

APRIL
1957

1/-

TAPE RECORDING

AND REPRODUCTION MAGAZINE

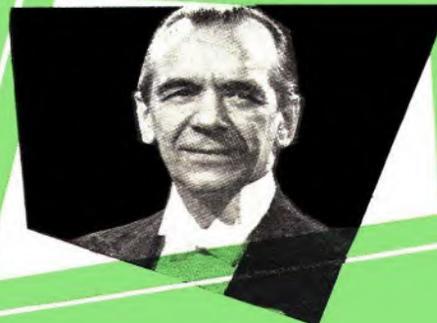


SPECIAL AUDIO FAIR NUMBER

Review of new equipment Pages 11—15

PRE-RECORDED MUSIC ON TAPE

A leading critic comments Pages 6—7



HOW TO GET GOOD SOUND EFFECTS

The essential rules explained Pages 16—17

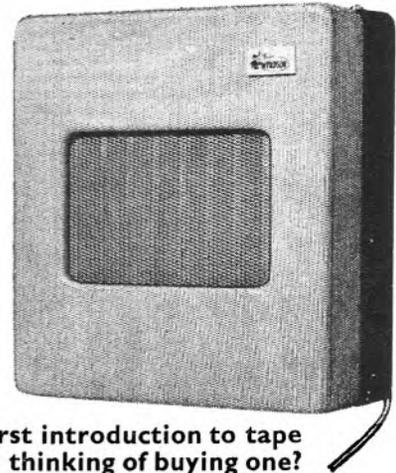


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*reporting on the home, office, factory, school, ciné,
amateur dramatic and musical uses of sound tape*

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COVER ILLUSTRATIONS: Sir
Malcolm Sargent, by courtesy of Electric
and Musical Industries Limited; Oil Tanker,
by Brian Worth.

Great Strides Forward

WE ARE PROUD to carry the first announcements, in this issue, of an exciting range of new and improved tape equipment. This year's Audio Fair marks the most significant stride forward that this new and virile industry has achieved. All those who have played a part in this advance deserve congratulations and support.

It follows from the rapid pace of current progress that the man or woman whose enthusiasm is captured by tape will not long be content with the equipment with which the first experiments are made. The urge to enjoy the full benefits of technical progress will mean replacement of one machine by another, later, model.

It is necessary that the industry should have the stimulus and encouragement of such an informed body of enthusiasts. It is the hope and intention of this magazine to serve as the link between the informed customer and the progressive manufacturer. We hope that in time we shall come to be regarded as essential to both.

The two most fascinating fields of progress are in the direction of stereophonic recording and reproduction, and of synchronisation of tape and ciné equipment.

Several manufacturers now enter the stereo field for the first time. Others will doubtless follow. The purchase of pre-recorded music on tape is likely to increase spectacularly as the new machines come into use.

Several manufacturers, too, are concentrating on synchronisation for ciné work. Some of their first products are already on sale. We believe that others may shortly be announced.

In this issue we report on progress with stereo. Next month we shall concentrate on ciné. It is a part of our service to the manufacturer to print the earliest announcements of all such developments in the world of tape. It is a part of our service to users to examine, and report on, equipment more carefully after it has been tested in use. Next month we shall inaugurate a series of reviews of recorders.

Opportunities for progressive development by manufacturers remain. Already we know from our post bag that there is a growing demand among enthusiasts for a battery-operated portable tape recorder at a more modest price than has so far been achieved. Another suggestion is for an electronic mixer with three or four inputs at a popular price. The Audio Fair demonstrates that our manufacturers have the right spirit; it is as well that there should remain fresh fields for them to explore.

THE RIGHT DEALER?

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WALTER 303. Small, easily carried and beautifully styled this new model is light on the pocket.

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● Recorders incorporating the **COLLARO** Tape Transcriptor Unit—the latest in design—from 48gns. This unit is available with pre-amplifier, for use with Hi-Fi equipment, from 32gns.

● Other recorders we recommend range widely in price and capability. We **MUST** have one to suit your needs.

● **TAPES — MICROPHONES — QUALITY SPEAKERS — AMPLIFIERS — F.M. RADIO — GRAMOPHONES — RECORDS.**

Careful attention to Mail and Export orders.



EDWARD GREENFIELD recorded music critic of the "Manchester Guardian" assesses the progress made with music on tape

EDISON, for years after he had invented the phonograph, persisted in thinking of it as a method for recording private messages—in other words, primarily as an office dictation machine. It was left to others to realise the greater potentialities of the phonograph, and later the gramophone, as a means of entertainment. So, in a way, with the tape recorder today. There must still be many users too ready to think of their tape-machine as a home-recording gadget, rather than as a "tape gramophone."

Yet already an important start has been made by E.M.I. on what to many has seemed an obvious application of tape-recording. E.M.I. (H.M.V. and Columbia) already have in their catalogue a fair array of "pre-recorded tapes" containing exactly the same recordings as have been issued on disc. Among these the prize exhibits are the stereosonic tapes, which I shall deal with in detail later in this article.



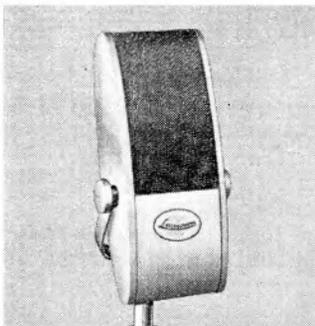
At the other end of the scale from the man with a tape-recorder who barely knows of the existence of pre-recorded tape, there is the man who refuses to buy a disc machine because "the disc is a thing of the past." The truth is, of course, that, though one day tape may actually supersede disc recording entirely, that will not be for a very long time.

Firstly, there is the price factor. "Pre-recorded" single channel tapes cost about twice as much as the equivalent discs; stereosonic, about three times as much.

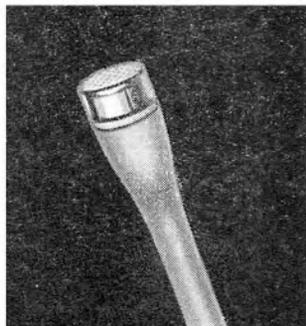
Secondly, there is the vast problem of re-equipment at every level, from manufacturer down, which any great turnover to tape would entail.

But, because the general supersession of the disc record will take years, that is no reason why, in the meantime, we should not be proving the real benefits of tape in this field—notably the absence of wear and of "end-of-side" distortion.

It was with these thoughts in mind that I went down to the E.M.I. factory at Hayes for a demonstration of their tape-records. Stereophonic (or stereosonic, as they like to say) reproduction is understandably E.M.I.'s great talking-point. An ordinary non-stereophonic tape-record is very much on a level with its L.P. equivalent. With stereosonic tape, E.M.I. feel they have something which it would be difficult ever to obtain from commercial discs.



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A NEW EXPERIENCE FOR MUSIC-LOVERS



“ Stereosonic tape-records have something of real value to offer to the music-lover, which is unlikely to be achieved by any other high-fidelity system ”—but our contributor offers cautionary comments as well.

Quite apart from the stereophonic sound that is now poured out in most cinemas, I had heard stereosonic tape demonstrations at the largest of E.M.I.'s recording studios at St. John's Wood and later at the Royal Festival Hall. The stereophonic effect was certainly impressive. In both the demonstrations, the effect of the sound coming from a wide and continuous area was amply proved. What I still felt sceptical of, even after this, was the value of this effect in a small or medium-sized room—the sort of room in which most home listening would be done.



At Hayes I was glad to find that the demonstration room was comparatively small—perhaps 12 feet broad and 25 to 30 feet long. The stereosonic unit was the H.M.V. model 3034, costing 275 guineas. The two large units, looking very much like conventional radiograms, were placed on either side of a low platform at one end of the room. They were arranged, as is recommended, at an angle of about sixty degrees to one another.

I was ushered to a chair placed where the angle of the two speaker units converged. I had to admit as soon as the demonstration began that the stereophonic effect was as impressive as in a larger hall, perhaps even more so. The E.M.I. engineers explain that the unit is essentially designed for listening in a small or comparatively small room, and all the components are designed with this end in view.

As every hi-fi enthusiast must have discovered from practical experience, the acoustics of a room make an enormous difference to the effect of normal hi-fi reproducers.

One great asset of stereosonic tape is that the acoustics of the room in which one is listening becomes of less importance, and the acoustics of the studio where the music

was originally played (and which is, after all, the one which ought to be paramount) becomes more pronounced.

