

# amateur tape **RECORDING**

Vol. 1. No. 2

SEPTEMBER, 1959

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# ***The British Recording Club***

123 SUTTON COMMON ROAD, SUTTON, SURREY

## **AMATEUR TAPE RECORDING MAGAZINE**

### **FIRST ISSUE 25,000**

*Yes 25,000! That is the number of A.T.R. Magazines printed and distributed. Quite an achievement considering the circumstances in which it was produced.*

*We are indeed grateful for the many hundreds of congratulatory letters which we have received and also for the many ideas, suggestions and constructive criticisms that are being sent to us by enthusiasts throughout the world.*

*The support which we are getting from readers, dealers and manufacturers alike is beyond our wildest expectations and indicates the need for a publication such as ours, with a solid Club foundation behind it.*

*We hope that it will not be many months before we open Club premises in London where enthusiasts can meet and enjoy their hobby to the full. Plans are now quite advanced and will be fully discussed in future editions of the magazine.*

### **THE AIMS OF THE BRITISH RECORDING CLUB**

- (1) To act as a central organisation for enthusiasts wishing to "Tape-spond" throughout the world.
- (2) To assist in every way possible the advancement and enjoyment of Tape Recording and its many facets.
- (3) To act as a liaison link between Manufacturers, Dealers and enthusiasts.
- (4) To advise and answer members' queries.
- (5) To keep readers abreast of the times with new ideas and equipment in the fields of Tape Recording, Hi-Fi, Stereo and Recordings.

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**The "Amateur Tape Recording" magazine is published monthly for the AMATEUR and is supplied free to members of the British Recording Club.**

It contains :—

- (1) Club News.
- (2) A complete list of all new releases of gramophone records and pre-recorded tapes in an easy to read supplement.
- (3) "INTER-TAPE" for enthusiasts wishing to "Tape-spond" throughout the world.
- (4) Articles of general interest to the AMATEUR.
- (5) Members' letters.
- (6) Questions and answers.
- (7) Reviews of equipment.

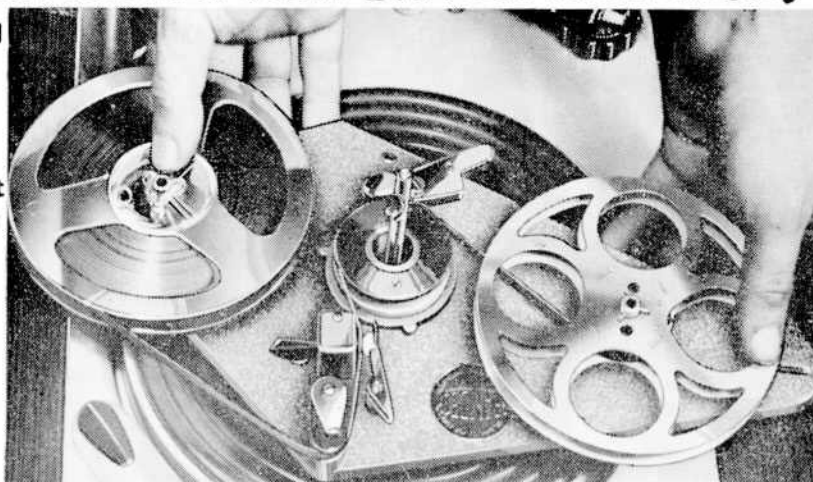
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To The Secretary, The British Recording Club,  
 123 Sutton Common Road, Sutton, Surrey

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I am desirous of becoming a member of The British Recording Club. I now enclose my membership fee of 1 guinea (21/-) which includes my annual subscription to the "Amateur Tape Recording" Magazine.

NAME..... DATE.....

ADDRESS.....

Make of Tape Recorder used..... Size spool.....

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Interests ..... Club Number .....

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At what speed ..... Occupation .....

With what part of the world do you wish to "Tape-spond" ? .....

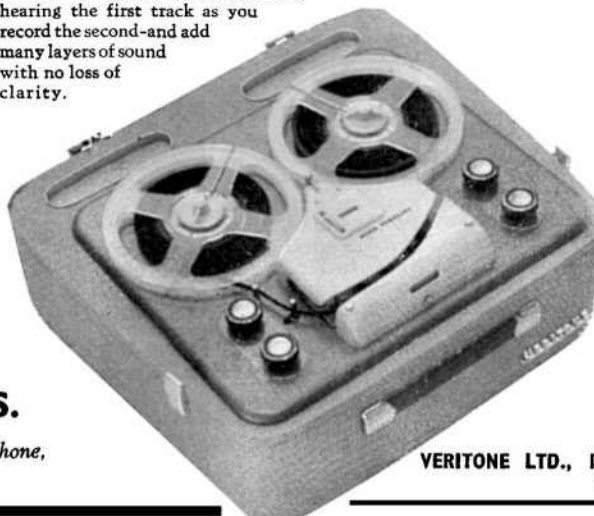




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... FOLLOWING THE FOOTPRINTS OF GREAT INVENTORS ...

# All the Way to Hi-Fi Recording

## HISTORICAL REVIEW OF SOUND REGISTRATION

By C. G. NIJSEN

*It is now more than three-quarters of a century ago that Thomas Alva Edison astonished the world by recording the human voice on a cylinder of wax by mechanical means. To hear that inventor's squeaking, tin-like phonograph today, one can hardly imagine how people could then have become so enthusiastic about such a machine, and yet in those times it must have been something extraordinary to see an inanimate thing imitate the human ear and the human voice.*

It would not be disparaging Edison's genius when we say that his recording and reproduction of sound waves was not exactly true to nature. However, his idea formed the basis for the modern and almost perfect technique of phonographic recording, just as the "picture wheel" invented by the Belgian physicist Plateau led to the present-day development of cinematography. As is the case with most inventions that have proved to be a great success, the principle was extremely simple, being based on the discovery that when we speak our voice sets up waves which travel through the air and we are able to hear these sounds because of the vibrations set up in the drum of the ear, which transmit impulses to the brain through the auditory nerve.

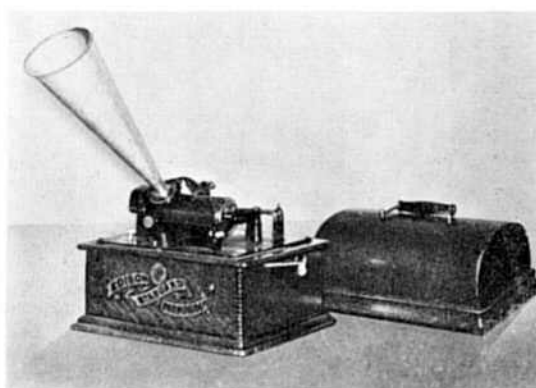
Really Edison was more or less guilty of plagiarism, if we may be permitted to use that word for his having taken advantage of the fact that the wonderful structure of the human body is not patentable, for in point of fact he only imitated the ear drum. He used a thin plate of metal, to which a small pin was attached, which when resting perpendicularly on a rotating cylinder of wax cut a helical groove in it. Words spoken a short distance away from this plate (the diaphragm) caused it to vibrate and the effects of these vibrations produced on the wax cylinder were subsequently studied. This was the first mechanical demonstration of an acoustic vibration. Further on we shall come across the same principle, only developed to an extremely fine state of perfection.

### The gramophone

About the turn of the century Edison's invention was greatly improved by Berliner. Whereas the sound track, cut by Edison's machine, was all hills and dales Berliner discovered that the sound could be reproduced stronger by giving the needle a lateral movement, instead of an up-and-down motion. The "lateral script" was obtained by employing a small arm for connecting the needle to the diaphragm, held perpendicularly over a disc of wax.

Subsequently (in 1888) an invention of the Italian Bettini made it possible for recordings to be multiplied by means of a matrix, the discs being moulded at that time from ebonite; later on shellac was used, but nowadays more and more use is being made of the unbreakable and more durable plastic material. The inventions of Berliner and Bettini opened the way to a brisk trade in "preserved sound." Several gramophone record companies rose out of the ground and, judging from the vast numbers of mechanically produced records still found today, with no little success.

But it was realised that this method was far from being perfect, and it meant a great advance when the

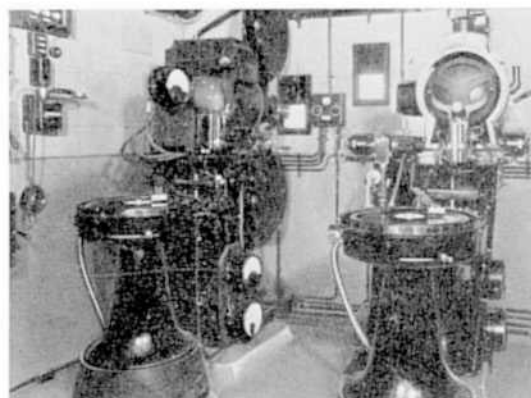


*Edison's phonograph, which once amazed the world*

radio valve was invented and it thus became possible to amplify sound. The sound waves were then picked up by a microphone converting them into electrical pulses which, after amplification, via electro-magnetic means excited an engraving system. For reproduction of the recording the reverse process was followed, the record being "scanned" by an electro-magnetic pick-up sending a succession of pulses to the amplifier, these amplified "signals" then being carried to an electro-magnetic loudspeaker, in which a specially shaped paper cone set up acoustic vibrations in the air, so that we could hear the sound. This was a most remarkable step towards achieving fidelity in the recording and reproduction of sound, for the frequency range had thereby been greatly extended.

### Photographic recording

Meanwhile investigations had been started in a field other than that of the gramophone, for with the



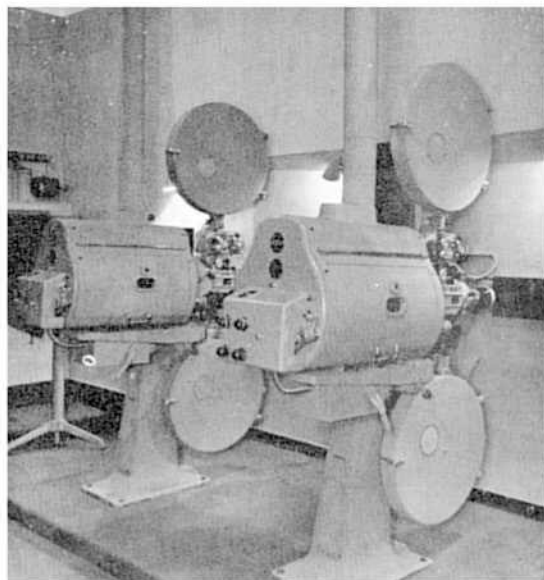
*A projection room in the days of "Sonny Boy": gramophone records were used for sound reproduction ...*

advent of the sound film (1928) the system hitherto employed was found to be not ideal for all applications. For a number of years Edison and many other inventors had been occupied with the question how to make the gramophone suitable for sound reproducing apparatus in combination with the "cinematograph" reproducing moving pictures. At first all efforts failed in face of the problem of synchronization, i.e., the exact timing of the sound with the picture. Even in 1926, when Warner Brothers produced their first sound film of normal length ("Don Juan") the sound was reproduced from gramophone records of large diameter played on special discs, rotated at a speed of  $33\frac{1}{2}$  r.p.m. and coupled to the transmission mechanism of the picture projector. One can well imagine the complications involved by such a system. The large gramophone records, which had to be transported together with the film, were highly fragile, so that it might well happen that while the film was being shown in a cinema there would be a break of about 20 minutes in the sound, owing to one of the records having been broken in transit. Further, the pick-up had always to be set in exactly the right place, as otherwise there might be all sorts of comical effects, such as a film kiss on the screen being accompanied by the sound of a smack on the face, with which the heroine rewards the villain's audacity. Moreover there was the possibility of the film itself breaking, and when the two ends were joined together again it was often found that the sound was then no longer synchronized with it. It was, therefore, a great improvement when in 1928 Fox Movietone produced a film with the sound track incorporated in it. Attempts had been made before to achieve this with the mechanical recording system, but all had failed. Now it had been done by photographic means, the sound track running beside the picture elements being again scanned by an optical system. Although manufacturers of sound cameras each applied their own patented system, the principle was much about the same. It is difficult to explain this principle in a few words without representing some details in a very simplified form.

Roughly, sound recording by the photographic method is done in the following way. The waves picked up by one or more microphones are converted into electrical pulses which, after amplification, are conveyed to an oscillograph. Such an instrument may be described as consisting of a metallic mirror, placed in a magnetic field, the strength of which is governed by a small coil, through which the pulses mentioned are conducted. The variations in the strength of the magnetic field cause the mirror to oscillate in rhythm with the sound waves picked up by the microphones. A beam of light from an exciting lamp is thrown on to the mirror through a triangular aperture in a mask, thus forming a triangular spot of light, which owing to the oscillations of the mirror is reflected at a certain angle. The reflected beam of light passes through another mask having an aperture in the shape of a narrow slit, then striking upon the sensitized layer of the film. Thus a sound track of varying width (maximum 2 mm.) is formed, and after the negative film has been developed it appears beside the pictures in the copy.

In the scanning of the sound track while the film is being shown in the cinema, a beam of light is thrown on to it from an exciting lamp through a slotted mask, while behind the track is a photo-electric cell, which converts the photo impulses (these varying with the varying width of the track) into corresponding electrical pulses. An amplifier and loudspeakers then complete the reproduction of the sound.

But this is only a very simplified representation of what takes place. In fact the sound camera contains



*Modern projection room with Philips projectors, which can reproduce both photographic and magnetic sound tracks.*

various systems of lenses for focusing the light, and not all systems produce a track of varying width. The system described here is called the bilateral system, the shape of the track being that of a double sawtooth, while there is also a unilateral system, with one side of the track bounded by a sawtooth; finally there is the variable density system, which appears to consist of strips across the width of the track which vary more or less in transparency.

#### **The Philips-Miller system**

The photographic recording system, with which sound tracks of very good quality were produced, had found to answer quite well in film studios, but for other professional purposes, such as in radio broadcasting studios, it was not so suitable on account of the high cost of 35-mm. film material and too cumbersome photographic processing. Neither was the gramophone record ideal for every purpose, being then still rather inferior in quality and limited to a short playing time.

