9	3	9	10	2	13	11																
Brenell 3 Star	60	18	0	6	2	0	5	0	6	3	10	1	2	14	10																

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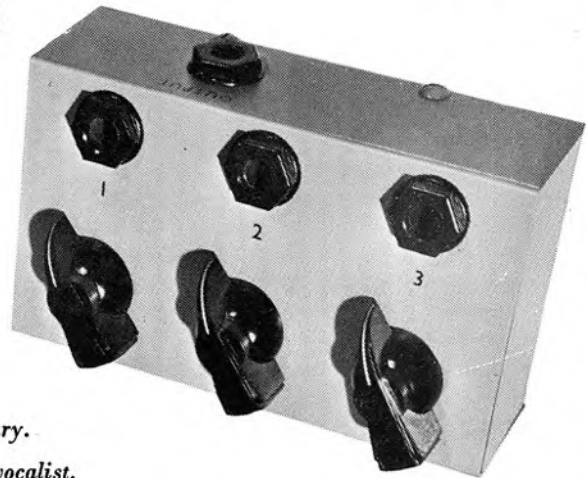
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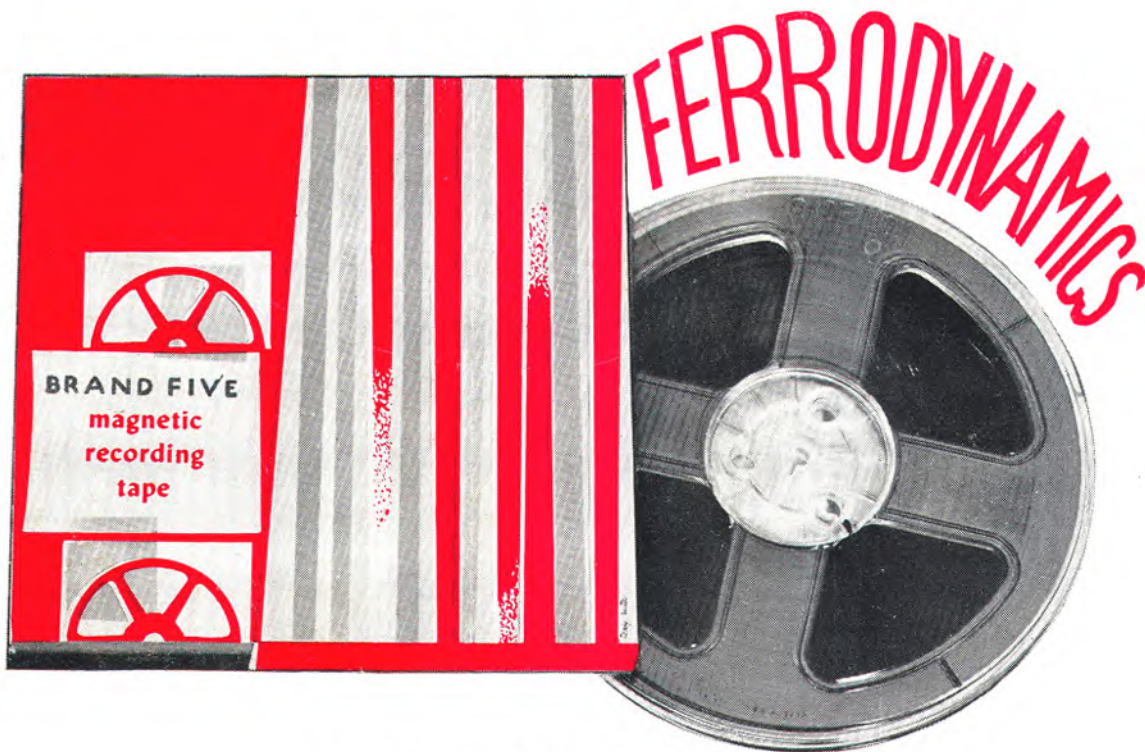
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