This is all in addition to the more direct advantages of stereosonic reproduction—the orchestra arrayed in clear divisions and the singers in an opera perceptibly moving about the stage. I remember, at the first demonstration at St. John's Wood, being impressed by a test record of part of Mozart's *Marriage of Figaro* by the Sadlers Wells company, with the voices clearly defined in different parts of the stage. That was, until Susanna suddenly slapped the Count's face—although she was quite obviously ten feet or more away from him. With greater experience of microphone placing, the engineers have learnt to avoid these gaffs, and the tapes I heard at Hayes were consistently good. I was particularly impressed by a new one of Klemperer conducting the Philharmonia Orchestra in Mozart's *Eine Kleine Nachtmusik*; also by an initial demonstration record, with the announcer moving across the stage to demonstrate an obvious effect and, later, an arrangement by one of the E.M.I. house musicians, Norrie Paramor, of *Dearly Beloved*. The strings swirled and the horns moaned with an effectiveness even more shattering than that of the music not specially designed for stereosonic tape.

There can be no doubt that E.M.I. has achieved what it set out to do, and that this achievement is well worth while.



Technically, I felt there was only one defect that was at all serious. That was the level of tape hiss in relation to the volume of the music. To my ears, it was abnormally high. But as it was a completely even noise one could, after a time, forget it—as one used to forget the needle hiss of “78” records. I am told by a friend more technically-minded than myself that the fault was probably in the speaker system and that an undue amount of tape-hiss could be avoided with a modification.

(Continued on page 20)



**A NEW CONCEPTION
OF RIBBON AND
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The majestic concord of the symphony orchestra or the cathedral organ...the strong rhythmic bass and percussive highlights underlying the drive of jazz...these you can record, **faultlessly, completely,** with the new "Cadenza" Ribbon Microphone.

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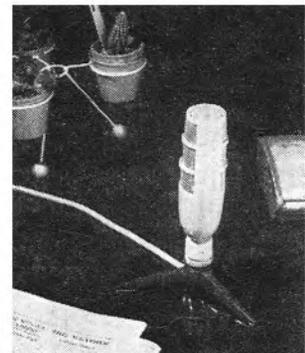
briefly...

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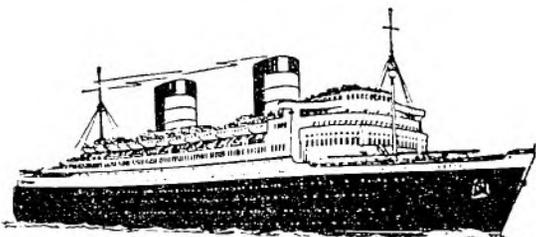
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Here is how the Swedish Seamen's Union keeps in touch with its members through magnetic tape—



Tape helps sailors at work and play

LAND and sea are becoming increasingly linked; first by radio telephone, now by tape recorder. Men at sea for long periods are finding many uses for magnetic tape, both for enlivening their leisure hours and dealing with more urgent business.

One of the most practical is that being used by the Swedish Seamen's Union and reported in the *International Transport Federation Journal*. This union, under the leadership of the Swedish T.U.C., organises educational activities, and deals with current business, by recorded tape.

More than thirty Swedish ocean-going vessels now possess recorders of their own. And, as our illustration shows, educational secretary, Gustav Klang, keeps in regular contact through easily dispatched tape messages.

The union employs three special local educational officers (one of them is based whole time at Gothenburg) who further the formation of study circles and educational activity on board ship. On board someone (perhaps one of the officers) acts as teacher—he supervises studies and makes corrections, just the same as in school.

Compared with correspondence courses there are many advantages. The teacher is on the spot; the pupil can check immediately the way things are going.



The union has worked out its own special course, known as "Seafarers' Course," which deals with the history of the union, its structure and method of working. Courses in navigation and engine room technique are also available. Many shipping companies willingly underwrite their cost.

But magnetic tape has really opened up the field of these studies. The recordings which are made and flown out to ports of call include musical programmes, shows of various kinds, trade union news and sports reports. This more intimate way of keeping in touch makes members feel more closely the part they are playing in the life of their organisation.

Language courses are a first-class example of the new "tape studies." Here all the obvious advantages of recording and playback for pronunciation and vocabulary are supplemented by practical work when putting in at ports of call as well as having mobility. They can be posted back to a tutor quite rapidly. They can be heard by a tutor on board, or they can be kept in reserve for future reference.



—and here is education secretary, Gustav Klang, recording a message which will be flown out to his members

What subjects are most popular? English and Spanish have particular popularity, probably because of their immediate practical use. But current affairs and vocational courses are equally well supported.

As a rule, half the cost of organising these study courses is borne by the State.



The library is another department which is always active on board Swedish vessels. Some vessels have between four and five hundred volumes. Complete photographic equipment and tools for making all kinds of models are other facilities usually available.

Excursions in port are becoming more commonplace; opportunities once only available to wealthy tourists are now open to the ordinary seaman. For as his cultural horizon is broadened through study and discussion (in which magnetic tape plays an important part), so his quest continues and develops when on shore.

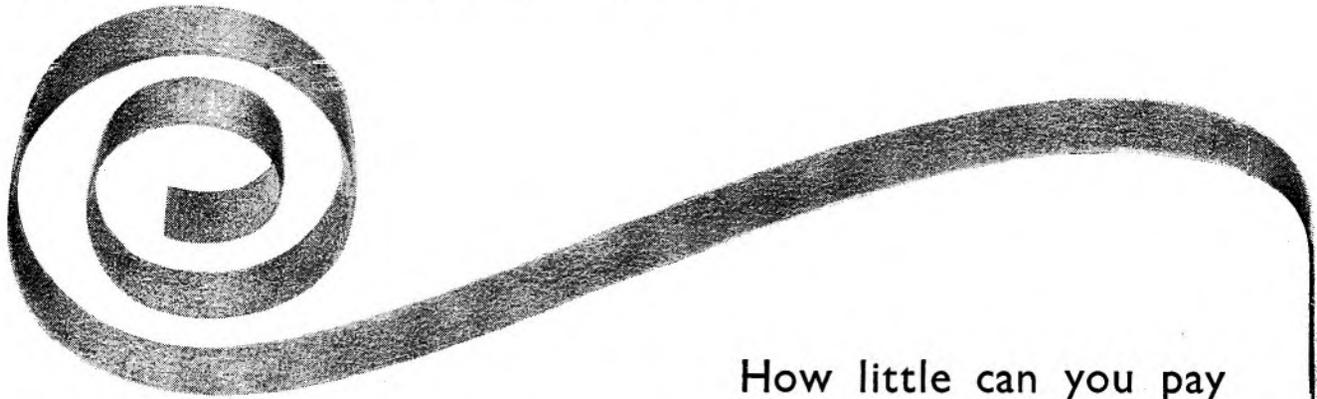
So the seaman solves his problems through modern electronic aids. And as land and sea draw ever closer through these contacts, so his ideas and difficulties become better understood.

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TAPE TO DISC SERVICE STD & LP



How little can you pay for a **good** tape recorder?

Sixty guineas? Fifty-five? Fifty? Stop guessing—here's a really good instrument for only *thirty-nine guineas*. It's the Walter 303 and people who've already tried it tell us we've got "a winner". With the 303 you can (1) build up your own record library of broadcast music; (2) record from discs or microphone; (3) record 'live' instrumental and vocal performances; (4) record and play back, rewind or reverse the tape, and erase—all with *one* control, the ingenious 'Joystick'. You can also connect the 303 to a radio or other amplifier for greater volume—but you won't often need to! Even *without* an extension loudspeaker the maximum volume on playback is great enough to fill a medium-size hall. Technically speaking, the Walter 303 has an output of 3 watts, a frequency range of 40—10,000 cycles, and a signal-to-noise ratio of -35db. It's housed in an attractive two-colour case and is easily carried from one place to another. The 303 is in the shops now. If you *do* have any difficulty, please let us know at once and we'll send you the address of your nearest stockist.



the new **Walter 303**

costs only **39 gns** complete with microphone and tape. Fully guaranteed. Easy payment terms.



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THE AUDIO FAIR 1957

TAPE RECORDING MAGAZINE SPECIAL GUIDE



THE 1957 Audio Fair promises to be even bigger, brighter and more popular than last year's first successful venture. It is already the Mecca of all sound recording, high fidelity enthusiasts.