An American by the name of Miller therefore devised a system for recording sound mechanically on a long reel of film. Philips worked out according to his method a combined recording and reproducing apparatus, which was placed on the market in 1935 and before the war had become part of the normal equipment of many broadcasting studios in Europe. The principle of recording was as follows:—

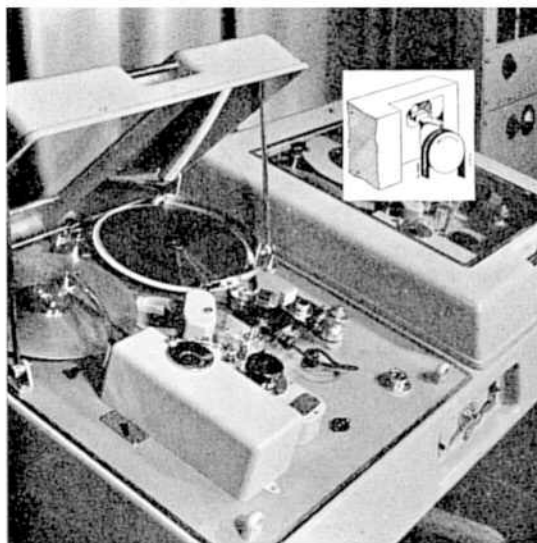
A reel of film 7 mm. wide passes at a constant speed in front of what is known as a sound writer, which consists of a wedge-shaped cutter (apex angle  $174^\circ$ ), making a vertical movement with respect to the film according to the strength of the electrical impulses. The film is made up from a base (or carrier) of celluloid and on top of that a transparent layer of gelatine with a deep-black covering layer. Where the cutter touches the film, it cuts away part of the black covering layer, leaving a transparent track. As the electrical impulses vary in intensity, so the cutter penetrates



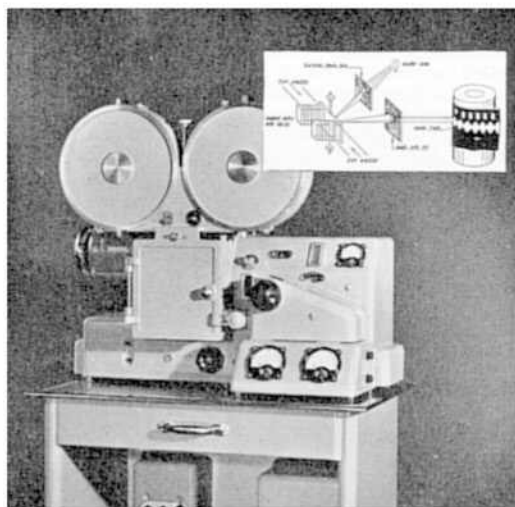
more or less deeply into the film (max. 1 micron), and owing to the wedge-like shape of the cutter a transparent zig-zag track of varying width is produced. The film is scanned on the same machine at a distance of a few centimetres from the recording head by means of a photo-electric cell and an exciter lamp. Obviously this minimum difference in time between the recording and the reproduction is a great advantage, since what is being recorded can be heard almost at the same moment through a monitoring loudspeaker, thereby making it possible to check and regulate the volume and timbre.

The sound tracks recorded by the Philips-Miller system therefore required no intermediate processing, and they had an indefinite lifetime. This was particularly of great importance for radio studios, where a large "library" of these recordings could be formed, which did not suffer at all in quality from frequent use. The film was not perforated but ran over smooth rollers in the machine. A reel was sufficient for a recording of more than a quarter of an hour, after which, by just a turn of the hand, one could switch over to the other part of the machine, which was made in two identical parts.

The Philips-Miller system afforded the Philips laboratories an excellent opportunity for experimenting with what is known as *stereophony*. In several countries one had long been trying to arrive at a three-dimensional recording and reproduction of sound. The stereophonic system devised by Dr. K. deBoer of the Philips laboratories (1938) could quite well be adapted to the Philips-Miller method of sound recording. The sound impressions from two microphones set up in a "dummy head" were conveyed via amplifiers to two separate recording heads of the Philips-Miller apparatus, which thus traced two sound tracks in the film. In reproduction the two tracks were also scanned separately, amplified and projected into the hall via two loudspeakers. In 1946 the Netherlands Radio Union, in co-operation with Philips, broadcast a stereophonic recording of an orchestral performance by using two different wavelengths, and the listeners had to have two receiving sets in order to get the stereophonic effect in the room.



*Philips-Miller system of sound recording (mechanic system).*



*Sound recording equipment for films (photographic system).*

#### **Magnetic tape**

The fact that the Philips-Miller system necessitated the acquisition of a rather expensive apparatus constituted an insurmountable difficulty for its application on a large scale other than in radio studios. Although in course of time the quality of gramophone records came to be greatly improved and for a large part they were thus able to meet sound-recording requirements, even for professional purposes (after World War II there appeared the long-playing record, with a speed of 45 or 33½ r.p.m. instead of 78 r.p.m., and the micro-groove record likewise giving a longer playing time), there was still a hiatus in sound recording, extending from midway in the professional field (for applications where the Philips-Miller apparatus was not economically justified) via the semi-professional to the amateur field, where sometimes demands were made which could not be satisfactorily met by the use of the phonographic system. A limited field of application—the recording of business dictations in offices—was covered by several kinds of dictation machines and the wire recorder, which latter converts the sound into magnetic impulses and records these on a long steel wire; for speech the quality was good enough but this wire-recording system was quite unsuitable for faithfully recording and reproducing music.

A Danish invention by Poulsen, further developed by a German of the name of Pfleumer, led to the production of an apparatus called the magnetophone, which after the war immediately came into favour in the U.S.A. and some other countries.

By this system the sound had to be recorded magnetically on a narrow tape of plastic material containing microscopically small particles of iron oxide, the principle being based on the varying state of magnetization of those particles. The "tape recorder" then consisted of a demagnetizing head (making the tape magnetically neutral), a magnetizing head (giving the tape magnetic variations corresponding to the original sound) and a playback head, which scanned the tape and via an amplifier and a loudspeaker transformed the small magnetic charges into sound again. In the smaller types of tape recorders the magnetizing head and the playback head were soon combined into one head performing both functions of recording and reproducing.



This system presented an enormous number of possibilities, the most revolutionary feature being the fact that the tape could not only be played back an unlimited number of times, but also could be used for new recordings, for when the apparatus was switched for recording, the demagnetizing head ("eraser") came into operation and made the tape magnetically neutral; the recording head was only a few centimetres away and remagnetized the tape for the new recording. When the apparatus was set in the play-back position the demagnetizer came out of action and the tape retained its state of magnetization, whilst the quality of the recording did not suffer through storage.

Obviously these properties made the system very economical to work with, so that the tape recorder had thereby also become an ideal apparatus for semi-professional purposes and also for the amateur. Undesired passages in recordings could be cut out for editing and the tape respliced, while parts of programmes could be joined together in any desired order to make one continuous tape. Tape recorders were soon manufactured for different speeds, and some big reels contained enough tape for a programme of several hours! Philips, among other firms, soon were marketing apparatus for all purposes, from the largest type for permanent installation in radio studios to the smallest portable types for reporters, musicians, teachers and medical practitioners. With these instruments musical programmes could be recorded and reproduced in hotels and factories, professors and lecturers could hear and study their prepared speeches in advance, in the advertising world they were being used for recording commentaries and explanations for demonstrations, while the film amateur could now easily produce his own sound track. Some thousands of uses were found for tape recorders within the space of a few years.

Especially for the man who can hardly be fitted into any category, the "amateur," the man who wants to direct and produce his own radiophonic presentations on tape, a new and interesting field of activity opened up. He now had a fine chance to experiment to his heart's content. He could hear "himself," he could record the voices of his children, from the first tiny wail to the first "cheeky remark. . . ." Sound hobbyism, in the form of international tape correspondence, got a real break.

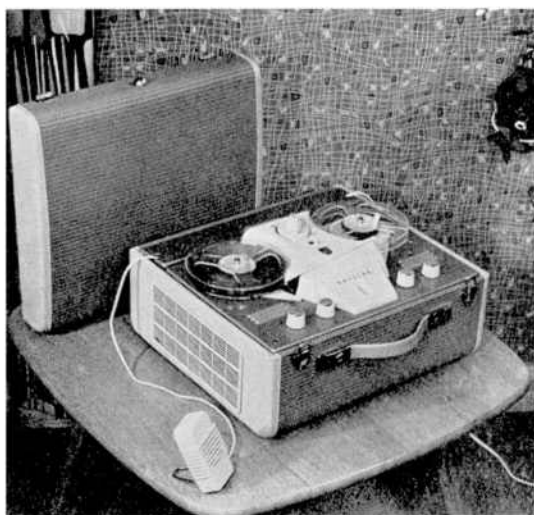
#### Magnetic sound in other fields

In the beginning, quite naturally, it was thought that tape recorders would completely do away with gramophone records, but it has turned out otherwise. Especially since the invention of the long-playing records, the gramophone continues to be a very attractive instrument for the home. There is a great repertory available of any kind of music from any country, the programme is soon chosen and one's choice, when playing records, can be changed in a moment. Undoubtedly, these are advantages of great importance. In film production and radio broadcasting, however, tape recording equipment has easily proved its superiority as compared with photographic and other sound recording systems.

In motion picture studios one or more sound tracks are now recorded magnetically and in many cases, as with CinemaScope, Todd-AO and other new film systems, the film print supplied to the cinemas has magnetic sound tracks which have to be reproduced by a magnetic sound scanning head on the projector. "Stereophonic" sound reproduction, in which Philips' laboratories pioneered before the war, is now also used in motion pictures. It is realised by using three or more sound tracks for recording and reproduction

plus an additional track for special effects ("surround loudspeakers" in the cinema) and it has become a great success. Thanks to magnetic recording, the quality of sound reproduction in cinemas has been considerably improved and complicated processing is no longer necessary.

Magnetic tape plays a very important part in today's radio broadcasting. The greater part of the programmes is now made in advance and recorded on tape. Even television pictures can now be recorded on tape (Video Recording) and in the near future it will be possible that complete television programmes can be indefinitely stored and repeated at will. The best process for this medium will certainly have a great future, especially when it becomes adapted for use in the living-room and will be smaller and simpler. Multi-channel recording of airfield communications and other data, and equipment for multi-language explanation with exhibition stunts, etc., have also become reality.



*Small, modern one-speed recorder for the family-man*

As regards the small portable tape recorders the last few years have brought substantial improvements like the twin-track system; lower speeds with the same or even better quality (and longer playing time per reel); easier tape-threading; better, thinner tape material and long-playing tapes; the stereophonic system; and others.

At this moment new developments of great importance are just around the corner. Easier operation and greater tape economy seem to be the main objects the manufacturers have in mind, but whatever future developments there may be, there is little doubt that the magnetic system will advance further and further towards perfection in recording tomorrow's sound.

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A number of localised tape clubs have requested permission to reprint the questionnaire which appeared on page 11 of the August issue of A.T.R.

We are delighted that interest has been stimulated in this direction and we, of course, have no objection. We would, in fact, be extremely interested to know of the results.



# The Hampstead Fair

tape-viewed by  
**JAN PHILLIPS**

★

Every August Bank Holiday Hampstead is the home of a large fair. On this occasion we sent Jan Phillips along to interview stallholders.



Jan was possibly having her fortune told (modern version with tape recorder). Harriet Lee is generally known as the grand'ma of all gipsies for she has been connected with fairs all her life. She is now 70 years of age and is the mother of 13 children and the grandmother of 19.



Mr. Brien is an Irishman who operates one of the roundabouts. He also assists in the collection of fares.



There are a number of shooting ranges one of which is operated by Mrs. Bray.



The "Ghost House" was fascinating. Jan tried to get a personal interview with a prominent member of the establishment, unfortunately all he could say was Ugh—Ugh—Ugh

Page Nine

# TAPE TALK the monthly summary of queries by post

Dear Sir,



CPL. J. CURRIE, R.A.F., Khormaksar (defending the outposts of the Empire), writes to say he has the following query:—

"I use a Pye Mozart amp. and a Garrard 301 turntable, the pick-up is also a Garrard make (T.P.A. 10). When I have them all switched on and the selector of the amp. on lp there is quite an excess of hum, yet when the selector is on radio, with the radio on, the amp. at the same volume setting there is not the faintest trace of hum. I have been told that all the connecting leads are in good order. Not being a Gen man could you please give some advice on how to stop the hum."

**ANSWER.**—It would appear from this Club member's query that the hum trouble which he is experiencing is being picked up by the magnetic head of the record player due to incorrect earthing. A twin screen and lead should be taken from the pick-up head and connected into the amplifier. The screen of the twin lead should be connected to the earthy side of the input to the amplifier and the turntable should have a separate earth say from some convenient point on the motor, and this earth lead taken direct to the main earthing point on the entire equipment. If this procedure is carried out in detail the hum will be cured.

MRS. G. H. SAMUEL, Totnes, South Devon, writes to ask us if:—

"There is a stereo tape deck on the market which I could use with Capitol's Record Reproducer (Model 101). I would also require to use the deck with my Grundig Tape Recorder for editing monaural tapes (speeds of  $7\frac{1}{2}$  and  $3\frac{1}{2}$  would be desirable).

"I would also like to take this opportunity of congratulating you on the formation of The British Tape Recording Club."

**ANSWER.**—There is an excellent stereo tape reproducer on the market and this is manufactured by Multi Music, Ltd. The equipment is retailed at approximately £150.

It may be necessary to slightly modify the tape recorder to use it in conjunction with Capitol's Record Reproducer. The tape recorder is suitable both for monaural and stereo, and the deck is so arranged that any speed between  $3\frac{1}{2}$  i.p.s. and 8 i.p.s. can be obtained.

R. GUNN, of Dagenham, contemplating adding a portable machine to his equipment, explains:—

"The chief reason I have written for your advice is, do I have to watch the frequency range of both recorders to be able to get a good reproduction when a tape is transferred from one recorder to the other? Hope you can help me in this matter.

**ANSWER.**—In order to get good results from a portable recorder the only thing to watch is—

- (a) that the recording and reproducing speeds sensibly coincide; obviously it does not matter if they vary slightly from each other, and

- (b) that the portable recorder, and there is one I know on the market and this is a wire recorder which is made and marketed by E.M.I. and is known as the Minifon, is reasonably free from wow flutter and frequency and amplitude distortion. Actually there are very few equipments in the world in a portable form which give satisfactory results.

A CORRESPONDENT, of Sanderstead, Surrey, in writing to us says that his recording efforts are marred in the following way, but fails to tell us the model he owns:—

"I would be indebted to you if you could tell me a way in which to subdue the loud hum I get from my recorder motors, particularly when using the mike. I have sent the recorder to the manufacturer twice, asking them to do something about it, but with no apparent effect, apart from an empty pocket!

"I have tried extending the mike lead another three yards; that's having the recorder in an adjoining room away from the mike. This cuts out the hum entering the recording, but I lose a lot of volume on the playback.

"I have now thought of amplifying the mike lead through the gram pick-up of my radio, and then feeding this into my recorder, but this tends to be inconvenient outside my own home.

"Rather than buy a mixing unit complete with amplifier, which I think may counteract this, I would trade in my own recorder for another one which does not hum all the time.

**ANSWER.**—Since you do not give us the name of the recorder, it is relatively hard to identify the hum source, and could be a number of factors. It could be caused by inadequate smoothing, incorrect earthing or even using the microphone too far away from the speaker's voice.

