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RECORDING
AND HI-FI MAGAZINE

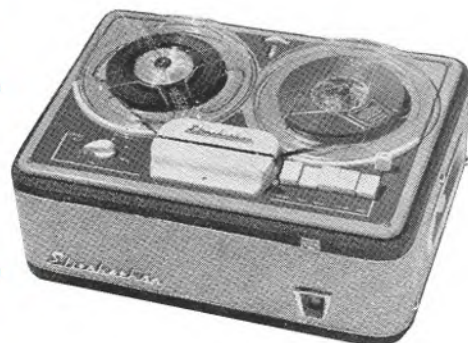
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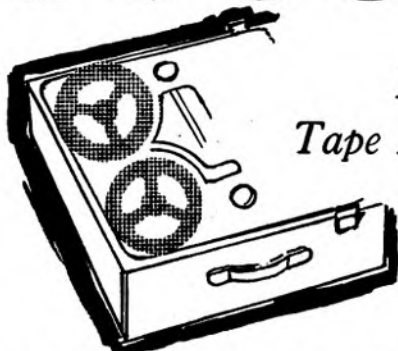


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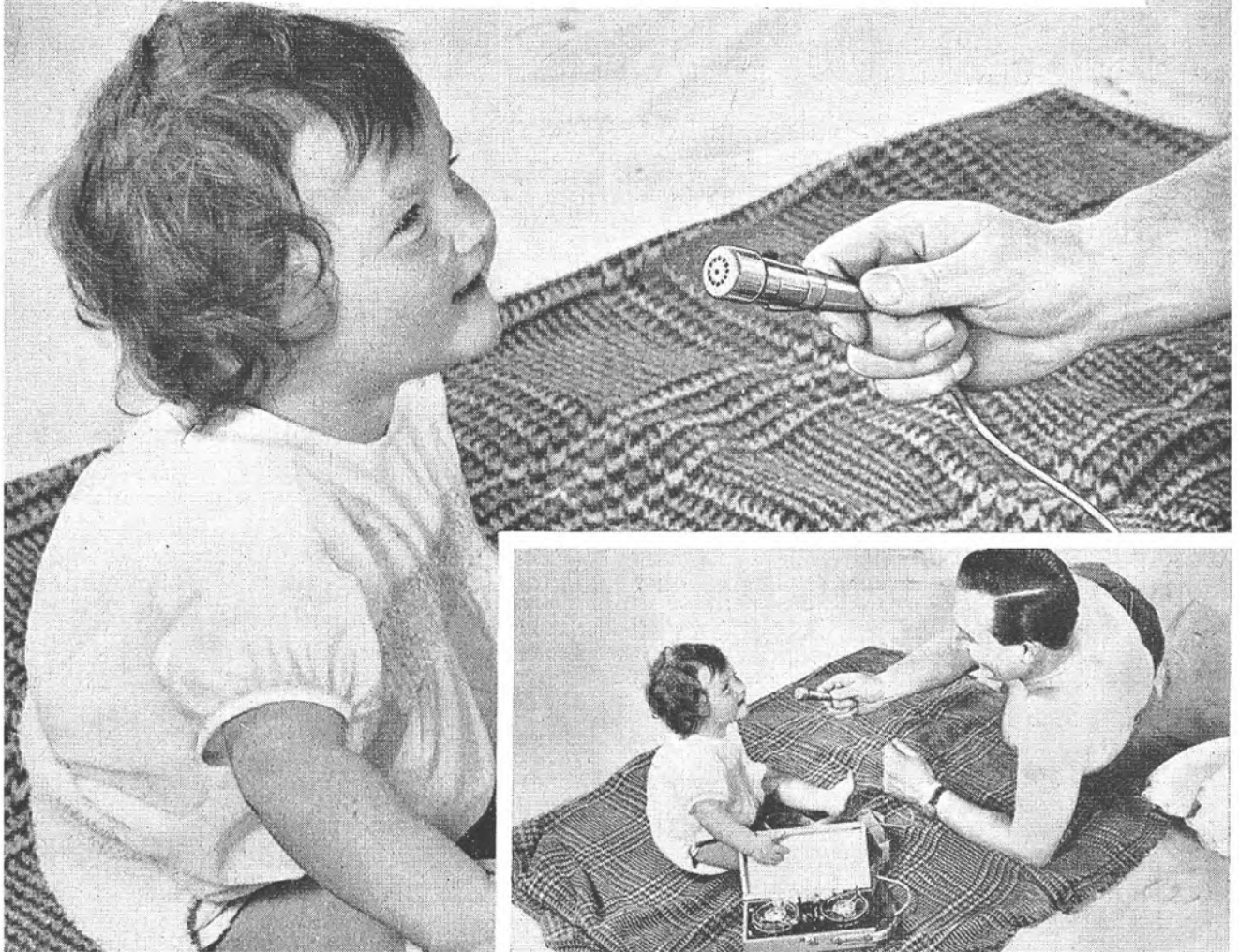
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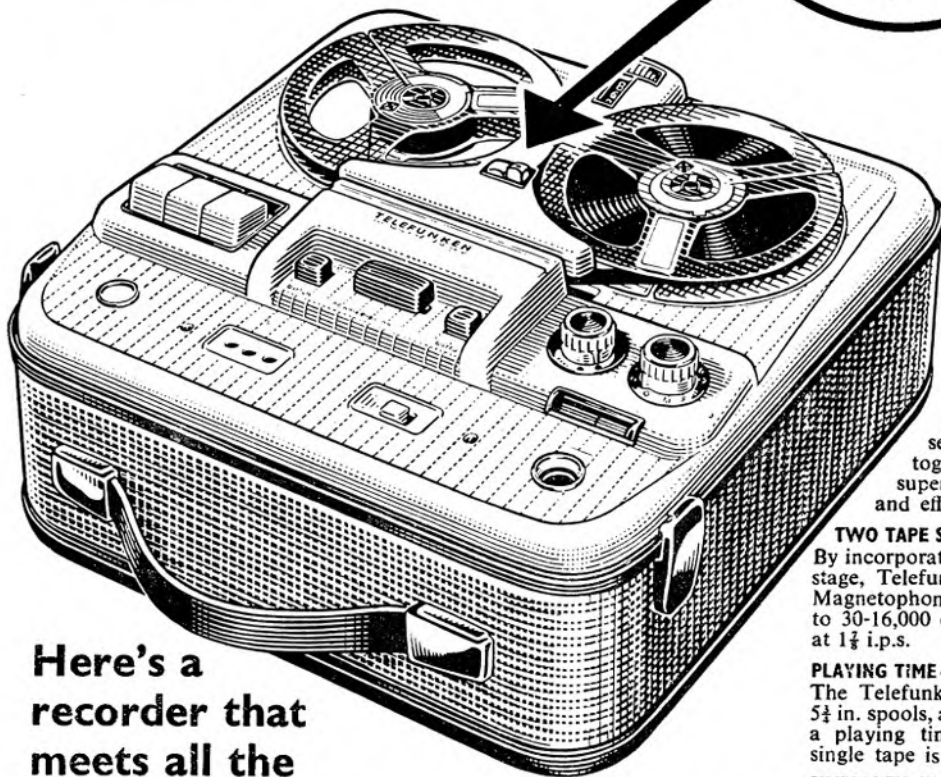
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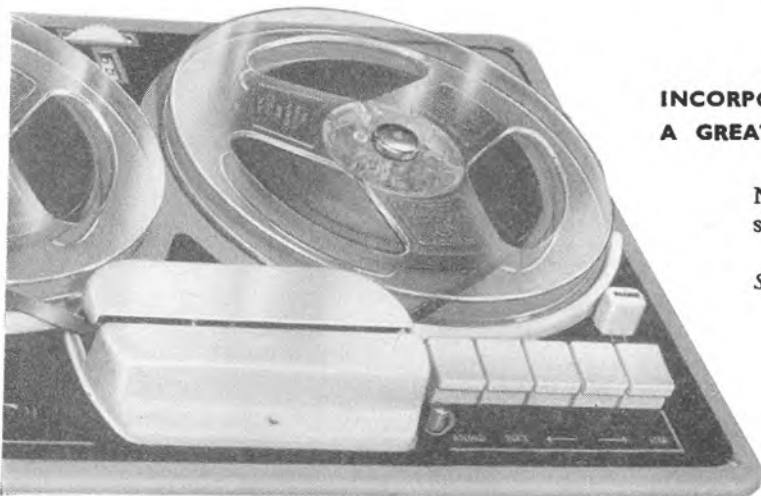
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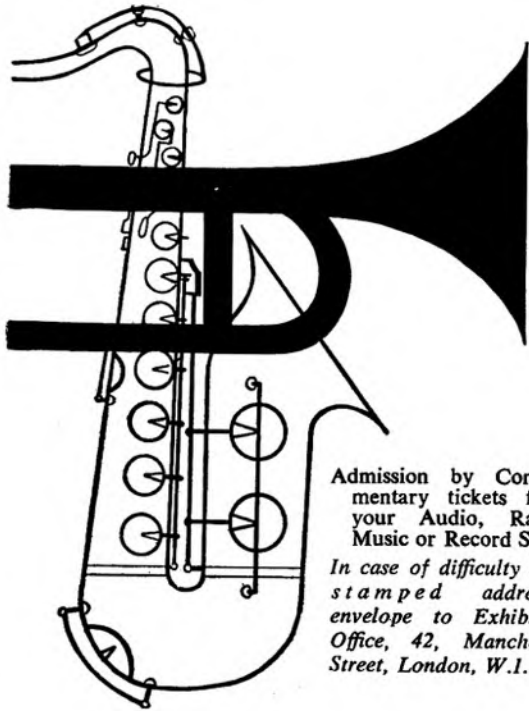
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TAPE RECORDS SUPPLEMENT

THE CLASSICS



by **Edward
Greenfield**

(recorded music critic of
the *Manchester Guardian*)

ONE of the most ambitious sets of single-channel tape records that E.M.I. has yet issued is of Massenet's charming opera "**Manon**," based like Puccini's opera "*Manon Lescaut*" on the Abbé Prévost's famous novel about the coquette Manon, her fickle loves and her tragic end. Massenet's opera has been produced at Covent Garden since the war but has not been revived for some years, and for those who cannot afford to pay frequent visits to Paris to catch up on their opera-going this recording will be a fine substitute.

Not only was it made at the Opéra-Comique—the opera-house for which Massenet originally wrote the work in 1883-4—the role of Manon is taken by Victoria de los Angeles. It might be argued that de los Angeles has so lovely a voice that she can hardly convey the hard side of Manon's character, the side which can callously reject Des Grieux, failing to warn him when she knows he is in danger. But that hard side of Manon is something that should not be exaggerated.

One point of the Abbé's moral story is that Manon is a coquette not because she is vicious and wicked but because she is pleasure-loving and weak. So it is her weakness and not her determination that causes her to be fickle. De los Angeles by creating a melting heroine, utterly charming, arouses our sympathy and for once one can understand and sympathise with the motives for her fickleness. Her very first aria "*Je suis encore tout étourdie . . .*"—I am still quite overwhelmed—has exactly the right wide-eyed innocence about it, but hiding just below the surface is the subconscious knowledge of her own powers over men—the natural, born coquette.

And when de los Angeles sings "*Adieu notre petite table*" bidding farewell to her life with Des Grieux with an aching intensity, here emotions are entirely genuine. But her regrets immediately vanish when the prospect of pleasure and luxury again takes hold of her. One may have even too much sympathy with the Manon of de los Angeles for the moral of the tale to have its full effect, feeling that the world has been unjustly hard, but that is very much in key with Massenet's conception of the piece.

Massenet, unlike Puccini, did not write his "*Manon*" for the grandest of grand opera traditions. Instead of the big, full-blooded emotions proper to the Italian grand opera house such as Puccini was aiming to fill, Massenet had in mind the traditions of the Opéra-Comique in Paris. It is

(Continued on page 12)

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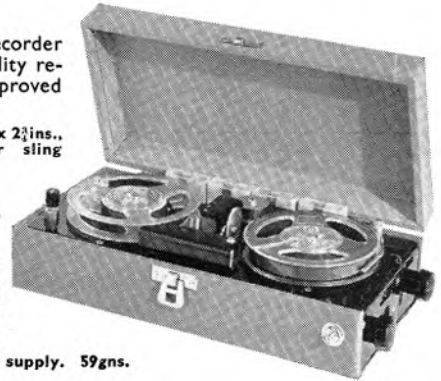
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April issue



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(Continued from page 11)

hardly a small house, but there was there a tradition of opera not exactly intimate but concerned with delicate emotions. The tradition was for operas to include spoken dialogue, and it adds enormously to the atmosphere of the present recording that important parts of it are included. The passage accompanied by solo violin (exquisitely played) when Des Grieux first sees Manon and falls madly in love with her is extraordinarily moving and so is the duet—ending in elopement—which follows.

The recording boasts not only an incomparable Manon but an outstanding Des Grieux in the French tenor, Henri Legay. It was HMV's intention originally to have Jussi Bjorling sing the part, but at the last minute plans went wrong and Legay was brought in. Even Bjorling could not have given a performance so intensely dramatic and satisfying musically. Legay does not have the thin whine one associates too often with French singers in general and tenors in particular. Instead his voice is extraordinarily open-toned, light yet rich, and it escapes me why HMV have not used him a great deal more. His singing of his delicate aria "En fermant les yeux" and the even more famous "Ah! fuyez, douce image!" rivals almost anyone who has recorded either in the past (always excepting, of course, the fabulous Caruso record of "Ah! fuyez").

But though Massenet's "Manon" sets itself deliberate limits in dramatic scope those limits certainly do not apply to length. The opera runs to six scenes and five acts and even with cuts in the dialogue it is very long indeed. Even though Massenet was the master of charm and this is the most charming of his operas, there comes a time in some performances when one wishes he had run things a little shorter. Not so here, and the credit lies not only with the fine singing of the principals but with the conducting of Pierre Monteux.

Monteux has settled for so long in California that one forgets how he sounds with a genuine French orchestra rather than one of the super-efficient transatlantic groups. He brings here a glowing beauty to Massenet's delicate orchestration and, more important, keeps an overall control over the rather episodic arrangement of the scenes. Massenet, like Puccini, found it very difficult to compress Prévost's complicated arrangement of scenes and incidents in the novel into a reasonably coherent and compact dramatic form.

Puccini had the most difficult job of all because he was writing after Massenet and had, so far as possible, to avoid incidents covered by Massenet a decade earlier. But even Massenet had to truncate the end, allowing Manon to die on the road to Havre instead of in America after actually being transported. The very multiplicity of scenes can make the work fall apart, but Monteux keeps the dramatic intensity at a uniformly high pitch and makes one wonder why ever Massenet's operas should have fallen out of fashion.

The opera takes four tapes and follows the divisions made in the disc version. The notes provided for the discs are also included but have had to be printed without the pictures. When so ambitious a set as this is being issued on recorded tape it might be an idea to sell it in an album rather than the four ordinary boxes provided.

Massenet: "Manon." Victoria de los Angeles, Henri Legay, Michel Dens, etc. Chorus and orchestra of the Opera-Comique, Paris, conducted by Pierre Monteux. HTA 27-30.

E.M.I. Records Ltd., 36, Oxford Street, London, W.1.

BEAT AND OFF-BEAT



by **Don Wedge**

(of "New Musical Express")

FRED ASTAIRE on tape? Certainly—HMV HTD 818—"Mr. Top Hat," the title, and one of the finest records in my collection. Astaire has no superior, and perhaps only one near-equal as a dancer, so perhaps it is not surprising that his singing, an art in which he has many betters, is neglected.

But it is worth seeking out. His thin voice is insignificant besides his great style. Here is the debonair, friendly personality that has been charming movie-goers for 30 years and it is absolutely captivating.

He has superb diction, perfect rhythm and communicates such an intoxicating feeling of joy that whatever imperfections he has pale to insignificance. Astaire sings—and dances—through another great collection of songs—five by the Gershwins, four by Irving Berlin (including the theme for the title, "Top Hat, White Tie and Tails") and one each by Cole Porter and Jerome Kern.

Though the immortal charm would alone make it worth while, "Mr. Top Hat" gains enormously by the accompaniment of some of America's finest musicians. As in the "Ella and Louis" album reviewed here last month, the backing is directed by the great Oscar Peterson, with bassist Ray Brown also featured on both (the records were produced by the same man, the redoubtable Norman Granz). The other luminaries are Charlie Shavers, Flip Phillips, Barney Kessel and Alvin Stoller—all members of Jazz at the Philharmonic troupe.

This is a formidable group of instrumentalists and Fred Astaire, singer, fits in perfectly, his phrasing slickly tailored to the ambitious accompaniment. His dancing is not ignored. The record ends with two special compositions, titled simply "Slow Dance" and "Fast Dance," written specially for the session by Peterson.

"Top Hat," is not the only record Astaire has made, but it is the best. Your friends may begin to laugh when you play it. Get them to listen. On this record at least, the dancing star is worth a very serious hearing.