It is a big occasion in the year, for the interested layman as much as for the technician, for manufacturer and for dealer.

For the music lover in search of greater perfection, this year's stereophonic equipment will need to be heard to be appreciated—and manufacturers will be providing ample opportunities to make their new products widely known and appreciated at the Fair.

The family man, the teacher and the executive will find a whole range of products to stimulate his interest, and the specialist in amateur sound recording will see several exciting new items.

The emphasis is not only on complete recording machines; all the ancillary features are well represented—microphones, loudspeakers and amplifiers.

Appreciate points of design. Manufacturers are genuinely striving to present better-looking products. This year promises to achieve even higher standards.

The exhibition itself will be considerably larger—fifty-two exhibitors as against last year's forty-one. Attendance is expected to be around thirty thousand—as against last year's twenty-five thousand. This will still be within a reasonable comfort margin.

In the following pages we give readers a foretaste of the new products to be shown at the Fair. This is not a complete catalogue—some manufacturers may be producing last-minute surprises. All we hope to do is to whet your appetites and encourage you to visit this event. In future issues we shall publish extended reviews of new items of interest to tape enthusiasts.

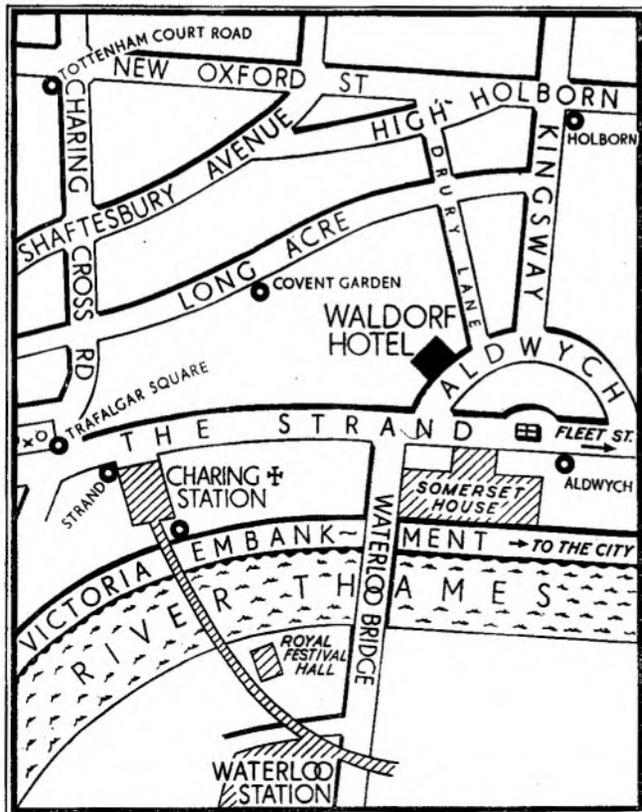
The Fair is open on Friday, 12th April, Saturday, 13th April, Sunday, 14th April, Monday, 15th April; 11 a.m. to 9 p.m. each day.

HOW TO GET THERE

Our sketch map shows the position of the Waldorf Hotel in relation to the nearest main London termini. For those coming from South of the river Charing Cross and Waterloo are the two nearest main line stations. For those from the North, Euston, King's Cross, St. Pancras and Liverpool Street are all within a short bus ride.

Visitors travelling by Underground will find Holborn (on the Piccadilly line), Covent Garden (Piccadilly line), Trafalgar Square (Bakerloo line), Strand (Northern line) and Aldwych (Piccadilly line) are all within easy walking distance of the Waldorf Hotel.

The following buses pass the door: 1, 6, 9, 11, 13, 15, 60, 77, 77a and 96.



COLLARO'S NEW HI-FI DECK

The photograph below gives a general impression of the latest Collaro mark III deck

THE new mark III high fidelity tape transcriber will capture the attention of tape enthusiasts on the Collaro stand. There will also be a pre-amplifier specially designed for use with it, new Collaro hi-fi tape, and a new studio microphone.

The mark III tape transcriber is designed on transcription quality principles for live recording, recording from F.M. broadcasts, and for reproducing pre-recorded tapes.

It is a twin-track model, fitted with four heads, and operating at three speeds— $3\frac{1}{2}$, $7\frac{1}{2}$ and 15 i.p.s.

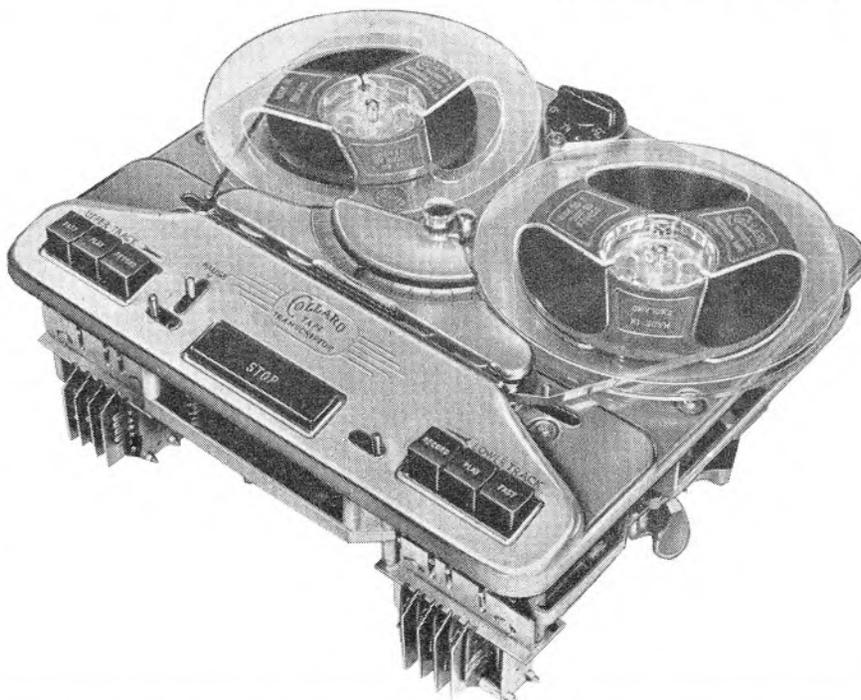
Operation and braking are mechanical, performed without rubber belts or solenoids. Control buttons are fool-proof, as, after depression of any control, all others are interlocked; to restart them, a stop control must be operated.

To prevent unintentional erasure of pre-recorded tape, a safety slide must be moved before the record can be depressed.

An outstanding feature of this deck is a special "pause control." This enables one to record only those parts of a programme that are required. The pause button, when depressed, "cuts out" the tape from the heads, but keeps the machine switched on, with the motors running. Immediately pressure on the button is released, passage of the tape through the heads is resumed.

The pre-amplifier for use with this deck incorporates bias oscillator and individual power-pack.

The Collaro studio microphone comes with six feet of cable and a jack-plug.



A NEW LAPEL MIKE

THE Fair will bring the first public demonstration of a number of new microphones of particular interest to tape users.

One that is likely to attract great attention is the new Lustraphone DA/62, a miniature electro-magnetic microphone which can be worn in the jacket lapel.

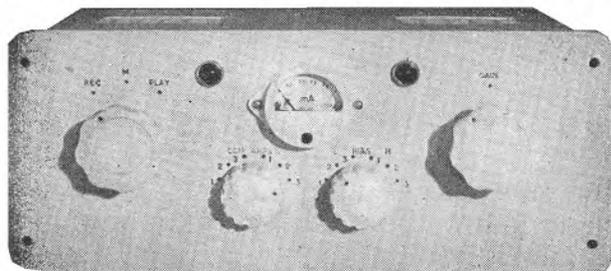
This Company will present two new tubular hand mikes, with press-to-talk switch and hanging button.

Simon Sound are introducing a new KTBI ribbon microphone designed to provide the level of performance hitherto associated with studio class equipment, without going out of the medium-price bracket.

It is claimed to incorporate a new conception of ribbon and magnet arrangement, giving an output which is flat to within close limits over the 50 to 12,000 cycles range.

Provision is made for high impedance output, to operate with 11 feet of cable, or low impedance output, with 30 yards or more cable.

A NEW AMPLIFIER FOR CONNOISSEURS



SOUND SALES LTD are showing an interesting new hi-fi tape recording amplifier—the "A-Z Precord," priced at £30 ex-works.

It has been designed for use with Wearite or Collaro decks, but can be adapted to suit other decks.

