# amateur

# REGORDING TAPE

VOL. 4 NO.5

DECEMBER 1962

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buy this Christmas, you get in-

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A VINV

December, 1962



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# AMATEUR Tape Recording & Hi-Fi THE SOUND MONTHLY

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### A CHRISTMAS PRESENT TO ATR READERS

Don't overlook the special subscription offer on page 27. It represents a saving of 10s. to you and will make the perfect Christmas gift for your tape recording friend. Vol. 4, No. 5

December, 1962

## Tap those teenage talents!

By THE EDITOR

As the year runs out and Christmas comes round again, let's look back just for once to see what 1962 has brought us.

Last January ATR anticipated a boom in prerecorded tapes as the most exciting development due. The expectation has been fulfilled. The frequent issue of 3<sup> $\frac{1}{4}$ </sup> ips spools meeting the demands of popular taste has given the domestic tape recorder the exercise it needed, and manufacturers have not been slow to adjust to the situation

At the same time, the needs of those who want something more than a tape record player have not been overlooked. The creative recordist who, not so long ago, had only two or three 'semi-professional' machines to choose between now has every excuse to



be finicky. And every right to be, at the prices he is prepared to pay for one or other of the magnificent instruments which currently grace the scene.

### TOWARDS PERFECTION

Another important development has been the introduction of Triple Play tape. Important because, though it may seem an unnecessary refinement to the majority, it indicates that tape manufacturers, too, are anxious to cater for every possible need and to strive constantly for perfection.

A glance through the advertisement pages of ATR should convince any who may have doubts that the business of tape recording is in a pretty healthy condition at this time. If the industry continues to show the initiative it has brought to bear in the past year, the prospect should be even brighter.

And what of tape recording as a pastime—as an amusement and an absorbing interest? The varied aspects of the activity reflected in *ATR* every month give sufficient answer to the question. Dust may still lie heavy on many machines, but there is evidence of a growing awareness of the full potentialities of the tape recorder. Particularly among the younger generation—the fount of enthusiasm and enterprise which, if properly encouraged, will bring a fresh surge of vitality to the hobby.

### GIVE THEM A HAND

In the next week or two, thousands of teenagers will be buying—or persuading parents to buy—their first tape recorder. Before they are much older they'll be exerting their influence, however small, on the industry—and they *could* be making a big difference to the future progress of the hobby. A lot depends on how they use that recording button—if at all—as a change from the playback switch.

*ATR* will be doing its best to enlighten and encourage them in 1963. If you can give them a hand, it will help a lot. Meanwhile, to all our readers, happy results with your Christmas recordings!

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# Taped sound breaks through the price barrier

## NEW FERGUSON 4-TRACK RECORDER GIVES YOU MORE FEATURES FOR LESS MONEY

How is it possible for the price? The answer lies in the years of designing and engineering effort that Ferguson have spent in producing a tape deck of their own. This recorder is *all* Ferguson. That's why it cost less to build. The cost saving has been passed on to you first by lowering the price, and then by cramming it with all those features you never dared hope to afford. Sceptical? There's only one cure for your scepticism. See the new Ferguson recorder at your dealer's. Trust to the evidence of your own eyes—and ears. Trust to the reputation of Ferguson. And finally, trust to your own instinct for value.



- · Piano Key controls
- Tape "inching" facility
- Four-track, two speeds: 3<sup>3</sup>/<sub>4</sub> per sec., 1<sup>2</sup>/<sub>8</sub> per sec.
- $3\frac{3}{4}$ " per sec.,  $1\frac{6}{8}$ " per sec. Reel diameter:  $5\frac{3}{4}$ "
- · Fast spooling in both directions
- Pause control
- 'Play-through' | Superimpose Button
- Press-button reset for tape position indicator
- Automatic stop operates at both ends of tape
- Electron beam recording level indicator
- Weight 19 lbs.

Complete with microphone (incorporating remote control switch), 850' long play tape, take up spool, connecting leads. Powered accessories socket, using suitable attachments, enhances scope of recorder with playback of stereo tapes, track to track recording synchronization, automatic stop/start by voice or signal, synchronized slide projector/recorded commentary operation, etc. etc.



A new twin-track single-speed Ferguson, too! Incorporates almost all the features of the fourtrack model, yet the Ferguson 3200 costs only **26** GNS



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### JOHN BOURNE considers the case of

# THE FORBIDDEN MACHINE

A T a recent meeting of a certain education committee, the question of tape recorders as initial equipment for new schools was being discussed.

"We give them sound projectors, film-strip projectors and record players—why not tape recorders?" one committee member argued. The chairman finally summed up the discussion which ensued.

Said he: 'We are not satisfied that tape recorders are of sufficient educational value to warrant inclusion in the equipment list.'

What a poor commentary on our enlightened approach to education! Teachers who have discovered for themselves its tremendous potential would certainly rate the tape recorder of equal importance to the other items mentioned and might even place it at the top of the list.

### Not enough

But the number of teachers who have put this new educational aid to imaginative use in the schools is regrettably few. It is used in many cases for speech training, for taping school broadcasts, for recording school choirs and classroom plays. All admirable uses, admittedly, but too often it ends there.

What is worse, in some schools where—perhaps through the well-meaning efforts of the parent-teachers' association—they have been provided with an expensive tape recorder, it has been regarded as just another status symbol and left to lie idle in the stock room.



'Look at it!' says the Deputy Head. 'It hasn't been used for the past three months-a complete waste of money!'

And he is so right, of course!

I believe that the purchase of a highly expensive machine for school use is, in many instances, a waste of money. Some of the tape recorders to be found in schools today, too often under a dust cover in the corner, are luxuries which they should not have been allowed to afford.

A question for teachers . . . is your tape recorder in a rut or locked away in a cupboard?

**Wise spending** From experience I would say that a cheap portable transistor machine which can

say that a cheap portable transistor machine which can be easily operated is of much more value to the average school than one costing £100.

If I had to plan the purchase of recording equipment for a school I would suggest the following items:

**1.** A cheap but efficient transistor portable with a tape speed of  $3\frac{3}{4}$  ips.

2. A moderately priced mains machine capable of running at the same speed; and

3. At least four pairs of headphones.

This vital equipment may be obtained for less than £60; and if it is desired to win the interest of pupils to the point of active partici-SEE PAGE 18



A small portable tape recorder being used in the classroom, and (right) for an outdoor exercise, at a school in Essex.

December, 1962

# WORLD of SOUND

### **Exercise Tapespond**

**T**WENTY miles of recording tape will be used in carrying Christmas messages from relatives and friends of 10,000 naval men and marines serving in the Far East, on Christmas Island, and in the Antarctic patrol ship HMS *Protector*. The messages are being recorded at 340 centres from Penzance to Aberdeen and re-recorded at the Royal Navy's Electric School at Fareham, Hants.

### Ancient and Modern

Shortage of organists may make hymns on tape an essential item for church services, the Rev. R. Brown, chairman of Darlington Organists' and Choirmasters' Association, told members at their annual meeting.

### Prepared

Prevented by illness from opening a new group headquarters at Compton Heath, Surrey, Lord Peter Baden-Powell, son of the Scouts' founder, sent a tape recording of his speech with his apologies. The building now carries a plaque inscribed: 'This HQ was officially opened by the speech of Lord Baden-Powell...'

### Film musique

Combining electronic music and musique concrête (made from machinery noises), *ATR* Technical Editor F. C. Judd has produced the soundtrack for an instructional film dealing with plaster manufacture. He has also been invited to produce electronic music recordings for a Film Festival entry by Campbell Film Productions.