* * *

Most other dance records in the tape catalogues are music for dancing. One I enjoy is "Let's Dance," by Eric Jupp and his Orchestra (Columbia CDT 866), one of those collections which has the theme word in the title of all the numbers—"Let's Face the Music and Dance"; "I'm in a Dancing Mood"; "Dance Ballerina, Dance"; etc.

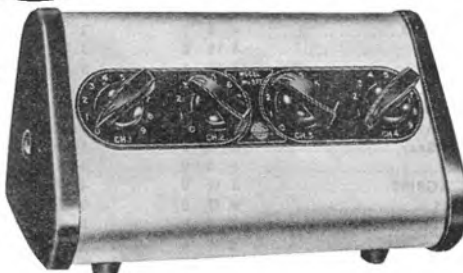
This is really well-dressed, luscious ballroom music, quite unsuitable for a wild party, unless it be to quieten it down. In fact, the instructions from the handbook seem to go with every note; "Gentlemen should wear white gloves, and while on the ballroom floor. . ."

Brighton-born Jupp is an all-round arranger (and for

(Continued on page 14)



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(Continued from page 13)

recording, "arranger" usually means conductor as well). His early recordings were with a big swing band. He was also responsible for many of the fine scores used by the old BBC Show Band.

His recent long-running radio series featured him at the piano with a string combination and some outstanding instrumental soloists. On the "Let's Dance" record, simplicity is the key-note, yet he has managed to make it interesting enough to listen to.

One of the numbers he includes is "You're Dancing On My Heart." If the title only rings a bell, the tune will be instantly recognised—as Victor Silvester's theme!

* * *

Joe Loss has as many dance music records in the lists as anyone (I make it that he and Silvester have seven each). Most of Joe's are in the "Dancing Time For Dancers" series. I have been re-hearing the sixth, issued rather more than a year ago.

The Glenn Miller influence is strong, but Miller discovered a sound that has probably not been ignored by one *dance* band. Loss makes a thoroughly good job of what he sets out to do—providing strict tempo music. But it is very "palais."

I've heard it said that long before the days of record charts, Joe made it his business to precede his band into a town, then tour the music shops to discover exactly what people were buying.

He has certainly remained at the top of his profession for much longer than many of his contemporaries. He seems to have an uncanny knack of knowing what his public wants and giving it to them. If he is playing for dancing, then everything is presented in tempo, too.

"Dancing Time For Dancers, No. 6" (HMV HTD 819) includes pairs of waltzes, tangoes and foxtrots, one samba and three quicksteps. One of the waltzes will be particularly nostalgic for some. "It's title: "Ramona."

My earliest recollection of Loss is of a Sunday visit early in the war to Stratford-upon-Avon, then the centre of a huge collection of troops of many nationalities. There was a great billboard fixed over the imposing frontage of the Memorial Theatre. "Tonight! Two performances only! JOE LOSS AND HIS BAND," it shouted.

It was a strange place to meet for the first time one of Britain's great dance bands.

* * *

I END WITH a latin record—"Amalia at the Paris Olympia" (Columbia CCT 659). Though the notes with this tape detail each number, they tell us nothing of the artiste, Amalia Rodrigues, or the occasion of the recording.

It was certainly at a public performance but not before a madly enthusiastic audience, unless the master tapes were severely edited to cut out applause. Senora Rodrigues gets in an occasional "Merci" and always manages "Formidable!" and then, as briefly as possible, announces her next song.

The excitement of a theatrical performance is missed, though Amalia herself is an exciting singer. Exciting, too, is Domingos Camarinha, who accompanies her on a Portuguese guitar with Santos Moreira (viola).

Fourteen numbers are included on the record—a generous amount, but many are Portuguese fadoes, the traditional sad national folk-song. When I first heard it, I was not very interested. But as I listened, on a wonderful summer evening, I was won over. Camarinha's guitar alone makes this one worthwhile.

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Vol. 3 No. 9 SEPTEMBER 1959

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GENERAL EDITORS: IAN ARNISON and R. BROWN

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

TECHNICAL ADVISERS: ANGUS MCKENZIE
F. C. JUDD, A.M.Inst.E.

STEREO: DOUGLAS GARDNER
Editor of Stereo Sound and Music Magazine

MUSIC: EDWARD GREENFIELD
Manchester Guardian recorded music critic

DON WEDGE
News Editor, New Musical Express

MOVIE-MAKING: JOHN ALDRED

NEWS AND CLUB ACTIVITIES: FRED CHANDLER

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A DIGEST OF

NEWS, COMMENT AND

EDITORIAL OPINION

THERE is every reason to suppose that tape recording is about to take another big stride forward—possibly the biggest single advance to date. Various signs point this way but, more important, there is a general atmosphere of progress.

The biggest factor looks like being the introduction of a number of new battery portables making use of transistors and, probably, of printed circuit technique. A number of firms have been pioneering in this direction.

Some of them have concentrated on low price, and the recorders that have resulted might be looked on as a development of the toy market. Others, like Fi-Cord and Stuzzi, have produced ingenious and impressive designs that have represented important advances in the field of electronics.

But, until now, only a limited market has been reached. The announcement in our last issue of the first Grundig battery portable tape recorder probably marks a turning-point. Every reader knows how big an influence is exerted in this field by this firm, which still manufactures nearly half the recorders sold in Britain. Its marketing plans for the new Grundig "Cub" are on the customarily ambitious scale. The result is bound to be a tremendous fillip for tape recording in general, and the education of a big new slice of the public to the fact that there are such things as battery portable recorders.

The biggest single factor that has held up the growth of tape recording in the past has, undoubtedly, been the need to have a mains supply at hand. So many of the things the average man and woman wishes to record are beyond reach of a power point—particularly, at this time of year, one thinks of holiday impressions.

The well-designed battery portable recorder, at a popular price, changes the picture completely. It begins to put the hobby, for the first time, on a parallel with photography.

Do not be surprised to see other firms entering this field in the coming months.

Stereo progress

THERE are other reasons for optimism about the future. Grundig have also recently introduced their first stereo tape reproducer, and that is one signal that the stereo field is beginning to open up.

It is no secret that it has moved forward rather more slowly than some people hoped. One reason has been the inability of the public to digest the flow of information about technical developments. They have tended to hold off buying while they sorted out the facts in their minds.

We take the view .

In this task, our sister publication, *Stereo Sound and Music Magazine*, is now playing an important role. The level at which its circulation has settled down—exceeding our estimates by about 50 per cent—is striking proof that stereo can be developed on a broad foundation of informed enthusiasts.

But the great question mark concerns stereo broadcasting. Obviously, it will be the general introduction of this technique — “sound radio’s answer to television”—which will break down the barriers and permit a nation-wide advance.

The back-room boys in this country are extremely preoccupied with the problem and will certainly be coming up with completely satisfactory solutions before long. At one stage, they were hoping to do so in time for this year’s Radio Show.

Obviously, it will not be as soon as that. One recent estimate puts D-Day some time in 1961.

It looks as though, in this field, we are keeping pace with the Americans. There, as here, a number of competing systems are battling it out at laboratory level.

Quite a few United States stations have been transmitting stereo programmes—one for five years past—but they have been using a system which provides left-channel information on FM and right-channel on AM. Now the question is—as here—which system of compatible, single-station transmission shall be adopted?

It looks as though another year will pass while the Federal Communications Commission there goes through the preliminaries.

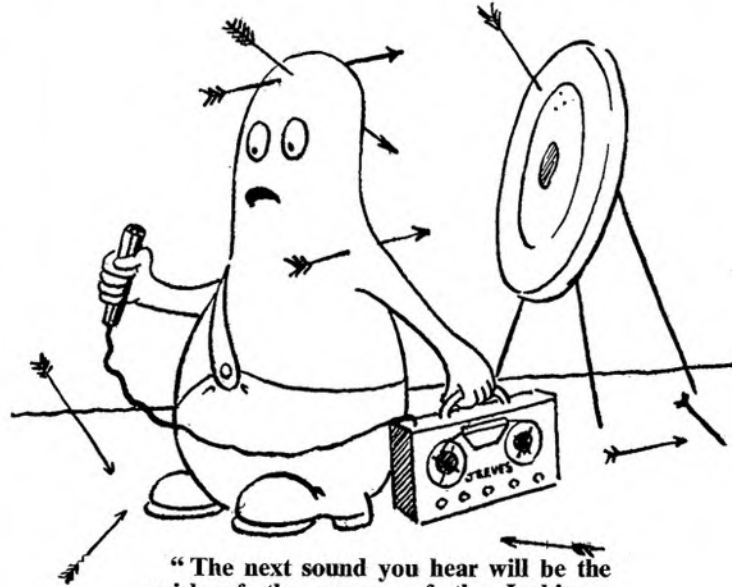
Objectivity

A GREAT deal of printed literature about tape recording is now being placed on the market—in itself a healthy sign of the growth of the hobby.

Readers are urged, however, to have regard to the sources of their reading matter. Some progressive firms are now issuing publications which, while designed to push their sales of equipment, take more the form of booklets and periodicals than of catalogues.

We believe strongly that magazines (and clubs) seeking to serve tape enthusiasts should be kept free from

LAUGH WITH JEEVES



“The next sound you hear will be the swish of the arrows of the Inchinery Toxophilite Society.”

direct trading influences. Life would be easier for us if we enjoyed subsidies out of trade in equipment; we prefer to safeguard the independence and objectivity of our editorial service.

Magnetic magazines

FURTHER information from Japan about the new technique of magnetically coating magazine pages so that they can be “played back” makes one wonder whether we may yet see even more fundamental changes in technique.

Preliminary details about the new Japanese technique were published in our June issue. It uses a magnetised sheet of paper, the iron oxide being carried in a film of powdered gravure ink. The cost is about one-sixteenth that of magnetic tape.

And copies can be taken from the master sheet with great ease and speed. It is claimed that 10,000 copies can be made from one master sheet and that each sheet will stand up to 2,000 playings.

The only deficiency seems to be on quality, which does not yet match that

of orthodox magnetic tape. But, already, improvements are being secured.

Opera boom

THERE has been a record season of professional tape recording of opera classics on the Continent these past few months.

Most of the big recording companies have been adding to their repertoires. In Rome and Vienna new stereo versions of half-a-dozen operas have now been completed.

They will be appearing in the catalogues before the winter is out. At present, they exist only on tape.

Tape at palace

TAPE recording is now taken as a normal activity at Buckingham Palace. Before leaving for the recent Royal Tour of Canada, the Duke of Edinburgh recorded a message for the annual meeting of the British Medical Association. It was played back in Edinburgh, while the Duke was thousands of miles away.

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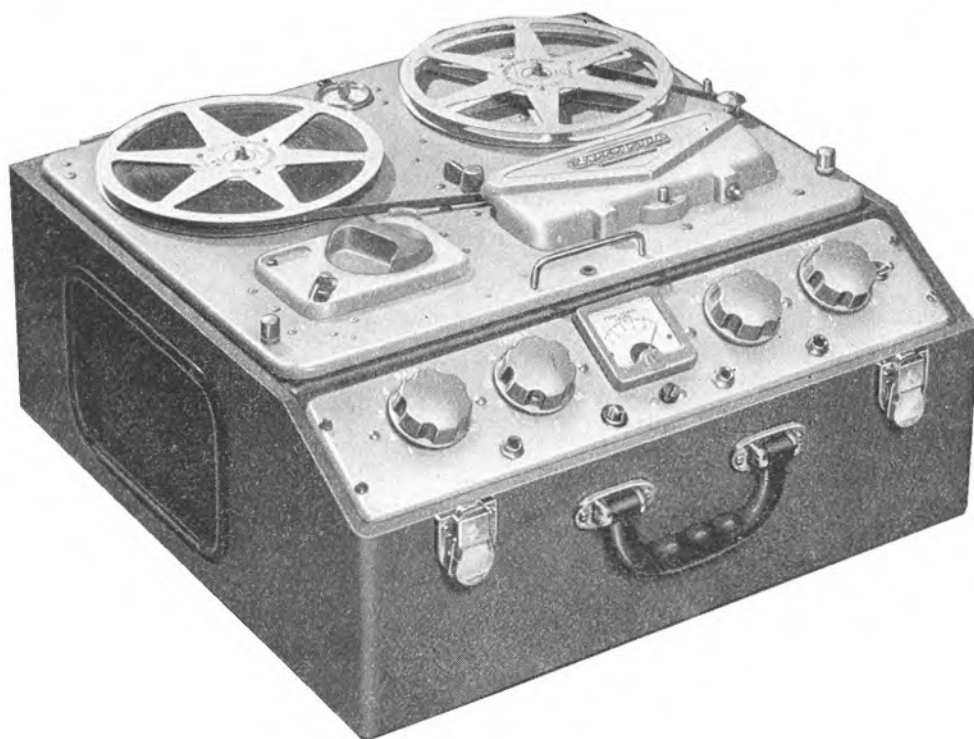
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THE 1959 TAPE CONTEST

British judging completed—A new medal award—B.B.C. will be hosts for the International Contest adjudication



The WyndSOR Gold Medal

THE BRITISH CONTEST

The names of the winners of the third British Amateur Tape Recording Contest will be published in our next issue, together with a full description of the "Tape of the Year" and of other outstanding entries.

This year's Contest has attracted much greater interest than ever before and the event is now established as the most important in the British tape calendar.

The judges—Miss Josephine Douglas, Mr. Douglas Cleverdon and Mr. Douglas Gardner—will have completed their task by the time these words appear in print and the winners will have been notified.

The Emitape Challenge Cup, for the "Tape of the Year," the WyndSOR Gold Medal for the best technical performance, and the ten-guinea cheques awarded in each section by *Tape Recording and Hi-Fi Magazine* will be presented at the Emitape Luncheon at the Savoy Hotel, London, on Saturday, August 29.

THE SCHOOLS CONTEST

The presentation of the Grundig Challenge Cup to the Meeching Junior School, Newhaven, Sussex—winners for the second successive year—will take place during the International Contest programme in London at the end of October.

The runners-up, Lee Manor Primary (J) School, Lewisham, will also be represented at

the special event which is to be organised.

The climax of the Schools Section of the British Contest is being delayed in order to link it more directly with the International Contest, to which the best British entries have been submitted. This will be a fitting preliminary to the effort planned for the coming winter to develop the Schools Contest on a big scale.

THE INTERNATIONAL CONTEST

Judging of entries in the eighth International Amateur Recording Contest will take place in the Council Chamber at Broadcasting House by kind invitation of the B.B.C. Judges from eight European countries—including the three British judges named above—will take part. It is expected to take three days to complete the playback of entries from all parts of the world. The best tapes submitted for the British Contest will be among them.

Before the judging, representatives of tape enthusiasts all over Western Europe will assemble at the annual congress of their organisation, F.I.C.S. (Federation Internationale de Chasseurs de Son). This will be a private business session, but many of the matters to be discussed will be of wide interest to our readers and we shall keep them fully informed.

The delegates and judges travelling to London from Paris, Brussels, Berne, Amsterdam, Luxemburg, Hamburg, Milan and elsewhere will have a unique opportunity to acquaint themselves with representatives of the British tape recording industry and of the clubs.

MORE DETAILS ABOUT THE CONTEST WILL BE PUBLISHED NEXT MONTH

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GEOFFREY HOLIDAY

describes a journey across the Sahara, from Nigeria to the Mediterranean, to get recordings of desert music

THE Sahara Desert! . . . Even today, with tourists in small, badly equipped motor cars (a constant anxiety to the harassed French authorities who administer this vast region of sand and rock) setting out from Nigeria for the Mediterranean coast, the Sahara Desert retains much of its glamour, its danger and its mystery.

To the nomadic tape recordist in search of music in the desert, the problems of sound recording are second only to those of survival, of thirst, of the necessity to get oneself and the equipment to the ultimate goal in one piece.

In Africa, that is to say Africa south of the Sahara, it is relatively simple, whether one belongs to a recording or broadcasting organisation or not, to arrive at a place where some sort of technical service for electronic equipment is available—good or bad. In the main, it is usually indifferent. In the Sahara it is a different matter: If your equipment requires any kind of attention you have got to do it yourself.

To put it mildly—you have to be prepared to do everything for yourself.

The object of the recent expedition made by my wife and myself to the Sahara—the second of what is intended to be a series of expeditions—was to obtain recordings of the music of Tuareg tribes inhabiting the regions of Air in French West Africa (the Sudan) and Ahaggar in Southern Algeria, for ethno-musicalogical study.

The Tuareg, about whose origins much remains obscure, are distinguished by several unusual features; notably that the men veil their faces, whereas the women go unveiled, and that their language is a relic of the libyco-berber tongue of ancient times, employing a written script, "tiffinagh," that is entirely consonantal and thus can be read only with extreme difficulty by sounding all the possible (implied) vowels until an intelligible word evolves.