Its great value is that it permits hi-fi recording practice approaching professional standard.

An infinite variety of tone colorations on record and playback is claimed. The advantage quoted is that elderly 78 records can be re-recorded on tape and subsequently played back with vastly improved results—"reincarnated" with improvement in the colour so that it exceeds the original recording.

The accompanying illustration shows the compact and attractive design of the "Precord."

This is equipment for the connoisseur.

When writing to manufacturers for leaflets or information, please mention that you "saw it in T.R. Magazine"

The accent is on stereo



TWO new Ferrographs to be shown represent this Company's contribution towards the growing popularity of stereophonic recording and reproduction. The first is known as the Stereo 77 and will cost 98 guineas; the other is the Stereo 88, at 105 guineas.

Both maintain the well-known Ferrograph standards.

The Stereo 77 is designed to appeal to the enthusiast who, while content with ordinary recording most of the time, wishes to have the opportunity to explore stereophonic reproduction of pre-recorded tapes.

It provides, therefore, for monaural recording and reproduction, monitoring during recording, and stereophonic reproduction.

On playback, the amplifiers (both monaural and stereo) provide signals across 600 ohms of two milliwatts and are intended to be fed into external hi-fi amplifier and loudspeaker systems.

The tape speeds provided are $3\frac{1}{2}$ and $7\frac{1}{2}$ ips.

The machine is housed in the familiar Ferrograph portable case, measuring $18\frac{1}{2} \times 17\frac{1}{2} \times 9\frac{1}{2}$ inches, and weighs 49 lbs.

The Stereo 88 goes a step further and provides for stereophonic recording and reproduction. The input level meter is switched in order to balance input levels of both channels, and the output of each channel on playback is of the order of two milliwatts across 600 ohms.

The machine can be used for monaural work as well and substantially full-width uni-directional tapes can be recorded.

Tape speeds are $7\frac{1}{2}$ and 15 ips.

ANOTHER firm now entering the stereo field is Truvox Ltd., who will be showing a new stereophonic head which can be bought separately for fitting to standard

The outstanding feature by which the forthcoming Audio Fair will be remembered, will be the appearance of a number of new models catering for stereophonic recording and reproduction. This brief survey highlights some of the things visitors should look for.

Truvox decks. This costs only £14 10s. but, of course, a conversion involves also a second amplifier and loudspeaker. Given satisfactory studio conditions, it is possible to make stereo recordings with this equipment.

Truvox report this new head to be the result of considerable experiment and development. The frequency response with suitable amplifier is 50 to 15,000 cycles.

Full fitting instructions and dimensioned drawings are supplied with each head. Fitting of this head does not affect the use of a recorder for ordinary half-track work, as the stereo head has identical electrical characteristics to the ordinary half-track head.

Truvox will, of course, be showing recorders equipped with the new head, but there will also be the full range of complementary equipment—amplifiers, speakers, decks, radio jacks, headphones, telephone attachments and dictation foot pedals.

E.M.I., who were pioneers in the stereo field, will be in the Fair with an impressive exhibit which is likely to include items of interest to stereo enthusiasts.

G.E.C. stereophonic sound equipment will be shown for the first time. It will be recalled that the prototype appeared at the Radio Show. Minor modifications have been made to the high quality amplifier which is now available in unit form.

The pre-amplifier makes provision for the addition of an extra valve amplifier stage so that direct connection can be made to a tape play-back head, while the full level of output power is maintained.

The firm's F.M. Tuner unit has been redesigned to provide improved sensitivity. A new loudspeaker cabinet embodies new design principles.

The G.E.C. 912 plus amplifier and the associated F.M. tuner will be shown, together with a number of audio valves which will include the new K.T.88.

Brenell Engineering make provision for new stereophonic heads in the equip-

ment announced on page 15. Their previous 48 gn. model also allowed for this facility.

SPECTO LTD., of Windsor, are showing a new stereophonic reproducer with facilities for single-channel recording. Details of this equipment were not available at the time of going to press, but it is understood that it is a development of this Company's type 126 reproducer which, in a console cabinet, has sold at £165.

The full range of Spectone reproducers, recorders and amplifiers will be on exhibition. These include the hi-fi portable tape recorder at 72 guineas (including microphone), which incorporates the Collaro tape transcriber.

It is fitted with an automatic visual "last track used" indicator to facilitate continuity of programme, as the Collaro deck enables upper and lower tape tracks to be used without spool reversal. In the centre of the control panel is an easily-read meter to show recording level.

This machine has a frequency response of 30 to 16,000 cycles at 15 ips and 30 to 12,000 cycles at $7\frac{1}{2}$ ips. It weighs 50 lbs.

There are three basic Spectone reproducers. The handsome model 123 is for the connoisseur and provides for single channel reproduction on one or two speakers and for stereophonic reproduction on two speakers. Provision is made for FM tuner and record player and a pre-amplifier caters for most types of pick-up. The price is two hundred guineas.

The Spectone model 126 provides a more economical method of reproducing stereo or single-channel tapes. This is the console model at £165.

Model 127 is a table version without amplifiers, designed for use with any two matched external power amplifiers to secure single-track or stereo reproduction.

Finally, as junior partner in the range exhibited, there is type 120, also a table model but suitable for reproducing only single-channel pre-recorded tapes. With power amplifier it costs £85; without £58.

Impressive displays planned by manufacturers

Vortexion announce new improvements

INTERESTING developments will be seen in the models displayed at the Fair by Vortexion Limited. The well-known 2A and 2B recorders are retained in improved form.

The B-type machine has an additional amplifier and head, by which the signal recorded on the tape can be monitored a fraction of a second later and compared, by the turn of a switch, with the pre-recorded signal. Thus the tape can be proved while the recording is in progress and the need for a run-through after the performance is dispensed with.

It is also possible to listen to a previous recording and record additional commentaries over it, or even to re-record the original sounds a fraction of a second later to form an "echo."

The unit may be used as a hi-fi amplifier alone.

Both these Vortexion models have built-in microphone transformers to give normal voice at 20 feet from the microphone. This may be on a cable of up to 440 yards. Radio and gram inputs are, of course, provided and monitoring is by a meter, which can be switched to read bias level.

Vortexion will also be showing a new miniature 10-15 watt amplifier and versatile pre-amplifier, measuring only 4½ x 5 inches over the front panel and projecting 10½ inches to the rear for tape (direct from heads), microphone, radio and gramophone.

The big manufacturers in the tape field will, of course, be well represented at the Fair.

GRUNDIG will probably show their well-known TK 820 and TK 8 models,

with, of course, a full range of accessories. Both of these machines incorporate three speakers to secure high fidelity reproduction.

PHILIPS ELECTRICAL will exhibit a full range of hi-fi reproduction equipment. Prominent will be the 10w. Novosonic hi-fi installation, in its two cabinets, one the amplifier unit, the other containing two speakers. This equipment is supplied without sound source and is suitable for use with a tape deck.

A number of hi-fi speakers will also be included.

The **E.M.I.** stand will, as might be expected, be an exciting microcosm of the world of electronics.

The full range of EMI professional tape recorders will be shown, with tape and accessories, and a range of hi-fi equipment for tape and disc reproduction.

The stereosonic equipment described by a contributor elsewhere in this issue will be there for all to see—and hear.

But tape enthusiasts will probably welcome more than anything else the chance to examine impressive equipment as supplied to recording studios and broadcasting stations all over the world. Several new or improved models are included.

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BUY BEFORE THE BUDGET—AND PURCHASE TAX

NEW RECORDER HEADS A FULL RANGE BY BRENELL

BRENELL will be exhibiting a full range of new products at the Audio Fair. Among the equipment will be their new Mark IV tape deck (illustrated below) for the high-fidelity enthusiast.

This provides three recording speeds ($3\frac{3}{4}$, $7\frac{1}{2}$ and 15 i.p.s.) with speed change above deck, the use of three shaded 4-pole motors, an interlocking control with a safety device preventing accidental erasure, a new flywheel and capstan assembly using a non-magnetic steel capstan, twin track recording on $8\frac{1}{4}$ inch reels with an indicator plate registering thin as well as standard tape. Optional extra is the digital revolution counter.

The Mark IV embodies all the other Brenell features—drop in tape loading, instant stop without tape spillage, forward or reverse tape transit in 45 seconds for the normal 7 inch spool and azimuth head adjustment.