### Parish records

By tape-recording the recollections of aged inhabitants, the Rector of Shere, Sussex, the Rev. E. R. Hougham, has compiles a 'spoken history' of the village ... And at Barnham, in the same county, the Vicar, the Rev. G. Keable, has written the script for a 'sound history' of the village from Saxon to Victorian times, to be taped by a group of enthusiasts.

### **Robot Robert**

In an experiment at two rural police stations in Kent, routine phone calls are being recorded on tape for suitable action by the bobby when he returns from his beat. The idea is to save callers ringing up again, or troubling the policeman's wife.

### Grand gesture

Tape recording equipment, and lectures on how to use it, have been made available by Bradford's official Youth Department in preparation for a 'Drama on Tape' competition among local youth clubs.

### Hometown symphony

The local brass band, a school choir, church bells and the fire station siren were taped by Mr. Roland Butler of Rushden, Northants., in answer to a newspaper appeal from a former resident in South Africa for recorded sounds to remind him of home.

### Echo from 1924

Through a tape recording brought from Victoria, Australia, by a visiting nephew, Mrs. W. Simpson of Birstall, Yorks., heard her brother's voice again for the first time in 38 years.

### Cupid's message

After helping 500 men of the 1st Battn. Prince of Wales' Own Regiment to tapespond with relatives and sweethearts at home, 24-year-old 'Auntie' May Whitehead of Wakefield, Yorks., returned from Wuppertal, Germany—with the news of her engagement to Cpl. Edward Fussey of Hull, to whom she is now sending her own taped messages....

TOP RIGHT: ATR Technical Editor F. C. Judd opens the Audio Exhibition organised by the Cambridge Amateur Tape Recording Society. CENTRE: A lofty view of some of the stands. BOTTOM: ATR Editor Walter Gillings talks with club secretary Michael Renshaw. (See report on page 20.)

### PHOTO VIEW OF AN AUDIO EXHIBITION





Amateur Tape Recording & Hi-Fi

### Who to tell your troubles to? RACHEL LINDSAY has a tip for teenagers

# **TAPE CAN HELP YOU TO FIND THE ANSWERS TO** LIFE'S LITTLE PROBLEMS

HEY say a trouble shared is a trouble halved, and I've found that a trouble recorded is often a trouble erased. The main problem in talking over your worries is that one often gets embarrassed in having to recount them. Here's another way your trusty tape recorder can help you.

Sometimes I worry over things I wouldn't even tell my best friend. I might want to tell her, but I'd get embarrassed having to do so while she was watching me. That's where a tape comes in handy. I record my problems on it and pass it to my friend, who records her advice.

### Straight speaking

She is able to tell me exactly what she thinks, and the fact that I'm not there to interrupt or to embarrass her means that she can give me advice straight from the shoulder. Some of the advice has hurt, but she's been able to state her opinions much more freely because, as she said herself. 'I haven't had your great big, soulful eyes looking at me.'

We found this method of talking over method of talking over our troubles so success- Strictly Feminine

ful that we decided to take it a step further. My friend has a son and daughter in their middle and late 'teens, and they're always telling her of the difficulties they come up against with their friends and actually asking her opinion.

Eventually she told her son and daughter that the next time they had some friends round they should put all their little problems on tape so that she could play it back and record her suggestions.

Well, to begin with, it was just an amusing way of spending an evening. Naturally, she got lots of silly questions to which she



gave lots of silly answers. What colour lipstick should a girl wear . . ? The right clothes for the occasion . . .

This fair

with her

4-track

Ferguson

teenager is quite happy

But gradually the questions became more serious. Problems of petting, of being in love with a boy parents don't approve of, in-laws, financial trouble, and the hundredand-one different worries that upset young people on the borders of maturity vet without the experience to cope.

### Question session

Soon my friend had more than she could tackle, and she decided to have a weekly party when she could invite her own friends over. They would play back the tape with the questions on it-each teenager who posed a question gave a fictitious name so that there was no embarrassmentand after listening to it the adults would tape their own com-

ments.

The teenagers were very clever, too. They

got different people to read each other's questions, and there have been occasions when a fond parent has given a most sensible answer to a problem without knowing that it was their own child's problem they were discussing. This meant that they could consider it far less emotionally.

#### **Everybody benefits**

The whole thing, in fact, has worked very well. Every Friday night the teenagers gather round at my friend's house. It has become quite a thing now, and a lot of young people

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come over and record the things that bother them. It isn't a mixed party: the girl has her friends in first, and her brother and his friends come afterwards, either the same evening or on another day.

And every Sunday night my friend holds an At Home for the parents and neighbours. They have tea and biscuits, they listen to the tapes, and they discuss the youngsters' problems very carefully before recording their answers.

At least one good thing has come out of all this. It isn't only the teenagers who've learned something . . . it's an education for the adults, too!

### THE TAPE LIBRARY

 $\mathbf{T}_{ATR}^{\mathrm{HE}}$  unique service offered by the ATR Tape Library can solve many problems for tape recording clubs and other enthusiasts. Lectures on creative recording, electronic music, sound effects tracks and non-copyright background music are at your disposal. All you have to do is send in a reel of tape and pay a 7s. 6d. copying and postage charge.

Special recordings for hospital and blind services are also available for free copying. Full particulars from ATR Tape Library Service, 152 May-bank Road, South Woodford, London, E.18.

RUSS ALLEN (after a slight technical hitch) decides:

# PD DIE WITHOUT HI-FI !

**D**<sup>UE</sup> to a technical hitch I was obliged to play some of this month's discs on a non-hi-fi machine. How, I now ask myself, can anyone live with one of these short-range, soundstifling efforts?

I'm pretty sure I couldn't.

When I came to replay these discs on hi-fi equipment it was like listening to a different recording. For example, Peter Burman's Jazz Téte-a-Téte. Columbia 33SX 1452. On first hearing (non-hi-fi) I was not at all impressed, but second time round (with hi-fi) I found it quite entrancing.

There are four small British groups—the Johnny Scott Quintet, the Pat Smythe Trio with Shake Keane, the Ray Premru Group and the Alan Clare Trio. The musical content is not particularly original but well worth hearing. It's chamber music-ish; neat, thoughtful, never raucous.

If your date is téte-a-téte, play this record to her, mate!

•Straight Ahead: Oliver Nelson with Eric Dolphy. Esquire 32-168. Nelson, alto, tenor, clarinet; Dolphy, alto, bass clarinet, flute; Richard Wyands, piano; George Duvivier, bass; Roy Haynes, drums. Recorded March 1, '61.

Six tracks, and each one the first take! Remarkable demonstration of the *rapport* between these men and their extreme competence . . . Five of the six tracks are Nelson's; he's fast becoming the busiest man on the jazz scene. Indeed, these young negroes Nelson and Dolphy, with Ornette Coleman and a few others, are so far ahead of their contemporaries they're even tailing the longhairs in their quest for new sounds.

Even so, most of what these way-out jazz boys are doing is still only what Bartok, Honegger, Stravinsky and Co. have been up to for the last half-century. But it makes for interesting listening, especially for advanced jazzophiles.



•Statement: The Milt Jackson Quartet. HMV CLP 1589. Jackson, vibraharp; Hank Jones, piano; Paul Chambers, bass; Connie Kay, ecember 14 and 16 '61

drums. Recorded December 14 and 16, '61.

An invigorating album which goes to prove how much Jackson and, particularly, Kay hold back within the confines of the M.J.Q. Without doubt, a really swinging group which brings out the best in Chambers, too.

A statement of great import.

●No 'Saints': Franz Jackson and the Original Jass All-Stars. Esquire 32-170. Recorded June 19 and 26, July 11, '57. Bob Shaffner, trumpet; Al Wynn, trombone; Jackson, clarinet and vocal; Bill Oldham, tuba; Ralph Tervalon, piano, organ; Lawrence Dixon, banjo; Richard Curry, drums.