It has been suggested that some of the Tuareg tribes inhabiting the regions of the Niger "buckle" and eastwards towards Air may be descendants of northern nomads who, in the eleventh century A.D., founded the Islamic religious sect called Almoravids and swept across Morocco to conquer the kingdoms of Andalusia in southern Spain. Speculation persists that the Tuareg were once Christians, and indeed the symbol of the cross is to be found in the cruciform pommel to their camel saddles, on the hilts of their weapons, and in the design of the women's jewellery. Speculation has gone so far in this direction that the two-edged cross hilted swords and the shields carrying their motif of the cross-crosslet of heraldry gave rise to the legend that the Tuareg were the survivors of a band of Crusaders lost in the desert during the Holy Wars!

Today, the Tuareg, little more than a quarter century after the pacification of the Sahara, are a pastoral nomadic people with a declining and non-working aristocracy clinging to the remnants of their old way of living in face of the encroachment of the technological age that oil discoveries in the desert have thrust upon them.

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SAND, WIND AND DECIBELS

Such, briefly, is the background to the expedition.

The vehicle we had chosen for the expedition was a military-type Renault four-wheel-drive station wagon, fitted out with extra fuel tanks, water tank, navigational aids and a separate charging system to run the recording equipment. We had to be completely self-contained in order to be able to traverse up to 600 miles of desert without being able to replenish water supplies or obtain petrol: to be self-supporting, in fact, for perhaps a week or more at a time.

Mounted inside the car was a Reflectograph RR102 variable-speed recorder, operated from a 12-volt 150 watt Valradio convertor, which comprised the "studio" equipment. This was supplemented by an E.M.I. midget portable which, although limited so far as recording time was concerned, could go places that the heavier equipment could not.

Generally speaking, the principal requirements of an expedition of this kind, when deciding upon what equipment to take are ruggedness of design, easy maintenance and flexibility in use.

With regard to the first two points, both mechanically and electronically the equipment has to undergo treatment for which it was never intended. Whether a tape recorder is fixed rigidly in a vehicle or on floating mountings it will be subjected over a period of time to damaging shock and vibrations under the conditions of travel that obtain in the desert. Moving parts and electrical contacts are never free from dust and sand, and temperature changes range between 38-140° Fahr., minimum night and maximum day recorded in the car.

Problems of recording in dust and heat

Temperature changes, I have noticed, seem to effect the plastic base of certain types of tape, particularly where the change is accompanied by an excessive alteration in humidity. Those tapes affected were old ones that I had used before on a previous expedition, that is to say they had been subjected to the African climate for a number of years; the new ones used on the present expedition were not affected. The old tapes appeared to warp and stretch in such a way that they would not wind smoothly on to a take-up spool, although the actual magnetic surface does not seem to have suffered. It is curious also that these tapes (which, incidentally, were of German manufacture)



"The important thing is not to try and arrange the performers in unnatural groups"

have now regained their normal characteristics. They are still in Africa, but humidity here in Nigeria is greater and they are no longer subjected to excessive heat. The E.M.I. and Scotch tapes I am now using seem to be less affected by changes in temperature and humidity.

"Flexibility in use" is perhaps not a very precise term, but it denotes those facilities incorporated in tape recorder design (and which vary with each class of recorder) that can be called upon to meet any situation which may arise.

Of first importance is the facility of monitoring off the tape—to be able to *know* that the end product is there, exactly as you intended it to be. To quote an example. Dust (or perhaps a low voltage supply) can induce "wow" on to an otherwise impeccable tape drive mechanism. On one occasion, recording with the Reflectograph in French West Africa, I became aware of "wow" on the tape and because of the type of variable drive employed was able to correct it without actually stopping the tape drive, so that, although part of the recording is spoilt from the technical point of view, it is there in its entirety and none of the song has been lost.

The flexibility of the E.M.I. midget is not so much in its operation: it conforms to my definition "flexibility in use." With primitive folk music, where there is a short and repetitive pattern or music cycle, and where at the

(Continued on page 24)

SAND, WIND & DECIBELS

(Continued from page 23)

same time there is a diversity of performers and consequently of musical interest within the framework of the cycle, it is possible to record each aspect of the music either continuously or selectively, given a high quality portable tape recorder that permits the microphone to wander where it wishes.

More than anything, it permits the performers to concern themselves only with their own pattern when performing, without the fixed point microphone to which the music must be directed which imposes a degree of nervous strain and self-consciousness and consequently a lack of spontaneity.

Power problem

Power supply when recording in the field is always a problem and it is not always possible to commence a recording session with fully charged batteries. To overcome this difficulty, my Reflectograph had been fitted with an audio frequency injector by the manufacturers, so that I could be certain of a correct tape speed even though my batteries were not in good shape.

The audio frequency injector is a clever device whereby a 50 cycle note is recorded on the beginning of all tapes to be used and from a known power supply. At the commencement of a recording session this 50 cycle note is played back against the 50 cycle note produced by the recorder when the A.F.I. button is pressed. The two signals are fed into a pilot lamp in such a way that if there is any difference in frequency the voltages will add and subtract, causing the lamp to blink or drift. By adjusting the variable tape drive until the light is constant or goes right out, the correct tape speed can be determined. And what is most important, the recordings can be reproduced at the exact pitch of the music, providing an invaluable check against written notes of the musical keys employed and of tempo.

Perhaps the biggest enemy of the tape recorder in the desert is wind. There are very few times during the day—or night—when the wind drops and usually only for short periods during the heat of the day. With a sun temperature reaching to 140° fahr., nobody wants to sing or dance and the best time for recording is usually about 5 p.m. when the shadows are lengthening and the temperature begins to drop. Unfortunately, at this time, the wind begins to rise and becomes quite strong with little thought for the sensitivity of a microphone. At best the only shelter available is from clumps of thorn bushes if you happen to be recording near an oasis, but in the open desert there is nothing with which to keep the wind off the microphone.

Using the Reslo RBL ribbon for the Reflectograph, I found that felt pads helped considerably and that wind noise could be reduced to a level so that, although it was still present, it was not objectionable, and a really strong gust was needed to distort the recording. With the Reslo dynamic hand mike for the E.M.I., it was possible to keep my body between the wind and the mike but not so close as to produce peculiarities of acoustics, such as reflection. In the main I think it is better to make the best of the wind rather than to use a mike shield as this is suitable only for speech and the frequency loss in recording music can be fairly substantial.



An intense audience watches the author use a portable recorder to capture an individual performance. The microphone is shielded from the strong desert wind by his body

When one arrives at a Tuareg encampment there is great excitement and interest in the setting up of the equipment, in which the men and women share as much, if not more, than the children. Presents of tea, sugar and cigarettes do much to overcome initial shyness and fears and, once the singing and dancing get under way, the recording session quickly becomes the excuse for a real fiesta.

The important thing is not to try and arrange the performers in unnatural groups in an endeavour to realise a "studio" balance. The Tuareg always place the drum in front of the singers so that it dominates everything. However, this is exactly how the music sounds and to alter the position in order to bring out the singing to greater advantage would introduce an element that is foreign, and the recording would not be a true replica of the original.

Pleasing playback

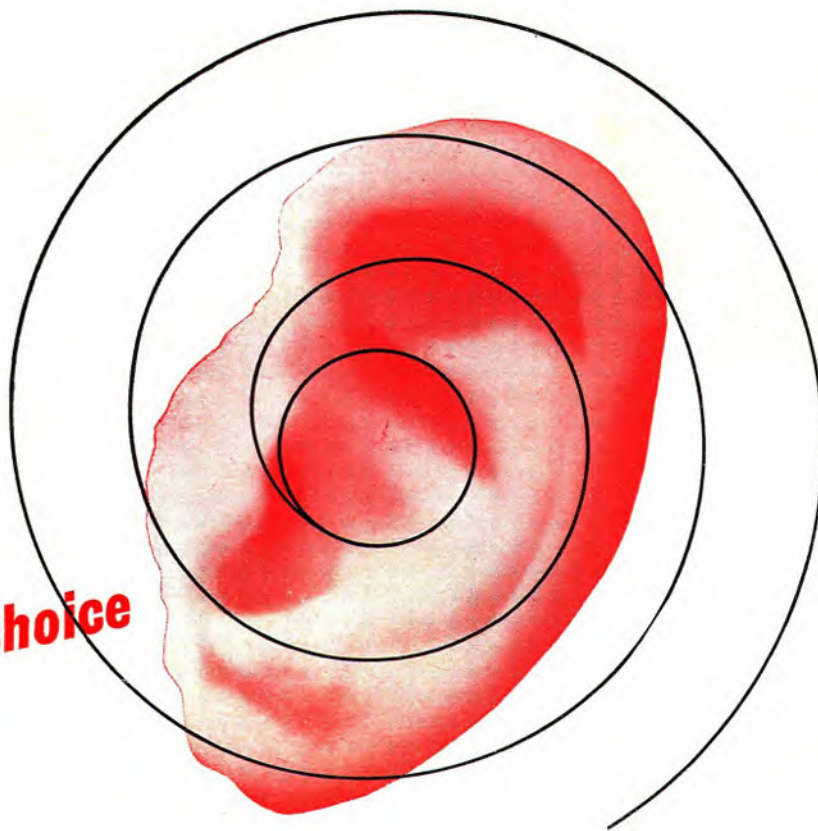
Like everybody else, the Tuareg take great pleasure in hearing the playback of their recordings and the Renault is immediately besieged by a crowd of men, women and children, laughing, shouting and cheering as they recognise their own voices or those of friends. Afterwards, as the sudden Saharan darkness closes in, there is the ritual of tea taken, Tuareg fashion, with our friends in front of one of their tents. The strong, sweet mint tea of the desert, drunk from tiny glasses: one for Allah, one for your host and the third for yourself.

Beneath the incredible beauty of the stars there is immeasurable silence round the camp fire which imparts a little warmth against the chill of the night.

In the shadow beyond the fire the men surreptitiously lower their veils to smoke a cigarette.

Everyone is at peace, perhaps pondering over the strangeness of the white man and his machines. In the silence is deep satisfaction. One is sorry to have to leave it and return to the rush and bustle of western life.

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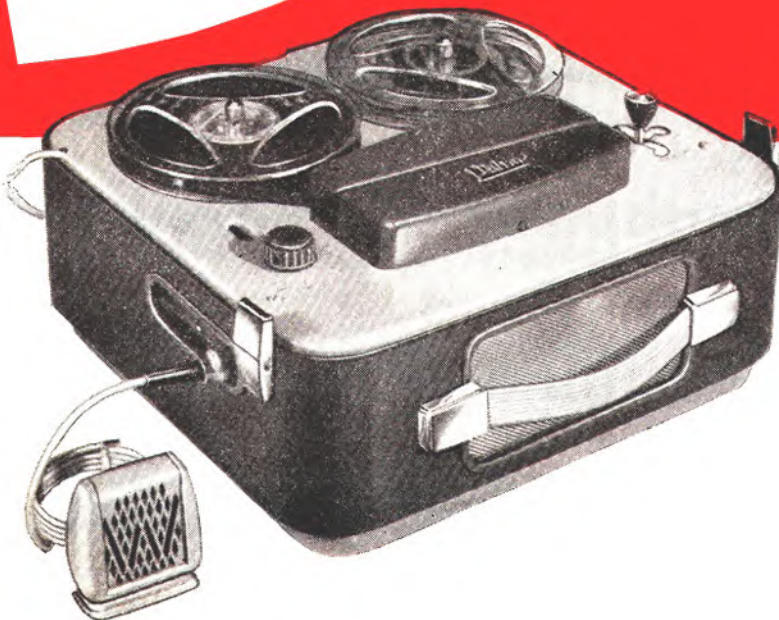
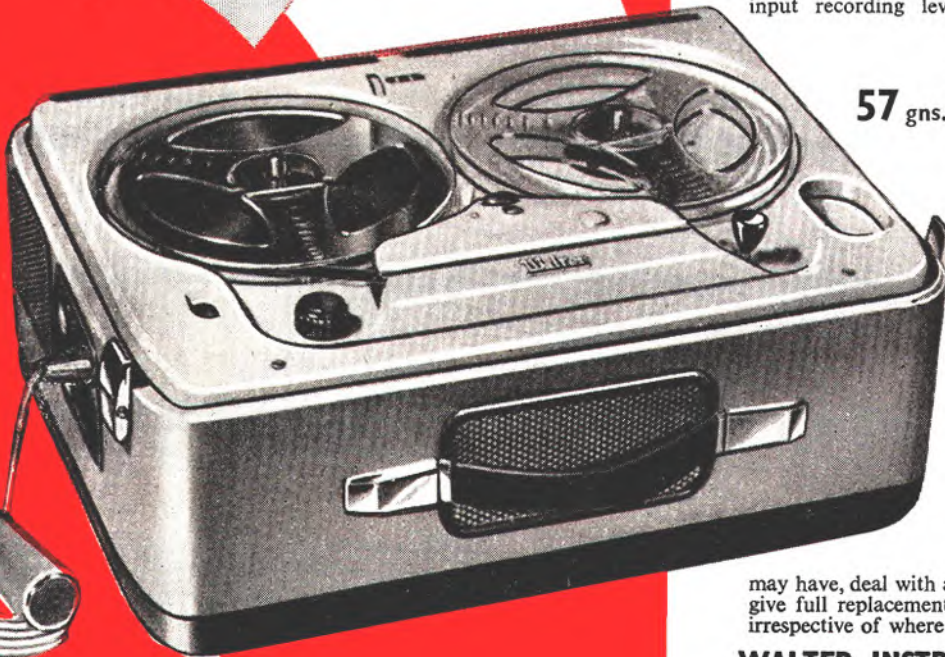
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PERFORMANCE SPECIFICATIONS

FOR TAPE RECORDERS

ONE of the major problems faced by the tape recording enthusiast is that of measuring the performance of his equipment. He can rely on design specifications and accept their assurance that the over-all performance is what he hopes it is, he can buy or build expensive test gear, or he can simply judge results by listening and forming his own, probably still doubtful, opinion.

The specifications of most manufacturers can generally be accepted as reliable, especially when backed by any recommendation in a review after independent but accurate tests and observations of performance. Those blessed with an audio signal generator and an oscilloscope, or output meter, are in the more favourable position of being able to check things for themselves.

The fidelity of electrically reproduced sound can be no better than the equipment or its acoustic environment will allow, and it is well known that some forms of distortion cannot be detected even by a so-called "trained ear." Frequent listening, comparison with equipment known to be above reproach, plus some knowledge of a highly specialised subject, does, however, enable a fair assessment of performance to be established.

The requirements for fidelity tape recording are now generally recognised, and reputable manufacturers are concerned with meeting certain specifications.

It is as well, however, to caution prospective buyers of tape recording equipment that there are instruments for which extravagant claims have been made regarding performance, and this applies to some so-called high-fidelity and stereo disc equipment.

The genuine and competitive manufacturer has nothing to hide and is not afraid of submitting equipment to expert reviewers. His products are tested to an exceptional degree before leaving the factory and meet very closely the performance specifications quoted.

REQUIREMENTS FOR A DECK

Tape Transport: The most important requirement for production and reproduction of tape records is a first-class tape-deck, having constant speed(s), good spooling performance, well-arranged tape pressure pads and mechanism with smoothly operating tape guides. A tape deck can, in fact, be judged by the quality of the tape transport mechanism.

Wow and Flutter: The wow and flutter produced by a suitable mechanism should be no greater than that of a first-class transcription-type turntable. Wow is difficult to measure accurately without expensive equipment and, unfortunately, tape decks completely free of it are scarce.

A prospective buyer can only be advised to ask the supplier or dealer to demonstrate by playing recorded tones at various frequencies, such as those from a standard test tape, for example, the E.M.I. T.B.T.1. Any undue percentage of wow or flutter will soon be apparent—much more easily than by listening to a recording of music.

Tape Speed: The short-term mean speed of most tape recorders varies somewhat from one end of the spool to the other, but this variation should not be more than plus or minus 1 per cent of the overall mean speed, which in turn should not differ from the nominal speed by more than 1 per cent. The overall mean speed may be found from:—

$$\frac{\text{Full length of tape on spool (inches)}}{\text{Time for complete play-through (seconds)}}$$

The mean speed is obtained by timing a short tape run, or by stroboscopic indication.

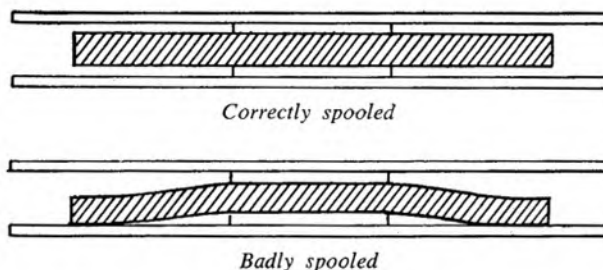


Fig. 1.—Tape spooling

Spooling: Spooling should be even and the tape should be clear of the spool cheeks on either side; in fact, the wound tape should support itself on the hub alone (see Fig. 1). This applies whether the recorder is set to fast wind or rewind or is running at normal playing speed.

Braking: The braking system must be capable of bringing the tape to rest quickly, with no slackness and without causing the tape to ride or jump the guides and heads. Fast winding in either direction is, of course, essential, with a winding speed which may vary with different recorders but should average two to four minutes. Some office-type dictating machines are slower than this, however.