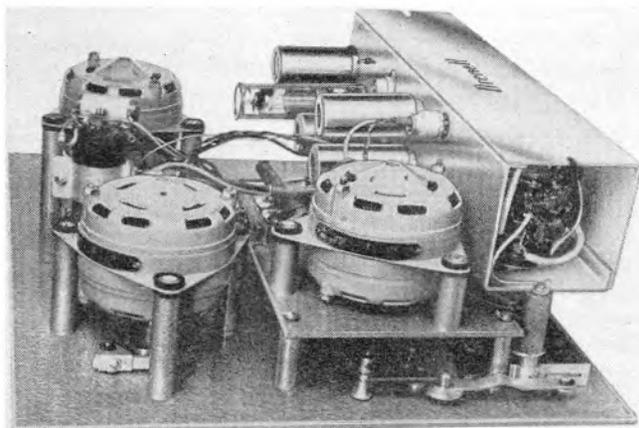
Brenell engineers have also borne in mind the increasing interest in "stereophony," using either stacked or "staggered" heads. Provision is made to convert any Mark IV deck to stereophonic recording at a later date. All that will be necessary will be to fit a pair of additional heads, the holes have already been provided.

A new pre-amplifier unit designed specially for the Mark IV deck will also be on show. Fitted immediately below the deck and attached by two screws only it provides a compact design. For stereophonic recording using "staggered" heads two of these units can be mounted.

The other main Brenell item is a new portable tape recorder incorporating the Mark IV Tape Deck and 10" x 6" elliptical loudspeaker.



The new Brenell Recorder



MASTERTAPE INTRODUCE LP

THE MSS Recording Company are introducing at the Fair their new long play Mastertape. This firm has 24 years' experience of manufacturing recording equipment and its products are held in high esteem. The addition of long play tape to its range will be widely welcomed.

It will be exhibiting, as well, a hi-fi standard recorder, in two models—portable and console. The new MSS tape transport mechanism is a first-class British machine. The console model has provision for an FM tuner (which can be supplied).

Among interesting related equipment, MSS will show a microphone pre-amplifier giving facilities for mixing four microphones, each with its separate control.

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DISCS
AND
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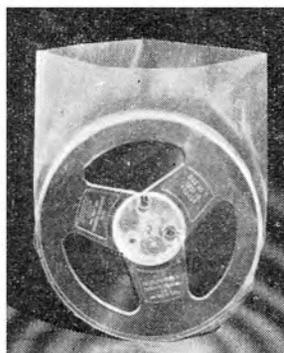


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DEPT. 6
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**THE BUZZ OF A CAR • RAIN SPLATTERING
A KNOCK ON THE DOOR • THE CLATTER
OF A PONY AND TRAP • PASSING FOOTSTEPS**

THE tape recorder offers, within its potentialities, an inexpensive way of recording various everyday sounds. These sounds may be used for purposes such as painting various pictures in terms of sound backgrounds or foreground effects for the theatre, school plays, broadcasting, television, home film projection and so on.

First efforts to record particular effects may prove disappointing, in that either the desired result is marred by unwanted incidental noises or sounds like a different effect entirely.

There are a number of reasons why this may be so. Firstly, we are dealing with the conversion of sound waves into an electrical medium by means of presenting a microphone to a given source of sound (the reference here is to the single microphone, amplifier and sound track). Therefore, we are at a disadvantage straightaway. We ourselves receive sound at two reception points, namely the ears. This natural bi-aural effect, gives the impression of depth, perspective and the direction of sound.

The film industry, for instance, emulates this sense for various films with careful placing of a pre-determined number or separate microphone chains from studio to

individual sound tracks. The subsequent reproduction in the cinema relies on a number of loudspeakers placed in convenient positions in the cinema and able to reproduce the original balance of sound tracks in terms of perspective to movement, dialogue and music as occurring on the screen. One microphone, therefore, has a hard job imparting a true picture to the mind's eye.

This mind's eye business is really the secret; so, whilst recording, it would be wise to close our eyes now and then. It is much easier to analyse the sound during the exclusion of visual aid. If, for example, a motor car was noticed proceeding down the street, it could positively be said that it was a motor car. On the other hand, suppose a recording was made of a rhythmic pattern of sound on a drum which had a dozen pennies placed on the skin, in company with the tooting of a motor horn; perhaps then you wouldn't be too sure! This merely suggests that, without the aid of vision, the required effect has to be carried out carefully in order to convey a satisfactory mental picture via the loudspeaker.

For the purpose of this article we will avoid the stereophonic effect and concentrate on the single microphone. Let us take an actual subject to be recorded. Rain, for instance. Finding opportunities here in England shouldn't be difficult; so we switch on, check level, record a few feet, re-wind and play back for check purposes.

The sound of rain . . .

Are we really satisfied? On analysis the effect might be thought as the surface on a worn gramophone record, or the hissing of steam. If, by chance, this same effect was put to background for a radio play it would probably prove a distraction to the listener, especially to those listeners with V.H.F. sets. On the other hand, this same sound played in the theatre during a "wet scene" might be effective if the actors were covered in oil-skins. This again suggests that the personal thought of rain is mentally associated with sounds consisting of loud noises of individual water drops on a mackintosh, umbrella, or the resonating effect whilst rain is beating on a nearby shed roof.

These, therefore, are the positive noises we should strive for. Going back a few years to the theatre to prove the point, it would be found that rain effects were arrived at by the following methods: lead shot poured into a drum or into an inclined basket lined with brown paper, or a rotating cylindrical cardboard container filled with rice and fitted with internal slats for breaking the rhythm.

That many effects are ineffective on reproduction may not be the fault of apparatus, but rather due to the actual effect recorded. A large percentage of effects have no basic harmonic pattern and, therefore, no recognisable wave form, e.g. door-knocks, footsteps, rain, wind,

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The right way to get good sound effects

By H. J. MORRISS

a leading authority with wide broadcasting experience

explosions, crashes, waterfalls, pneumatic drills, chains rattling and various machine noises.

Because of these conditions, it is our job to record a chosen basic noise and then to put in the trimmings by means of faking. Suppose we want to record a long duration of distant knocking at a castle door for background to a play. We immediately think of a huge wooden door fitted to a mighty thick stone wall, complete with draughty corridors, plus lots of echo. This suggests that the knocking effect has to contain the imagery of our thoughts; so we proceed to bang a piece of iron with the tempo desired on to a stout wooden box for the sympathetic reinforcing of sound. The echo may be obtained by doing the knocking in a reverberant room. The microphone may be tried at various distances outside the room with the door shut or slightly ajar. On the other hand, if you already live in a castle it might be easier to try an actuality effect!

The relative position of the microphone to several effects is also important, bearing in mind that distortion is quite possible although the level indicator is giving no sign of overload. This result may be caused by the interference of direct and indirect sounds, due to the fact that more high frequencies are reflected than low. Always try, therefore, to pick up the direct source of sound and avoid any possible reflections of sound to the microphone.

The sound of keys . . .

What, for instance, are the points to be observed while recording the jingling of a bunch of keys? Firstly, consider the frequency range involved. This may be anything from 400 cycles per second to 20,000 cycles per second. The microphone in this case needs to be very efficient in order to pick up the top frequencies. Even so, it is doubtful whether these extreme frequencies will register on the tape or be reproduced from the loudspeaker. Therefore, choose keys which contain a deeper note and so giving a better chance of a more faithful reproduction. If the microphone is positioned on a table, don't forget to put it on the edge and not in a position where reflected sounds from the table top may interfere as stated earlier. Now experiment with distances, and remember that as you bring the effect nearer to the microphone so the bass sound will increase accordingly.

This simple effect has been quoted for the purpose of bringing to notice some of the hazards which also apply to other effects. Another factor to note is the difference between outdoor effects and indoor effects. Outdoor effects are not enriched with the reverberation factor which normally will be found in a room.

The following points should be noted if outdoor effects

are required to be undertaken indoors, owing to lack of facilities.

This may sound a peculiar statement but if, for instance, the foreground effect of a single horse's hooves going through various antics is required for synchronization to film, it would be a lengthy and expensive business with a real horse.

The acoustics of a room should be "dead" when it is required to simulate open-air sounds, that is to say, without reverberation. Use may be made of spare curtains, blankets hung up on walls, or of the many patent materials available for acoustic purposes. What we are really after here is the absorption of the energy from the sound waves, so preventing reflections.

The sound of cart-wheels . . .