I'm not by nature a trad fan nor a banjo lover, but this disc gave me tremendous enjoyment. It has some magnificent 'jass' played by men who were around in the beginning.

**FII**-F

discs

Shaffner replaced Louis with Oliver and later played with Jelly Roll. All the guys have similar histories. They sound as if they're still enjoying every moment. Dixon uses the banjo like a musical instrument and plays some knockout solos.

The tunes are all the old favourites— 'Bill Bailey,' 'West End Blues,' 'Sugar Foot,' 'Runnin' Wild'—and mate, it's great!

•An Electrifying Evening with the Dizzy Gillespie Quintet. Verve RLP 1586. Recorded February '61 at the Museum of Modern Art, N.Y.C. Gillespie, trumpet; Leo Wright, alto and flute; Lalo Schifrin, piano; Chuck Lampkin, drums; Bob Cunningham, bass.

Exciting, rumbustious jazz with a sense



t of humour. Dizzy's technique is as dazzling as ever, but he's matured and uses his ability with great taste. Everybody plays well, everybody solos likewise. The crowd roars approval, and so do I. Go and get electrified!

•Miles Davis at Carnegie Hall. CBS BPG 62081. The legendary performance of May 19, '61. Davis, trumpet; Hank Mobley, tenor; Wynton Kelly, piano; Paul Chambers, bass; Jim Cobb, drums, with Gil Evans and his 21-piece Orchestra.

This must have been one of the greatest jazz concerts ever. Davis is superb; he has never recorded so consistently well. Kelly too is on form; his solo on 'So What?' is a delight. Gil Evans' arrangements are fine and the 21 men do them justice.

This legendary performance will become a legendary recording. Make sure you have it in your archives.

●Johnnie Pate at the Blue Note. Esquire 32-169. Recorded July 3 and 10, '58. Pate, bass; Floyd Morris, piano; Wilbur Wynne, guitar; Johnny Whited, drums.

Pate as leader features himself on most tracks, but as he mostly plays melody as part of the neat little arrangements, it doesn't become laborious. Floyd Morris is the real jazz man of the set, which is more truly jazzslanted cocktail bar but the kind of bar I would frequent just to listen.

Delicious paté.

•Let's Jam. Claude Hopkins. Fontana 688 405 ZL. Recorded February 21, '61. *Hopkins*, piano; *Buddy Tate*, tenor and clarinet; *Joe Thomas*, trumpet; *Wendell Marshall*, bass; J. C. Heard, drums.

Mr. Hopkins has been playin' ever since I wer' a lad an' 'e still der make tha' ol' pianna talk. Fresh as a daisy he is, and that Joe Thomas too. Buddy Tate plays my kind of tenor, and this is a swinging mainstream set that could please almost everybody.



Making a multi-guitar recording with a Series 6 Tandberg tape recorder.

The Technical Editor, F. C. JUDD, A.Inst.E., tells you how to produce trick musical effects in

# NEW WAYS WITH TAPE

**O** NE of the virtues of magnetic tape, so well established as the ideal medium for sound recording and reproduction, is that it lends itself to almost unlimited experiment.

Many different recording techniques have been devised with the aid of magnetic tape and the tape recorder. The effect of using varying speeds is well known. Multiple mixing can be achieved with a mixing unit, and copying from one machine to another can also be the means of making new and interesting recordings.

Many of these facilities are now incorporated in a single tape recorder, and flexibility has at last become the keynote in the design of equipment for the true enthusiast. Several machines now available enable a recording made on one track to be transferred to another, together with fresh material if desired.

### Multi-music

With a machine such as the Simon SP5 a recording can be made, with or without echo effect, from mixed signal sources. When the first half-track recording has been made, it can be re-recorded on to the other half-track, with additional material from mixed sound sources.

Musicians will recognise the possibilities this offers. Such flexibility lends itself to the making of multi-music recordings. As a guitarist of moderate ability, I often make for my own amusement multi-guitar recordings, by playing first an accompaniment

of chording on one track and then adding the melody and counter-parts by re-recording from track to track.

By making use of different speeds, one can produce solo parts at impossible 'playing speeds', to which echo can be added if the machine will permit. These same techniques are used by the American guitarist Les Paul, whose records provide some excellent examples. The same effects can, of course, be carried out with two separate recorders and a mixer or mixing facility.

By making tape loops to supply rhythmic background, one can produce unusual music

The diagram (right) shows the modification to record-head connections necessary for the 'roving head' (below).

December, 1962

recordings by playing a conventional instrument against the tape-created rhythm. As an exercise, try splicing together into a loop four pieces of recorded sound, each of the same duration—each piece of tape being of the same length. Experiment with playing speeds and play against the 4/4 rhythm. By mixing such loops highly complicated rhythms can be produced.

SEE NEXT PAGE





15

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Whatever the type of programme you most enjoy you'll immediately recognise the consistent, uniform quality that you get from AUDIOTAPE ... extra crispness at the top, extra depth of bass, all without loss of the essential middle tones. AUDIO-TAPE has only one standard of quality-the finest obtainable.

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### NEW WAYS WITH TAPE

### -from page 15

Here is a fairly simple technique in which enthusiasts of musique concrête will see endless possibilities. The method of recording requires a half-track tape head (impedance being the same as the head on the recorder) and a small modification to the existing head connections, as shown in Figs. 1 and 2. The technique is to 'draw' the sounds on tape as shown in the photograph.

Sounds of almost any description-music, speech, tones, noisefrom a microphone, another tape recorder or a gramophone disc, may be fed into the tape recorder. Adjust the gain control to indicate maximum recording level and set the machine to 'record' after removing tape and spare spool. The signals are now at the roving head, together with the necessary recording bias.



Sound doodling by using a 'roving' record-head and a Simon SP5 tape recorder.

Anchor down a spool of tape so that it is still free to unwind, and pull out two or three feet. Now draw the roving head along the tape at different speeds, forwards or backwards-in long, quick runs of several inches; in short jerks; slowly for very short distances, and so on. Try replaying your experimental piece at different speeds, and with the application of a little tape cutting you will find you have a ready-made musique concrête producer.

If you have a stereo recorder the head can be applied to both tracks of the tape, and the result will be some highly dynamic movement to the different sounds.

### HAVE YOU ANYTHING TO SWOP?

### Another ATR Service

HAVE you a tape recorder, a piece of equipment or any accessories in good condition for which you have no further use but which somebody else might be looking for? Somebody who may have just what you need to offer you in exchange?

Why not send details of what you have to offer to ATR so that we can help you both to make contact? As another service to our readers we shall introduce in the next issue the ATR SWOP COUNTER. All entries will be included free.

Address your offers to: The Swop Counter, ATR, Room 532, Ulster Chambers, 168 Regent Street, London, W.1.

A. LESTER RANDS writes about

# COPYING AT HIGH SPEED



The Ferrograph 420 tape recorder permits stereo 'panning' of sounds.

THE problem sometimes arises of copying a tape originally recorded at a speed which is not available on your machines. For example, a tape recorded at  $1\frac{7}{8}$  ips is to be copied with machines having speeds of  $3\frac{3}{4}$  and  $7\frac{1}{2}$  ips only.

This means that the tape will have to be replayed at  $3\frac{3}{4}$  ips, copied at  $7\frac{1}{2}$  ips and then replayed at  $3\frac{3}{4}$  ips. Similarly, a tape recorded at 15 ips which has to be copied with machines having speeds of  $3\frac{3}{4}$  and  $7\frac{1}{2}$  ips necessitates replaying at  $7\frac{1}{2}$  ips and copying at  $3\frac{3}{4}$  ips, then replaying at  $7\frac{1}{2}$  ips.