But we suspect that the hum "bug" to which you refer is local room noise being picked up by the microphone, due to the microphone control being turned up too much. May we suggest, therefore, that you try the following simple experiment:—

Place the microphone on a shelf at about the height of the user's head, turn the volume control of the tape recorder to 9 o'clock and then at a distance of one foot, count from one to ten and, of course, record this. At a distance of three feet repeat the same test, but, of course, turning up the volume control for the microphone until the skirts of the magic eye reach the same level as when using the microphone at a distance of one foot. Repeat this test at six feet and again at twelve feet and then play back the equipment and listen to the result. You will find that the hum or noise



increases considerably as the volume control is turned up. You cannot extend the lead of the microphone due to the fact that most microphones used with tape recorders are high impedance devices and the loss in the line cord when extended is so considerable that not only is volume lost but also all the high notes disappear.

Finally, we would recommend feeding the microphone through the gram pick-up of a radio set.

D. J. O'CONNOR, of Ealing, writes to tell us that he recently bought a recorder, with which he was very disappointed, due to distortion both on re-record and play-back. He further informs us that:—"On complaining to the suppliers, I was told that the internal speakers could not be expected to do justice to the recording powers of the machine. However, a tape recorded on another machine and played over mine sounds better than one of my own, though I do get quite a lot of distortion from pre-recorded tapes. As I regularly take the recorder to friends on the other side of London, external speakers with this machine are not practical. I am interested in good quality (not necessarily hi-fi) music. Is there any portable recorder on the market capable of reproducing (in its portable form) all that it claims to record? I would appreciate any comments on the Tandberg "Stereo-plus" recorder, which looks almost too good to be true. Does the weight (27 lb.) appear to you too light for all the machine is expected to do? Is  $\frac{1}{4}$ -track sufficient for recording good music? Apart from its stereo features, is the high cost justified by its other features (three speeds, excellent makers' specifications, etc.)? With this machine I could possibly fit external speakers in a second portable case for the best performance, but how does it perform on its one built-in speaker? Finally, what is 'freak-boasting' and does this machine suffer from this? I do hope I have not imposed too heavily on your time with my many questions, but having spent almost £100 with poor results, I need expert advice to avoid spending more in the same way. Thank you very much."

**ANSWER.**—Thank you very much for your confidence in the Club and may we hasten to assure you that "our" time is "your" time. Moreover, we consider that you should return your tape recorder and insist that the manufacturers give you satisfaction. It is absolutely ridiculous for the supplier to suggest that the internal loudspeakers could not be expected to do justice to the recording powers of the machine. This is an evasive statement; obviously they do not want to be bothered. There is no doubt whatsoever that distortion is occurring in the early stages of the amplifier. In relation to the Tandberg "Stereo-plus," this is an extremely good equipment, but the weight would appear to be a little on the light side to deliver the performance as claimed.

Quarter-track recording is quite satisfactory provided that the manufacturers have ensured, without question, that the separation of channels is sufficient to ensure that cross talk does not appear when recording or reproducing. Cross talk means that if you record on one track and then on another track and play back, there is no interference from the recording on one track to the other track. Now, freak boosting is an expression which is used by many manufacturers when an equipment has incorporated into the amplifier tone correction to make up for deficiencies in base and high notes.

L. ISHERWOOD, of Darlington, writes:—

I wish to thank you for sending me a copy of *Amateur Tape Recording*. It is certainly a very welcome publication for us amateurs, not too much technical, hard to understand data, but just right. Thank you once again for the most excellent publication—the best I've seen.

#### MANUFACTURERS PLEASE NOTE:—

W. SMITH, of Rochester, Kent, writes:—

Enclosed please find my application for Club membership. I am leaving for my home in East Africa shortly and would like future issues of *A.T.R.* forwarded to me there. A small point for your consideration: there are many keen tape recorder owners in East Africa who may wish to join the B.T.R.C., but it is very important that your advertisers who are willing to export include in their adverts, their willingness to do so, with prices wherever possible. For example, in the small community where I live, out of 30 houses 10 already have recorders. There is a good potential market for British products. At present it is 90 per cent. continental. I will pass my copy of *A.T.R.* on, in the hope that it will further the interests of the Club and British manufacturers. In closing, I would add that it is important that the magazine remains for the layman. I have already had both the other magazines, but they are over the head of the average owner. I wish you every success.

L. A. PETTS, of Morden, Surrey writes:—

Thank you for my copy of *A.T.R.* I found it of great interest and now enclose my cheque for 21/-. I would like to let you know—as you may be in a more advantageous position to place the items—that I have about 200 12 in. records (78s), most of them in sparkling condition, covering symphonies, tone poems, etc., and I would like to donate these to any worthy cause, please free. If anything comes your way I shall be pleased to hear from you.

**EDITOR'S NOTE.**—We shall be pleased to hear from readers regarding Mr. Petts' exceedingly generous offer and all suggestions will be passed on to him.

W. G. JOHN, of Llanelly, Carms., writes:—

I have pleasure in enclosing my application form for membership. Many thanks for the first issue of the Club magazine; I found the contents most interesting and meets my needs. I find the mags. on the market now, too advanced and cater more for the professional in this fine pastime.

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**EDITOR'S NOTE.**—Mr. D. J. Chatterton, of Camberwell, an early club member, wishes to pass on to other club members information concerning a simple and useful editing device he has made for his own use. He tells us that he screwed his editing block on to a piece of wood measuring 8 in. x 4 in. which had previously been marked with lines  $7\frac{1}{2}$  in.,  $3\frac{1}{2}$  in. and  $1\frac{1}{2}$  in. apart. Then, when he wants to edit a "pause" distance between recorded items, say two seconds at  $7\frac{1}{2}$  i.p.s., he merely lays the tape along the corresponding distance, doubles the tape over, thereby giving 15 in. of tape, or two seconds of tape running time. Simple, YES!



**BUSY MUSICIAN THAT HE IS**

# LOUIS ARMSTRONG

***has still found time to build one of the largest tape collections***

By CHARLES GRAHAM

If you are interested in jazz music, you surely know that Louis Armstrong spent the last months of 1957 on a tour of South America, and you probably read that he was greeted with such enthusiasm that, on one occasion in Buenos Aires, such a huge crowd gathered around the concert hall where he was performing that the police had to disperse the people by pouring water on them with fire hoses!

You may even be able to name the countries he covered on other tours, and perhaps you know that his home, when he can spend time there, is in New York City. But did you know that Louis Armstrong is a dyed-in-the-wool tape enthusiast, and that he has one of the largest private collections of taped music?

His equipment and tape library are in a second-floor room of his home known as "Louis Castle." Here he keeps his golden Selmer trumpet (he says a horn lasts him about five years), usually with the case open so that he can pick it up whenever he wants to warm up his "chops" by blowing a phrase or two. And

here, also, is his next most prized possession, his tape library. At present he has almost 500 reels catalogued with no-one-knows how many yet to be edited and indexed, for he adds more reels constantly.

Even though he is still a far more energetic performing musician than most other jazzmen,



Louis recognises that the day will come when he will be able to do much less travelling and trumpet playing. Against that time, he has taped every disc that has interested him since the advent of the earliest tape machines. These tapes include copies not only of his own discs, and he is believed to have made more records than any other musician who is primarily a performer, but the records of numerous other jazz musicians, as well as many symphonies and operas. Also included and constantly swelling the list are tapes of innumerable radio and television shows, concerts, and interviews in which he has participated. From this collection, he often makes tape copies for other musicians and for friends. That is why, as the accompanying illustrations show, he has two tape machines. He has worked out a special indexing system, the key to which is a small loose leaf notebook that he always carries with him. On the road he listens to new tapes, or those sent to him by friends, edits them, and enters them in his notebook. Sometimes he starts a tour with only a few reels of blank tape; two weeks later he may have 15 or 20 hours of new recordings to add to his ever-growing library.

In his home, at present, he has two Philips tape recorders, a Harman-Kardon preamp and 40-

watt amplifier, a Collaro changer, and an Acoustic Research speaker. He also has a small speaker in his bathroom, so he can listen while shaving and dressing. This is cut in by the speaker-selector switch on the preamp-amplifier.

One feature of this system he particularly likes is that it allows him to make a tape copy of another tape or a disc while he monitors it through the main-system loudspeaker, or he can reduce the volume or turn it off completely while the copying proceeds. This is of special value to him, since he often copies for many hours, even while his den is crowded with people, as it usually is when he's in town. When he goes out of town he carries one tape recorder, a power amplifier, and a speaker.

An important part of his travelling tape set-up is a long connecting cord which has a pair of small alligator clips on one end and a plug for the radio-photo input receptacle on his recorder. This allows him to copy from any radio or TV receiver. When he's going to appear on a radio or TV show and wishes to tape it, he clips the connecting cord to the loudspeaker terminals of a receiver, either radio or TV. plugs the

other end of the cord into his tape machine, and sets the controls for recording. When the show is broadcast, one of his assistants merely pushes the start button on the machine. Later Louis listens to the tape, edits it, and enters it in his index. On tour, Armstrong takes along tape recordings of his present band, composed of world famous jazzmen, which he plays for the local musicians. In this way they can learn the forms ("get the run-down") without using up valuable rehearsal time. This has proven especially helpful, Louis says, in recent years when readying foreign jazzmen for concerts with him overseas. In many such cases these musicians had not heard recordings of his made in the past ten years, so were not sure of what would be expected of them. Yet after a couple of hours with his tapes they were confident and ready.

Louis isn't sure whether his greater interest in tape is as a hobbyist or a professional musician, but between the two he has built a priceless tape library, for much of it contains original music that no one else has recorded, which is one of the things that makes tape recording so much worth while.



# THE WORLD OF TAPE



SEEN, READ and HEARD

## RECHAUFFE AU TAPE

Whilst in France last year a Dutch priest temporarily substituting for a French colleague was confronted with the problem of having to prepare his own meals, due to the absence of a housekeeper in the Rectory.

Chaos reigned until he discovered a cookery course being broadcast over the National network. But, unfortunately his command of an unfamiliar language was insufficient to cope with the rapid culinary instructions being issued. Undaunted and determined not to starve, he decided the following day to record the recipes, and then keep playing back until he understood their every word. Success was assured and his cooking was improved beyond recognition.... Now take four eggs at  $7\frac{1}{2}$  i.p.s. and "mix" to a rich consistency of 1,800 c.p.s.

## WARBLING TUTOR-TAPE

An artist who very much enjoyed the singing talents of his canary was rather shocked when one day the vocal development of the bird seemed to have come to a sudden standstill.

All seemed lost until he hit on the idea of making an extensive recording of a friend's canary which was in excellent form. He thereupon played back the recordings with great regularity to his own canary, and the efforts of his friend's bird served as a first-class presenter, with remarkable results.

Remind me to tell you some time of the story of the man who tried to Budge-a-rigar.

## THE WHISPERING ELEVATOR

The lift boys in 15 lifts of Rudolph Karstadt AG's department stores in Hamburg, Luneburg, Wilhelmshaven, Duisburg, Mannheim, Gottingen and Munster are now able to perform their task silently and to concentrate on pushing buttons. Automatic tape machines provided with endless tapes and combined with amplifiers and loudspeakers have taken over the duty of announcing (with a melodious voice) the dif-

ferent floors and also of informing the public in the lifts what bargains are available in the various departments.

Apparently all that is left now for our electro-acoustic geniuses is to give voice to the "dumb-waiter" as it trundles up loaded with dishes from cavanous kitchen to ravenous recipients, frantically cackling, three rice and jams, two steak-and-kidney puds, and one filleted plaice. "Sorry ducks, plaice is orf!"



Source of the Whispering Elevator Voice



# "TAPESPONDENCE"

By W. PATRICK COPINGER

## Part II

Last month I indicated how to join a club for "Tapesponding" and I showed how much enjoyment, interest and knowledge may be gained by tapesponding with people from every walk of life and most parts of the world.

### *Your First "Tapespondent"*

Upon joining a tapesponding club you should receive a directory of members. In the case of the B.T.R. Club these are published monthly in the *Amateur Tape Recording Magazine*. This will include the occupation, major interests and bodies with tape recorder speeds of each member listed. It should also include each member's Christian name and that of his wife if she is also taking part. In the tapesponding world members are very friendly and Christian names are always used.

Don't wait for someone to write to you first to initiate a contact. This takes time because your name will not have been circulated to all members for quite a while. Further, no one may notice your name or consider starting another tapespondence. On the other hand, if an older member receives a letter asking to tapespond, quite often he feels flattered that someone noticed his name and curiosity will most likely get the better of him and he will agree to exchange tapes.

Now comes the interesting business of selecting a member with whom to exchange tapes. This is no easy task. If you have an unusual job you might find a member with a similar occupation and would like to talk with him on the local aspect of your work, particularly if he lives in a foreign country. The British Tape Recording Club lists a number of members in foreign parts and the number of these members is growing. If you join a foreign club such as one of the American clubs as well as the B.T.R.C. you will then have a very large choice of people to select. My own efforts might be a guide.

When I tried to select my first tapespondent some four years ago I started by looking for a member with a similar job to mine. I am an Air Traffic Control Officer, but from some 800 members of the Voicepondence Club of America there were no A.T.C.O.s listed. Eventually I wrote to an Air Line Radio Operator in British Guiana and a business man in New York who had similar musical and electronic interests to mine. I never heard from him, but the friend from British Guiana was most interesting and we still exchange tapes. My wife



*Phyl & Pat Copinger doing a joint tape*

then wrote to a member in Paris so that she could brush up her French. It so happened that this French member was an American living in Paris, but her French was perfect and she frequently talks to my wife in French and my wife reciprocates. After a few months we started getting requests from people in U.S.A., Canada and Sweden, and we now talk to about 25 different people all over the world.

Having decided on one or two people, write to them and ask if they will tapespond with you. Enclose a stamped-addressed envelope or International Postal Reply Coupons if foreign. Tell them your interests and hobbies as your prospective new friend may not have seen your name in the directory if you are a new member. Never send a tape without writing first unless the member has specified in the directory that he does not require an introductory letter. This is a general rule in all tape correspondence clubs. The reason is, of course, that the member may not have time to take on any more tapespondents or he may have sold his tape recorder and resigned, or he may have moved or even died. So always write first. Apart from the foregoing it is an intrusion, rather like calling on someone without first knocking on the door.