The effect of a horse is our next objective. Don't laugh! Procure or buy one or two coconuts, saw into halves, and dispose of the edible content. It is not quite enough to clap the shells together, for this effect tends to sound thin. What we want now is to apply a body, plus the surface to be walked upon and the feeling of weight.

The hollow box used before will serve for a resonating base. On top of this box put a cloth covered tray (papier mache if possible) containing a mixed quantity of gravel and sand. Some degree of manipulation is now required whilst applying the open side of the shells to the prepared surface.

The rhythm for walking is roughly one fast beat with one hand, followed by a slower beat with the other hand. Repeat this timing, to give the effect of the four feet. The gallop rhythm is of two fast beats with one hand, followed sharply with a beat from the other hand which is held a fraction longer.

If the sound of a cart is needed to accompany the plodding horse, hammer a 2 inch nail into the box, leaving an inch and a half protruding. Use a piece of metal large enough to allow a circular motion to be applied to the edge of the nail's head. The result should give a sound of wheel movement and metallic squeak. Use a bunch of keys in tempo with hooves for the jingling of harness.

Two further methods for cart-wheel sounds are:

Suspend and mount two six-inch-diameter iron-tyred wheels tyre to tyre. One wheel is rotated by a handle, causing the other loosely mounted wheel to rotate. Wet the wheels, and sprinkle sand on the tyres for gravel road sounds.

Take a medium-sized wooden cable drum, with a length of iron piping through the centre, the pipe ends on supports enabling the drum to be rotated by hand.

Footsteps present a similar problem to other effects without consistent harmonic pattern. The best method to carry out the operation in the most natural manner possible, rather than walking around the microphone in circles. The latter usually gives the impression that the feet are troubled with a major ailment! So follow the natural walk, with the microphone, and at the same time ensure that the footsteps are giving the sound in accordance with the character portrayed.

These suggestions should plant the seeds for further experimentation in this field.

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CHOOSING A TAPE RECORDER

By E. SWAIN
AMIEE, A.M. Brit. I.R.E.

A number of readers contemplating the purchase of a tape recorder have written asking us to recommend a particular machine. It is not possible for us to do this. Instead we print this article by our Technical Advisory Editor telling you what to look for in a recorder. After studying his advice, potential purchasers will be able to make their own individual choice with confidence among the many machines advertised in this magazine.

MOST prospective buyers of tape machines are, quite naturally, largely influenced by styling and quality of finish. But such a varied selection of attractively designed, good quality tape recorders are now available, that other factors will probably tip the balance in favour of one particular machine.

Where should one look—and what for? It is reasonable to assume that any potential buyer will study the manufacturers' sales literature; among it, he or she will find the "technical specification." This should be carefully examined, for in it are set out, in concise and orderly fashion, all the relevant points by which a tape recorder may be judged.

POINTS TO WATCH

An intelligent appreciation of such a specification is essential. This article is intended to explain in simple terms the meaning of the various items set out in the specification.

I shall not concern you with more obvious items such as mains voltage and power consumption, because in this age of electrical gadgets most people are aware that any piece of electrical equipment must be chosen to conform with their local supply voltage. As for power consumption, this is so low with domestic tape recorders that it cannot really be regarded as a relevant factor in determining the choice of a recorder.

The important points to look for are such things as frequency response, power output, wow content, tape speeds, single or double track operation, monitoring facilities, recording level indicator, and location devices. Let us consider each of these in turn.

FREQUENCY RESPONSE

Sound consists of pressure variations, conveyed by wave motion through the air from the source of the sound to the ear of the listener. The pitch of the sound determines the number of vibrations per second. The range of such vibrations that the ear can receive varies very much with the individual. Some people are able to hear a higher or lower pitch than others.

In scientific parlance, the number of vibrations per second is termed the "frequency," and is expressed in number

of cycles per second. Pitch, therefore, may be defined as the subjective effect of frequency. The range of these so called "audio frequencies" is somewhat arbitrary, but 20-20,000 cycle/second represents the upper and lower limits of audibility for most people.

Now it is obviously essential that, if we are to convey to the listener an accurate impression of what took place at the sound source, the conveying medium, whatever its form, must be capable of passing without diminution all the frequencies involved. This, then, is the importance of the "frequency response" of a tape recorder, as it expresses the range of frequencies that

the equipment is capable of passing from input to output without substantially altering their relative amplitudes.

I have quoted the audio range as 20-20,000 cycles/second, but I do not wish to leave the reader with the quite erroneous impression that anything less than this would result in unpleasant reproduction. A frequency range of 30-15,000 cycles/second would be adjudged a high fidelity range and even a range of say 50-12,000 cycles/second would give most pleasing results.

It is true to say, therefore, that the frequency response of a recorder is a

(Continued on page 20)

(Advertiser's announcement)

HOLIDAY SOUNDS —as well as the sights

HOW many of us have returned from a holiday abroad feeling a tinge of regret at not being able to recapture some of the happier moments when we would have wished to record the sounds complementary to the views preserved by our cameras?

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We have for long been accustomed to keep our souvenirs in the photograph album—now also we can keep them in the tape library. A snap of a children's choir, a percussion band—how many times have we said: "If only you could have heard them!" Now we can invite our friends to hear them through the medium of Tape.

The North Sea Travel Service programme of Tours offers this additional attraction—Recording machines are available for our tourists' use (entirely free of charge) so that all the wonderful sound impressions at holiday time can be brought back home to recapture in a very vivid way the delights of places visited.

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**To NORTH SEA TRAVEL SERVICE
3, MARKET SQUARE: DOVER, KENT (Tel.: 623)**

The Technical Editor's advice on CHOOSING A MACHINE

(Concluded from page 19)

measure of the fidelity of reproduction that can be expected and that, the greater this range for a given tape speed, the better the reproduction will be. This assumes that the extension of the frequency range has not resulted in excessive noise or distortion being introduced.

POWER OUTPUT

The power output rating of an amplifier indicates the maximum audio power it can supply within prescribed limits of distortion. The type of distortion referred to is the introduction in the output of frequencies that were not present in the input. If the output power of these unwanted frequencies exceeds a certain percentage of the desired signal, the reproduction becomes unpleasant.

Manufacturers usually state the output power for negligible distortion, and typical values are from 2.5 to 4 watts, although it is possible to get recorders having a power output substantially in excess of these figures.

For normal level listening in the average room, it is doubtful whether the required power output would exceed one watt, but it is desirable that sufficient reserve of power should be available to handle without distortion the louder passages of music. Thus, in general, one can say that, for given limits of distortion, the higher the available power output, the better.

'WOW' CONTENT

"Wow" is the name given to the effect of momentary variations of the tape speed away from the nominal value. It is usually expressed as a percentage variation from nominal speed. The effect of such speed variations is to mar the quality of reproduction, so the smaller the percentage figure quoted, the better.

TAPE SPEEDS

Most modern recorders are provided with at least two tape speeds— $3\frac{1}{2}$ inches per second and $7\frac{1}{2}$ inches per second. The $3\frac{1}{2}$ inches per second gives greater playing time per spool than $7\frac{1}{2}$ inches per second, but the fidelity of reproduction will not be as good.

Recorders are available which provide an additional speed of 15 inches per second for very high fidelity reproduction but this is an "extra" usually provided on the more expensive instruments.

SINGLE OR DOUBLE TRACK OPERATION

The trend nowadays is towards double track working. This has the obvious advantage of doubling the playing time for a given length of tape. When considering a machine employing double track working, it is advisable to pay particular attention to the ease with which a change of track may be effected.

MONITORING

This is a very useful facility, as it enables the operator to listen to the signal which is actually being put on to the tape and to make adjustments accordingly. During the live recording process, the built-in speaker must, of course, be muted, but where monitoring facilities are provided arrangements are made for the operator to plug head phones in to a suitable point in the output stage of the amplifier.

RECORDING LEVEL INDICATOR

The "level" at which the recording is made is very important. If it is too low, then by the time the amplifier gain has been adjusted to give a suitable output on playback, the amount of background noise may be excessive. If on the other hand, the level is too great, the distortion introduced will be excessive.

The indicator may take the form of a neon lamp, which will flash when the maximum permissible recording level has been reached (this should only occur on peak passages).

A more informative indicator is the "magic eye," which most people will be familiar with, as it is extensively used in radio receivers. In this case, the "eye" should just close on peak passages.

A third method, and the most informative of the three, is the voltmeter-type indicator, on which recording limits are marked.