This leads to saving time in copying by carrying out the whole process at twice the speed. If, for instance, one has to make several  $3\frac{3}{4}$  ips copies of a particular tape, the master recording should be at  $3\frac{3}{4}$  ips, but the procedure is to replay the master tape at  $7\frac{1}{2}$  ips and copy at  $7\frac{1}{2}$  ips. All copies can now be replayed at  $3\frac{3}{4}$  ips.

### Adjustment needed

No doubt the purists will raise a clamour here about frequency response or ask, 'What about CCIR characteristics?' Naturally, if one has to do constant copying work, the replay and copying recorder frequency correction networks should be suitably adjusted.

Professional copying concerns use specially modified machines for this purpose. With the average domestic class tape recorder little will be lost in copying at twice the speed; and with the help of an intermediate pre-amplifier as described in my last article, some frequency response modification can be introduced. It is important, however, that the master tape should be of the highest quality and free of hum and noise—particularly noise.

SEE NEXT PAGE

Gain control



The Brenell stereo machine has independent controls and amplifiers for each channel.

Gain control Channel 2 Channel 1 С MONO STEREO 1. Mono mic Ch. 2 Ch. 1 mic  $\bigcirc$ STEREO MONO MIXER 0 O  $\circ$ 0 0 ۰ Ch.1 Ch.2

Simple stereo 'panning' technique: (1) From a mono recording; (2) from a mono microphone; (3) from mixed microphones.

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December, 1962

### Another big issue including

### **CONSTRUCTION BOOK NO. 2**

### with complete instructions and diagrams for building

### THE ATR HI-FI PREAMPLIFIER

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### **Bind those back numbers!**

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ATR binders are available for only 13s. 6d. each, including postage and packing. Send your order to: Binder Dept., Amateur Tape Recording and Hi-fi, Ulster Chambers, 168 Regent Street, London, W.1.

### TAPE WITHOUT TEARS—from previous page

### Stereo from mono

Strictly speaking, what follows does not come under the heading of tape copying; nor do I mean to imply that one can produce stereo recordings from mono copies, at least not from music tapes. But by employing the copying process as outlined in my previous articles, the technique will enable 'moving sound' to be produced.

The idea is really only applicable to sound effects and surrealistic sound montage such as musique concrête, but some highly entertaining effects can be produced. For this you require a mono recorder for replaying the master tape and a stereo recorder with independent volume controls for each channel.

The recorders are connected up as shown in the diagram. As an example, suppose we require movement in a sound effect such as a car crash. The mono recording will presumably consist of the sound of a car approaching, then the actual impact.

### 'Panning' sounds

Replay and copy with Channel 1 gain open for normal record level. As the point of impact approaches, bring up Channel 2 gain slowly, at the same time reducing Channel 1 gain. By the time the impact occurs Channel 2 gain should be full up and Channel 1 gain almost at zero.

On replay (stereo) the sound of the car should move from left to right—or right to left, depending on which channel the loudspeakers are connected to—ending up in the crash on the opposite side.

This 'panning' system can be applied in other ways; for instance, by feeding a mono microphone via a dividing circuit into a stereo recorder. Panning a sound in this way is only effective for single sounds and will not provide stereo effect for music, unless you want the whole orchestra to move about while it is playing.

### THE FORBIDDEN MACHINE-from page 11

pation, excellent construction kits for both mains and portable machines may be bought quite reasonably and the price brought down to no more than £50.

Nor need one fear that these kits are beyond the capacity of school-children. In one school I know, three portable machines have been assembled by the ten-year-olds in the top class.

### For adults only

At a later date, as funds become available, other items of equipment might be acquired and a more expensive machine considered. But only if its full use could be justified; otherwise I would recommend the addition of more equipment of the cheaper kind.

Tape recorders bought for school use should be of the type which the pupils themselves can operate without continuous supervision. Yet in many schools they are forbidden to the children, who begin to wonder if their machine, like the proverbial model railway, has been bought for the amusement of the adults.

To be effective, an educational aid must surely excite the pupils' interest, and when it is given to them to operate it instantly encourages that extra effort which is so rewarding both to teacher and pupils.

For the past ten years I have experimented with tape recorders in the classroom and outside, and have found the results fully justifying the use of what some teachers still consider 'another gimmick.' I know other teachers who are continually experimenting with their machines and devising original uses for them. If they will only pass on their ideas those machines that are in a rut or in a store cupboard will soon be helping to prove what a wonderful instrument the tape recorder can be in modern education.

# Operation Maintenance

## No. 2: MORE TIPS ON HEADS AND GUIDES



KEEPING the heads and tape guides of your recorder clean and free from oil and tape dust is highly necessary. This picture shows the complex head and guide assembly of a Series 6 Tandberg. While certain moving parts require light oiling, on no account should oil be allowed to remain on heads or guides even if it gets there by accident. Clean off with lighter fuel (never use solvents or motor petrol) and polish afterwards with a dry cloth.

Some tape recorders have adjustable guides, which should be checked to see that they allow the tape to ride smoothly across the tape heads. Actual track to head alignment can often be checked by using a length of transparent leader tape which will invariably show the position of the head gap with respect to the edges of the tape.

▶ MOST pressure pads are spring-loaded affairs which sometimes become slack, with consequent loss of high frequency response or poor recording generally, and even poor erase. A few tape recorders employ a 'wrap-round' system to keep the tape in contact with the head; one of these—the Philips AG8107—is shown here. When the roller arm moves forward for record or playback a wrap-round plateholds the tape snugly against the head. Sometimes these plates are made of mu-metal and act as a screen against hum pick-up. They should not be moved or bent more than is absolutely necessary for any adjustment to tape tension or pressure against the head.

Adjustment of these plates is rarely if ever necessary. Felt pressure pads, on the other hand, become worn and often need replacing. It is better to replace the felt rather than bend the spring to maintain tape pressure against the head. These little pads should be obtainable from the manufacturer of the machine, but any good quality felt or thick baize about  $\frac{1}{2}$  in. thick may be used and fixed with Evostick or similar adhesive. Make sure this doesn't get on to the head and that it is thoroughly set before using the machine.





SOME recorders such as the Simon SP5 (shown here) have a small coil attached to the lead going into the playback head. These coils are for cancelling out hum picked up in the wiring, but are only effective on playback; they play no part during recording. They can be moved from the factory setting by accident or by heat which causes them to sag, but they are easy to adjust as shown in the picture.

Switch to playback (after removing any spools on the machine) and turn the volume control to maximum level. The motors must be in motion, so the recorder is set running as for normal playback. Listen intently with an ear close to the loudspeaker to detect if hum is present. Gently move the coil(s) until the hum is reduced to its lowest level, and continue adjustment until no further reduction can be obtained. Carefully replace the head cover without disturbing the setting of the coil.



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### NEWS OF THE CLUBS

# NOW FOR THE FINAL SPURT IN THE RACE!

- ▶ IT WON'T be long now! The Top Tape Club for 1962, winner of the ATR Club Challenge Cup, will be made known next month.
- ▶ THE EFFORTS of the Cambridge club which resulted in its second Audio Exhibition have advanced it from ninth to second place in the Club League Table. But it has not usurped the No. 1 position which Thornton Heath has held since October.
- ▶ RUGBY, TOO, is still well in the running. The efforts which these three clubs are making *now*, in the last few weeks of the year, will determine the issue between them.
- NEXT MONTH'S ATR will also give full details of the Tape Club Contest for 1963, which will introduce an important new aspect into this unique competition.