### *Making Your First Tape*

You may find that, having written to someone, he will reply by tape. This simplifies your first tape as you can reply to any questions he may ask and it gives you a lead on what to talk about. More usually you will find that you will have to start the ball rolling, and the first thing to decide is the size of the reel you intend to



use. A 3 in. reel at  $3\frac{3}{4}$  i.p.s. (cost 6s. 3d.) will play for 16 minutes each track. You may feel that you could not possibly talk for half an hour about yourself to a complete stranger who is miles away and you have never seen and is not there with you to put in an odd comment or so! O.K., do it at  $7\frac{1}{2}$  i.p.s. and make it 16 minutes total if you and your "stranger" friend both have  $7\frac{1}{2}$  i.p.s. But you will be surprised how quickly the time goes once you've started. Make a few brief heading notes. Never write out what you intend to say and read it. It sounds unnatural and insincere. Your brief notes might read: "Self, age, wife, children, names, ages, etc., house, garden, town, village, street live in. Job, how far to work, car, etc." Always begin by giving your name, your friend's name and the date you start the recording. You might start something like this: "Hullo, John Smith, this is Joe Snooks coming to you from London, England on Saturday evening, June 3rd, and it is a lovely evening." With your first tape it is a good plan to include your name and address on a piece of paper and put it in the box with the tape. I always put my name and address on the box so that if it goes astray or the wrapping breaks the G.P.O. knows where to return the tape. Your first tape should be easy. Don't be afraid of talking about yourself. That's what the other

fellow wants to know about. He wants know what sort of a bloke you are. How you earn your living, what sort of a house you live in, what sort of a wife and family you have (if any), whether you have a garden and what's in it. He would like to know about your tape recorder and what it can do, about your radio or television and whether you record from either and if so, what. You can talk about your daily journey to work by bus, train, car, boat or aeroplane. I have a friend in Kentucky who flies his own aeroplane to work every day to avoid the traffic jams on the road.

Always try to ask questions about him and note his interests and ask about them. The more questions you can ask the better, and a more interesting tape will come in reply.

When you are doing your first recording to a tape friend don't bother about phraseology or wording. Talk quite naturally. Try to maintain an unrehearsed conversational naturalness which is not difficult if you mentally change the microphone into the person to whom you are talking. Don't get pedantic in your speech. You are not making an after dinner speech, but talking to a friend.

### Technique

Before starting to record you should really be in the mood and you may find it easier to be in private with no possibility of interruptions. It is preferable to speak fairly close to the microphone in order to avoid picking up extraneous noises and to give a more personal effect. Do a test recording before you start. Make sure that you are comfortable and relaxed. If you want to record on the dining-room table make sure that the microphone is not picking up vibrations or noises from the tape recorder. Avoid rustlings of paper from your notes. If you are using a hand microphone don't continually "paw" it or keep moving it about while you are recording. Don't talk too fast, don't swallow the microphone or spit down it. If you want to stop recording to collect your thoughts don't just stop the mechanism and when ready start it again. This produces clicks, wow and noises on the tape. Turn down the gain before stopping and turn it up to the same level again after starting the mechanism. If you have a "pause" control on your tape recorder you can use this.

Take your time over making a tape—a rushed job always sounds just what it is. Because you started your tape by giving the date don't feel that it has to be finished that day. Continue next day or even next week, and when you get to the end you can mention that some time has passed since you started the tape and give the date on which you are completing it and posting it.

# Mixer

## ● TRANSISTOR PRE-AMPLIFIER MIXERS

Accepting Low and High imp. inputs from Microphone and Gram, etc.  
DESIGNED FOR RECORDING ENTHUSIASTS

## ● NEW STUDIO MIXER with inputs built

to user's requirements.  
READY SHORTLY

## ● MATCHING UNITS to go between Tape

Recorders, Hi Fi Amplifiers, Tuners and Grams, etc.  
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**HERTS.**



The Club suggests that in all instances it is advisable to first contact a prospective tapespondant by letter on the following lines:—

Dear Mr. X,  
 I am a member of the B.T.R. Club and I would like to "Tape-pond" with you.  
 I own a X machine and use X" spools playing at X i.p.s.  
 My interests are as follows:—

Yours sincerely,

**ERIC CHANNON**, 11 Highdown Road, Lewes, Sussex.

Occupation:—Sales Manager of Cement Mfg. Co.

Mr. Channon owns two Philips machines, size of spools 7 in. and 5 in., with speeds 1½, 3½ and 7½. His interests include 8 mm. and 35 mm. (transparencies) photography and his musical taste is everything except super highbrow and modern jazz. He would like to tape-pond with South America, North Africa, Spain, Portugal, Austria and also the Far East.

**F. G. POOLEY**, 14 Portsmouth Road, Kingston, Surrey.

Occupation:—Builder.

His musical taste is classical and opera and owns a Winston Thorobred with 3 in. size spools at 7½ speeds. He is interested in stamp collecting and architecture and would like to tape-pond with Australia and North and South America.

**ANDREW TIMKO**, 2300 Lake Avenue, Elyria, Ohio, U.S.A.

Thinks the club idea is a good one and wishes to tape-pond with British members.

**F. A. SMITH, Esq.**, 4 Union Street, Dulwich, South Australia.

Has an Elcow recorder playing at 7½ and 3½ i.p.s. with dual track. Tells us that he is originally from Britain, but is now an eight-year-old Australian. Wishes to tape-pond with British club members.

**FERD. A. KELLER**, Memory Lane, Linlithgo, New York, U.S.A.

Is interested in music and spoken word recordings. Is a critic and composer. Says he is always glad to hear from folk in this part of the world.

**O. ROWLEY, Esq.**, Electronic Services, Permanent House, Mainway, Livingstone, N. Rhodesia.

Is a keen tape addict for many years' standing. Has had two and a half years' experience with a local broadcasting organisation as studio engineer. Now has his own electronic business. Would be inter-

ested to hear from members with similar background.

**C. R. WHITCOMBE, Esq.**, Orchardleigh, Little Entry, Wells, Somerset.

Occupation:—Paper Mill Laboratory Assistant.

Mr. Whitcombe owns a Philips EL 3527 machine, playing at 3½ i.p.s., size of spools 5 in. His musical taste is pop and also some classical music. He is interested in swimming, cycling and photography and would like to tape-pond with male or female age 20-23 with similar interests, in either New Zealand, Canada or S. Rhodesia.

**F. C. SWAIN**, 48 Agar Grove, London, N.W.1.

Occupation:—Electrical Engineer.

Mr. Swain owns a Grundig 700L playing at 3½ i.p.s., with 7 in. size spool. His taste in music is pop, piano music—Fats Waller, etc.—and he is interested in Hi-Fi, photography and records. He would like to tape-pond with someone in Jersey, C.I.

**WILLIAM STANLEY PRYOR**, Bedford Hotel, Tavistock, Devon.

Occupation:—Hall Porter.

Mr. Pryor owns a Saja machine with a speed of 3½. His taste in music is Light Classical, Films and he would like to tape-pond with someone in Canada.

**JOHN RUDKIN**, 8 Tetuan Road, Fosse Road North, Leicester.

Occupation:—Engineer.

He has a Telefunken 85 with speeds of 3½ and 7½ i.p.s. His tastes in music include Light Classic, and Piano and Cinema Organ. He would like to tape-pond with South America, U.S.A. and Holland.

**COLIN BRADDOCK**, 266 Waterloo Road, Blackpool.

Occupation:—Electronic Engineer (Tape).

Mr. Braddock is very interested in tape recording and likes all types of music. He owns a TK55 Reflectograph Electron Telefunken 75.15 at speeds

# Pictures in sound...

... pictures to keep. Cherished memories caught and held on tape, to sound unspoiled in the years to come. Every familiar mannerism, every memorable sound, from the greatest events of your lifetime retained forever in a reel of tape, to be played back again and again. Yes, with a Philips tape recorder you can make your own scrapbook of familiar sounds. With a Philips tape recorder you can record weddings and birthdays, baby's first words . . . and yourself, too. In fact, whether for entertainment or education, every sound worth remembering can be trapped and played back with one of these superb Philips tape recorders.



**MODEL**  
**EL3527**

- Twin-track recording
- Magic-eye indicator
- Mixing facilities and tone control
- Six-position control knob
- Can be synchronised for film
- A versatile and reliable instrument

**39 GNS.**



**MODEL**  
**AG8108**

**62 GNS.**

- (3-speed push-button)
- Twin-track recording at three speeds
- Professional tone quality at  $7\frac{1}{2}$ " per second
- Magic-eye and revolution counter
- Simple push-button controls
- Efficient, easily controlled braking
- Supplied with 18,00ft. LP tape and sensitive microphone



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of 1½, 3½ or 7½, size of spool 8½ max. Mr. Braddock wishes to tape-pond with North America, Australia and also British Empire in general.

**P. E. HART (Mr.)**, 113 Manor Road, Dover, Kent.  
*Occupation:—Internal Telephone Wireman.*

Mr. Hart owns a Walter 303 machine with 5 in. size of spools with a speed of 3½ i.p.s. His interests include Motor Scooting, Dancing (not ultra-modern) and his musical interests include Light Orchestral, G. and S. Opera. He would like to tape-pond with America, Australia, Europe and New Zealand.

**MAURICE CHAMBERS**, 139 Goldthorne Avenue, Sheldon, Birmingham, 26.

*Occupation:—Sales Manager.*

He owns a Philips and Grundig, size of spool up to 7 in., with speeds of 1½, 3½ and 7½. He would like to tape-pond with Germany, Austria, Holland and Italy. His interests include General (non-political) int. friendship and his musical interests are from classical to popular.

**FRANK W. BUSCK**, 102/3 West Street, Faversham, Kent.

*Occupation:—Tobacconist and Confectioner.*

Type of machine used, Grundig T.K.830 at speeds of 3½ and 7½, with 7 in. size spool. He is interested in the Stock Exchange, Racing and Life in General. His musical taste, as he puts it, is "Low," i.e., Popular. Mr. Busck would like to tape-pond anywhere where English is spoken.

**Sgt. B. FUSSEY**, No. 1 PRS, HQMELF, B.F.P.O. 53 (as from September, '59).

He owns a Saba Automatic playing at 3½ i.p.s., and size of spools 7 in. His musical tastes include musicals, shows, and light classics. He would like to tape-pond with America, Canada, Australia and New Zealand. He is a married man with two children, has been a regular soldier for the past ten years and photographer for public relations. He tells us he has just spent two years in Berlin, four and a half years in Germany.

**CLIVE SNELLING**, 18 Avenue Road, Anerley, London, S.E.20.

*Occupation:—Bank Clerk.*

Owns a Walter 303 with 5 in. size spools, at speed of 3½ i.p.s. His musical taste is varied and his interests include Amateur Broadcasting (disc jockey) Dramatics. He would like to tape-pond with Northern or Southern Rhodesia or anyone interested in amateur broadcasting, e.g., to Hospitals.

**G. S. HARDING**, Sgt.'s Mess, R.A.F. Norton, Sheffield, 8.

*Occupation:—R.A.F.*

Sgt. Harding owns a Telefunken 65KL playing at 1.75 and 3.5, size of spools 5 in. Sgt. Harding is very interested in Scottish and Irish songs and would like to make a collection of these on tape. He would like to hear from any country.

**JAMES H. BAMFORD**, 9 Heybridge Avenue, London, S.W.16.

*Occupation:—Teleprinter Operator.*

Mr. Bamford owns a Regentone RT50 playing at 1½, 3½ and 7½ i.p.s., size of spools 3 in., 5 in. or 7 in. His musical taste is varied, he would like to tape-pond anywhere, but is specially interested in Continental tape-ponding in English. Mr. Bamford has travelled in India and the Middle East and has a slight knowledge of French. He says he is a real amateur recordist with little technical know-how.

**DAVID WILLIAM KEATING**, 410 Franklands Village, Haywards Heath, Sussex.

*Occupation:—Junior Civil Engineering Assistant.*

Mr. Keating owns a Stellaphone playing at 3½ i.p.s. with 7 in. size spools. His musical taste is Mainstream Jazz and his main interests are reading and

painting. He would very much like to tape-pond with anyone in America.

**LEON McCLOSKEY**, 1503 N.7th, Wichita Falls.

Mr. McClosky would like very much to tape-pond with anyone interested in Swing bands (big) present and past and also popular music before about 1950.

**HAROLD E. GUTHRIE, Esq.**, Box 131, Coraville Branch P.O., Iowa City, Iowa, U.S.A.

Mr. Guthrie would like tape-pondence who would be willing to communicate with what he calls a "common" American in the middle West. Considers that a club for users of tape recorders is a fascinating idea. Present recorder is a Crescent Model 150 playing at 3½ and 7½. He says he uses it for recording music from the radio, films and television.

**CLIFFORD LAMB**, 59 Derbyshire Lane, Stretford, Manchester.

*Occupation:—Electrical Apprentice.*

Mr. Lamb, age 20, owns an Elizabethan machine using 7 in. spools and recording at either 7½, 3½ or 1½ i.p.s. His interests include Films, Reading, Radio, Tape Recording. He enjoys light music especially Gilbert & Sullivan. Keen to make contact with either Australia, Gibraltar or U.S.A.

**RAYMOND GOSNEY**, 3 Mayfield Avenue, Chiswick, W.4.

*Occupation:—Book-keeper.*

Mr. Gosney owns a Grundig TK 35 machine using 7 in. spools and recording at either 7½, 3½ or 1½ i.p.s. He likes popular music and is very interested in languages. To quote his own words, "I am interested in German Business and the European Common Market, or anything that may have a bearing on the future of Germany. My special place of interest in Germany is Hamburg and I should like to hear from an enthusiast residing there."

**S/Sgt. FRANK WILLIAMS**, Malta Signal Squadron, B.F.P.O.51.

*Occupation:—Regular Soldier.*

Sgt. Williams owns a Telefunken K85L machine using 7 in. spools and recording at either 3½ or 7½ i.p.s. His interests include colour photography and Hi-Fi and he is keen on popular music. He would like to hear from either U.S.A., Australia or Canada.

## **BIRMINGHAM TAPE CLUB**

**RICHARD SCOBELL**, 69 Blandford Road, Harborne.

Owns a Grundig TK830, wishes to tape-pond with the U.S.A. Hobbies include photography, music, swimming and obviously tape and Hi-Fi.

**DENNIS OSBORNE**, 75 Millmead Road, Bartley Green.

Secretary of the Birmingham Tape Recording Club and seeks tape friends anywhere. Hobbies include Hi-Fi recording, gardening and music.

**KEN MINTERN**, 3/45 Latimer Street, Edgbaston.

Owns a Stuzzi Magnette, seeks tape friends anywhere. Hobbies include motoring, swimming and photography.

**CHARLES COCKSHOTT**, 210 Wood Lane, Handsworth Wood.

Proud Ferrograph owner, wishes to communicate with enthusiasts throughout the world.

**FLORENCE COCKSHOTT**, 210 Wood Lane, Handsworth Wood.

Seeks tape friends anywhere English is spoken.

**TONY CARTWRIGHT**, 4/159 Park Road, Aston.

Tape and light music enthusiast. Owns a Wyndson Regent. Seeks tape friends anywhere.

**Miss MOLLY RICKARD**, 67 Hamilton Road, Handsworth.

Has no recorder, but can always borrow one.

*continued on page 20*



# Mixermatapist

By RUPERT SMITH



Mixermatapist is the dread disease of the Recording Enthusiast. Herein lies the death of the recording in unskilled hands. As in the great hobby of Photography, the would-be genius of the spools accumulates masses of gadgets and aids to "better reproduction." They include de-fluxers, splicers, bulk erasers, inter-circuit cut-outs, and outer circuit incuts, illuminated meter panels and, of course, a mixer.