POSITION INDICATOR

This is a very useful device, as it enables the operator to locate quickly any particular point on a recorded tape. It may be quite a simple device, such as a scale marked underneath the spool. The approximate position can be noted by relating the outside of the spooled tape to this scale.

Many tape recorders carry more elaborate devices, enabling a point to be located with greater accuracy.

This article may have served to indicate the points to look for, but, listeners are individuals, and, as such, have varying tastes. In the end, therefore, despite sales literature and technical specifications, it may well be *your ear* that decides your choice of recorder.

MUSIC ON TAPE

(Continued from page 7)

As it is, each of the two speaker units has a $13\frac{1}{2}$ -inch moving coil elliptical speaker, as well as a special new wide-angle electrostatic H.F. unit. The electrostatic unit typically let out a soft hissing, even when no tape was being played. The splendidly wide frequency range of this set-up certainly does add considerably to the realism of the whole. Notching down the treble-cut a few points showed how the fullest bloom disappeared when the range was more restricted.

With the reservation about tape-hiss, I have no hesitation in applauding what has been achieved already and in predicting a rosy future for stereosonic tape records.

The rosy future, however, is not likely to be very close until the cost of both equipment and tapes is considerably reduced. The most encouraging news now is that other firms are to market stereosonic tape-reproducers at more modest prices. On the cost of the tapes themselves, one can only hope that, with increased demand, the price will come down.

Paradoxically, I think it is the music where stereophonic effects are not so immediately striking that benefits most from the new process. With an opera, for example, the stereophonic reproduction allows us to hear the singers moving from one part of the stage to another. At first it is very impressive, but very quickly it becomes almost too distracting. Philip Hope-Wallace said recently, in a review of the three L.P. records containing the sound-track of the film *Richard III*, that it was all rather like going to the cinema with one's head in a paper-bag. So here, it is rather like being at the opera with one's head in a paper-bag, and the fact that the characters really do sound as if they are walking round the stage only makes one want to see them the more. In the comparatively short time I was listening, I could not forget completely during the opera extracts the actual gimmick by which the sound was reaching me, and I have a feeling I could never easily forget it (as I manage to forget the fact when listening at home that it is a loudspeaker pouring out the music).

Where it was simply an orchestral record, with no distracting movement of sounds from place to place, things were quite different. With the stereophonic effect, the whole sound acquired an extra realism without distracting one's attention any more than single-channel reproduction. It is the success on this score which convinces me that stereosonic tape-records have something of real value to offer to the music-lover, which is unlikely to be achieved by any other high-fidelity system.

Whether extra realism is worth extra cost is always a very difficult problem. After a point one always finds in the process of making one's *fi hi-er* that it takes more and more pounds to produce less and less improvement. So here, for the moment the luxury of stereophony will be limited to the wealthy enthusiast. There is every reason to hope that things will change considerably in the near future.

TAPE NEWS DIGEST

BISHOP JOINS TAPE IN CHURCH ARGUMENT

THE controversy stirred up by the Archbishop of Canterbury's ban on tape recording of church weddings has been renewed by a declaration by the Bishop of Rochester, Dr. Chavasse.

In his diocesan review he comments on the Archbishop's decision, last December, to prevent photographs and recordings in churches in his diocese. The Archbishop, it will be remembered, thought the solemnity of services might be affected.

The Rochester Review puts this contrary view: "The Bishop believes that the possession of a photograph of a bride and bridegroom plighting their troth can have a great value for a wife and husband in looking at it together in future years; and that, still more, for them to listen, on the anniversary of their wedding, to their own voices taking each other 'for better, for worse . . . till death us do part' can only do untold good.

"We would, therefore, encourage the practice, under proper conditions. . . ."



Lynda Simpson, the 14-year-old Birmingham schoolgirl who won £1,000 on Hughie Green's ITV "Double your money" programme, has spent some of the cash on the present she promised herself. Here she is seen happily displaying her new "Sound" tape recorder. First reports from the Simpson home studio are that she is delighted with the performance and potentialities of this all-British machine.

Revolutionary Speaker has no diaphragm

A REVOLUTIONARY new idea in loudspeakers is reported from New York. It dispenses entirely with the orthodox diaphragm and replaces it by a small, open-ended quartz cell, in which air is confined in a chamber which narrows down to an aperture about the diameter of a pencil lead.

Inside this space air molecules are bombarded with a high-frequency high-voltage current, which ionizes the air. The device thus becomes known as the Ionovac.

It can be used as a generator of ultrasonic waves for industrial, therapeutic and research purposes.

The new technique is claimed to be superior, on the ground that the moving coils and diaphragms of ordinary speakers are the weakest links in hi-fi reproduction.

Production of the new equipment began in February.

Simon's design success

THE Simon hi-fidelity loudspeaker enclosure is to be shown at the forthcoming Amsterdam Household Fair as an outstanding example of British design. A Committee under the chairmanship of Mr. J. Penvaad, well-known Dutch industrial designer, selected this product during a recent visit to the Council of Industrial Design.

Helping the Blind

KYE GADSBY, manager of the Granada Theatre, Rugby, has been experimenting with a tape recorder to give more pleasure to blind patrons.

A film is screened in the ordinary way, but an action commentary is put on tape and played during every suitable gap in dialogue on the film sound-track.

First reports suggest the technique may prove a popular and successful one. It calls for coupling of tape and film sound-track.

News from America

BRIEFCASE RECORDER LOOKS SO INNOCENT!

Marketed a "briefcase recorder." AN American company has just It looks like an innocent briefcase, the switch is hidden in the handle, and a sensitive microphone is disguised as an external fitment.

The recorder is battery-operated and is designed for surreptitious recording by salesmen, research workers, insurance investigators, and detectives.

It sells at 379 dollars (about £135).

The same firm—the J. C. Warren Company—produces three battery recorders measuring only 6 x 10 x 15 inches.

* * *

Latest estimates put the number of tape recorders in use in the United States at over 1,750,000. In 1955 sales totalled 325,000; in 1956 they are estimated at 425,000—a jump of 30 per cent; this year manufacturers budget for 475,000 sales—a further 10 per cent increase.

Students and teachers are the best customers. Parents buy them for junior when he starts on music lessons or goes away to college.

And a new habit is developing—enthusiasts buy discs, put them on tape for daily use, and so keep the discs in mint condition.

* * *

One U.S. firm has produced a bright idea to prevent tape spilling from spools. Adhesive or tabs are not entirely satisfactory and they have now introduced spools with two notches, on opposite sides of the rim. A rubber band is slipped over the two notches, holding the tape securely in place.

* * *

A fully automatic tape splicer announced from Hollywood will splice in six seconds. By pressing a knob, the mechanism is made to eject, apply, cut off and press into place just the right amount of splicing tape.

LETTERS TO THE EDITOR

A long hoped-for magazine

THANK you for kindly sending me the first copy of your new TAPE RECORDING MAGAZINE. This is a project which for a long time I have hoped to see launched in England, as I have received a similar publication from the States for some months now. I would most certainly like a year's subscription to your publication. . . .

My best wishes for the success of a magazine which deals with one of the most fascinating hobbies ever invented.

MALCOLM POWELL.

East Grinstead, Surrey.

And more kind words

IHAVE now had an opportunity to read the first issue of your new magazine, which shows promise of becoming a useful addition to the literature of this growing subject.

It would appear your approach is to be a popular one, but I hope you will include at least one technical or semi-technical article each month, rather than devoting all your attention to describing the applications, however numerous and unusual they may be, of magnetic tape recording today. Many of your readers would welcome, I am sure, some practical articles on the operation, construction, and design of tape recording equipment.

Good wishes for the future from a contemporary.

DONALD W. ALDOUS.

Technical Editor,
Gramophone Record Review.

CONGRATULATIONS on your first edition of your magazine. I wish you every success, as I feel that your magazine will be a great help to us amateurs.

REV. MICHAEL STACK.

London, W.9.

THANKS for sending me the first copy of your very promising magazine and, in enclosing my subscription, may I wish you every success? I feel there is great need for a magazine of this kind, if you proceed on the right lines, and I think you should aim at an international market. . . .

S. JEPSON.

St. Aubin, Jersey,
Channel Islands.

IHAVE just read your first issue of the new TAPE RECORDING MAGAZINE. I have not only acquired a useful amount of significant information, but have enjoyed reading the many varied articles and news topics. I congratulate you.

JOHN PATTERSON, B.Mus.

Broxburn,
W. Lothian.