### Three-club meet

South Birmingham Tape Club entertained Birmingham Tape and Audio Club to a Question Night, when two members from each club answered queries put by the rest and subjects ranging from impedance to four-track recording were discussed.

South Birmingham, Kidderminster and Cotswold clubs held a special get-together at Stourport at which problems in the use of portables and copyright were debated. The meeting proved so successful that it is hoped to extend individual club activities into this wider field.

### In England now

By way of experiment, the **Brixton** club issued the first edition of another tape magazine of special interest to Englishspeaking people overseas. Intended to reflect the home scene, it included messages from all three political parties, a criticism of the English by a visiting Australian, and a feature on the Samaritan service to alcoholics and would-be suicides.

If the venture appeals to its world-wide audience, the club will invite the cooperation of other recordists in the country as contributors to a truly *English Magazine* in sound.

#### Public appearance

A team of Crawley and Sussex club members led by Geoff Whitehead put in some good public relations work at Crawley 'Leisure and Pleasure' Exhibition, which was visited by 2,000 people in four days. Secretary George Stephenson is

### CAMBRIDGE HOLDS SECOND AUDIO EXHIBITION

TWENTY leading manufacturers and local dealers put on a big display of tape recorders, record players and radios at the three-day Audio Exhibition held by Cambridge Amateur Tape Recording Society at the Corn Exchange.

It was the second annual venture of this kind by the society, which was featured on the BBC Midland Home Service. As well as showing home-built equipment, members installed their own recording and television studio and presented documentary programmes.

The exhibition was opened by F. C. Judd, A.Inst.E., ATR Technical Editor,

who was accompanied by Editor Walter Gillings. A special display of Chromasonics was among the attractions.

Though attendance was poor in the afternoons, a good number of evening visitors took an intelligent interest in the exhibition. Among manufacturers represented were BASF, Brenell, Cosmocord, E.M.I., Grundig, M.S.S., Stuzzi, Truvox, Telefunken and Zonatape. Headed by president H. K. Rout and

Headed by president H. K. Rout and secretary Michael Renshaw, the 'CATS' are now laying plans for their 1963 exhibition which they intend shall be second only to London's Audio Festival.

### THE LEAGUE POSITION

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1.	THORNTON HEATH	44
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4.	BIRMINGHAM	11

trying to rally support among other local organisations for suitable club premises at the town centre.

### **Dartford's president**

Miss Daphne Oram, well-known for her work in the field of electronic music, accepted an invitation to become president of Dartford Tape Recording Society—new title of Dartford and District Tape Recording Club.

Members combined forces with Dartford Co-op Cine Club for a sound and vision visit to the Bluebell Railway in Sussex. Two trips were made, starting from Sheffield Park Station, Uckfield, with the cameramen riding on the footplates of engines at either end of the train and the recordists in coaches next to the engines.

coaches next to the engines. Joining the party was Mr. Martin of Zonal (Magnetic Coatings) Ltd., who demonstrated Zonal sound striping to the members.

### Music and song

The **Huddersfield** society has recently been occupied with recordings of brass bands, some of which have been broadcast over the local hospitals network. Members have also interviewed several pop stars, including Del Shannon and Jet Harris, for the hospital service.

F. C. Judd, *ATR* Technical Editor, visited the club to talk about electronic music and *musique concrête*. Future projects are designed to encourage members to use their machines for recording bands and choirs and other outside events giving scope for creative work.

• Make certain that regular news of your club activities is sent to the Club News Editor, ATR, Room 532, 168 Regent Street, London, W.1.

### Who's there?

Since it was started in August by two enthusiasts only 15 and 16 years old, respectively, Romford and District Tape Recording Society has established a meeting place at Valence House, Dagenham, which is reputed to harbour a ghost. Ambition of the club, now six members strong, is to secure the first taped interview with the phantom - and, perhaps, a seventh member . . .

Charles Towers, secretary of World Wide Tape Talk, has become president of the club, whose secretary is David K. Kirk, 58 Ashton Gardens, Chadwell Heath, Romford, Essex.

### Geing up

The Rugby society's second tape re-cording course continued with a session on 'How to overcome common recording difficulties,' consisting of a 30 min. tape produced by **Cotswold** club and discussion of individual problems. A lecture on the manufacture and use of magnetic tape was followed by a session on programme construction conducted by members R. C. Cotgrove and J. A. Willis.

At the invitation of producer Tim Matthews of the BBC's North American

# TOP TEN CLUBS FOR DECEMBER 1. CAMBRIDGE 6. DARTFORD 2. CRAWLEY 7. THORNTON HEATH 3. SWANSEA 8. HUDDERSFIELD 4. BRIXTON 9. ROMFORD 5. WALTHAMSTOW 10. RUGBY

Torbay Gramophone Society for a talk on current tape records by president Donald W. Aldous, who played some of current the latest mono and stereo releases.

#### History on tape

The opening ceremony of the new Dillwyn Art Gallery-first private gallery in Wales-was recorded by the Swansea society. The BBC commentator, Mr. Wynford Vaughan Thomas, who performed the ceremony, gave members an interview which included reminiscences of other famous Swansea contemporaries. This will



Dartford club members meet Mr. Martin of Zonal (second from left) at Sheffield Park Station in Sussex, where they rode on the Bluebell Railway.

Service the society supplied, as an example of its work for an overseas broadcast, a recording of Bill Tilcock climbing an 820ft. mast at Rugby Radio Station.

### Birthday cake

In a talk to South Devon club on the development of recording, committee man David Pletts used examples ranging from a wax cylinder to a modern tape record. The occasion was the club's second birthday, and members made short work of a cake decorated in the form of a tape recorder by Shirley Furneaux.

The virtues of tape over disc were considered when the club joined forces with

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be deposited in the town's archives to make local history come to life for future generations.

The club's second News Digest, based on reports in the Herald of Wales, was presented to blind pensioners at a community centre and included in its hospital service. New premises have been converted into a studio well equipped to promote all the club's activities, and members look forward to winning the ATR trophy in 1963.

### About town

More outside activity by the Thornton Heath club has increased public awareness of its interests. To gain practical experience,

members recorded the Croydon Borough Brass Band as well as helping the local association for the blind to produce its variety show. Pianist George Shearing was also interviewed at Sutton for the club's hospital request programme.

Final judging of the five-minute tape competitions held over the past six months resulted in vice-chairman Maurice Webb winning the cup, presented to him by chairman E. J. Bashford. Three members have been specially empanelled to deal with beginners' queries.

### Thanks to Press

New venture by Walthamstow's lively society is an Overseas Circle for tapesponding enthusiasts. The club has made a special tape for prospective members illustrating its activities, which continue to receive attention in the local Press. A course of lectures on recording techniques and practical work is being undertaken.

To show appreciation of the encouragement it has received from many quarters, the club has invited civic heads and local businessmen to its second annual Christmas party. The Mayor and Mayoress have accepted.

### **Microphone** marvels

The mysteries of the microphone were explained to members of Whitstable and **District** club who, with some visitors from **Medway**, attended a lecture and demon-stration by Mr. George Pontzen of Lustra-phone Ltd., one of the leading authorities on the subject.

All the firm's well-known products were put to the test, including a contact microphone which enabled the audience to listen to Mr. Pontzen's heartbeats.

### **NEW CLUBS**

London: Tape Recording Circle. One of the aims of this new club, which is now holding regular meetings, is to start an old people's service. Details from Douglas N. Gould, 67 Queen's Crescent, London, N.W.5.

Manchester University: A tape recording society has been started in the Faculty of Technology Union. Electronic music and video recording sections are contemplated. The secretary is D. Norman, c/o 19 St. Clements Road, Chorlton-cum-Hardy, Manchester, 21.