Ah! The mixer, common carrier of the dread disease, the only inoculation against which is the state known as "financial embarrassment." This state is well known, however, by most of us; but, nevertheless, we seem to carelessly overcome it when such desirable objects loom into view. How can one resist the beautiful round knobs, the smooth casing, and delight of delights, the mass of delicate wiring on the inside coupled with tiny resistances and the like. Some even have valves which only add to the bliss.

When we have examined one of these objets d'art at close range, we are too far gone to retrace our steps, and as we fumble for the cheque book, we realise that it will be "bread and water" for the next month or so, but who cares? Our wives do. Does this stop us? Well, what do you think?

We arrive home, sweaty in anticipation, and unwrap the package, careful to a point, but when a protrusion prevents the smooth exit of the machine, we instinctively tense and tug. Our collars are even hotter. (Why do manufacturers' packing departments make such a thorough job?) We ease off a bit when we think of the Bank Account, and then dismiss the thought immediately.

Eventually, ten minutes later, there it lies on the table, all new. It smells good, too. The temptation is too great. We gather together our equipment, wire up the jack plug and, now, the great moment. Plug in. Nothing happens. In desperation we turn to the instruction leaflet. This is beneath us, but no one is looking. We don't understand it fully, but somehow manage to connect up. There is a reassuring faint hum (if

it's got valves) or no reassurance if it hasn't. We are ready to go. Switch on recorder, check inputs and outputs. Put microphones in mixer sockets. Start recording. "Testing one-two-three four; testing one-two-three-four." Now, breathless and exhausted, we wind back for replay. Nothing. Oh, heaven! Did we pull too hard when unpacking? We think it looks tough, but is it? Then we notice that the volume control on the recorder is at zero. Could this be it? It is. Shortly, lulled by the sound of our own voice, we fall asleep with the sound of "Testing, one-two-three-four; testing, one-two-three-four" in our ears.

★

Messrs. W. J. & G. R. Willis, Ltd., of 73 Grand Parade, Harringay have asked us to apologise for the serious error which appeared in their advertisement on page two of last month's supplement. The advertisement referred to Broadcaster Diamond needles, which should have read Sapphire needles and the price should have read 5/11 and not 6/3. We are somewhat to blame for this oversight as, due to the printing dispute, a number of proofs were overlooked. Sorry, folk.

★



## OTHER PEOPLE'S CLUBS

Tape Recording — — — — — that rapidly developing sound hobby is carrying in its wake the interesting emergence of small localised clubs, created and built up in many cases by the individual untiring efforts of unselfishly devoted enthusiasts, bent on bringing together fellow devotees in their particular locality. Often financed in the first instance by the "odd bod" struggling to create an organisation for the collective participation of the hobby.

In many cases, the cost of the weekly or monthly meeting is met by a small "on the spot" contribution to cover these expenses. Other clubs are more ambitious in their monetary matters and an annual fee is required for membership.

Many clubs devote part of their activities to good causes, and nearly everyone includes tape-sponding. Some clubs, such as the Birmingham Tape Club produce their own club publication, whilst others, like the Reading Cine and Tape Club include cine appreciation as an integral part of their activities.

A few groups specialise in a particular aspect of sound recording and the recently formed Tape Organ Club springs to mind as an excellent example of this approach.

Some months ago, a loosely knit organisation was formed between the various clubs and a national policy is in the process of being hammered out.

There are to our knowledge some 40 clubs functioning and another 12 are in the process of being formed. It is also interesting to note that one or two far-sighted manufacturers are looking benevolently upon these developments and in some cases rendering active assistance to club night programmes.

We for our part are being constantly requested by our own membership for information concerning these other clubs so liberally scattered throughout the British Isles, and have as a result of this stimulated interest in "Other People's Clubs," take pleasure in presenting below all the information we have to hand, and at the same time taking the opportunity of wishing them success in their activities and trust that in the near future a mutual working liaison can be effected.

*A complete directory of clubs throughout Great Britain appears on page 34.*

### READING

#### CINE AND TAPE RECORDING SOCIETY

*Secretary :*

*D. M. Noyes, 4, Froxfield Avenue, Reading*

Reading Cine and Tape Recording Society held an evening for Tape enthusiasts, when 16 Tape Recorders were on show, ranging from mains hi-fi tape recorders to small portable recorders, including the latest Grundig portable.

Several of the recorders belonged to members, one having twin transcription units with hi-fi equipment which proved of great interest, and this is used by the owner with his cine equipment, for which purpose the majority of tape recorders shown were suitable.

A great deal of first-hand knowledge was gained during the evening, as members were invited to try out the recorders, and it is felt that this enterprising evening has forged yet another link between cine and tape, which it is hoped will become even more united in the future of the society.



*An interested group of G.P.O. Engineers who are members of the "Ettesa" Tape Club, seen watching the testing of amplifiers during a recent visit to Messrs. Walter Instruments, Ltd. factory at Morden. The group were conducted around the factory by Mr. Parrington, technical sales officer, who is seen on the extreme left.*

*Inter-Tape continued from page 18*

Wishes to tape-spond with enthusiasts throughout the world.

**FRED. WILKINSON**, 591 Walsall Road, Great Barr. Seeks tape friends in Italy, particularly Rome and Milan. Has varied interests which, he says, include recording, photography, ballroom dancing, rose growing, wine, women, continental travel, floral decorations, cake decorating.

**TERRY NURSE**, 108 Bordesley Green, Birmingham. Editor of the Birmingham Tape Recording Club. Interests include cycling, swimming, jazz, swing and tape and record reproduction. Seeks tape friends anywhere throughout the world, but would like to hear from the U.S.S.R.

**MONTI KNEE**, 3 Knipersley Road, Sutton Coldfield. Seeks tape friends in America, Norway, Sweden and France. Owns Grundig TK5. Interests include art, music (classic or jazz), reading and stamp collecting.

**CHARLES DAVISON**, 51, Bagnell Road, Kings Heath.

Is interested in electronics, radio and T.V. Wishes to make tape friends throughout the world with similar interests.

**HARRY COOMBS**, 94 Nigel Avenue, Northfield. Seeks tape friends in France. Owns Vortexion and is interested in recording, motoring and travel.

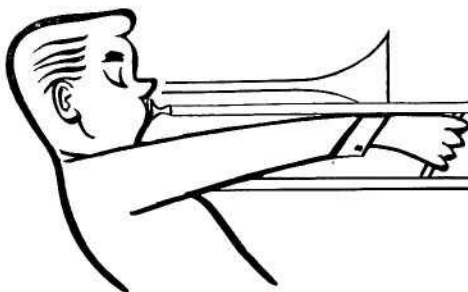
**BARRY STEPHENS**, 130, Clarence Road, Handsworth.

Brennell 3-Star owner. Hobbies include tape and photography. Wishes to do tape-sponding throughout the world.

**GEORGY DAINTY**, 75 Cramlington Road, Great Barr, Birmingham, 22A.

*Occupation:—T.V. Service Engineer.*

Mr. Dainty owns three Grundigs and one Philips playing at 7½, 3½ and 1½ i.p.s. and up to 7 in. spools. His musical taste is general and his interests are Hospital Broadcasting, meeting people, and recording musical comedy. He would like to tape-spond with Australia, Canada and the Americas. Mr. Dainty would also be glad to hear from anyone anywhere and would like to help other associations in their work.



## JUST FOR JAZZMEN

Are you an amateur Jazz musician?  
Do you wish to improve the quality of your playing?

Would you like to have the experiences of top line U.S. jazz musicians to guide you in your home?

AMATEUR TAPE RECORDING is pleased to announce that the club has made an arrangement with the San Francisco School of Jazz, to make available only to club members a "jazz tuition on tape" course. The course will include interviews, commentaries, examples of playing, theory, technique and "local" jazz. Colour photographs will also accompany each tape. The cost, 49/- to purchase an 18,000 ft. tuition. Available also is a 12,000 ft. course at a reduced fee. Alternatively, both these courses may be hired on a rental basis.

G.V.A. Radio, that's the name of the studio, tell us that these tapes are as good as a trip to the U.S. at only a fraction of the cost of the fare, and assure us that they really live up to the studio slogan of being "the finest sound around."

### THE "STAFF" MEN BEHIND THE SCENES INCLUDE :-

**STEVE ATKIN, B.A., Piano, Vibes.**

Staff Musician, ABC-KGO-T.V. Four years instructor, leader Air Force dance bands. ABC Paramount records.

**JOHN COPPOLA, Trumpet.**

1st Trumpet—Stan Kenton, Woody Herman, Billy May, Charlie Barnet, Capitol, Columbia, Verve. Mercury records.

**JERRY COUNROYER, Composer, Arranger.**

Composer, Arranger for: Woody Herman, Count Basie, Johnny Mathis, Chris Connors, Virgil Gonzales, Bob Scobey. R.C.A. Victor, Liberty records.

**RON CROTTY, String Bass.**

Dave Brubeck, Earl Hines, Sarah Vaughn, Carmen McRae, Wally Rose, Ron Crotty Trio, Fantasy records.

**PETE DOVIDIO, B.A., Sax, Clarinet, Flute.**

Tex Benke, Bob Scobey, Virgil Gonzales. R.C.A. Victor, Coral records.

**ED. WATSON, late B.B.C. and Scottish Variety Orchestra.**

**PAUL MILLER, Guitar.**

Staff Musician, ABC-KGO-T.V., NBC. Carmen Dragon, S.F. Symphony. Fantasy records.

**TERRY SLATER, Sax, Clarinet.**

**JAMES W. PRICE, B.A., Trombone.**

Staff Musician, ABC-KGO-T.V. Jerry Gray.

All enquiries in the first instance should be made to:  
Jazz on Tape, c/o T. F. Slater, Esq.,  
52-54 Alvarado Street,

San Francisco, California, U.S.A.

## MORE BASIC TAPE—For the man and his newly acquired tape recorder

### Erase.

Neutralising the magnetically recorded patterns by placing the tape in a strong magnetic field thereby removing any recorded sound from it. This is done automatically to any previously recorded sound as the tape passes through the "erase" head before reaching the "record" head. A permanent magnet would also perform this function.

### Bulk Erasure.

This is a useful accessory designed to make an instantaneous erasure of a complete reel of tape without the need to run it through a recorder. A strong magnetic field is set up, thereby neutralising the existing magnetic patterns on the used tape.

### Bias.

A high frequency A.C. current fed into the recording circuit to eliminate distortion.

### Capstan.

A spindle or shaft, frequently the motor shaft itself, rotating against the tape and pulling it along at a constant speed on recording and playback.

### Gap.

The distance between the poles of the recording head, measured in ten thousandth parts of an inch. Usually the head gap of the domestic recorders ranges from about 0.001 to 0.00025 (to give some idea of this dimension by comparison, the thickness of a

human hair is approximately from three to 12 times these dimensions). Generally, the smaller the gap the higher the frequency response of the tape recorder.

### Editing.

Choosing required sections of a tape recording or the number of individual recordings, and then splicing them together in a pre-determined order.

### Gain.

Gain is effected by means of an amplifier and is the ratio between the input level and the output level of any sound equipment.

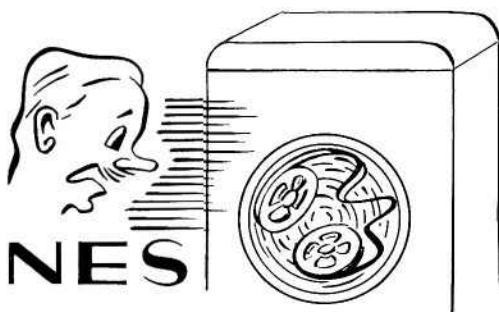
### Head.

An electro-magnet, against which magnetic tape is drawn, thereby magnetically impregnating the iron oxide coating in a series of patterns. Nearly all tape recorders incorporate a combined record-playback head and also an erase head. Some machines also include a monitor head for listening to recordings immediately after they have been taped.

### Impedance.

Is related to the manner in which the head coil is wound. If many turns of very fine wire is employed, it is said to have a high impedance. If fewer turns are made with a thicker wire, it is said to have a low impedance. Therefore, it is vitally important to use the correct impedance head in conjunction with any given amplifier.

# MEN AND THEIR MACHINES



No. 1

## A Laundry Turns to Tape

A large old-established laundry and dry-cleaning group with a hundred shops based in the Midlands, bent on cutting costs and improving efficiency have installed tape recorders at their main Receiving Depot to reduce paper work.

When the customer's bundle arrives at the depot it is given a number, and each article in the bundle is then tagged with a code quoting list number and other necessary information.

As the article is inserted into the tagging machine, the operator announces the name of the article into a microphone which is connected to a tape recorder automatically synchronised with the tagging machine to record for one-and-a-half seconds after each tag is secured. Before naming the first item in each bundle, the bundle's code number is given, and after the last item the operator includes the word "Stop." Each tape is used for a two-hour period, this being the specified time calculated by the Management to handle a batch of approximately 10,000 articles. The tape is then passed on to the pricing department, together with the customer's own list.

The pricing clerk plays back the recording and at the same time enters prices on an adding machine. At the recorded word "Stop," which separates one customer's bundle from another, she stops the recorder by foot control, presses the adding machine total key, and attaches the printed price slip to the customer's list. This combined recording adding machine technique has three distinct advantages over the old method inasmuch that the sequence has ensured an independent check on the customer's list—which is quite often wrong—has eliminated the possibility of incorrect addition and, moreover, each individual price is fully legible, having been printed by the adding machine.

Also, of course, the whole operation has obviated written paper work.

The spool of tape having fulfilled its particular function in the pricing department, is subsequently transferred to the packing department for further use.

Here, articles of each order have already been sorted and loaded on to racked shelves. The packer has a trolley equipped with a recorder, again foot-operated, which she wheels to the rack to collect an order. As each item is announced on the tape she stacks it neatly. Any article found "surplus to requirements" on the trolley is put aside as a "mis-sort."

Again, if on playing the tape an item is found to be missing, the packer depresses the foot-stop control and makes a written note of the missing item. This is usually discovered quite easily as it is thrown up automatically in sorting the rest of the batch.

Except for noting missing items, paper work has been eliminated in this department also.

After being stored for three weeks in case of enquiries, the tapes are then bulk erased and put back into circulation to complete the whole cycle over again.

It has been estimated that this application of tape recorders in improving laundry efficiency has resulted in a 30 per cent. increase in the number of articles handled by sorters. And, has clearly demonstrated the practical diversity to which "tape" can be put to in this day and age.

## "B.T.R.C." ANNOUNCES A BRAILLE LETTER SERVICE FOR BLIND MEMBERS

We are pleased to announce that the club is now in the position to undertake the answer of queries and requests received by blind members who are able to read and write either Grade 1 or Grade 2 Braille. This added service has been made possible by the very generous offer of Mr. James F. Adams, Home Teacher of the Blind, who suggests that if any blind member would care to communicate with him in Braille, he will undertake to transcribe it into type, so that the matter is dealt with through the usual club channels and then transcribe back again for dispatch to the member concerned.