NEWS FROM THE CLUBS

Each month we hope to publish news of the activities of all organisations catering for sound recording enthusiasts using tape.

We invite officials to submit items that are of general interest. Copy should be received by the 20th of each month.

PUTTING PARIS ON TAPE

BATRS members will soon be hearing in the Society's magazine-on-tape the results of Roving Reporter Jack Talling's recording activities in Paris. With Derek Knight, Forces Representative of the British Round Robins' Tapesponding Circle, he spent a week in the French capital.

Recording with a portable machine during the flight proved difficult because of engine noise, and there were some difficulties, too, once they had arrived on foreign soil. A session in an underground hot jazz club might have produced some interesting recordings, but the room was so small and the noise so loud that it proved tricky.

But the travellers spent the whole of a Sunday recording in a French cafe, and we hear there was plenty of song to help things along.

Later they recorded at the cathedral of Notre Dame and in picturesque Montmartre.

Messrs. Talling and Knight also paid a couple of visits to Kodak Pathe to meet French enthusiasts and to hear demonstrations of Kodak tape and of a Swiss recorder.

*

MR. TED YATES, BATRS general secretary, is indefatigable in his efforts to build up impressive world-wide contacts. We now hear from him that a reciprocal agreement with Tape Respondents International, of the U.S.A., has been signed; that he is negotiating a similar agreement with the Australian Tape Recording Association; that he is in contact with the Swedish Cosmos Club; and that he has hopes of a new branch of the BATRS in Hong Kong.

*

THE agreement with Tape Respondents International, of Arkansas, opens up exciting prospects of new tape contacts for members of the BATRS. TRI has about 750 members, most of them in the U.S.A. and Canada, but others scattered all over the world.

Details are given in the directories and supplements that will come to all BATRS members who elect to join TRI. The

additional subscription is 8s. a year, but newcomers may join BATRS and TRI together for an inclusive one guinea.

TRI publishes a quarterly newspaper called "Talking Letters" and British recruits will get this.

Members of TRI are being invited to join the BATRS at a dollar a year, so secretary Ted Yates hopes now to be pulling in the dollars in the national interest!

*

RECENTLY Mr. Yates was invited to take part in the opening ceremony of Chester's Festival of Arts. He recorded the proceedings in the city's town hall, including the Mayor's address and orchestral items.

B.A.T.R.S.

(British Amateur Tape Recording Society)

Personal membership 15s. per annum. Affiliated membership for public bodies £1 1s. per annum

(non profit-making)

Details from

E. YATES, General Secretary,
210, Stamford Road, Blacon,
Nr. Chester, Cheshire

WORLD TAPE PALS

Headquarters: P.O. Box 9211,
Dallas, Texas, U.S.A.

(an international association for the exchange of recorded tapes)
No subscription in Great Britain

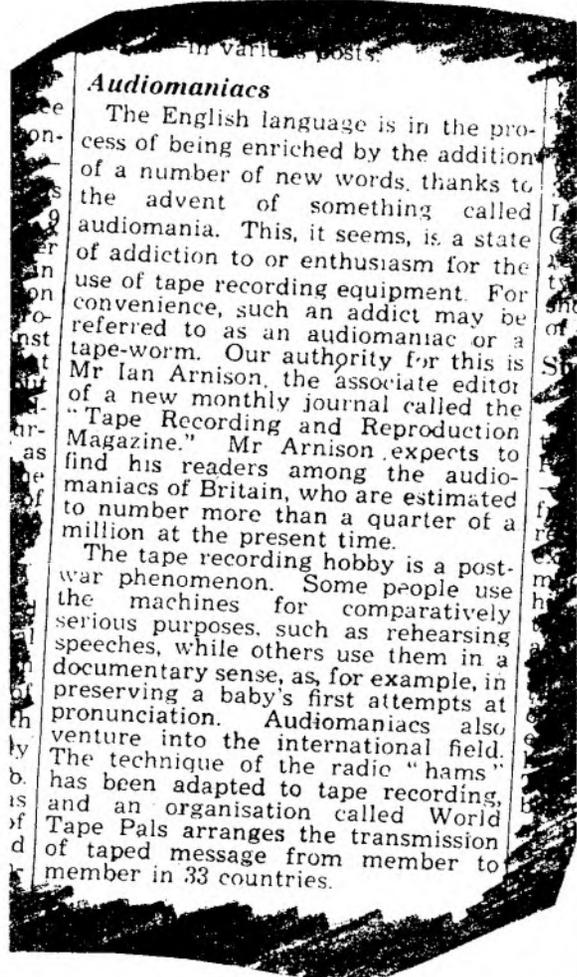
Details from

ROGER D. SMALLWOOD,
28, Wrekin Road,
Sutton Coldfield,
Warwickshire.

T. R. MAG. MAKES NEWS

The appearance of *T.R. Magazine* has made news in the National Press. The item reproduced on the right appeared in the "London Letter" in the *Manchester Guardian*. In the north *The Weekly News*, a big-circulation, popular paper, devoted nearly a column of space to the growing popularity of tape recording, citing the publication of this magazine as evidence.

There is evidence, too, of the "pulling power" of *T.R. Magazine*. Mr. Roger Smallwood, British representative of World Tape Pals, writes: "The write-up for W.T.P. was first class and from this I have received nearly 50 enquiries. Letters keep descending on me. . . ."



Next month

SPECIAL TAPE FEATURES FOR CINE FANS

Classified advertisements

Rate—Sixpence per word (minimum 5s.); Trade, ninepence per word (minimum 10s.); box numbers, one shilling extra. Payment with copy.

USE YOUR RECORDER TO LEARN LANGUAGES — Famous American "Tutor Tape" beginners course available in this country. German, French, Italian, Spanish, Russian, mastered in 30 days. £3 17s. 6d. complete. C. M. Jones, 812a/816, London Road, Leigh-on-Sea, Essex.

AS NEW: 16 Bakelite and 4 Metal empty tape spools 7in. 2s. 6d. each o.n.o. Plumb, Adur Avenue, Shoreham, Sussex.

TAPE TO DISC RECORDING
Microgroove L.P. (30 mins.)
25/-, 78 rpm. 12/-

S.a.e. for leaflet: Deroys Sound Service (A.D. Marsh), Little Place, Moss Delph Lane, Aughton, Ormskirk, Lancs.

Make sure of your copy NOW

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Please supply
TAPE RECORDING
AND REPRODUCTION
MAGAZINE
monthly until further
notice.

Name.....
Address

TO T.R. MAGAZINE

Rolls House Publishing Co., Brems Buildings, London, E.C.4

Please post TAPE RECORDING AND REPRODUCTION MAGAZINE to me each month. I enclose postal order/cheque.

- 14s. for one year (post free)
- 7s. 6d. for six months (post free)

Name.....

Address

PLEASE POST FREE SPECIMEN COPIES TO THE FOLLOWING FRIENDS, WHOM I THINK MAY BE INTERESTED:

.....
.....
.....

Quality of recording . . . economy of recording . . . You can have both, with 'SCOTCH BOY' magnetic recording tapes. Choose from Britain's only comprehensive range, and get the tape that exactly suits the job you want to do.

And remember to get 'SCOTCH BOY' No. 41 splicing tape for joining your edited tapes: it's specially made for the job! If your machine takes 5 $\frac{3}{4}$ " spools, ask for "Continental size". Your 'SCOTCH BOY' supplier will help you.



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Recording?

—choose the right tape for the job!

.. standard .. 'SCOTCH BOY' 111

magnetic recording tape with acetate base
Probably the most famous recording tape in the world, 'SCOTCH BOY' 111 has a high reputation for clarity of reproduction, and for freedom from background noise. It has become the criterion for judging fidelity. (Coloured brown for easy identification)

.. extra-play .. 'SCOTCH BOY' 150

magnetic recording tape with polyester base
Strongest on the market. Standard spool accommodates 50% EXTRA footage, provides 50% EXTRA PLAYING TIME. Exceptionally crisp, clear reproduction, with improved response to higher frequencies. (Dark red for easy identification)

.. high output .. 'SCOTCH BOY' 123

magnetic recording tape with acetate base
Specially developed oxide coating. Greater dynamic range with freedom from distortion. Utmost signal output at low frequencies. Used for highest fidelity audio recordings, and similar special applications. (Dark green for easy identification)



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BOY** TRADE MARK

magnetic
recording
tape

does the job BETTER!

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