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## STAN WHITE welcomes JOHNNY'S FABULOUS GUITAR

# in **tape parade**

 Johnny Cucci and His Guitar. Esoteric Recotape. Twin-track mono, 3<sup>3</sup>/<sub>4</sub> ips.
 A t long last the Hot Club of America presents Johnny Cucci (above) and his electric steel guitar; the first time he has been featured on a release in this country. And it makes excellent entertainment for all age groups.

Cucci is an exceptional artiste with his chosen instrument; his technique is simply fabulous. He is president of the Hot Club of America, which is composed of top-rank guitar players, and Mantovani has employed him as leading guitar when touring over there with his orchestra.

On this tape Cucci is involved in a lot of multi-recording; every sound you hear is produced by Johnny himself. But it's not quite the same thing as talented Les Paul has given us in the past. Cucci uses an entirely different approach, with arrangements tailored to ensure a first class musical performance as the end product rather than the clever but gimmicky sounds which made Paul famous.

The music varies considerably, from uptempo jazz numbers somewhat in the style of the old Quintet of the Hot Club of France, to sentimental popular tunes. Titles include 'Cherokee,' 'Tenderly,' 'Sweet Georgia Brown' and 'Stompin' at the Savoy.'

### String Along With Roy Eldridge. Roy Eldridge supported by Russell Garcia and His Orchestra. World Record Club TT167. Twin-track mono, 3<sup>3</sup>/<sub>4</sub> ips.

Trumpet star Eldridge blows through a selection of evergreen tunes, well backed by the Garcia strings, The resulting sound is very easy on the ear.

Harry James has done this sort of thing before, of course, to equal effect. But the main difference here is the rougher tone Eldridge produces—more of a jazz tone, in fact. The whole performance is top class and rolls smoothly off the tape. Titles include 'A Foggy Day,' 'Stars Fell on Alabama,' 'They Can't Take That Away' and 'Have You Met Miss Jones?'

If you decide to string along with Eldridge, you won't be the only one.

### Hamp. Lionel Hampton, vibes; Oscar Peterson, piano; Ray Brown, bass; Buddy Rich, drums. World Record Club TT166. Twin-track mono, 3<sup>3</sup>/<sub>4</sub> ips.

This is a real out-and-out mainstream jazz session; not unlike the pre-war Benny Goodman trio and quartet, but without the Goodman clarinet, of course.

Hampton has lost none of his magic since those early days with Benny. The session swings along nicely, with some good solo work to distinguish it. Titles are 'Just One of Those Things,' 'Stompin' at the Savoy,' 'How High the Moon' and 'The Nearness of You.'

A must for mainstreamers, methinks.

### \* The King and I: Carousel. George Feyer and His Piano. Esoteric Recotape. Twintrack mono, 7<sup>‡</sup> ips.

Rhythm pianist George Feyer has a likeable style which reminds me distinctly of the late Charlie Kunz. Here he presents a collection of Richard Rogers tunes from two famous shows—a total of 15 items which make a tape you can listen to over and over again without any risk of mono becoming monotonous.

### \*American Marches. Massed Military Bands conducted by Commandant Deisenroth. Esoteric Recotape. Twintrack stereo, 7½ ips.

Some of the swingiest marches of all time, played in up-to-date style by massed military bands, make a really stirring sound in stereo. The 'U.S. Air Force Song,' 'The Army Goes Rolling Along' and 'The High School Cadets' combine with others to make you want to get up and go.

I wouldn't be surprised if some, more stirred than the rest, even go as far as the nearest recruiting office.

### Sadler's Wells Theatre presents Orpheus in the Underworld. E.M.I. HMV TA-CLP 1385. Twin-track mono, 3<sup>3</sup>/<sub>4</sub> ips.

This spool version of a recording published on disc two years ago was among the first of the 3<sup>3</sup>/<sub>4</sub> ips tape records now being issued by E.M.I. Unfortunately the reproduction quality is not up to the excellent standard of the others we've heard, and it hardly does justice to the singing of June Bronhill, Kevin Miller, Jon Weaving and the rest. But admirers of Wendy Toye's production may find it acceptable enough.

### \* 'Tops' With Me. Helen Shapiro. E.M.I. Columbia TA-33SX 1397. Twin-track mono, 3<sup>3</sup>/<sub>4</sub> ips.

Tops with the teenagers, too, is this selection of Helen's hits recorded while she was still at school: 'Little Devil,' 'Teenager in Love,' 'Sweet Nothin's' and nine more. Sorry we couldn't mention it before, Helen. You got what it takes!

December, 1962



\*Christmas brings a wonderful opportunity to use your tape recorder to make a family documentary right in your own home . . . something to keep in your treasure house of sounds to bring back happy memories. The winner of ATR's 'Audio Stars' competition instructs you on how to go about it.

CHRISTMAS... the time of good cheer, with plenty of good food and drink. The occasion when the family gets together and friends gather round to share a special comradeship and talk of the past, the present and, sometimes, the future.

Owners of tape recorders are no exception. But there are those who stick the thing under the stairs and forget it for once, and those who bring their machine out to record, spasmodically, Uncle Bert singing 'Nellie Dean' and little Percy being sick in the parlour. No self-respecting tape recorder could regard this as being properly employed and could be excused for blowing a resistor.

So let us consider how to perpetuate our Christmas on tape and



share it with friends in the frozen north, the tropics and Notting Hill Gate. Let us make our own Christmas story ... it could be worth hearing over and over again.

### The music

I alway think of Christmas musically, so I would first choose my basic three forms of music—general theme music, mood music for backgrounds, and individual 'live' music. I would then list my programme material, live items such as:

- 1. Front door opening and guests arriving.
- 2. Giving of presents.
- 3. Games.
- Uncle Bert playing the piano.
- 5. Children.
- 6. Candid snatches of conversation, etc.

Various small effects could be pre-recorded —if you have two machine. Yule logs crackling (crumpling cellophane), the door-bell,



wind blowing, and so on. To make a first-class tape, two machines are desirable, preferably a battery portable and a mains 'master' machine for putting the final tape together. With one machine the finished tape is likely to lack continuity unless there is provision for superimposition. But don't let that deter you; it *can* be done on one machine—with care.

### Take your time

Assuming that the music is selected and the various small sound effects safely recorded on your portable, the live items can be recorded as Christmas proceeds. Don't rush it—wait until you think you will get what you want and don't accept 'posed' performances. Leave a gap between each live item—five seconds is about right—and make a note of each item as it is recorded, as far as possible in the order in which you will use them on the finished tape.

When the shambles is cleared away and everyone has departed, play back your live takes, editing, omitting and cleaning up where necessary. This will be your Basic Material tape, and all that remains is to link these items to form an interesting where the second second

A fade-in of your theme music opens your master tape. This should not be too long—15-20 seconds is generally sufficient. Your live takes can then be dubbed on to the tape, mixing in your mood music where applicable. A good supply of this is advisable, for you'll find that you will need to use it behind all your spoken

If you have to play Santa Claus, you'd be well advised to let the children do the talking. Unless your beard is natural, your voice will probably sound very woolly!





commentary, to maintain the continuity.

### The intimate touch

For programmes with a personal flavour a close-mic technique helps enormously. Speak within about four inches of the microphone with the volume adjusted accordingly. This pro-

duces an intimate quality, devoid of overtones or room reverberations. Aim at smoothness of production; don't space your live items out at precise intervals and don't make each live take the same length.

Don't rush your commentary, keep it to the point; don't use too many long words or be too verbose. The essence of the tape is its live content, the music and commentary being the link —a vital link, but still subsidiary to the main content.