General: Indicators registering the amount of tape used are useful, though not essential. An indicator should, however, be capable of showing a spot position on the tape, at least to within a few inches.

It has now become almost standard practice to drive the tape between a capstan and pinch wheel, one or the other being made of rubber. Any variation in the balance of the capstan and/or fluctuation due to the drive motor can produce objectionable variations in pitch, which are quite easily detected by listening to a recording of a steady tone at a frequency between 400 and 1,500 cps (See paragraph on wow and flutter).

Tape Heads: Almost all magnetic heads are of the "ring type" and consist of two stacks of nearly "C" shaped laminations of high grade iron, which are placed face to face with a minute air-gap between faces. This gap is often as small as 0.0005-in. in a record/replay head, but for reproduction to a frequency of 12,000 cps at 7½ ips, the magnetically-effective length of the gap should be about 0.0003-in. Larger gaps lead to difficulties associated with a necessarily high degree of pre-emphasis at the higher frequencies, resulting in hiss and distortion.

The performance specifications for recording and replay heads are rather too involved for the non-technical owner of a tape recorder to worry about; but, for the more technically-minded, the choice of a record/replay head is usually decided by the following points.

High impedance heads are preferable for some reasons, but disadvantageous in that:—

- (a) Bias losses are high, due to the high self capacitance of the winding.
- (b) Design of the bias oscillator becomes difficult, due to the high bias voltage required.

Low impedance heads, on the other hand, require the use of a matching transformer, often resulting in difficulty due to hum pick-up from stray mains transformer fields.

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PERFORMANCE SPECIFICATIONS

FOR TAPE RECORDERS

In discussing tape heads, it should be remembered that a combined record/replay head is to some extent a compromise. If a recorder is fitted with separate record and replay heads—and those approaching professional standards generally are—the record head should meet rather more rigid specifications.

Azimuth Alignment: The gap in the tape head must be in alignment with the magnetisation on the tape. Referring to the diagram of Fig. 3, it will be seen that the gap in the head is vertical. Any departure from the angle of 0° , or zenith, will result in losses at high frequencies if the tape was previously recorded from a head with the gap perfectly aligned to 0° . The replay head must, therefore, be rotated until its gap is exactly parallel with the "azimuth" of the recorded signal. Adjustment to bring the gap into alignment with the recording magnetisation is, therefore, known as "azimuth alignment."

For a machine running at $7\frac{1}{2}$ ips a misalignment of only two minutes of arc at a recorded frequency of 10 k/c will cause a reduction in output of 0.6 dB on full-width recording on quarter-inch tape.

It is essential, if the recorder is to be used for playing pre-recorded tapes, that some provision is made for azimuth alignment at the tape head, or that such alignment is set very accurately by the manufacturer. If the tape recorder has a single record/replay head and is used only to play tapes recorded with its own tape head, misalignment is not so critical, as the tape head will still be in correct azimuth alignment on replay.

A tape recorded on another machine known to have correct alignment will lack high frequency response when played on a machine with an incorrectly aligned head.

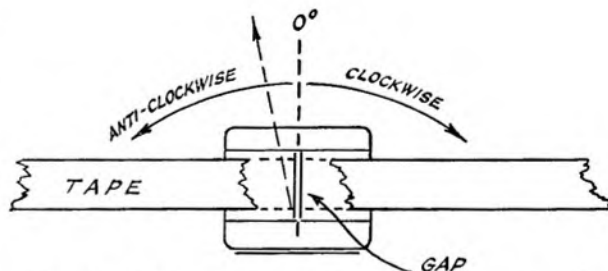


Fig. 3.—Direction of rotation for correct azimuth alignment of replay head

The diagram of Fig. 2 shows the variation of output voltage when a replay head is rotated about the azimuth axis (Fig. 3). The dotted curve is more likely to be obtained in practice but the secondary peak to the right might easily be mistaken for the true peak.

The high speed pen-recording of Fig. 4 shows this variation and was taken from an actual tape head with the aid of a very sensitive pen recorder which, with its associated DC amplifier, is capable of showing differences in gain of as little as 0.25dB. As other illustrations in these articles will show, this instrument may be used for directly plotting frequency response curves as well as for measurement of small variations in tape head output, beat note effects and other phenomena normally difficult to detect with conventional measuring instruments.

Finally, a word on frequency response. A good quality magnetic tape head should be capable of a frequency response of 1,800 cps per second per inch of tape. Therefore, at a tape speed of $7\frac{1}{2}$ ips the maximum upper limit of the frequency response should be approximately 13,500 cps. Some manufacturers claim responses higher than this, but usually fail to give a reference frequency, which is generally 1,000 cps.

It should be made clear that although a tape head may have some response at, say, 20,000 cps, this may in fact be several dB below the level at 1,000 cps. When comparing specifications, be careful; in some instances a quoted response may seem poor, when compared with another, but it may prove to be a genuine response plotted against a reference frequency, while the bolder claim does not mention the level when referred to 1,000 cps.

The frequency characteristics of recording and playback amplifiers and other effects concerned with tape heads and tape will be dealt with in the next article, when some examples from actual instruments will be given.

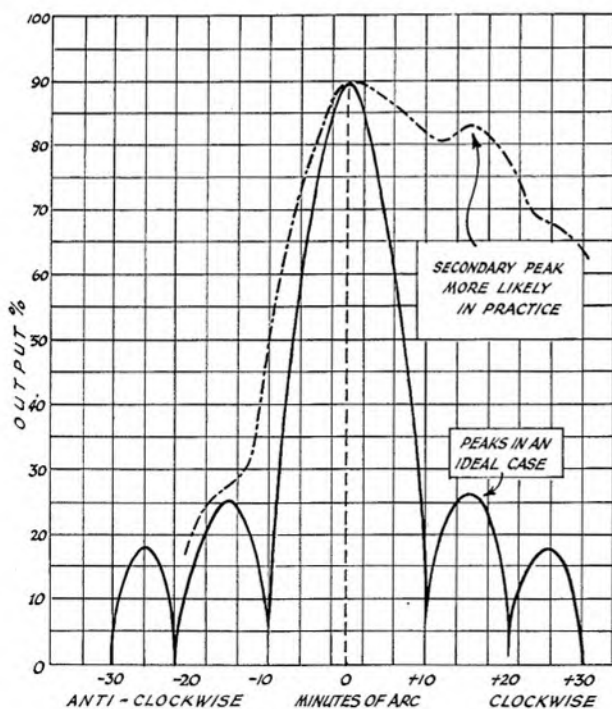


Fig. 2.—Variation of output voltage when replay head is rotated about azimuth axis

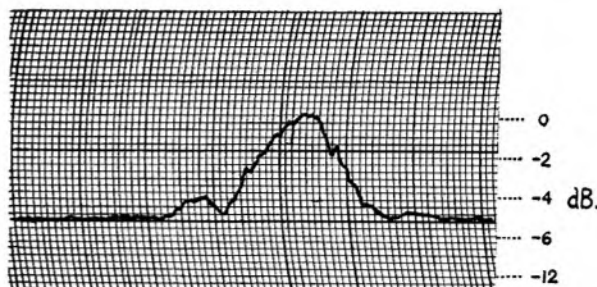


Fig. 4.—High-speed pen-recording showing the effect of correct azimuth alignment of a tape head

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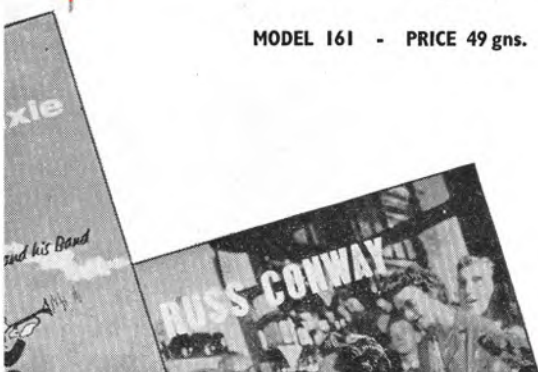
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SHOULD

MUSIQUE CONCRETE

A Stimulating

article by

BRYAN WHITTON, L.R.A.M.

GO STEREO?

MUSIQUE-CONCRETE is at the "garret" stage: a bewildering world of sounds, peopled by back-room enthusiasts, each moving in his own, often not clearly defined, direction. These creators have as yet no common forum and little common terminology with which to discuss their art or, indeed, any clear indication, save that of the heart, that what they are professing is indeed an art at all. It is at the cradle stage, and anything can happen.

The aim of the article is to try to set musique-concrete—as distinct from electronic music—more firmly in its historical perspective and, perhaps more important, to offer a set of tentative suggestions on future progress arising from the disconnected and necessarily incompletely representative examples of musique-concrete which I have been able to hear.

First of all, the barrier of prejudice must be overcome and the nature of "ordinary music" realised for what it probably is—a series of noises which, finding themselves, either by conditioning or through basic physiological elements, in some sort of peaceful co-existence with the brain patterns, awaken pleasurable responses.

Hitherto, the nature of musical sound—at least in the western hemisphere—has been limited to a twelve note key system associated with a group of timbres, limited by the variety of instruments and set to a relatively small range of rhythms. Add to this a harmonic structure, which has admittedly developed—with corresponding prejudice and attack from the old-guard—and you have a useful, if sketchy, view of musical progression from Palestrina to Schoenberg.

Latterly, music has suffered from these limitations—resulting in the tonalists chasing their own tails at one end of the scale, passing through the apparent "sameness" of modern "bread and butter" composition to the skifflists' vain attempts to make paraffin funnels and soap boxes do the work of trumpets and double-basses.

An impasse has been reached. Poets, musicians, painters and sculptors have realised this. The period is passed off by the optimistic as one of "consolidation" or "meditation," but is more probably one of stagnation! When has there ever been a so-called period of "consolidation" in the past?

The way ahead for the poet and painter is hard to seek. For the musician, several ways are signposted. One of these ways, I firmly believe, is that of musique-concrete.

Musique-concrete is interested, as I have said before, in sound—living sound. It is not basically "programme music"—although the programme element may be used. It does not matter whether the generator is a hair-dryer, mama-doll or wine-glasses; it is the sounds, not particularly the associations, in which we are interested. In fact, the clinging to associations has made things difficult all round for those concerned with musique-concrete. To emphasise

this point I should like to see a critic give five out of five correct answers in an audio-test which involved his distinguishing the "angelic" sound of a nightingale from that of a squeaky wheelbarrow.

In order to overcome this association prejudice, the composers of musique-concrete have largely abandoned the accepted forms of orchestral music. This has given rise to the dilemma of boundless freedom. It is asking too much of the mind to grasp new sound and new form in one fell swoop. It has occurred to me that the difficulty may at least be compromised, if not resolved, by a careful consideration of *dimension*. I put forward this idea for several reasons.

Firstly, when listening to orchestral music we probably have a strong mental image of a band, or an orchestra, or perhaps a "scene" which acts as a mental anchor to which the freer elements of the music are fixed. This probably enables us to grasp the music as an integrated whole. With musique-concrete, the mental image is probably too nebulous to act as the necessary stabiliser.

Secondly, formal music owes its extension beyond eight or sixteen bars to the fact that the melody can be operated on in certain formal ways, fixed to some extent by the duration of the note, the rhythm and the instruments involved. Musique-concrete does not rely on thematic material, in fact the use of it would probably result in unsatisfactory orchestral imitation.

In view of these problems it seems to be fairly logical that the "musique" could be given the much-needed "identity," the anchoring mental image and the freedom in which to exercise its new rhythmic and harmonic possibilities, if it were given a tangible, three-dimensional form. In other words, stereophony.

Lest some of you are about to burn this before rushing for the smelling-salts, let me plead that this is not so odd as it may sound. Experiments in abstract filming have been going on for some time, i.e., the dramatic interplay of three-dimensional abstract forms, and have solved a similar problem confronting avant-garde experimental cinema. Why not apply it to musique-concrete?

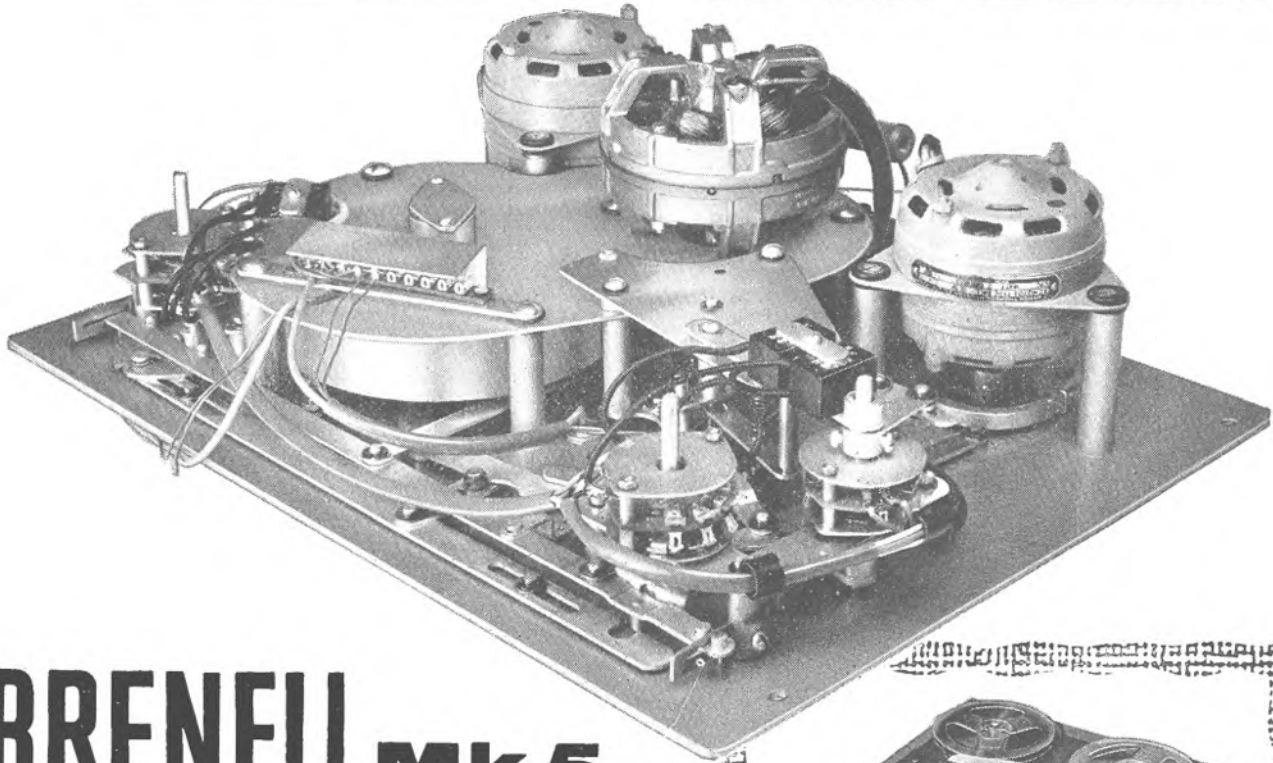
I am suggesting, therefore, that the sounds be given a spatial relationship to compensate for the lack of a rigid formal element. Normal stereophonic equipment is already at our disposal. The possibilities of three-dimensional, abstract sound drama are intriguing.

I would like to suggest one more thing. Because of the audience-performer relationship, the listener has always had to be "outside" the performance, as it were. A further liberation which musique-concrete could offer, in the way I have suggested, is that it could place the listener, by the number of tracks and speakers in use, in any position, spatially, in relation to the composition that it liked, making listening a more inherent part of the composition.

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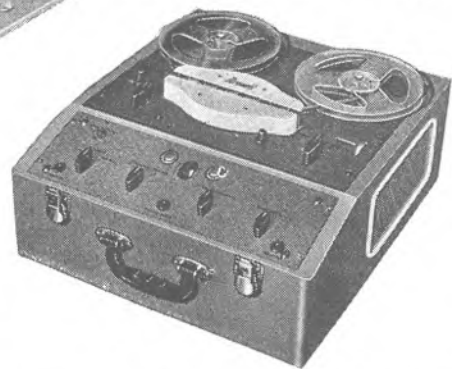
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YES IT'S ONE MORE TAPE MARRIAGE



Across the continents, tape has brought together another couple and led to wedding bells.

The photograph shows Kenneth de Courcy Low (centre), director of youth activities for a Warwick, Queensland, radio station and a member of the International Committee of "World Tapes for Education," with his bride, Evelyn Pierce Low, formerly of Long Island, New York (second from right).

Mr. and Mrs. Low became acquainted through their interest in World Tapes for Education. She was an artist-musician-teacher and her students exchanged tapes with members of the Australian friendship club sponsored by Mr. Low.

Soon there was romance on tape. Exchanges continued after Evelyn took a post at the American Family School at Landstuhl, in Germany, and last May she flew to Australia to meet her fiance for the first time.

Also in the picture above are members of the Billington family, who emigrated from England to Australia a few years ago. Miss Margaret Billington (extreme right) was a member of the winning team in an international debate between Australian and American teams organised through World Tapes for Education.