It should be noted that Mr. Adams, who incidentally is a club member himself, devotes a considerable amount of his time to the very worthwhile humanitarian work of helping the blind, and we are grateful to him for undertaking these further commitments.

**EDITOR'S NOTE:**—All communications regarding this "service" should be accompanied by a stamped-addressed envelope and sent to:—

Mr. J. F. ADAMS,  
54, Richmond Road, Gillingham, Kent.



## HOW TO CHOOSE YOUR

# TAPE RECORDER

By FREDERICK'S

Frequently we receive letters, telephone calls and meet members of the Club who ask what kind of tape recorder should I purchase. It is a simple question to ask, but a difficult one to answer because we do not know what the inquirer wants to suit his personal requirements. The purpose of this article is to survey the various facilities that one can obtain from tape recorders.

It is not our intention to go into the various types made by the many manufacturers, but it is our definite intention to present the clearest possible picture of how a tape recording equipment, whether portable or built into one's own cabinet system, should be considered. Before going into this detail there are several questions to ask:—

- (1) For what purpose do you intend to use the tape recorder? Is it your intention to purchase or build a portable tape recorder, or do you intend to mount it into a cabinet?
- (2) How much do you want to pay for your ultimate equipment and what fidelity do you expect from the tape recorder in the price range for which you have budgeted?

Let us now examine the various facilities, fidelity and approximate price range of tape recorders. The simplest type of tape recorder is one that possesses a single input into which can be fed a signal from microphone, radio or gram and they are usually fitted with a volume control, separate tone control, single speed tape deck and one loudspeaker. These instruments are eminently suitable for the recording of vocal items, radio, T.V. programmes or records. Due to the simple design of the equipment, however, it is frequently not possible to make composite recordings as mixing facilities are not always included in the equipment. Shortly the Tape Recording Club will make available to its members a miniaturised mixing unit which will enable the simplest of tape recorders to be converted into a most versatile instrument and will enable composite recordings to be made as follows:—

- (a) Vocal or instrumental items with standard discs.
- (b) Vocal or instrumental items with all radio or T.V. programmes.
- (c) The mixing of two microphones together.
- (d) The facility of being able to record any one or two of the variations mentioned in (a), (b) and (c) at good fidelity and at very low cost.

This miniature mixing unit will be known as the Tape Mixing Ade. It has been so designed

that a person without any technical knowledge whatsoever can connect it in a few seconds.

The tape recorder described thus far can have many and varied uses. It can be used in business to record notes and data, to send messages to your friends or family if you are away from home. You can record your favourite programmes from radio or T.V. for enjoyment at a later time. You can tape gramophone records to increase your library of music. In particular, children's voices can be recorded, the recording stored and played back years later. All these things can be achieved with the simple type of tape recorder plus the tape mixing Ade, both of which have been described above, and at a cost of £25 to £35. Naturally it is assumed that you already possess a radio set, gramophone, record player and T.V. set.

The tape recorders described so far are the simple and portable types and are monaural or single channel.

We should now consider portable versus permanent installations. This is the difference between bringing the tape recorder to the party or taking the party to the permanent installation.

Obviously the portable recorder gives you more latitude in recording sounds of nature, voices of your friends and man-made noises of every day living. The permanent installation restricts you to programme sources that are available in your home.

Tape recorders are readily available in all sizes. They can cost as little as £20 and the more ambitious studio type as much as £700.

Studio type equipment will, of course, record and reproduce at very high fidelity, but the authors consider that equipment costing say between £20 and £150 would cover most requirements; one usually obtains what one pays for, a tape recorder capable of reproducing high fidelity quality will obviously cost more than one which has been designed for the recording of voice or simple instruments such as trumpets and saxophones which are not rich in harmonics or overtones as, say, pianos or banjos. When choosing a tape recorder decide what you want to do in so far as facilities are concerned. You can buy one having several inputs with built in mixing, bass and treble tone controls, several loudspeakers, extension speaker sockets and several different tape speeds.

The simple type of equipment usually has one input source, one volume control, one tone control, one loudspeaker and a single speed tape deck and the whole system is usually capable of recording and reproducing sound waves from about 100 cycles/second to 11,000 cycles/second, at a tape speed of  $7\frac{1}{2}$  inches/second (i.p.s.).

The lay reader need not be frightened by the expression "frequency response or cycles/second" as this mysterious or learned expression can be very simply explained.

Sit in front of a piano or imagine that you are doing so and strike middle C on the keyboard. Now what happens? Striking middle C causes a hammer to hit a tightly stretched length of steel wire. This wire, when it is hit and when it is the right length, thickness and under correct tension, will oscillate or vibrate 256 times (approx.) every second or 256 cycles/second, and the note which is heard is described as the basic frequency. A cycle is one vibration per second. All musical notes vibrate at different frequencies and the higher the note, the higher the frequency and vice versa. The musical frequency range is usually called "The audio frequency range" and varies from about 30 cycles/second (the lowest foot pedal note on a very large cinema or church organ) to approximately 15,000 cycles/second (the highest note on any known musical instrument, i.e., the piccolo).

Returning now to the simpler type of tape recorder you will see that as the instrument will only reproduce down to about 150 or 100 cycles/second (approx.) and will only record and reproduce up to 11,000 cycles/second (approx.), quite a lot of the audio frequency range is lost. Nevertheless, the simpler type of equipment even though it has a limited frequency range, is capable of recording and reproducing most of the musical range very pleasantly. If the Club member wants to listen to very high notes and very low notes then, as previously stated, the price for the equipment can very easily reach £150. The following table will give a clearer idea of the frequency range of musical instruments and human voices.

Source of Sound		Frequency Range C.p.s. = Cycles/Second
Male speaking voice	...	100 to 8,000
Female speaking voice	...	180 to 10,000
Piano (88 notes)	..	27 to 7,800
Tuba	...	40 to 7,500
Key jingles	...	1,300 to 15,000
Piccolo	...	450 to 15,000
Triangle	...	400 to 15,000

The above table is approximate, but is sufficient

accurate when considering the frequency range of musical instruments for tape recording purposes.

We have now dealt with the system having one speed, one loudspeaker and so on. It is now necessary to consider the tape deck and the number of loudspeakers. A tape deck usually consists of one or more motors for driving the tape and a driving system to move the tape past the recording/playback/erase heads at a constant speed. The tape deck has also included in its mechanism, control systems to start and stop the tape, fast forward, re-wind and so on, and if more than a single speed is required, some selective method of achieving the desired tape speed.

Tape speed is important as it is one of the controlling factors in the frequency response of both record and playback. It can generally be stated that the higher the tape speed the higher the frequency the equipment will record or reproduce, and the following table will show this quite clearly for the average tape deck.

(Speed (I.p.s.) Inches/Second		Frequency Response (Cycles/Second)
$1\frac{7}{8}$	... ..	50 to 5,000
$3\frac{3}{4}$	... ..	50 to 7,000
$7\frac{1}{2}$	... ..	50 to 11,000
15	... ..	50 to 15,000

From the above it will be seen that some care must be exercised when choosing the tape deck. The next point to consider is "what type of music do I want to hear," jazz or more serious music. The average type of tape recorder will reproduce quite pleasantly, dance music and most of the classical music.

Return for a moment to the simple tape recorder which has one of everything including a single speed deck running at  $7\frac{1}{2}$  inches/second. This instrument will reproduce say down to 100 cycles/second and up to 11,000 cycles/second and will be found suitable for most purposes. The more discriminating listener, however, will want to cover the whole frequency spectrum and to achieve this it will be seen from the table that a 3-speed tape deck is a must.

To conclude the article, let us now consider loudspeakers. A wide range of loudspeaker system should cover a frequency range of 20 cycles/second to 18,000 cycles/second or even higher. A system covering this range, however, could cost anything between £50 and £400. This, of course, does not lie within the pocket

(continued on page 36)

# *Anyone for Tapesponding ???*



*JOSIE WARING* has recently returned from a dancing engagement in Las Vegas. She hails from Southern Rhodesia and was for some time a member of the famous "Blue Belle" Troupe. Currently she is modelling in London and tells us that she is very keen to buy a tape recorder of her own and is busily inspecting various machines.

# CLUBMAN PROFILE....

Meet the Men & Women behind the  
"MIKE"

ON THE AIR—STATESIDE

By P.F.C. JOSEPH E. BADGER

*Member of World Tape Pals and the B.T.R.C.*

Upon graduation from high school in 1954, I entered Indiana State Teachers' College and majored in Radio and Television Broadcasting. At the same time, I was under the employ of W.B.O.W. radio in Indiana. The station was affiliated with the N.B.C. Radio Network and I worked week-ends, doing station-breaks during "Monitor," N.B.C.'s week-end programme. Soon after, the manager asked if I would like a disc show of my own. Naturally, I accepted and did a record stint in the afternoons. Later, I did a night-time programme called "Panorama." It was a show that featured semi-classical tunes and light music for restful listening.

I left that station and went to WTHI AM FM TV about two years later, hoping to better myself by getting into television. Immediately, I was given my own show, called "The Joe Badger Show." This was a daytime series for housewives and the music was of a happy nature. My main interest in music is jazz, and later I was given the Saturday night slot to programme a show I named "House to Wax." During this period, the television manager asked if I'd like to announce for TV. I accepted this position and did some "on-camera" commercials. All the while, I kept working in radio.

Given the opportunity to do a "live" weathercast, I came on at 12 noon for five minutes and drew diagrams on a huge map to indicate weather conditions throughout the country and locally. Needing a part-time television director to fill the shoes of a director going on vacation, I got the job of directing.

My personal record library grew and thus my show (on radio) grew. It was then that I was drafted into the Army branch of the Armed Forces. Working with records and tapes, I became interested in tape recording and consequently became a member of an organisation called "W.T.P." World Tape Pals helped me meet people from all over the world.

Besides the hobby of taping and jazz, I collect tobacco pipes from the countries in which I have tapespondents. My collection, which now numbers in the neighbourhood of 187 pipes, is one I treasure. I have pipes from Turkey, Scotland, Holland, Germany and many other countries too numerous to mention.

The Army sent me to France in early January



G.I. JOE BADGER checking notes for tapesponding

(1959), and after acquiring a Grundig TK/20 recorder, I continued to carry on correspondence with those tape pals I had neglected when I was without a recorder. I did, however, keep in contact via letter until the time I got my recorder. Currently, I am corresponding with 39 people outside continental United States and 32 within the "colonies."

Interests not mentioned above include writing short stories, articles and poetry. I am single, 24 years old, and plan to return to my television job upon the completion of my military duty in August, 1960. With the two recorders I have at my home (803, N. Meridian Street, Brabil, Indiana, U.S.A.) and my Grundig, I hope to win many more friends and communicate with every free nation. I feel as though every contact one can make with another in a different country, the more good will is being spread. It is also said that a man with money is wealthy, but a man with a friend is rich. I plan on being very rich.



**TAPE-to-DISC-TAPE-to-DISC-TAPE-to-DISC**  
**to-TAPE-to-DISC-to-TAPE-to-DISC-to-TAPE-to-DISC-to**  
**TAPE-to-DISC-TAPE-to-DISC-TAPE-to-DISC**

If **quality and durability matter** (especially with LP-s from your precious tapes) consult Britain's oldest full-time transfer service.

Bring professional quality within your scope with the famous **Unimixer** mixing units. Three independently controlled duplicated inputs for low or high impedance to suit almost every tape recorder and microphone.

If your **Tape Recorder** is less than 3 years old, we would be pleased to issue our fully comprehensive insurance policy to cover unlimited service calls, free labour and free replacement of all components.

**Tape sale in September** while stock lasts: 1700 ft. Gevaert, 31/-, 1200 ft. EMI of Ferrosponds and others.

Write for details and expect prompt reply from:—

**SOUND NEWS PRODUCTIONS**  
**10, CLIFFORD STREET,**  
**LONDON, W.1.**  
**Telephone : REGENT 2745.**

### CALLING ALL AMATEURS

Do you experience a feeling of acute inferiority when, upon going into contact with a fellow "tapist," you discover with horror that he is one of the "egg-heads" of recording, who knows it all and tells you in no uncertain terms. Who blinds you with science and confuses you with his, Oh so brilliant understanding of those queer little bits and pieces to be found nestling in wild profusion underneath the cover of your own modest recorder.

Don't despair, friend, or decide to end it all by making a noose of tape. We are going to help you because, as from next month, the publication will carry for the edification of the average man a series of articles especially written to explain in simple lucid detail the basic component parts of recording equipment.

But seriously, to know your machine, its limitations and its functions will assist you to improve your recording technique and appreciation. This obviously must be the aim of both amateur and professional alike. So remember tape types, look out for "WHAT IS," in next month's edition.

## NEXT MONTH...

### The RADIO SHOW NUMBER

CONTAINING MORE PAGES  
 THE BEST 1/6 WORTH YOU CAN BUY  
**ORDER YOURS NOW**



*Did you see us on Television*

## AMATEUR TAPE RECORDING PRICE 1/6

The Printing Dispute being over we are now able to present the second edition of Amateur Tape Recording in its entirety. The regular price of the Magazine is 1/6 but to avoid any confusion we would like to point out that the first edition was published price 1/- because we were only able to produce a temporary edition.

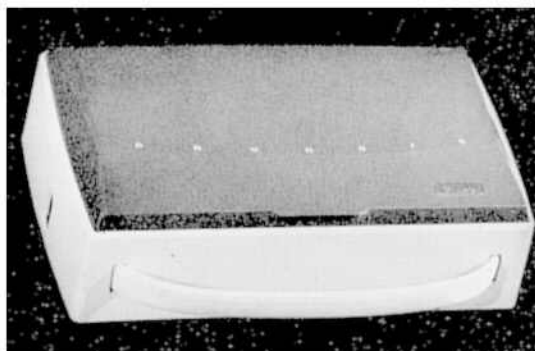
### CLUB EMBLEM

A competition will be announced in the next issue to design a Club Emblem. The competition will be open to members only and the first prize will be a new Grundig Cub Portable Tape Recorder. A worthy prize indeed. So readers hasten to become members and members hasten and sharpen your pencils. Watch for details in the next edition.

# WHO'S WHO

## AND WHAT IS MANUFACTURED

### An A-Z of manufacturers and their equipment



Grundig (Great Britain), Ltd., have just released their first battery-operated transistor tape recorder. Appropriately christened "The Cub," this neat little machine, no bigger than a lady's handbag, weighs only 5½ lb. and is finished in discreet two-tone grey. Whatever your interests, wherever you go, no matter the mode of transport, the Cub can go too and faithfully record anything asked of it.

And here's what it will do. It operates at an approximate tape speed of 3¾ i.p.s., the frequency response is 150-5,000 c/s, it is a dual-track machine giving a total 30 minutes recording time. So simple that even a child can work it, the Cub has a single control for Stop, Start, Recording, Playback and Rewind, as well as a temporary Stop Control for immediate stop or start. With it goes a special connecting cable



so that it can be used with a radio, radiogram or auxiliary external equipment for recording or playback. When this is connected it immediately cuts out the Cub's own built-in high quality permanent dynamic loudspeaker, so that the output can be fed to an external amplifier and loudspeaker system. Another feature is the special socket for easy connection to an external 6-volt motor supply instead of the four 1.5-volt cells.