Before you start, make sure you have enough tape on your master machine, and if you get dissatisfied with the way the tape is shaping up, start again. But don't erase your first attempt: you may regret losing that tricky bit of timing you managed the first time!

●PETER BASTIN has been interested in recording since 1937; now has his own home studio where he goes in for experimental recordings and compiling 'sound albums.' Won a prize for technical experiment in this year's British Amateur Tape Recording Contest with a tape titled 'Nightmare.' Deplores the use of the tape recorder as an extension of the radio.



# DON'T FORGET THAT MESSAGE !

WHY not let the magic medium of tape be the messenger, this Christmas, for your greetings to friends or relations whom you may not be able to meet at this time of good fellowship?

A special Christmas tape will have much more effect than a card, especially if you are able to introduce some local colour into your recording. My own Christmas tapes last year were made with extracts of a public carol service in Trafalgar Square the year before

But the ideal taped Christmas card needs for its 'front cover' only a verse or two of a favourite carol or hymn, or the sound of some pleasing church bells. This will set the scene and lend an atmosphere to the tape, before it presents your spoken greeting to your correspondent.

### Say it with care

Choose your words with care here. It is worse than useless to recite some handy lines from a Chistmas card; they will sound quite trivial and false.

One of the best sound greetings I ever received was one which reminded me that this was the time of peace on earth, goodwill to all men, and went on to wish me all the best, ending with the sincere words "... and may you get all you want—and want all you get ..."

December, 1962

Your greetings should be tailor-made for the person you have in mind, before you round off the whole thing with a few more bars of a carol so that the whole affair lasts only two or three minutes.

With such a short recording, the tape is expendable. And if you you can get hold of some 3in. plastic 8 mm cine spools which can be safely mailed in a strong manilla envelope, to keep the weight down to one ounce, your expenses will be at a minimum.

### **Getting it there**

Unless your friends live in very remote places you will have until some time in December to make up your recordings for mailing in time for Christmas Day delivery. If you miss the mailing deadline and you can check at your local post office on this—you may care to send your audio card by second class air mail.

To conform with GPO regulations the tape must be left open for inspection—by Customs, for example. A strong, clasp-fitted envelope will allow for this; but the tape must contain no *current* message as on a normal tape or in a letter. Explain that it is a Christmas card in sound when handing in at the post office.

●ROBERT COOTE is one of Britain's most enthusiastic tapespondents; has made tape recording his hobby since 1954. First realised the value of tape as a substitute for pen and paper in cultivating 'magnetic friendships' five years ago; now maintains contact with 17 tapespondents all over the world and still finds time to promote the pastime on behalf of The Voicespondence Club.

www.americanradiohistory.com



## CHRISTMAS GIFT SUGGESTIONS 🙋

### Accessories for your Ferrograph

### The Nusound "Monitor"

Available for the following Ferrograph Recorders. Models 'D', 2A, 3A, 4A. The "Monitor" enables the user to listen through the internal loud-speaker of a Ferrograph (normally muted during recording) to programmes which are being recorded, at a listening level which may be adjusted independently of the recording level, with an "off" position. Price: Monitor (black) 21/- (greey) 25/-.



NUSOUND RECORDING COMPANY 35 CRAVEN STREET, TRAFALGAR SQUARE, LONDON W.C.2 Telephone: TRA. 2080

### Perfect Sound

5

5<u>3</u>" 7"

### Lowest Cost

### PLAYRITE

the premium quality MAGNETIC RECORDING TAPE, the logical choice for every RECORDING ENTHUSIAST.

andard	1	Long	Play	Tens. My	lar D.P.
600'	14/-	900		1200'	
900'	18/-	1200'	22/-	1800'	38/-
200'	22/-	1800'	30/-	2400'	48/-

Distributors: K. POPPER (R.T.C.) LTD., 55, Chaplin Road, London, N.W.2. Tel. WILlesden 2141 (4 lines).

GIVE PLAYRITE, THE APPROPRIATE XMAS GIFT

### THOMAS SHERIDAN provides some

# **Answers to Present Problems**

ANT to give a present that will be a source of enjoyment to everybody this Christmas and still be of use to the recording enthusiast in the family afterwards?

The answer to this simple puzzle is a good, big reel of tape, plus some tips on how to use it to entertain the guests without fear of boring them. And Emitape's Christmas packs contain instructions for eight party games to be played with the aid of a tape recorder . . . At 8s. 6d. each or 51s. for the complete

At 8s. 6d, each or 51s. for the complete set of six, the popular Emiguide instructional tapes prepared by John Borwick

will make most acceptable gifts, especially for anyone newly embarked on the hobby. And the same expert's book, the *Emitape Guide to Better Recording*, is a most economical buy at 2s. 6d.

With over 2,000 pre-recorded tape titles now available, it's no problem catering for music lovers whatever their taste. Prices vary from 35s. for the  $3\frac{3}{4}$  ips tape records issued by E.M.I. to 4 gns. for 4-track stereo tapes at  $7\frac{1}{2}$  ips—though you may have some difficulty tracking these down!

To introduce their new Recotape, Esoteric are offering any



### The new Antex Precision soldering iron, E240

one of four  $3\frac{3}{4}$  ips titles in mono or 4-track stereo, plus a 5in. reel of raw tape, for only 30s. To take advantage of this offer you must order direct from them; see the advertisement on page 22.

### **C**cloured spools

For those who just need tape, and more tape, a coloured spool of Zonatape makes a nice gift in its elegant box. BASF Tape Library Boxes, which protect tapes from dust and SEE NEXT PAGE

### RECORDING MACHINES LTD.

A SOUND name . . . a SOUND service

serving the South . . . PORTSMOUTH—299 Commercial Road (23097) SOUTHAMPTON—4 New Road (27092) serving the North . . .

GLASGOW-60 St. Vincent St., C.2 (City 3847/8) Everything for the TAPE RECORDER & Hi-Fi enthusiast. Leading stockists of Tape & Audio equipment. Studio facilities. Hire Service. Sales. Part Exchange. Full Trade Service.

A	<b>IPE</b> X	50	O SEI	RIES	TAPE
	Standard Play Tape	Long Play Tape	Standard Play Tape Mylar	Long Play Tape Mylar	Double Play Tape Mylar
5″	15s. 6d.	£1 2s. 6d.	£1 Is. Od.	£1 6s. 6d.	£2 2s. 0d.
54"	£1 2s. 6d.	£1 10s. 0d.	Not avail- able	£1 13s. 6d.	£2 16s. 0d.
7″	£1 6s. 6d.	£1 19s. 6d.	£1 12s. 6d.	£2 5s. 0d.	£3 12s. 6d.

Cash with order for immediate despatch post free. **NUSOUND RECORDING COMPANY** 35 CRAVEN STREET, TRAFALGAR SQUARE, LONDON W.C.2 Telephone: TRA. 2080 damage and are now available containing 3in., 4in. and 41in. reels, are also very acceptable. Prices are 42s., 75s. and 90s. respectively; each box is pre-packed with three reels of D.P. tape.

If your friend owns a portable and hasn't yet sampled Triple Play tape, a 3in. reel of one of the three brands now on the market will introduce a touch of originality to your gift and enable him to experiment. It is available from BASF, Agfa and Gevaert at prices varying between 21s. 6d. for 450ft. and 66s. 3d. for a 5in. spool containing 1,800ft.

Keen tapespondents will welcome Mastertape Voice Letter reels giving 20 minutes' playing time at 3<sup>3</sup>/<sub>4</sub> ips. and weighing only 2 ozs. Complete with box and envelope for posting, they're a good buy at 5s. 3d. each.