Some of the Viking Players in their pageant play



The Viking voices were on tape

VIKINGS invaded England again this summer—but they were armed only with stage scenery and a tape deck. The deck was the nucleus of a reproduction set-up used to provide sound and dialogue for a pageant play, "The Saga of Amled," presented by the Viking Players of Frederikssund, a small ship-building town on the Baltic.

Every year since 1952 these dedicated amateurs have performed dramas dealing with Danish history.

Over 100 players, the oldest a 90-year-old retired farmer and the youngest a five-year-old girl, made a six-day visit to England, in full costume. They performed in the open-air at Ramsgate, in a park transformed for the occasion into a Viking village.

To solve the language problem, the English Debating Society in Copenhagen, with the co-operation of the Danish Broadcasting Corporation, put the whole of the dialogue on to tape.

At the English performances, the players mimed their parts and four loudspeakers, concealed in trees backing the set, were brought into use in turn, so that sound followed action.

The sound equipment used belongs to Mr. G. Nielsen, a member of the Danish Tape Recording Club, who has built up an impressive system worth over £1,500. Including the speakers, a pre-amplifier and a stand-by deck, the items he brought with him were worth £500.

The deck used—specially built for the Viking Players by the Danish firm of Nordisk Electric—was a single-track, two-speed machine which cost £98. It had a pre-selector pause control, allowing for silent movement on-stage without tape wastage.

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- ★ Peak Level recording meter. 2 matched loudspeakers. High and low level inputs. Outputs for external amplifier or loudspeaker.

Only the Reflectograph Recorder has the unique continuously variable speed control. In conjunction with the built-in stroboscope this enables both the recording and reproducing speeds to be set and maintained precisely at 3½ and 7½ i.p.s. Absolute pitch is thus ensured—a fact that will be appreciated by professional recordists and musicians alike.

UNIQUE GUARANTEE Your Reflectograph Recorder carries a one year's free service guarantee which includes valves. Service is undertaken within 24 hours' notice by trained engineers of the E.M.I. Company. For a small annual fee, this fully comprehensive maintenance guarantee may be extended for up to 20 years.

BRIEF SPECIFICATION Power Output: 3 watts; Frequency Response: 45-12,000 c/s ±3dB; Equalisation: strictly to C.C.I.R. specification; Signal-to-noise ratio: better than -45dB (unweighted, including hum); Sensitivity for max. recording level: 1mV. (microphone input) 50-200mV. (radio or pick-up input); Output from playback pre-amplifier: 200mV. R.M.S.; Wow and flutter: Better than 0.2% R.M.S. as measured on G.B.- Kalee Flutter Meter.

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D. W. Aldous in "Gramophone Record Review"
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Owing to the demand for the Reflectograph only a few dealers are able to carry stocks. The following should have an instrument available for demonstration:

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Yes, your recorder needs oil

—BUT DON'T OVERDO IT

LUBRICATION is essential to the operation of all types of mechanism. With a few exceptions, the modern lubricant consists of oils derived from petroleum. The characteristics of these oils vary widely, from heavy dark kinds for large industrial gears to highly refined oils for use in watches.

All who use, maintain or make tape recorders, should have some clear idea what the use of lubricants is expected to achieve.

The function of all lubricants is to interpose a film of oil between bearing surfaces that are moving together and so to reduce friction and consequent wear to a minimum. Oil lubricants have another purpose, in that they carry away from bearing faces the heat that is generated when two surfaces move over one another.

In general, it can be said that there are two kinds of friction in tape recorder mechanisms: *sliding motion*, as when certain parts move up and down one another, and *rotary motion*, such as that which occurs between a shaft and its bearings. There is, too, side pull on some bearings of the tape drive, which can be a cause of "flutter" and/or "wow" when slightly worn bearings begin to wobble.

Here, then, is one of the worst spots for noticeable wear and on some tape recorder mechanisms there is no proper provision for lubrication! True, you can put a little oil there yourself and thus reduce wear and friction; but a fault surely lies with the machine's designer.

You must understand that bearing surfaces may look and feel smooth and mirror-like when highly polished, yet, when examined under a modern microscope, be found to be rough and file-like. They are, in fact, covered with little fissures and cracks. These rough surfaces are most noticeable on new bearing faces. Microscopic though they are, they call for careful and proper lubrication at all times if you are to get the fair and noiseless service you are entitled to expect from today's fine electronic equipment.

The correct oil viscosity is very important for all major bearings of a tape recorder.

The viscosity of lubricating oil is a measure of its resistance to flow at given temperatures and can be called its "body." All that stands between the various important moving surfaces of your tape recorder, separating them and preventing them from scraping themselves to destruction, is a film of oil of the correct viscosity. This film of oil need be only of a thousandth part of an inch in order to reduce or even prevent wear. Should the oil break down for one fraction of a second, your machine could be damaged and so reduced in value.

That is why the engineer and mechanic should rely only on high grade products of the correct viscosity for the machine. It is also important to use the type of oil which is appropriate for the country in which it is used. Some manufacturers semi-tropicalise their products for warmer climates.

Not only should the correct type and viscosity of oil be used, but it should, in my opinion, always contain colloidal graphite. I have found, and official tests prove, that as colloidal graphite beds into the bearing face it makes a slippery surface over which oil can spread quickly and thus reduce wear and noise.

Unless you are a tape recorder engineer or mechanic you must never, never attempt to lubricate any bearings of your machine other than those which your dealer or instruction book say you can.

Harm is often done by injudicious lubrication by people who have little or no knowledge of the working mechanism, but a great deal of over-enthusiasm.

By
**DOM de
FREESTON**

The parts you are likely to be lubricating yourself should have a little low-viscosity oil or fine grease, and all residue must be removed at once with a clean, fluffless cloth.

Never let lubricating oil get on recording heads, erase heads, tapes, pressure rollers and the like.

Major bearings fall into two main categories. Firstly, there are the so-called "packed for life bearings." These are packed with oil and grease and then sealed from dirt, wet and leakage with oil seals. These seals and bearings usually last the machine's life, or can be replaced, as can the oil or grease, by the manufacturer.

Secondly, there are the "self-lubricating bearings," i.e., centred bronze bearings. These are composite bearings made up in most instances from powdered bronze, oil and graphite, under extreme hydraulic pressure of many tons. Other self-lubricating bearings are made from P.T.F., and nylon plastics. Plastic bearings are used a lot on cine equipment, as they are particularly silent.

All these major bearings should be left to the expert. On some machines a little graphited oil on the drive mechanism may be used; watch until it has disappeared and remove the residue before closing down the deck.

Your tape recorder is an expensive part of your equipment and common-sense tells you to look after it properly. One of the ways is proper lubrication with oils and greases. Another is regular servicing by your dealer. No matter how carefully you may look after your machine, it will be all the better for a visit at least once a year to your hi-fi mechanic. Only he can lubricate or service it properly, and it is penny-wise and pound-foolish to be afraid of spending a few shillings with him on an annual overhaul. He has the knowledge and equipment costing far more money than you are ever likely to spend on testing gear.

Maintenance is always so much better than a cure, however good it may be.

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KENNETH BLAKE OFFERS SOME MORE USEFUL HINTS ON RECORDING WITH A CAR BATTERY

REMEMBER that your tape recorder requires a much more steady voltage and frequency than does an ordinary radio, principally because your tapes are driven by A.C. motors. It also uses more current than a radio.

If you are going to record from your car, I do recommend buying the equipment for the job, and enjoying good quality, after you've forgotten the price!

When I started, I finished up, not only disappointed, but with sore feet, after rummaging round surplus stores and fiddling with W.D. rotary converters in order to try to save a few pounds, and I found nothing that was satisfactory.

Where do you put the converter when you have purchased it? A long while ago Mr. Ohm told us of the relationship between voltage, current, and resistance, and his observations now become very significant.

The D.C. Input carries a fairly heavy current—10 amps. or so. In consequence, we want to place the converter as near to the car battery as possible and to connect it up with something like 15 amp. flex, as short as you possibly can make it. It's worth giving this serious thought.

With an old car like ours, with the battery under the back seat, you put it on the floor at the back, or in the boot. In new cars, which have the battery under the

bonnet, I suggest it might be fitted under the dash. It seems a bit unkind to place it under the bonnet with the engine.

In any event, get it close to the battery, and connect with heavy leads to minimise the voltage drop.

Fortunately, Mr. Ohm's law works in our favour when dealing with the 220v. A.C. supply from the converter to the tape recorder, which means our recorder can be several yards away. In fact, within reason, the farther the better, because you get away from the magnetic field which is set up by the vibration in the converter, which can and does cause "hum" when too near.

To record under the best conditions, and this is important, we find it necessary to earth the recorder; so we carry round a length of flex with a copper spike on one end and stick it in damp ground. We have made some of our best recordings under these conditions, with the recorder 20 or 30 feet from the car and well earthed. They are freer from background "hum" than those made in our flat in town.

There is the problem of how to do this earthing when driving along—I've not yet solved it. When I complained to my wife of this difficulty, she replied, "Well, we're not having iron wheels."

NOTE.—Vortexion and Valradio both make good converters. Either can be obtained through a tape recorder dealer.



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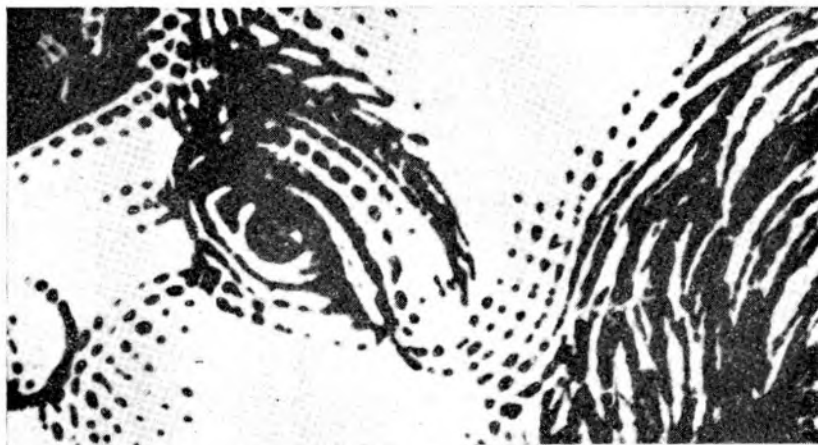
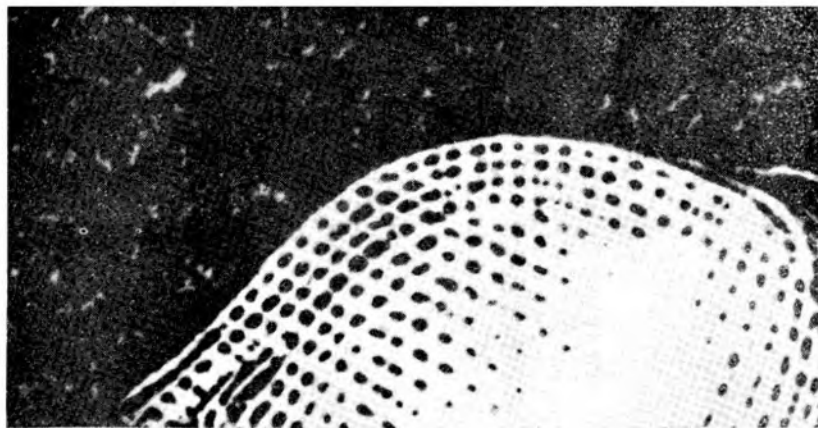
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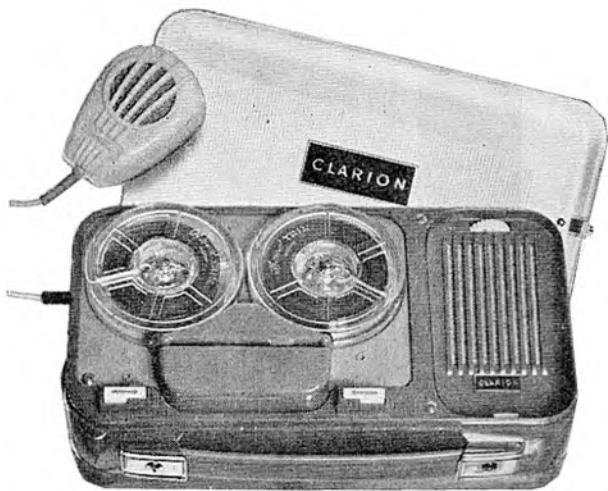
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TESTED IN THE LAB

I—FOR OUT-DOORS ENTHUSIASTS

The Clarion Transitape

COMPLETELY transistorised and self-contained, the Clarion Transitape is a remarkable little instrument which should prove a great asset in the office (for recording telephone messages and conferences and for dictation), in the family circle, and at teenage "pops" parties. As it operates at the standard speed of $3\frac{1}{2}$ ips, a recorded tape can be played back on a larger machine for better quality reproduction. It should be emphasised that because of its small internal speaker, one cannot expect high fidelity reproduction. The recorder submitted for review was put through tests similar to those normally applied to much more expensive instruments, however, and it gave a surprising performance.

Only four transistors are used and the recorder will run for 50 hours on one set of four $1\frac{1}{2}$ volt cells, or it can be operated from a 6 volt car battery with the aid of a special connecting lead (supplied separately).

The Transitape is complete with a magnetic type microphone and a reel of tape, a comprehensive instruction booklet and, of course, batteries are included. The whole instrument is housed in a very attractive case, finished in two tones of grey, with a clear plastic, quickly detachable lid.

Operation is simple and full use can be made of the amplifier for monitoring while recording from microphone, radio or a telephone pick-up unit.

FUNCTIONAL TESTS

Having decided to carry out as many tests as practicable on this recorder, a special $3\frac{1}{2}$ ips test tape was made, containing bands to tones at frequencies from 60 to 6000 cps \pm 2dB over the whole range, including a section of 1000 cps at \pm 1 cps and a section of 9000 cps for azimuth alignment, as well as music recorded via a hi-fi pick-up.

Neither the makers or the distributors have any need to worry about the plus and minus so many dB's, so favoured by reviewers and hi-fi enthusiasts, because, in all fairness and considering this little recorder in its proper perspective, it came through the tests surprisingly well.

The frequency response is substantially level from 250 to 4000 cps, using the internal amplifier and speaker. Slight motor noise was discernable during playback, but no unwanted noises are detectable when a tape recorded on this machine is played back on another instrument. As the capstan and tape spools are driven from a governor-controlled D.C. motor, the very small amount of wow was detectable only on steady tones or recordings of the pianoforte. The running speed was a little up on $3\frac{1}{2}$ ips, however, being measured as 3,825 ips.

Erasure of old recording is automatic and clean, as a magnetic erase system is used and, while slightly higher noise than usual is left on the tape, it is by no means prominent.

Following the maker's suggestions on its various uses as a portable recorder, I took the Transitape for a railway train recording session and was able to get some quite good recordings, which were, of course, greatly enhanced when played back on another machine.

In my work as a technical writer, this type of compact recorder is invaluable, especially when I have to get long technical details from engineers, who naturally object to wasting their time repeating information while it is written down. One can get the whole lot taped, and then digest it at leisure.

The Transitape is designed for twin track operation, so that a total playing time of 44 minutes is available, using L.P. tape; and with a special connecting lead (supplied extra) the recorder can be connected straight into an external amplifier. Although the impedance at the output socket is only 1000 ohms, it does not load an external amplifier input appreciably; in any case a signal level of approximately one volt is available.

A special lead for direct connection to a car battery is available, and when the recorder is thus used the internal batteries are disconnected.

A tape may be re-wound after recording (fast reverse wind), but no fast forward re-wind is provided. This does not, however, seem a great inconvenience, owing to the small size of the tape spools (standard $3\frac{1}{2}$ in. spools).

To quote the distributors, G.B.C. Electronic Industries Limited: "This machine is designed as a simple, handy portable tape recorder with a flexibility far above any other machine in the same price range."

While the playback quality must necessarily be limited, the recording quality of this machine makes it an admirable second to another more static machine, and it will undoubtedly provide recording enthusiasts with many new recordable items only obtainable with a portable machine.

The Transitape weighs only 5 lb., and measures $9\frac{1}{2}$ in. long by 5 in. wide and $3\frac{1}{2}$ in. deep. Battery consumption at 6 volts is only 0.1 amps, and the audio output from a single OC76 transistor is 20 milli-watts. The remaining transistors are OC71 tape head/microphone amplifier, GFT21 intermediate LF amplifier, and a GFT21 as bias oscillator.

This little recorder undoubtedly represents good value for its price of 25 guineas, and I endorse the maker's claim that—in my experience—no other tape recorder has so many valuable features for such a remarkable price.

F. C. JUDD.

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(BLOCK LETTERS PLEASE)



A NEW magnetic recorder for 8mm. sound stripe has recently been introduced by Paillard-Bolex, called the SONORISER. Typical of all Bolex equipment, it is extremely well-made, and particular care has been given to the design of the magnetic sound head to minimise wow and flutter.