A high quality dynamic microphone with high sensitivity and a good frequency response is included in the purchase price of 26 guineas. The batteries, which are extra, cost 3s. 11d.



Grundig (Great Britain), Ltd., 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 gns. Supplies of the old type are still available.

The Sound Belle Tape Recorder is manufactured by Tape Recorders (Electronics) Ltd., 784-788, High Road, Tottenham, N.17, and is obtainable from all leading retailers at the remarkably low price of 26 guineas, including Sound long play tape, spare Spool, Sound crystal desk microphone, safety tape mains lead, extension lead and full instructions, ready to use. A carrying case is available as an optional extra at only 42/-. This also holds microphone and spare tapes, etc.

The aim of the manufacturers has been to produce a low-priced twin track recorder which is absolutely reliable and giving superb performance. The deck mechanism is manufactured to extremely high standards and is designed and built specifically for the Sound Belle by the manufacturers. All steel parts are heavily cadmium plated and the standard of engineering leaves nothing to be desired. The Sound Belle Tape Recorder has a built-in 7 in. x 4 in. elliptical loudspeaker giving 3 watts output with excellent reproduction, and is a complete recorder requiring no additional parts.



Absolute reliability has been achieved by the differential speed principle. Recordings are made merely by plugging a microphone, radio, etc., into the appropriate socket, pressing the "Record" button and adjusting the gain control by means of the electronic eye recording level indicator. To play back recordings the tape is returned to its original position by means of the "Fast" button and the "Playback" button when pressed. The rewind is extremely fast. The button marked "P.A." will, when pressed, convert the tape recorder into an amplifier, and if a radio jack, record player pick-up arm, etc., is connected this will be amplified and played over the instrument's own loudspeaker. Erasure of old recordings is automatic whenever a new recording is made. This is accomplished by means of an erase head fed from a 50 kilocycles per second oscillator.

A playing time of over half an hour can be obtained with the tape supplied on each track, giving a total of well over one hour.

The L.P. tapes supplied with the machine are wound on 4½ in. spools. The centre fitting conforms to international standards, and any size of spool up to this diameter can be fitted. There is a unique spool retaining device which allows the Sound Belle to be used in any position, even upside down!

The Sound Belle is for use on all voltages, A.C. mains, and the overall size is only 10 in. x 8 in. x 5 in. and weighs only 11 lb. approximately. The recorder is fully guaranteed.

## TRUVOX LIMITED

*announce the addition of two new Tape Recorders to their range of Tape Recording Equipment.*

The "Melody" Tape Recorder (the smaller model) is only 11 in. x 9 in. x 5 in., but takes 4 in. spools with 300 ft. of standard play or 400 ft. of long play tape. This instrument has a frequency response of 80-6,000 cps. with a single speed of 3½ i.p.s. Its output is 2 watts and it weighs 11 lb. The internal speaker is a 5 in. x 3 in. hi-flux model and the instrument is

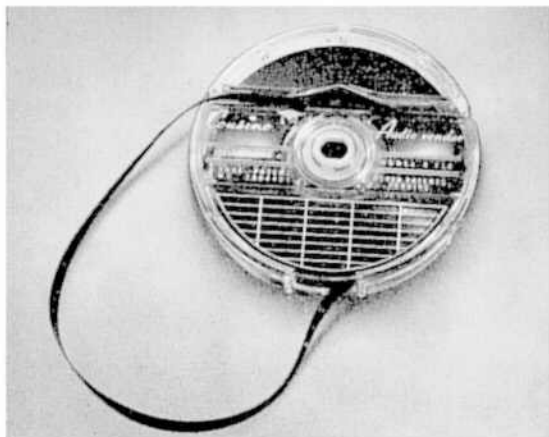


supplied complete with a crystal microphone and an attenuated radio lead. It is elegantly styled in the Italian manner—the case being a summer-blue leatherette with gold trim and the deck is in two-tone blue with the controls in white with silver trim. It is suitable for 100-250 volts A.C. List price, complete—£36. This instrument has been designed for the 'teenage market, to which its dainty elegance has immediate appeal.

The "Harmony" Tape Recorder is slightly larger—size 12 in. x 9 in. x 5½ in., but takes 5 in. spools with 600 ft. of standard play or 850 ft. of long play tape. It has a frequency



response of 80-7,000 cps. with a single speed of  $3\frac{3}{4}$  i.p.s. Output is 2.5 watts, and it weighs  $13\frac{1}{4}$  lb. The internal speaker is a 6 in. x 4 in. hi-flux model and the instrument is supplied complete with a crystal microphone and an attenuated radio lead. The case is covered in simulated pigskin with gold trim. The deck controls include a push button assembly for fast speeds in both directions and for recording and replay. The instrument is suitable for 100-250 volts A.C. List price, complete—£44.



*Philips Continuous Tape Cassette Type EL 3963/00*

Intended for use primarily with the Philips AG 8108 G model tape recorder and with certain other models which have a left to right tape sense and facilities for locking the tape turntable in a stationary position during recording/playback. Made of clear plastic, with a diameter of  $3\frac{3}{4}$ " and contains low function magnetic tape coated on both sides. Playing time 20 minutes at  $1\frac{1}{2}$  i.p.s. 10 minutes at  $3\frac{3}{4}$  i.p.s. 5 minutes at  $7\frac{1}{2}$  i.p.s. These times may be doubled by the foundation of a "Möbius Loop" as described in the operating instructions. Price £5 suitable for applications requiring a continuous operation of directions, messages or signals.

### THE WYNSOR STORY

Like many success stories, that of WyndSOR tape recorders begins in a very small way and under almost insurmountable difficulties. The earliest ancestors of the present handsome products that bear the name of WyndSOR were hand-made in two rooms over a radio shop, by the proprietor and one or two assistants. One man did the design, organised and contributed to the making and drove the finished products off in the van to demonstrate and sell.

This sounds as though it was a long time ago and, relative to the life history of tape-recording manufacture, it is. In fact it was nine years ago and that same proprietor is the managing director of the whole WyndSOR organisation. This is a paramount factor in the success of WyndSOR tape recorders. The remarkable reputation the name now has stems from this continuity of experience in design and manufacture from the very birth of the industry—one which is now in the turnover bracket of millions of pounds per annum.

Although the WyndSOR group is now large enough for the research, design and development aspect to be

an off-shoot of its own (and incidentally perpetuating the old title of Magnetic Recording Company) the original designer is still the principal creative brain and personally designs every model bearing the WyndSOR name. And, in addition, the Magnetic Recording design team even creates new models for other manufacturers.

The success of WyndSOR tape recorders lies basically in good design based on sound experience (no pun intended). Scrupulous attention is given to high standards of both performance and appearance. Frequency response is almost a fetish at WyndSORS, whether it is the Buyer of components (all close-tolerance), the man on the production line or the Test Engineers in any one of the four test bays, through which each machine must pass. Every WyndSOR recorder must achieve the specification quoted on the leaflet.

Such is the WyndSOR "know-how" that the Magnetic Recording Company designs and builds special tape recorders for such exacting customers as the Ministry of Supply. Indeed a most unusual specimen called for by the Guided Missiles Division of the M. of S. was taken in their stride.

WyndSORS do not believe that people have cloth ears and this has been proved in that WyndSOR tape recorders sell on their merits and with only prestige advertising. The name has maximum repute in the electronics trade and a new model comes into production with several weeks' orders in hand purely on the issue of photographs and specifications to the trade.

WyndSOR tape recorders are now in use all over the world and have been instrumental in their owners winning many prizes. Most recently a WyndSOR was used by one of the award winners for the Ten Best Amateur Films. This is the second year in succession for a WyndSOR success in this field.

Many professional broadcasters, musicians and famous names in the entertainment industry have WyndSOR tape recorders and the firm takes a pride in its testimonial file, which is constantly fattening.

With the same man who started all this at the helm and a team of enthusiastic professionals under him, the WyndSOR banner will continue to fly high.

WyndSOR stockists and WyndSOR owners have always the link with an organisation which guarantees a reliable product and a continuing after-sales-service. The very first WyndSOR models are still being serviced as a normal routine.

The present WyndSOR output is concentrated entirely upon the WyndSOR "Viscount," in view of the phenomenal success of this model. It is a brilliant portable at only 49 guineas complete with microphone and 1,200 ft. reel of tape. This success is not surprising when one hears the quality of recording that the "Viscount" gives and considers it in conjunction with its superior styling and the many additional features it affords. Furthermore WyndSORS have always made a speciality of enclosing a really fine speaker (10 in. x 6 in. elliptical) in a detachable lid which acts as a baffle and defeats the possibility of microphony. The "Viscount" therefore sounds really attractive when played through its own equipment without any added expenditure on a large speaker or other ancillary equipment.

Furthermore the amateur ciné or amateur drama enthusiast is able to utilise the facility of placing the source of sound in the required position (behind the ciné screen or a piece of scenery) whilst retaining the operating controls on the projection table or in the stage manager's corner.

It is no wonder that WyndSOR is such a well-liked name in the tape recorder world. The facts testify that it is a reputation which is well deserved.



# **AND NOW**

To anyone who purchases a Recorder from us, of either our own make or any other make that we stock, we offer a fantastic range of free accessories, the value of which can be anything up to £10 10s. There is no catch in this offer and this applies to both cash and easy term purchases. We are sure that you will wish to take advantage of this and at the bottom of this page there is a small form which, if you send to us, we will immediately let you have our brochures and details of this wonderful offer by return. Amongst the many accessories which you are able to obtain free of charge, are such things as Pre-Recorded Tapes, Microphones, Floor Stands, Extension Speaker Units, Splicing Kits, Spare Tapes, Telephone Adaptors, Earphones, etc., etc.

Such has been the response to our last advertisement that at present we have a short waiting list for our Bromley 59 and also the Bromley De-Luxe. However, we should be able to avoid excessive delay with those of you who have yet to place your orders. The response to these two Recorders has been so overwhelming that we have had to re-organise to meet the demand. From the many letters reaching us from our customers who have purchased either one of these two machines we know that they have reached not only ours, but also their expectations. The same wonderful offer applies to both of these two machines and thus once more gives the most attractive purchase that you can obtain in the Country.

## **THE TAPE RECORDER SERVICE CO.** **43 NAPIER RD., BROMLEY, KENT Ravensbourne 6119-4498**

---

Please send without obligation on my part, details of your Bromley recorders and Soundcraft speaker enclosures.

I am interested in purchasing ..... outright ..... easy terms.

Name .....

Address .....

.....



# Walter 303 De Luxe

...the most popular member  
of the club!

A Tape Recorder with everything for everybody! Unique Walter 'joystick' control; two speeds,  $3\frac{3}{4}$ " and  $7\frac{1}{2}$ " per sec.; two inputs, microphone and radio/gram; two outputs, extension speaker and external amplifier; tone and volume control; 3 watts undistorted output giving enough volume to fill a small hall; up to 3 hours playing time on long-play tape — or 4 hours on double play tape. All this, complete with crystal microphone, tape and 12 months guarantee, for only 42 gns.



**ONLY**  
**42**  
**GNS**

*...and two more winners:*



## Walter 505

Aristocrat of the Walter range. For home, office, professional or club use, a completely satisfying performer. 4 watts undistorted output with enough volume to fill a medium sized hall, 4-stage built-in amplifier, two speakers, pencil microphone and spare spool storage compartments. 12 months guarantee

**57 GNS**

## Walter 101

Best bargain yet in Tape Recorders with all the standard Walter qualities. 2 watts undistorted output, enough volume for the largest living room. 5" built-in speaker, 5" reels, giving one hour's playing time. 12 months guarantee - all for the astonishing price of



**29 GNS** including microphone

### SERVICE CENTRES

All owners of Walter tape recorders can call on any one of 200 Walter service centres appointed throughout the country for free service and advice, irrespective of where they bought their recorder.

WALTER INSTRUMENTS LTD • MORDEN • SURREY • Phone DERWENT 4421-5

# THE CLUBMAN VICTOR



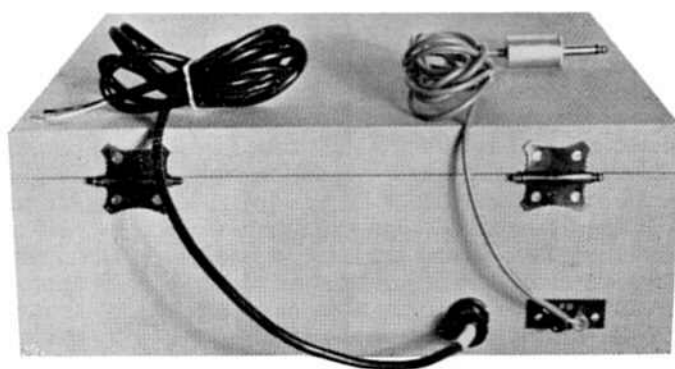
**The only Portable Gramophone specially designed for use as an accessory to a Tape Recorder**

(Supplied complete with mains lead and tape recorder connecting lead)



## SALIENT FEATURES

- 1 Four speed motor
- 2 B.S.R. Gramophone Deck
- 3 Strongly constructed portable case, beautifully finished in Rexine
- 4 Special plug connection in the rear for direct linking with Tape Recorders
- 5 Provision made in the front for the addition of a mixer to be made available shortly



Rear view showing mains lead and pick-up lead complete with jack plug for connection to Tape-Recorder (This plug varies according to the make of Tape Recorder)