The Sonoriser has a pull-through sound head mounted in front of the projector on a strong support. It relies on the film being pulled through the head by the feed sprocket on the projector. For proper sound reproduction it is, therefore, necessary to have a projector with a constant speed induction motor drive.

The Bolex M8R projector has a series-wound variable speed motor for which there is no governor but, providing that the mechanism is well warmed up beforehand, it seems to require little adjustment. The recommended projector speed is 18 frames per second and a built-in stroboscope assists in maintaining this speed. Almost any other 8 mm. projector may be used instead, providing a loop of film can be taken from the feed spool and feed sprocket.

The Sonoriser is contained in a single case, half of which is detached with the amplifier and forms a base on which to stand the projector. The remainder of the case forms the speaker baffle and has a large compartment for stowing away the sound head, microphone, and leads.

AMPLIFIER

The amplifier is quite conventional and employs an EF 86, an ECC 33, and an EL 84, to give an output of 4 watts into a 4 ohm speaker. An EC 92 triode is used as a bias oscillator, and the H.T. supply is obtained from a full-wave selenium rectifier in a bridge circuit. There is provision for mixing two separate inputs, as well as for superimposition. The controls are all on a sloping front panel and comprise: microphone input socket; function selector switch (playback/superimpose/record); Volume 1—mic on record, film on playback; Volume 2—gram on all positions; and tone control on playback, monitor volume on record.

An EM 84 type magic-eye is used as a volume indicator, and there is a red signal lamp which lights up only when actually recording, to indicate that the bias is switched on.

All other connections are made to a small panel at the rear. There are inputs for gram or tape recorder (500 K/ohms—100 mV), and a socket for a trick button for superimposing. Outputs are provided for a speaker and for feeding an external amplifier (1 volt / 20 K/ohms).

The microphone socket, which has an impedance of 200 ohms, is only live on *record* and *superimpose*, because the first stage of the amplifier is used for the magnetic stripe on *playback*. The gram and tape inputs are live on all positions, so that music can be played either with or between films carrying a sound stripe. When films without a sound stripe are being shown, a live commentary can be given by switching to *record*

The Bolex Sonoriser

and turning up the monitor volume control. For valve replacement, the amplifier can be easily slid out of its wooden case by unscrewing the four rubber feet.

MICROPHONE

An A.K.G. moving-coil microphone is supplied, type D.11, with a bass cut-switch at the rear for speech recording. There is also a button on the front of the microphone which operates the superimposing circuit.

SUPERIMPOSING

When the function switch on the control panel is set for superimposition, the amplifier is in a recording condition but with the erase head disconnected. For adding commentary to an existing recording of background music, the film is run through a second time and the trick button on the microphone pressed when it is desired to speak. This operates a relay, which gradually restores the recording bias. So the first recording fades down and does not take a sudden drop in level.

When the button is released, the recording bias slowly dies away to zero and the original recording fades back to its former level. An extension trick button can be bought as an accessory for use when superimposing sound from other sources.

The speaker is not operative as a monitor when the amplifier is switched to superimposition.

SOUND HEAD

The sound head operates with a tight loop of film, with the erase and record/play heads adjacent to the sound drum or capstan. Two spring-loaded rollers hold the film taut against the heads and between the two sprockets on the Sonoriser. These are coupled by a chain inside the flywheel housing.

The large diameter flywheel runs on ball races and handles film joins reasonably smoothly.

OPERATION

About five feet of film is required to thread up the Sonoriser and projector, and a further three feet is the minimum required to attain the correct running speed before commencing to record. It is advisable to allow slightly more footage, rather than not enough.

Start marks should be placed on the film as it leaves the sound head and just before it enters the projector gate, to ensure that the film will always be projected in synchronism.

Due to the distance between the sound head and the picture gates, the sound will be at least 136 frames behind its corresponding picture frame.

REMARKS

The Sonoriser gives quite a good reproduction of speech and music, but the long length of film between the sound head and projector feed sprocket tends to introduce unsteadiness, due to a slight film weave.

This is a rather critical judgment and the instrument does full justice to 8 mm. edge stripe; the results seem to make sound stripe a worthwhile proposition in this gauge.

SONORISER SPECIFICATION

Magnetic frequency response: 50-8,000 cycles.

Signal to noise ratio: 42 dB.

Dimensions 15 x 12½ x 10 in.

Weight: 26 lbs.

Price, including microphone: £90 (extension trick button extra).

Distributed by CINEX Ltd., Bolex House, Burleigh Gardens, Southgate, London, N.14.

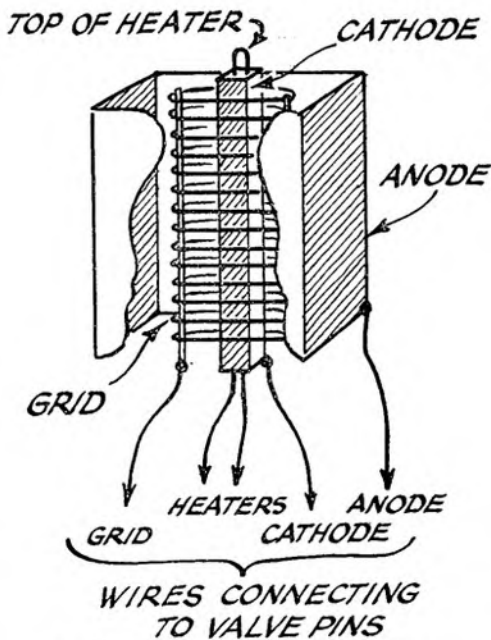


FIG. 1.—Internal construction of triode

THE diode, or two electrode valve, discussed previously has the property of allowing current to flow in one direction only through the valve. It was seen that the electrons, emitted from the hot cathode, would travel across the valve space from cathode to anode only when the anode was *positive* with respect to the cathode. This enables the valve to be very usefully employed as a rectifier in power supplies, or as a detector in radio tuner units, or in certain more specialised applications.

The diode, however, cannot amplify a signal, and the first valve to do so contained three electrodes, and was therefore known as a *triode*, a valve which is extensively used in tape recorders. The construction of a triode is very similar to that of a diode, but includes an extra electrode known as the *grid*. This is in the form of a fine wire mesh completely surrounding the cathode, so that all the electrons have to pass through the grid on the way to the anode. The grid is able to act in the manner of a gate which may be fully or partly open, or completely closed at will, thereby allowing the full electron current to flow from cathode to anode, or a reduced current, or no current at all. In the latter case the valve is said to be cut-off.

Consider the circuit of fig. 3 (a). When the cathode is heated by the filament (not shown in this diagram) electrons are emitted which pass through the spaces between the grid

wires almost unimpeded and arrive at the anode because the anode is connected to HT positive. They then continue round the circuit as shown by the arrows and arrive back at the cathode, so becoming available for emission again. Notice that in this diagram the grid is connected to the cathode so as to be at the same potential.

If we wish to alter the strength of the anode current, there are two ways in which this may be done. The first way is to increase or decrease the HT voltage, which will result in an increase or decrease in anode current respectively.

The second way is to connect a small battery (about 3 volts, say) between the grid and cathode, so that the grid is *negative* with respect to cathode. Fig. 3(b) shows this, and now it can be seen that, as the grid is

negatively charged, some of the electrons from the cathode are repelled by this and are turned back, so that fewer electrons actually arrive at the anode. The anode current has thereby been reduced.

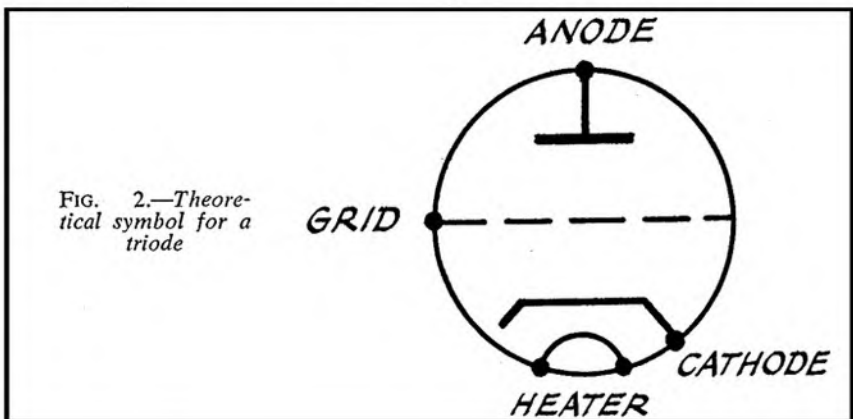
The more negative the grid is made, the harder will it become for electrons to "squeeze through," and the lower will be the anode current. If the negative voltage is sufficiently large, all the electrons will be turned back (fig. 3(c)), and so the anode current will cease to flow. The valve is now cut-off, as mentioned earlier, and this may take ten or more volts, depending upon the particular valve.

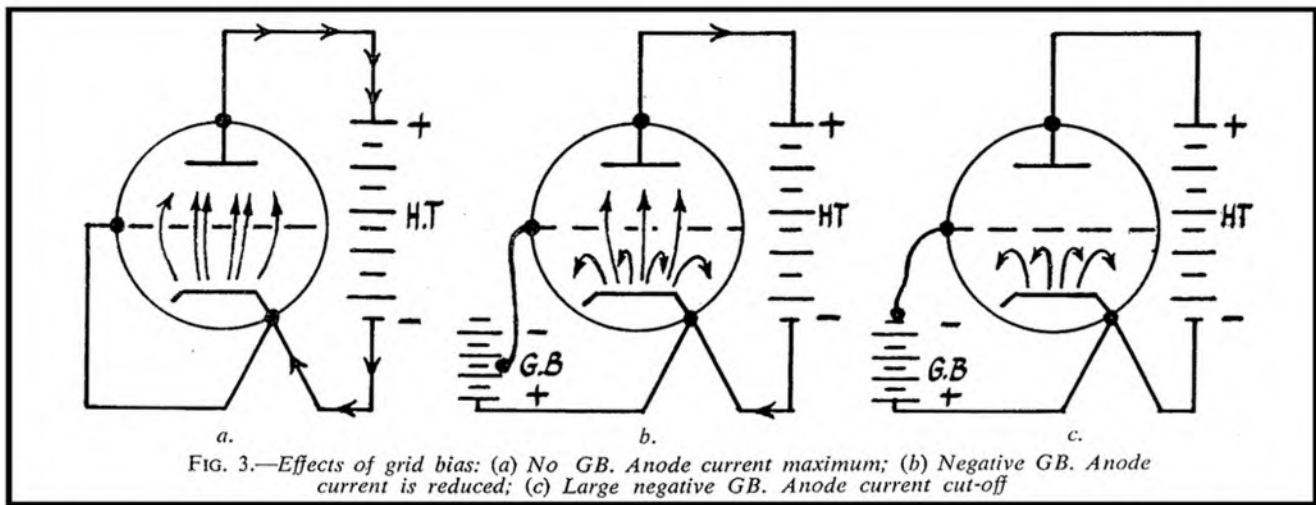
The remarkable fact is that, out of the two methods of controlling the anode current, the grid voltage is far more sensitive than the anode voltage. In practice, changing the grid voltage by only one volt may have just as

Another article in our special series explaining simply the scientific basis of recording

by our Technical Advisory Editor
CHARLES LANGTON A.M.Brit.I.R.E., A.M.Inst.E.

HOW A VALVE AMPLIFIES





much effect on the anode current as a change of anode voltage of one hundred volts! In such a case, the *amplification factor* of the valve is said to be one hundred.

The amplification factor is a theoretical figure, however, and in practice the amount of amplification or gain obtainable is always less than the stated amplification factor of the valve used.

It has been emphasised above that the voltage applied to the grid of a valve must always be negative with respect to its cathode. There is a good reason for this, because if the grid were to be made even slightly positive it would attract electrons to itself, causing distortion and possible damage.

Now, in an audio amplifier we are concerned with applying a small *alternating* voltage to the grid of a valve, and obtaining an amplified replica of alternating voltage from the anode. If we apply the signal directly between grid and cathode, the result will be distorted because, on the positive half cycle, the grid will draw current, which is undesirable. The negative

half cycles will be faithfully reproduced, however.

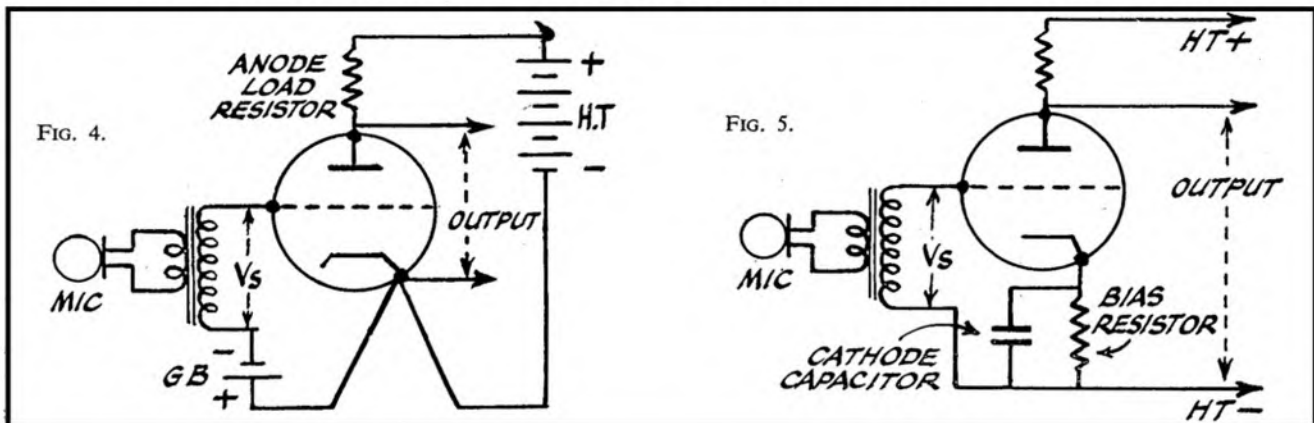
The difficulty is overcome by using a *grid-bias battery*, connected as shown in fig. 4. This should have a voltage of about three, or as recommended by the valve manufacturer. As long as the input voltage V_s does not exceed the GB voltage, the grid will always have a negative bias, and the effect of the input signal will be to make the grid go more or less negative, thus controlling the anode current faithfully. Too much GB, on the other hand, may cause the valve to cut off during the negative half cycles of the signal, resulting once again in distortion. It is evident then, that the value of GB is fairly critical.

In practice, a battery is not used to provide the grid bias, but this is obtained quite simply in various other ways. By far the most common method is to include a low value resistor in the cathode lead, as shown in fig. 5. The current which flows through this will produce a voltage drop across the resistor, making the cathode end positive with respect to chassis. As the grid circuit is returned

to chassis, however, the grid is effectively negative with respect to cathode, which satisfies the requirement. A cathode capacitor must be connected across this resistor in order to prevent fluctuations in the bias voltage.

An essential feature about any voltage amplifier is that it should have an *anode load resistor*. Without this, no amplification can be obtained. To understand the necessity for this, remember that the signal voltage V_s applied to the grid only controls the flow of anode current, causing the current to fluctuate in sympathy. If the current has to flow through a high value of resistor on the way to the HT supply, a fluctuating voltage will be developed across this resistor.

The higher the value of the resistor, within practical limits, the greater will be the resulting voltage. This means that a larger audio output will be obtained for a given audio input, or, in other words, the amplification is greater when a high anode load is used than a smaller value, subject to certain limitations. Values of anode load resistor between 10 kilohms and 100 kilohms are commonly used.



STEREO

Edited by **DOUGLAS GARDNER**

Editor of *Stereo Sound and Music Magazine*



Forward, pioneers!

IT will not be very long, I imagine, before a lot more tape recording enthusiasts are plumbing the mysteries and pleasures of stereo recording. Whispers have reached me from many quarters indicating that a good deal of thought is being given to the subject. All we need are a few pioneers to demonstrate to those who are uncertain about the size of the problem that it can be done by amateurs—and that, in fact, some recording difficulties are circumvented by the use of two microphones.

Much depends on the manufacturers, of course. There is a growing tendency to make stereo recording facilities available on tape recorders and to smooth the way for those who wish to adapt existing machines for this work. Specially designed microphones at a price the amateur can afford are playing their part. The Lustraphone VR.65 has already proved its worth and now we have news of a stereo microphone from Cosmocord which should also be comparatively inexpensive.

This is clearly a field in which clubs will make an important contribution. A stereo microphone that members can borrow and first-class stereo reproduction equipment in the clubroom (owned or borrowed) would enable a great deal to be done.

There is already a move to create a stereo recording club in this country for the exchange of stereo recordings and information between members and between this country and an amateur group in the U.S.A. A proposal for such a club comes from

Mr. F. C. Gazeley, 12, Bromley Road, Beckenham, Kent. He suggests that those interested should write to him.

Before long, of course, there must obviously be a section for stereo recordings in the British Amateur Tape Recording Contest.

Compatible recording

At least one representative of every London orchestra took part in a recording of Janacek's *Sinfonietta* made by Pye Records on July 20 at Walthamstow Town Hall: it was a very much augmented Pro Arte Orchestra including twelve trumpet players as well as 25 other wind players.

One of the interesting things about this recording was the use of a three-channel system, which Pye are beginning to use because of the advantages it has when both stereo and mono discs are to be made from the same tape. With three channels under immediate control the engineer has scope for balancing the material for monophonic use.

In the future when only stereophonic records are made this particular problem will not exist, but at this stage any system that helps to do full justice to both types is invaluable. For the sake of economy it is necessary to avoid separate sessions for mono and stereo recordings, and it would be a great pity if the necessity for considering both results should frustrate natural developments in stereo technique.

All the recording companies are paying close attention to this problem, and I think it is a healthy thing to permit the public to share, as far as possible, the knowledge about the techniques used. In stereo, far more than in mono, recording and playback techniques are inter-dependent, and it is much easier to achieve first-class reproduction when one has the relevant information concerning the recording methods.

* * *

Special attention to stereo items at the Radio Show is given in both the August and September issues of *Stereo Sound and Music Magazine*. In the August issue there is an article by James Moir on "Stereo radio—the choice before us."



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Saja Standard	45	6 5 0	3 8 4
Verdik S1	45	6 5 0	3 8 4
Elektron	47½	6 17 6	3 12 2
Wyndor Viscount	49	6 19 0	3 14 2
Spectone 161 (Ex Tape)	49	6 19 0	3 14 2
Grundig TK20	52	7 0 0	3 19 4
Dulci-Harting Deck* (with pre-amp)...	55	7 5 0	4 3 4
Elpico	55	7 5 0	4 3 4
Telefunken 75KB (with microphone)...	56	7 6 0	4 5 10
Brenell 3 Star	58	7 10 0	4 9 0
Veritone Portable.....	59	7 19 0	4 10 0
Saja Export	59	7 19 0	4 10 0
Truvox R2	62	8 2 0	4 15 0
Grundig TK25	63	8 3 0	4 16 8
Telefunken Deck*	63	8 3 0	4 16 8
Philips 8108	63	8 3 0	4 16 8
Elizabethan Essex*	65	8 5 0	5 0 0
Veritone Venus*	66	8 9 0	5 2 6
Brenell Mk. V (with microphone)	69	8 11 0	5 5 6
Stuzzi Magnette	69	8 11 0	5 5 6
Grundig TK30*	72	9 12 0	5 10 0
Telefunken 85*	75	9 15 0	5 15 0
Harting HM5*	82	10 12 0	6 5 8
Grundig TK35*	82	10 12 0	6 5 8
Sabafon Automatic*	89	13 9 0	6 13 4
Simon*	95	14 15 0	7 1 8
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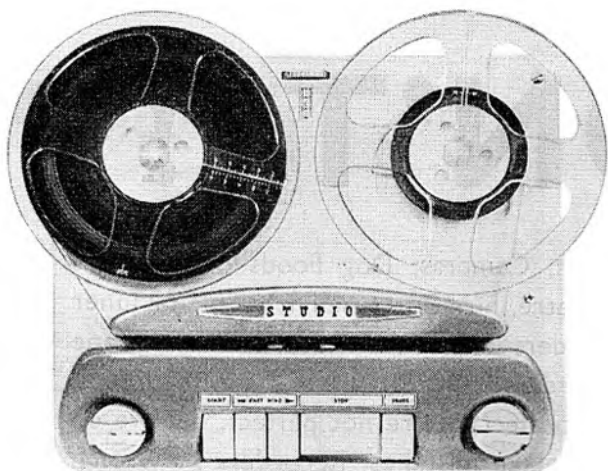
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The new Collaro "Studio" deck

The Audio Hall at this year's Radio Show at Earls Court—from August 25 to September 6—looks like providing the most exciting range of new lines for the tape recording enthusiast that has ever been gathered together at a single exhibition.

At the time of going to press—with some manufacturers still not releasing full details of their exhibits—it is clear that at least a dozen new tape recorders will be on show, and at least three entirely new tape decks. One of these may introduce a revolutionary new feature in this country.

In addition, a wide variety of new units for stereophonic recording and reproduction are being introduced.

Tape Recording and Hi-Fi Magazine and its associated publications will be on Stand 315 in the Audio Hall, on the first floor.

THE progress of tape recording has been, in large measure, determined in recent years by the availability of tape decks and probably the most significant development at this Radio Show is the introduction of new decks by some of the biggest manufacturers.

A new Collaro deck, to be known as the "Studio," will be shown, and at least two manufacturers will be introducing complete recorders incorporating it.

The B.S.R. deck, recently introduced and now being produced for mass sale, will be seen in several new recorders from different manufacturers.

It is understood, though official confirmation cannot be obtained before the Show opens, that another leading manufacturer will be introducing an exceptionally simple, compact, single-speed deck. This will be the first British deck specially designed to take tape in magazines, or cassettes. Full information and photographs of this machine, and of all other new equipment of which details are being withheld until the Show, will be published in our next issue.

The Collaro "Studio" deck, illustrated above, is a single-track, single-direction machine, with one pair of magnetic heads. Space has been provided for the inclusion of a third head for stereo playing or monitoring. The deck has three speeds— $1\frac{1}{2}$, $3\frac{1}{2}$ and $7\frac{1}{2}$ ips.

It is adaptable to two versions—one which will play $5\frac{1}{2}$ in.

TAPE STRIDES FORWARD AT THE RADIO SHOW

New decks — and some surprises

Continental spools, which are then housed wholly within the confines of the unit plate; and a second version which will play spools up to 7 in. diameter.

Other features include patented automatic self-compensating mechanical brakes, and three motors—one for each spool and one for the capstan only. The take-up motor runs at reduced power during "record" and "playback" operations. The dynamically balanced flywheel is mounted on a long, hardened, ground and lapped spindle, which runs in low frictional bearings. A digital counter is incorporated and controls—including a pause control—are of the piano key pattern. (Stand 49).

The "Studio" deck is being used in a new recorder from Repts (Stand 310) and in another new machine, to be known as the Elizabethan "Major" from E.A.P. (Stands 215 and 319). The "Major" will be a replacement for the "Essex" recorder, and will be priced at around 55 to 65 guineas.

MORE WITH B.S.R. DECK

E.A.P. are also bringing out a new recorder using the B.S.R. "Monardeck," which will be known as the "Avon" and which will be sold at 25 guineas, complete with microphone and tape. (Photograph on page 49).

The B.S.R. deck will also appear on a new machine from Lee Products Ltd. (Stand 118), to be called the TR/400. This will use an elegant contemporary-style cabinet, and the price will be 26 guineas, including microphone and tape.

Details of the B.S.R. deck have already been published in

(Continued on page 49)



The new Truvox "Melody" recorder

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Sell Cars, Washing Machines, Refrigerators, Cameras, Dog Foods or Granny's winter socks! We don't book seats for the Theatre, hire Boats, sell T.V. Sets or Inner Tubes! **WE DO** make and sell Tape Recorders and Tape Recorders and Tape Recorders! We eat, sleep and think Tape Recorders! We dream of Tape Recorders, we look for Tape Recorders! No Recorder is perfect; we're not perfect, but we do specialise in nothing but Tape Recorders. We make mistakes; Recorders go wrong, but we specialise and we will always, always, always, always do our best to give you service to your complete satisfaction!

Whatever your query, whatever your order, if it's concerned with Tape, then we are concerned with it! With the approach of September, as always, orders continue to mount higher and higher (we hope!) and to avoid disappointment, to ensure that you get exactly what you want, when you want it, don't delay your order and take a chance. If you want your Recorder for October, November or December, there is no need to forward the full deposit of 10 per cent now. A 10s. deposit only will be sufficient to ensure that your Recorder is tested, packed and ready to be despatched to you as soon as you require it and this will enable you to save towards the balance of your deposit. Don't forget, you may have your Recorder with no interest charges up to a period of 18 months, **OR** you may take advantage of our free accessories offer which enables you to put your Recorder to the fullest use as soon as you receive it. When ordering, simply state which method of purchase you prefer. We have a wonderful free accessories scheme also for those who wish to purchase outright and these terms apply to our Bromley De-Luxe and Bromley 59 Recorders also. Remember, we specialise in Tape Recorders, we make Tape Recorders! Send for our free Brochures now which give you details of our easy terms and remember that delivery to any part of the Country is absolutely free!

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**TAPE
RECORDING
MAGAZINE**
at Stand 315

(Continued from page 47)

Tape Recording Magazine (April, 1959)—it is a single-speed deck (3½ ips), taking 5½ in. spools.

Other new deck designs can be expected. They will include two new machines from **Truvox Ltd.** (Stand 332), which are illustrated in this issue. The first—the smaller model—will be known as the "Melody" recorder, measures only 11 x 9 x 5 in., and weighs 11 lb. The manufacturers say of it: "This instrument has been designed for the teenage market, to which its dainty elegance has immediate appeal."

It is listed, complete with crystal microphone and attenuated radio lead, at £36. It takes 4 in. spools and plays at 3½ ips, with an output of two watts. Frequency response is quoted at 80 to 6,000 cps.

The internal speaker is a 5 x 3 in. hi-flux model.

ANOTHER TRUVOX

The second Truvox machine, the "Harmony," is slightly larger—12 x 9 x 5½ in., weighing 13½ lb. It takes 5 in. spools and also plays at 3½ ips. Frequency response is given as 80 to 7,000 cps, and output as 2.5 watts. A 6 x 4 in. speaker is incorporated and a microphone and radio lead supplied. On this machine, the deck controls include a push-button assembly for fast speeds in both directions and for record and replay. The price is £44.

The new E.A.P. "Avon" recorder, incorporating the B.S.R. deck.



R.G.D. (Stand 25), who have entered the tape field with two machines during the last year or so, are now bringing out a third model, to be known as the Mark 104. This will be fully described in our next issue.

Veritone are introducing a stereo version of their well-known "Venus" tape recorder. This will have three heads and four separate amplifiers (two record and two playback), and will provide stereo recording, as well as reproducing facilities.

The amplifiers have 14 valves, giving output of three watts per channel undistorted. There are separate bass and treble controls on each playback amp. Two 10 x 6 in. 12,000 lines

(Continued on page 51)

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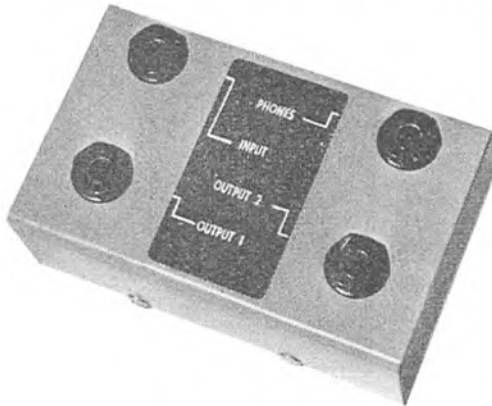
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Another NEW DEKTRON unit



The latest accessory for tape enthusiasts—THE DEKTRON MONITOR—is a fully transistorised unit of compact design.

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Pye FM.....	23	2	0	Pamphonic 3000.....	31	10	0
Pye AM/FM.....	30	9	0	Leak Stereo 20.....	30	9	0
Collaro 4TR200.....	14	11	0	Loudspeakers by—			
Garrard 4HF and P.U.				Wharfedale, C.Q., W.B., Pye,			
cartridge to choice				Goodman, etc.			

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*Grundig TK25.....	62gns.	*Telefunken 75/15.....	54gns.
*Grundig TK30.....	72gns.	Verdik.....	45gns.
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*Harting.....	82gns.	*Vortexion WVB.....	£110 3 0
Magnafon Courier.....	49gns.	Walter 101.....	29gns.
Magnafon Diplomat.....	51gns.	Walter 303 De Luxe.....	42gns.
Minivox Battery Portable	34gns.	Walter 505.....	57gns.
Perth-Saja Standard.....	45gns.	Wyndoor Dauphin.....	89gns.
Philips EL3527.....	39gns.	Wyndoor Viscount.....	49gns.
Philips 8108G.....	62gns.		

*Microphone extra

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Between St. Leonard's Church
and Streatham Station

STreatham 0466 & 0192



The new Truvox "Harmony" recorder

RADIO SHOW SURVEY

(Continued from page 49)

elliptical speakers are provided in a separate, matching carrying case.

The deck has push-button controls, takes 7 in. spools and operates at $7\frac{1}{2}$, $3\frac{3}{4}$ and $1\frac{7}{8}$ ips. Complete with speakers, microphone, two radio leads, tape and spool, the machine costs 95 guineas. (Stand 308.)

Another new tape recorder, with three speeds, is announced by **Electric Audio Reproducers Ltd.** (Stand 320), but details are not available at the time of going to press.

STEREO

Apart from the introduction of new decks, and of new models of complete recorders, the other fascination of this year's Radio Show is likely to be stereo. Last year stereo had tremendous novelty value; this year there will be solid evidence of progress.

Two units which were seen by the enthusiasts at the Audio Fair will now be open to inspection by a much wider slice of the interested public.

Simon Sound are marketing on September 1 a new stereo replay adaptor which can be attached to the side of the standard SP/4 recorder to convert it for stereo reproduction. No modifications are called for: the stereo replay pre-amplifier is a self-powered ganged unit giving full tone control for both channels. Signal balancing is achieved through the radio input gain control on the standard recorder, and the other channel is handled through the second amplifier/speaker unit, which incorporates an identical amplifier to that in the SP/4. The price of the adaptor will be 49 guineas. (Stand 326.)

Demonstrations of stereo recording, as well as replay, will be given by **Multimusic Ltd.** on the new Reflectograph Stereorecorder model 570 in a self-contained studio on Stand 62.

This machine, which costs 149 guineas, remains one of the most interesting of stereo tape recorders available, because of such unique features as the variable speed between 8 and $3\frac{1}{2}$ ips, with a neon-lit stroboscope to indicate the precise speeds of $7\frac{1}{2}$ and $3\frac{3}{4}$ ips, and the facility to "inch" tape back and forth with sound available.

A new stereo microphone will be shown by **Cosmocord Ltd.** It incorporates two pressure-differential inserts mounted mutually at 90° , each having a figure-eight polar diagram (Stand 304).

E.A.R. will be among firms showing new stereo speaker units.

Interesting new amplifiers will be shown by **Reps**—a self-contained unit for use as a second channel with a stereo-adapted recorder or as a monaural amplifier with a standard independently-mounted tape deck—and by **B.T.H.** (Stand 307).

(Continued on page 52)



In this feature every month you can check

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who gives special attention to tape

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professional standards

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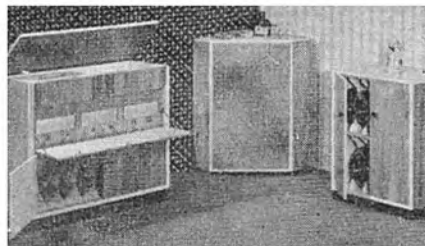
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Records and Tapes

Dealers in CQ Audio
Equipment

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by **STAMFORD**



Equipment Cabinet GP61. Size 36" wide, 33 $\frac{1}{2}$ " high, 16" deep. Control panel 34 $\frac{1}{2}$ " x 9" high. Price £28 15 or £47 dep. and 9 monthly payments of £2 18 3.
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Telephone: Westbourne 64292

HAMPSHIRE—HIGHCLIFFE-ON-SEA

J. H. WOOD

TAPE RECORDER STUDIO

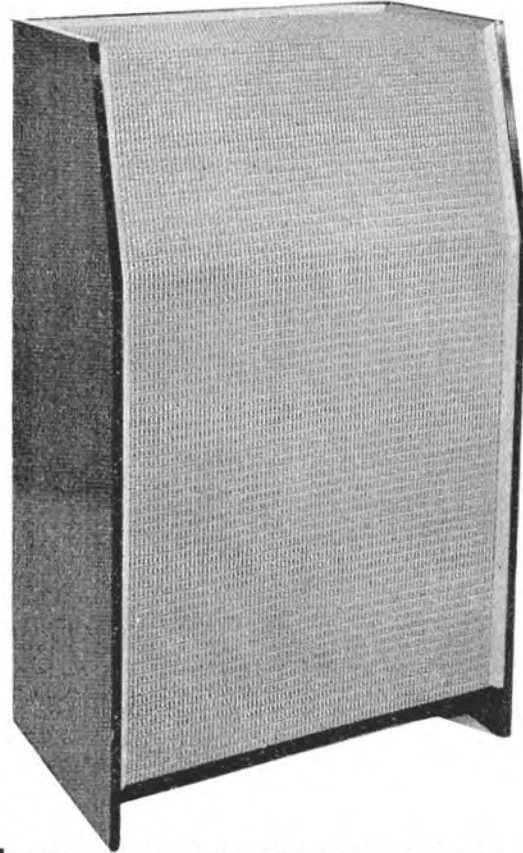
Elizabethan, Ferrograph, Gramdeck, Reflectograph, Spectone, Truvox, Walter, etc.

Authorised Walter Service Centre.

STEREOPHONIC & MONOPHONIC HIGH FIDELITY SOUND EQUIPMENT

Demonstrations of synchronised sound with home cine.