Illustrating simple connection



Ready for use

**SOLE DISTRIBUTORS**  
**W. J. & G. R. WILLIS, Ltd.**  
**POSTAL SERVICE ONLY**

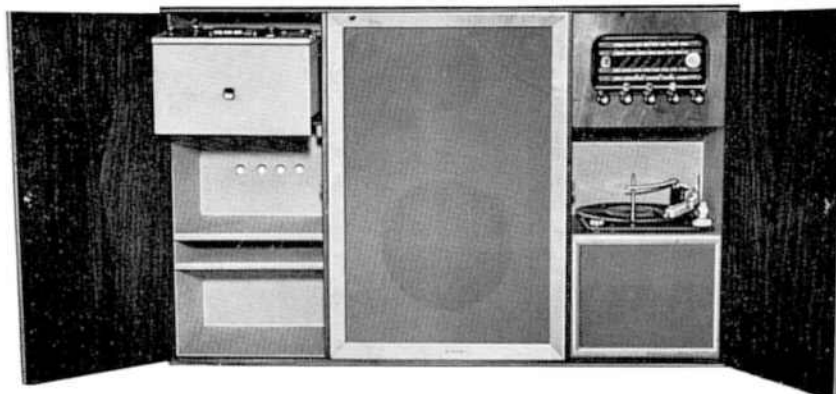
# A Directory of Localised Clubs

- ABERDEEN.** CARNIE, A. G., 181, Hilton Avenue.  
**BELFAST.** SCOTT, W. J., 41, Haypark Avenue, Ormeau Road.  
**BIRMINGHAM.** CHAMBERS, M. L., 139, Goldthorne Avenue, Sheldon.  
**BIRMINGHAM.** HOLLAND, A. E., 203, Burbury Street, Lozell's.  
**BIRMINGHAM.** OSBORNE, D., 75, Millmead Road, California.  
**BLANDFORD, Dorset.** NEWELL, P. E., Milborne, St. Andrews.  
**BOURNEMOUTH.** GAYMER, F. T., 67, Old Christchurch Road.  
**BRISTOL.** BEATON, R. F., 12, De Clifford Road, Lawrence Weston.  
**BRISTOL.** LOVELL, A., 12, Longmore Road, Ashton.  
**CHESTER.** YATES, E. (Brit. Tape Recording Soc.), 210, Stamford Road, Blacon.  
**CHISLEHURST.** BRAIDWOOD, J., 29, Defema Road.  
**Co. DURHAM.** RIPPINGTON, JOHN, 30, Brearnish Street, Jarrow.  
**COLCHESTER.** YEMAN, S. J., 1, De Vere Road, Lexden.  
**COVENTRY.** PENFOLD, R., 48, Holbrook Lane.  
**COVENTRY.** REYNOLDS, R., 1, Thurlstone Road, Radford.  
**COVENTRY.** SIMMONS, M. J., 102, Lawrence Saunders Road, Radford.  
**CRAWLEY.** WATSON, R. C., 32, Southgate Drive.  
**CUMBERLAND.** THOMPSON, K. H., "Freya," Haverigg Milon.  
**DERBY.** NEWMAN, C. R., 9, Devonshire Villas, Barrow Hill, nr. Chesterfield.  
**DEWSBURY, Yorks.** WALKER, M. P., 67, Victoria Road, Halifax Road.  
**DUNDEE.** AITKEN, C. W., 59, Stathnastine Road.  
**EASTHAM, Cheshire.** SWEENEY, G., 168, Mill Park Drive.  
**EAST LOTHIAN.** GIBSON, JAMES, 132, Church Street, Tranent.  
**EDINBURGH.** PENMAN, J., 22, Lauriston Place.  
**EDINBURGH.** PENMAN, J. F., 33, Tylers Acre Road.  
**EDINBURGH.** WHYTE, A., 33, Tylers Acre Road.  
**GLASGOW.** CRAIG, D., 55, Ledaig Street.  
**GRANTHAM.** HUDDLESTONE, R. V., c/o 33, London Road.  
**GRIMSBY.** LEIGHTON, G. H., 21, Langton Drive, Nunthorpe.  
**HALIFAX.** FAWTHROP, T., 17, Rawson Street.  
**HAMPTON.** SAUNDERS, H. E., 20, Nightingale Road.  
**HEREFORD.** PEGG, J., 58, Homestead, Potson.  
**KEIGHLEY.** WELLS, K., 318, West Lane.  
**KETTERING.** WEBB, A. M., 93, Regent Street.  
**KETTERING.** WHITE, S. R., 61, Stamloy Street, Rothwell.  
**KIDDERMINSTER.** WALTERS, J. R., 29, Pitt Street, Broadwaters.  
**LEAMINGTON SPA.** RACE, B. J., 30, Ashford Road, Whitnash.  
**LEAMINGTON SPA.** RANDLE, D. V., 4, Edmons-cote Road.  
**LEICESTER.** STARIE, P. J., 56, Minehead Street.  
**LEIGH.** HILTON, F., 10, Edale Road.  
**LEIGH.** SHINN, J., c/o John Shinn & Sons, Ltd., Town Centre.  
**LIVERPOOL.** REILLY, MARY, 11, Speke Hall Road.  
**LONDON.** ASLIN, E. R., 269, Green Lanes, Finsbury Park, N.4.  
**LONDON.** DAVIES, RONALD, 99, Caulfield Road, East Ham, E.6.  
**LONDON.** HARKER, D., 62, Barmeston Road, Catford, S.E.6.  
**LONDON.** JONES, G. P., c/o G.P.O., Cables & Wireless, Electra House, Victoria Embankment, W.C.2.  
**LONDON.** NIXON, S. S., 16, Beethoven Street, Kilburn, W.10.  
**LONDON.** WATKINS, L., 40, Ravenslea Road, S.W.12.  
**LONDON.** WELLS, J. A., 178, Selwyn Avenue, Highams Park, E.4.  
**LUTON.** NICHOLS, M., 53, Sundon Park Road, Sundon Park.  
**MAIDENHEAD.** SILVESTER, R. J., 54, Grenfell Road.  
**MAIDENHEAD.** STRONG, G., 89, Clare Road.  
**MERTHYR TYDFIL.** GRIFFITHS, FRANCIS C., 4, Garden City, Penydarren.  
**MIDDLESBROUGH.** HARRISON, BRIAN G. W., 27, Tennyson Street.  
**MIDDLESBROUGH.** LONSDALE, D. H., 70, Devonshire Road.  
**NEW FERRY, Cheshire.** O'DONNELL, MERRYLE, 385, New Chester Road.  
**NORWICH.** ROBERTSON, DAWSON, W., 5, Essex Street.  
**NOTTINGHAM.** LITTLEWOOD, N. D., 129, Stanhill Road.  
**NOTTINGHAM.** WADE, B., 56, Mandalay Street, Badford.  
**OLDHAM, Lancs.** CRAIG, BEVERLEY, STUART, 126, Main Road.  
**OXFORD.** SCOTT, B. H., 173, Banbury Road.  
**POOLE.** JONES, H. R., 442, Poole Road, Branksome.  
**READING.** BEILBY, L., 104, Whitley Wood Lane.  
**READING.** BROOKS, G., County Police Station, Bradfield.  
**READING.** NOYES, D. M., 4, Froxhill Avenue.  
**RUGBY.** BROWN, MIKE, 219, Clifton Road.  
**SHEFFIELD.** SHEPHERD, F., 4, Birchitt View, Dronfield.  
**SHERWOOD, Notts.** FRICKER, K., 10, Sherwood Avenue.  
**STAFFORD.** WHELDON, H. J., c/o Kay's Business, Services Limited, Tipping Street.  
**SUTTON COLDFIELD.** SMALLWOOD, ROGER, 28, Wrekin Road.  
**UXBRIDGE.** ASLIN, ROGER E., 29, Belmont Road.  
**WINCHESTER.** RUSHTON, Mrs. P. E., 11, Chat-ham Road.  
**WOKINGHAM.** WIDDOWS, Miss M. E., Reading Ciné & T.R. Society, Ripplesmore Cottage, East-hampstead Road.  
**WORTHING.** WIBER, K., Clarendon Yard, Mon-tague Street.  
**YORKS.** QUIGLEY, TERENCE, 32, Derby Road, Rawdon, nr. Leeds.



# CUSTOM BUILT BY CONNAUGHT

Two outstanding new models by Connaught (Tape Recorders) Ltd. Hand built to order for the Connoisseur. Versatile basic design allows a wide range of facilities to cater for all tastes and requirements.



Ribbon or Moving Coil Microphones.  
High quality 4 speed Autochanger with speed adjustment.  
Overall frequency range:—  
30-20,000 c.p.s.

Four Speaker System, 15" Bass unit, 9" middle unit and two tweeter units.  
Bass unit housed in unique damped enclosure with variable Pressure Control valve.

## Tape-o-Gram

10 Watts undistorted output, 12-14 watts peak.  
AM/FM high quality tuner unit.  
Separate Bass, Treble and Volume controls.  
Full compensation for all types of records.  
High quality Tape Deck with two speeds  $3\frac{1}{2}$  and  $7\frac{1}{2}$  i.p.s.  
Magic Eye Tuning indicators and recording levels.  
Continuous Tape monitoring and Erase cut out switch.

Record Storage Compartment for 75 records and 16 reels.

PRICE:- £210 - £250 Depending on microphone supplied and autochanger or transcription recorder player.



## Console

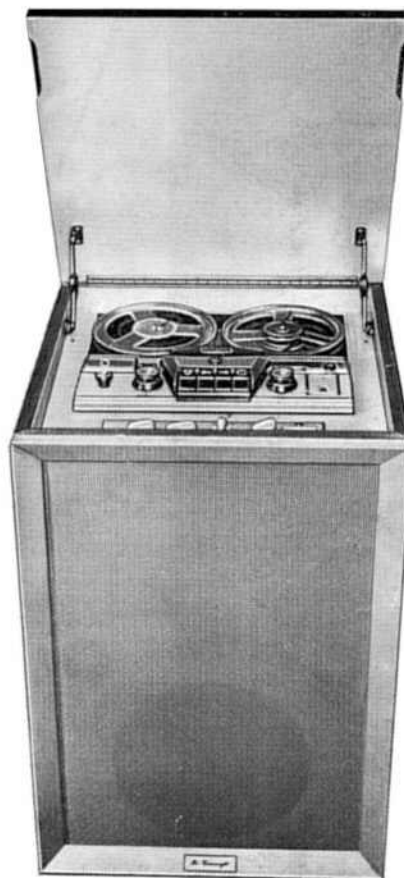
10 Watts undistorted output 12-14 watts peak.  
High quality, two speed tape deck.  
Overall frequency range :- 30-20,000 c.p.s.  
Separate Bass, Treble and Volume controls.  
Facilities for recording from Radio, Gram Pick-up and Microphone.  
Full correction facilities for all records.  
Erase cut out switch for superimposing.  
Tape monitoring facilities.  
Latest type Magic Eye recording level indicator.  
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*Tape Recorder continued from page 24*

of the average listener and an effective compromise has to be achieved. The following table will act as a rough guide:—

All Frequency Ranges are approximate. To be used as a guide.

No. of loud-speakers	Size	Bass or single loud-speaker (Cycles per second)	Middle range loud-speaker (Cycles per second)	Treble loud-speaker (Cycles per second)	Total No. of loud-speakers	Approx. total frequency range
1	7" x 4"	70 to 9000	Nil	Nil	1	70 to 9000
1	10" x 6"	50 to 12000	Nil	Plus 1 7000 to 18000	2	50 to 18000
1	10" x 6"	50 to 1000	Plus 1 1000 to 12000	Plus 1 7000 to 18000	3	50 to 18000

The last example includes a special additional unit which improves fidelity.

From the above table it will be seen that the addition of a middle range or treble loudspeaker will increase the high notes and that the bass response is better or goes lower the larger the loudspeaker. Therefore, it can generally be stated that tape recorders possessing only one small loudspeaker can only reproduce a very limited frequency range. There are many tape recorders available with two and three loudspeakers and the Club member should investigate these, and if in doubt write to our Technical Readers' Service for advice.

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All Makes Available from Tape Recorders (Bournemouth) Ltd., New and Reconditioned. Telefunken and Walter Authorised Service Agents. Write for Free Brochure to: Seamoore Road, Westbourne, Bournemouth, Hampshire. Tel.: Westbourne 64292.

New and Unused Recording Tape 7in. reels 1,200ft. Emitape 4 (equal to 88) 25/6 each (usual price 35/-), 3 reels 24/- each, 6 reels 22/- each; Ordinary tape 7in. plastic reels 16/6, 5in. 13/3, 5in. 12/-; Super quality 7in. 19/3, 5in. 15/3, 5in. 13/9. Empty plastic reels 7in. 2/10, 5in. 2/8 P. and P. paid. Guaranteed on a money refunded if not satisfied basis.—A. Marshall and Son Ltd., 18 Cricklewood Broadway, London, N.W.2.

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Rendezvous Records offer a comprehensive 33-45-78 Tape to Disc Service. S.A.E. for latest leaflet: 19 Blackfriars Street, Manchester, 3.

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We have been asked many times in the past by members if the Club would accept secondhand E.P. and L.P. records in exchange for tapes, accessories or records hired from the library. We have therefore worked out a scheme whereby members wishing to dispose of either E.P. or L.P. records in good condition can send them to the Club and have their accounts credited on the following basis:

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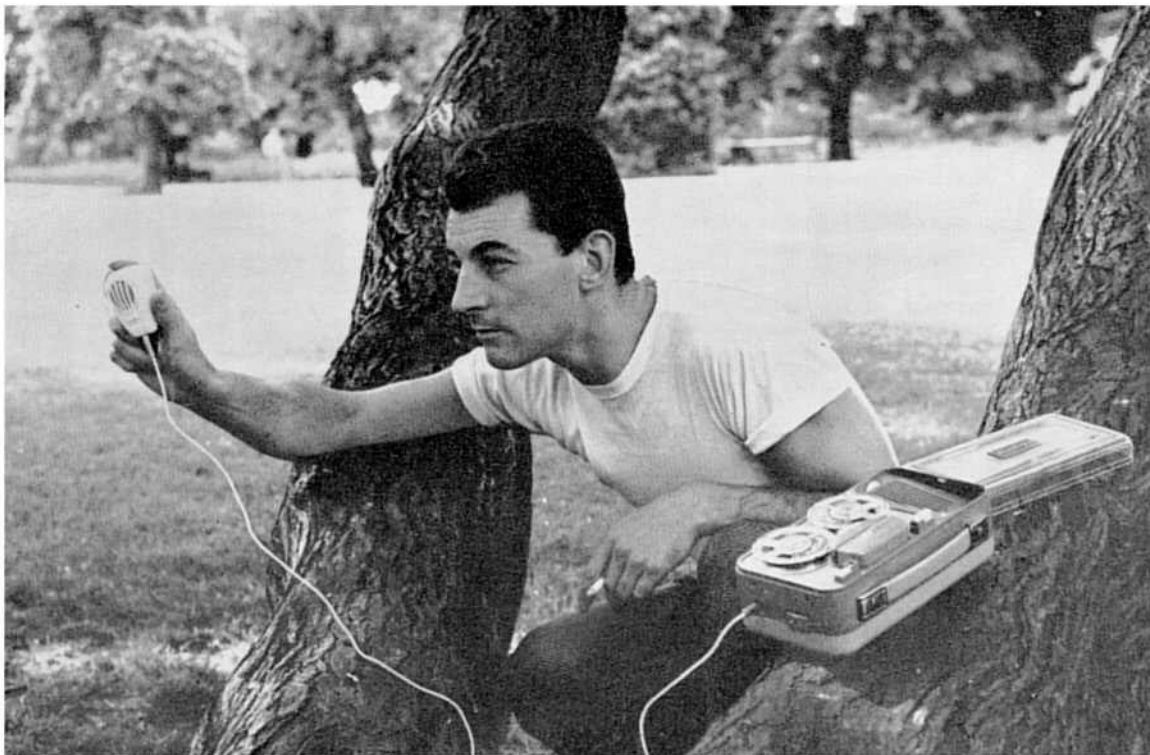
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