117, Ringwood Road, Highcliffe-on-Sea Telephone: 2040



The recently-introduced CQ three-way speaker system which has a quoted frequency response of 25 to 17,000 cps. It incorporates one 12 in., one 9 in. x 5 in. elliptical, and two miniature cone tweeters. Fully finished, it costs 43 guineas

RADIO SHOW SURVEY

(Continued from page 51)

Tape Recorders (Electronics) Ltd. (101) will be exhibiting two new recorders. The first of these, the "Studio" uses the new Collaro "Studio" deck with three speeds, while the "Prince" has a single speed of 3½ ips. Both models have facilities for mixing, superimposition and monitoring and an automatic locking device to prevent accidental erasure. The "Prince" accommodates spools of up to 5½ ins., and the "Studio" can use 7-inch reels. Frequency response claimed for the "Prince" is 60-8,000 cps, and for the "Studio," 60-12,000 cps ± 3dB at 7½ ips.

A number of new accessories and aids to tape recording are likely to be shown at Earls Court. For example, **Metro Sound (Stand 314)** will introduce their "Metro Tabs," a colourful new index, together with recognition labels for applying to tape.

Tape and stereo will be well to the fore on the E.M.I. stands (52, 322 and 323). New types of Emitape are promised, and professional and technical visitors will be interested in the professional E.M.I. sound recording equipment to be shown. The home constructor will find a full range of speakers of all sizes and a new complete four-speed playing deck.

Readers should understand that this survey has had to be compiled well in advance of the opening date of the Radio Show, and it cannot be exhaustive. Some of the other important firms who will be exhibiting are: Beam-Echo, Brenell, Daystrom, Decca, Dynatron, Goodmans, Lustraphone, Perth Radio, Philips Electrical, Pye and Walter Instruments.

A further review of the Show, with more details of new products, will appear in our next issue.

IN BRIEF

A NEW GELOSO tape recorder, the G.256, is about to be released in this country. It will sell at £27 16s. 6d., including tape and microphone. Fuller details will be published as soon as they are available.

Lee Products Ltd., Elpico House, Longford Street, London, N.W.1.

* * *

THE AMPLION recorder, described in our July issue, will be in general supply from the time of the Radio Show, but certain modifications have been made.

The tape head amplifier is now an ECC.83 valve, and the rectifier valve is an EZ.80.

The machine accommodates 5½ in. spools. Frequency response is quoted at 50 to 8,000 cps. The overall dimensions are 15 × 12½ × 8 in.

The price is £26 15s. 6d.

* * *

A SIMON SP/4 automatic tape recorder, Serial No. 01261, has been reported stolen from the premises of New Sound Recording Co., of 3/8, Bridstock Parade, London Road, Thornton Heath, Surrey. Any information should be passed to this dealer or to Simon Sound Service Ltd., 46/50, George Street, London, W.1.

* * *

AS PART OF their tape recorder sales drive, Walter Instruments Ltd. have appointed four more sales representatives—Mr. G. Jones, of Hull; Mr. W. Wady, of Wallasey; Mr. R. Dean, of Gateshead; and Mr. R. A. Anderson, of Edinburgh.



Grundig (Great Britain) Limited announce that their condenser microphone, the GCM 3, is now being supplied in two-tone blue to match the distinctive case of the Grundig range of tape recorders. The design is unaltered and the price remains the same at 6 guineas. Supplies of the old type are still available.



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GLASGOW C.2 Phone: DOUGLAS 2846



THE TEST TAPE

SUPPLIES of the special Test Tape being prepared by *Tape Recording and Hi-Fi Magazine* in association with Olympic Sound Studios are now available.

In the monaural section, there are checks at 3½, 7½ and 15 ips. First, there is a 10 Kc band for head alignment; then 1 Kc at peak level, to represent loudest undistorted modulation; then a section of blank tape to measure signal to noise ratio; then a 3 Kc wow test; then frequency response tests.

In the stereo section, there are first 120 cycle bands to test that the two channels have their speakers in phase; then a speech check of channel placing; then checks of real and false centre. Orders can be accepted for the time being at two guineas per tape.

E.M.I. TAPE RECORDS

Four E.M.I. "Stereosonic" tape records are announced for release on September 4th. They are Beethoven's Symphony No. 6 in F Major (The Pastoral), played by the Philharmonia Orchestra, conducted by Otto Klemperer (Columbia BTA.131); a selection from Offenbach's Gaité Parisienne played by the Philharmonia Orchestra conducted by Herbert von Karajan (Columbia BTB.307); Rimsky-Korsakov's "Scheherazade," played by the Royal Philharmonic Orchestra, conducted by Sir Thomas Beecham (H.M.V. SAT.1021) and a selection "Nights in Vienna," played by the Vienna Philharmonic Orchestra, conducted by Rudolph Kempe (H.M.V. SAT.1022).

TAPE TITTER



"—an' I 'ope to be doing business with you again sometime; I remain, yours gratefully
—Guess who?"

NEWS FROM THE CLUBS

Edited by Fred Chandler

AROUND the world link-ups have represented one of the activities prominent recently according to reports received from the clubs. The **Millom and District** club has brought a round-robin tape into circulation between South Africa, New Zealand and this country. **Rugby**, following their introduction to their French twin-town, now intend to run a regular correspondence with tape enthusiasts in Evreux. First feelers are out, and members hope to sponsor the setting-up of a society over there. A tape from down-under came from Bill Turner of Melbourne. The tape, depicting that beautiful Australian city, was received by **Warwick and Leamington** club. Members of this club also recently presented a tape/slide show sent to them by Lloyd Avern from Canada.

Coventry, already past masters of overseas contacts have been applying the personal touch by entertaining some of their friends who have visited this country. Les Skingley presented a taped interview of an Austrian visitor, and Roy Penfold and Howard Freer entertained Mr. and Mrs. Larry Charrington who are on a twelve-month tour of Great Britain, Europe and Australia. Mr. Charrington is a television newscaster in Los Angeles and a tape contact of Roy Penfold. From Coventry the American visitors moved to Worcester to call on another tape contact of theirs—Colin Shepherd. They had already met Sir Mark Dalrymple of the **Edinburgh** club.

Sir Mark, Scottish representative of the Voicependence Club of America, recently entertained members of his club with a resumé on the various world tape organisations. Most of these organisations are known to readers but there is one which has never been mentioned in this column. For the benefit of those clubs not as yet in contact with organisations abroad I would like to introduce the **Australian Tape Recordists Association**.

Formed some years ago, this society now has nearly two hundred Australian and Overseas members. The Secretary, John F. Wallen, welcomes enquiries of any nature from any part of the world, but points out that ATRA cannot undertake introductions for would-be correspondents. The Committee would make an exception where an obvious match-up is possible. Associate membership of ATRA can be obtained by sending a subscription of ten shillings. For this members receive the Society's bi-annual mailing list and a monthly newsletter which includes up-to-date information of new members. Informing me that he is English-born and therefore not unduly biased, Mr. Wallen maintains that anyone who gets an Aussie as a correspondent can be sure of a regular contact. Write to Box 970.H, Adelaide, South Australia. Non-members please enclose International Reply Coupons for postage.

Ken Thompson, Secretary of the Millom club, is to put into operation a scheme devised for a general discussion circuit tape between six clubs, similar to the one in use for overseas correspondence. The tape would be divided into three sections, each section separated by a strip of marker tape, the first section being a little longer than the others. The tape now provides six sections, three each track, with the first and last a little longer than the remainder. Each member club will provide an initial fee to cover tape purchase, and select two members to handle the scheme on their behalf. On receipt of the tape they will dub the contents on to another tape for distribution around the club members, add their contribution and then pass the tape to the next club. If more than six clubs are interested, provision is made for each circuit group to be linked. Club six on circuit A would also be a member of circuit B. These

Club Personalities No. 2

LEE LACY

The Voicependence Club
of America



LEE LACY purchased his first recorder with the sole idea of enhancing his act as a professional magician. But, with theatres rapidly closing all around him, he later settled down in the printing industry as a compositor. He did, however, combine magic and recording on several occasions (remember his contest entry—"Recorder at a magic convention"?).

Lee is now the English special deputy of the Voicependence Club of America and his time is taken up ironing out the occasional problems, listening to the criticisms and suggestions of members, and acting on their behalf for the world's largest tape organisation.

In March 1958 Lee started a scheme to bring the members of "Voicependence" closer together through "Voices in the Post," a bi-monthly sound magazine.

Lee occasionally finds time to indulge in other pursuits, such as the theatre, concert-going, record-listening and photography. He also answers an average of 25 tapes a month. He is a bachelor, aged 25, and, having a bachelor flat to care for, time is his main enemy.

He prefers to use his Philips machines for general tape work, but sometimes uses a Ferragraph or a Wyndson (Regent).

linking members, using the longer tape sections, would give their own news and views, plus any outstanding features from the linked circuit. Any interested clubs are invited to contact Mr. Thompson at "Freya," Haverigg, Millom, Cumberland.

Another sound idea—no pun intended—has been put into operation by Michael L. Byrd of California. He is collecting recordings of National Anthems. If you are interested in helping Michael by contributing to his collection, write to him (enclosing a reply coupon) at 1107, Myrtle Avenue, Inglewood, California, U.S.A. Dubbings may be available, too.

Within our own shores we find the Coventry Secretary collecting sounds familiar to us all. Roy Penfold is endeavouring to obtain a library of recordings of the dialects in the British Isles. If anyone willing to make a recording of their local dialect writes to him, he will provide the tape. His address is 48, Holbrook Lane, Coventry, Warwickshire.

Food for thought for the historians among us is presented by a project embarked upon by the **Crawley and West Sussex** club. Working in conjunction with the Council of Social Service, they are to create a sound picture of Crawley from 1900 to the present day with the aid of recorded interviews of the town's oldest inhabitants. Members are finding this project very rewarding and it has aroused much interest.

Unfortunately lack of space again leads to the exclusion of details of new clubs but where possible we have mentioned dates of the next meeting after the Secretary's addresses.

Eric W. Wallis, 23, Kipling Drive, Marton, **Blackpool**. C. Hesketh, 7, London Road, **Grantham**, Lincolnshire (Sept. 15). G. H. Leighton, 21, Langton Drive, Nunsthorpe, **Grimby**, Lincolnshire (every Tuesday). G. R. Parks, 175, Newsome Road South, Newsome, **Huddersfield** (Oct. 8). Malcolm Wilding, 31, Darwin Road, **Ipswich**, Suffolk (Sept. 12). Norman Littlewood, 129, Standhill Road, **Nottingham** (Sept. 3). J. M. Ashby, 3, Hill Cottages, Station Road, Plympton, **Plymouth**, Devon. A. R. Dyer, 59, Tannfield Road, **Sydenham**, London, S.E.26. George Sanderson, 42, Plumpton Road, Westgate, **Wakefield**, Yorkshire.

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.

JOHN HASSELL RECORDINGS. Tape/Disc. All Speeds. C.C.I.R. Studio, 21, Nassau Road, London, S.W.13. Riverside 7150.

TAPE RECORDERS. players, radios, etc. (modern), wanted for cash or exchange. Callers or particulars. Cooks, 159 and 187, Praed Street, W.2 (opp. Paddington Station). PAD 6464.

TAPE RECORDERS. Large selection of used models, most as new. Three months guarantee. Part exchanges with other machines, cameras, binoculars, etc. Ferrograph Tape, 7 in. spool, 1,200 ft. 25s. Cooks Miscellaneous Store, 159 and 187, Praed Street, W.2 (opp. Paddington Station). PAD 6464 or 5931.

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Truvox R2. Eight months old. As new. Cost £61. Bargain £45. Box 308.

THE TAPE KING DOES IT AGAIN! Tremendous purchase of Recording Tape—all sizes available at the lowest ever prices such as a 50s. tape for 32s. 6d. S.A.E. for complete list. E. C. D. Kingsley & Co., "Always first for tape," 132, Tottenham Court Road, London, W.1. EUSTon 6500.

Our Stratford Branch stocks almost every make of tape recorder manufactured. All recorders available on our unique No-Interest Terms. Highest part-exchange allowances obtainable anywhere. Examples: Grundig TK9/12 £25-£35. TK5/20 £23-32. TK8/3D £33-£43. Telefunken KL75 £28-33. Philips AG8108 £32-£43. AG8109 £19-£23. Write for lists. Essex Tape Recorder & Hi-Fi Centres, 2, Maryland Station, Stratford, E.15. Maryland 5879.

Have you anything you wish to sell or buy?

Remember classified advertising in the columns of TAPE RECORDING MAGAZINE brings results.

Unused Grundig TK.35 with guarantee not filled in. What offers, would exchange for new TK.830/3D, price adjustment. Carlton, 187a, High Street, Slough.

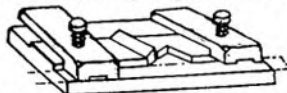
EXCHANGE. For a Grundig Tape Recorder—A Mercury Motor Scooter, under 1,000 miles, excellent condition. Tanner, The Manor House, Shamley Green, Surrey. Tel.: Bramley 3038.

GRUNDIG Cub portable for hire: £3 3s. per week. Box 309.

TRUVOX R2. cost 59 gns. One Month Old. Indistinguishable from new, £46. Hunt, 1, Broomstickhall Road, Waltham Abbey, Essex.

J. & B. Recordings, tape/disc, all speeds. 14, Willows Avenue, Morden, Surrey. Mit 8155.

Sprung pivoted clamps of EASYSPLICE make tape splicing simple and accurate



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TAPE RECORDING AND HI-FI
MAGAZINE ADVICE BUREAU
SEPTEMBER, 1959

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by

F. C. JUDD

A.M.Inst.E.

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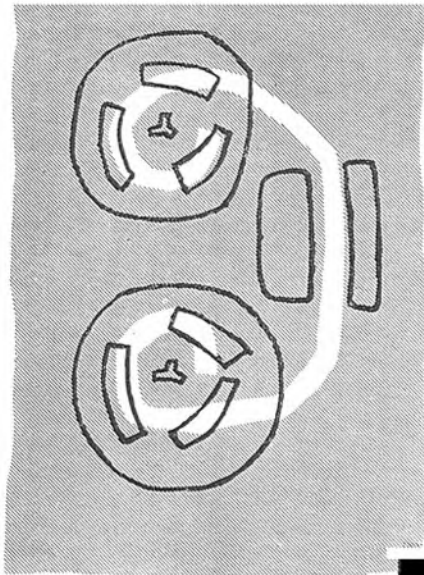
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by

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Metro-Sound proudly present KLENZATAPE, a new and scientific device designed to clean these inaccessible surfaces as easily as playing 12 feet of normal tape.

Two spools, cleaning tape and fluid are supplied, complete with a polythene storage wallet, to give you the quickest, easiest and safest cleaning method. **Price 12s. 6d.**

Please write for leaflet giving full details.

World Patents pending

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Do drop in at **THE RADIO SHOW** See us at **STAND 314**
AUG. 26-SEPT. 5 Audio Hall, (First Floor)

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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..... ADDRESS</p> <p>September, 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..... ADDRESS</p> <p>September, 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..... ADDRESS</p> <p>September, 1959</p>
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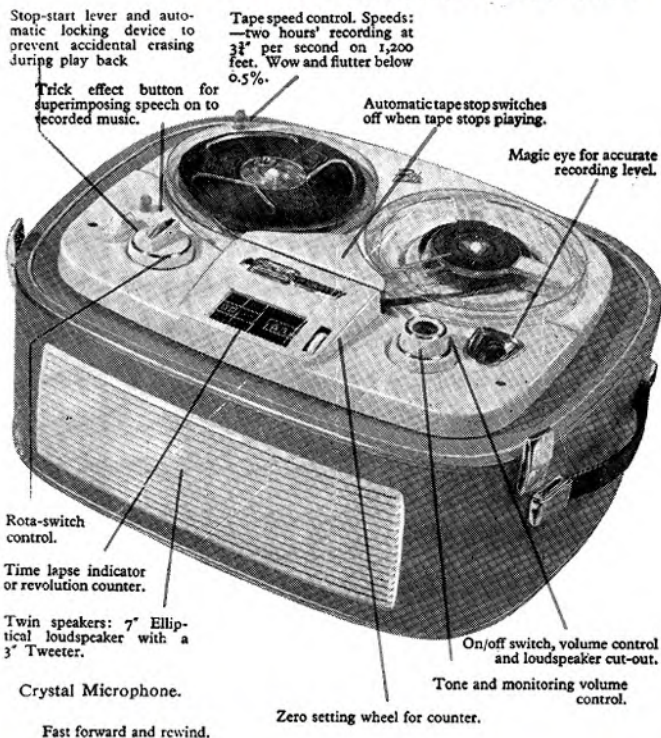
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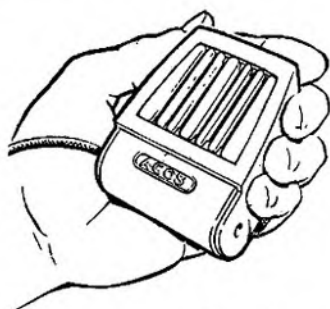
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