#### For constructors

For home constructors and other tinkerers, a new miniature soldering iron is a useful gift. A new model, E240, in the Antex Precision range has four interchangeable bits, weighs only  $2\frac{1}{4}$  ozs. and, with a power consumption of 20 watts, has ample heat capa-

city for practically any electronics job. Price is 35s. An invaluable piece of equipment for creative recordists is the new Nusound transistorised Numix Mk. 3 mixer. It is designed for two microphones, with a high impedance output for music as an alternative to one of them. Obviating the need for external matching transformers normally required for low impedance mics, it comes complete with four phono plugs for £8 19s. 6d. A set of connecting leads is 30s. extra.

Something simpler? How about a smart waterproof cover for that tape recorder your friend is always bringing round to your house? The extensive range available from A. Brown of Hull is priced between 49s. 6d. for the Grundig TK1 to 90s. for the Sony 521 (see advertisement, page 43).

#### **Hiss-remover**

Perhaps your clubmate has not yet realised what a difference it makes when you demagnetise your heads at regular intervals? You can enlighten him by presenting him with a Wearite De-Fluxer,



The Nusound transistorised Numix Mk. 3 mixer

which will depolarise the heads of all makes of tape recorder and get rid of that annoying hiss that develops. The Wal D-Mag, with its long probes, is an alternative buy. Both cost 50s. If he has not yet overcome his reluctance to cut and edit tape,

convert him with a tape splicer. The simple, hand-held Gibson Girl splicer marketed by A. C. Farnell costs only 18s. 3d.; the popular Bib, 18s. 6d. With the Bond Splicer, which makes the operation simplicity itself, comes a 150in. reel of splicing tape; price 32s. 6d.

A complete tape editing kit with leader tapes, jointing block and A complete tape editing kit with leader tapes, jointing block and all makes a perfect present for any enthusiast at this stage. The E.M.I. Accessory Kit is 37s. 6d.; the BASF Cutter Box, incor-porating a semi-automatic splicer, 52s. 6d. The Scotch pocket-size Accessory Kit, with splicer, is 29s. 6d. And those who have only just bought a tape recorder for Christ-mas will be glad of a cleaning kit. The Tape Kare Kit, price 12s. 6d., contains head cleaning fluid and tape cleaning cloth. The Jockey Cloth price 6s. cleans the tape and leaves it with a protective coat-

Cloth, price 6s., cleans the tape and leaves it with a protective coating. Both these are marketed by Farnell. SEE PAGE 32

#### December, 1962

## You can SAVE 10'on the ideal gift for your friend

- X If you want to give your tape recording friend the ideal gift, which will please him all the year round, you should take ad-vantage of this special offer which is ATR's Christmas gift to you.
- \* For this month only you can place a subscription to ATR for twelve monthly issues, commencing with the next issue, for only 19/- instead of the usual 29/-.
- You can't afford to miss the helpful articles. entertaining features and money-saving construction projects which will be coming up in ATR in 1963. Neither can your friend . . .
- \* Don't delay! Fill in the form below and send it in immediately. This offer will not be repeated.

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### SPECIAL SUBSCRIPTION OFFER

To: Amateur Tape Recording and Hi-Fi, Subscription Dept., Oldbourne Hall, 43/44 Shoe Lane, London, E.C.4.

I enclose Cheque/Postal Order/Money Order for 19/-. Please despatch Amateur Tape Recording and Hi-Fi to the following address for one year, commencing with the January issue (due out December 21st):

NAME	•	•	•	•	•	•	• •		•	•	•	•	• •		•	÷	•	• •	• •	•	•	•	• •		•	•	•	·	•	• •			•	٠	•	•	• •		•	•	•	•
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# BY REQUEST . . . A POWER SUPPLY CIRCUIT FOR THE 'ATR' MIXER

A POSITIVE deluge of inquiries from enthusiastic readers, some of whom had essayed the role of home constructor for the first time, followed presentation of the instructions and diagrams for building the ATR 4-Channel Microphone and Signal Mixer in the September issue.

Most of these requests were for a power supply circuit for the Mixer. Other readers wanted to know if the Mixer could be used with low impedance microphones, and whether a power supply circuit could be incorporated in the case.

To meet the first demand, a suitable power supply circuit is given on this page (see *Fig. 1*). Those who build an external power supply should earth one side of the heater connections to the common earth line on the tagboard chassis of the Mixer. Do *not* earth the heater line inside the power supply itself.

Components for the power supply circuit<sup>1</sup> are:

Mains transformer: 220-250 V pri, 250 V sec; 5 to 10 mA; 6·3 V—1 amp. heater winding.
Rectifier MR1: Half-wave selenium type, peak wkg. voltage 250-350 V at 5 to 10 mA.
Capacitors: 16 + 16 mfd, 350 V pk. wkg.
Resistor: 33 K.ohms, 20 per cent tol, 1 watt.

#### Using low impedance mics

The Mixer was primarily designed for high impedance microphones such as the crystal types in common use. If low impedance moving-coil or ribbon microphones are to be used, a matching transformer is necessary (unless contained within the microphone, in which case the output will be high impedance).

#### SEE PAGE 32

<sup>1</sup> A complete kit of components which includes a miniature mains transformer and pre-drilled case can be obtained from the Esisolder Iron Co. Ltd., 98 Dominion Road, Worthing, Sussex, who can also supply individual components.



Assembly of the power supply.



Fig. 1. Circuit of power supply for the Mixer.



Fig. 2. Connections for balanced input (Lo. Z. mics).



Fig. 3. Connections for unbalanced inputs (Lo. Z. mics.).

Is this the ideal tape recorder? The Technical Editor examines it in

# THE SOUND SCENE



The Tandberg Series 6 stereo tape recording unit.

### THE TANDBERG SERIES 6 STEREO TAPE DECK

### Reviewed by F. C. Judd, A.Inst.E.

ERE is a Norwegian manufacturer's answer to the question I posed in a recent editorial: Where is the ideal tape recorder?

Flexibility, a high standard of performance, portability and compactness are the features called for by the enthusiast. The Tandberg Series 6 fulfils all these demands; but it must be emphasised that this is a record/playback unit only, requiring external power amplifiers and speakers for full mono or stereo replay.

The unit is available either for two-track or four-track operation, and comprises the deck, dual recording amplifiers and dual playback pre-amplifiers. The output from either amplifier is sufficient to load any hi-fi amplifier and speaker system as well as stereo headphones.

The full specification of this machine is so comprehensive that the details given in the panel are necessarily abbreviated, and we can only urge interested readers to write to the distributors for the fourpage brochure which gives complete technical information.

### **Optimum** performance

The three-head two or four track system employed ensures optimum recording and playback performance as well as such facilities as direct monitoring of a recording, artificial echo and cross-track recording. There are four amplifiers with ganged controls which can be operated separately or together. The cathode follower outputs from the playback amplifiers allow freedom in matching to external amplifiers and other tape recorders, and each provides approximately 11 V peak signal output.

There are two record level indicators of the cathode-ray tube type which operate independently, one for each channel. The two recording channels each have a microphone input, a high level and a low level input-three separate inputs on each channel. All inputs and outputs can be utilised during mono or stereo recording. All recordings, mono or stereo, can be monitored directly from the tape or before actual recording.

A 'sound on sound' feature is cross-track re-recording-taking a recording from track 1 and re-recording on track 2, together with any other signals from the inputs. Fading of original recording or of new signals from the inputs is possible with the dual gain control system. The process is reversible; you can re-record from track 2 to track 1 if you wish.

### **Ruggedly built**

The machine has three speeds  $(1\frac{7}{8}, 3\frac{3}{4} \text{ and } 7\frac{1}{2} \text{ ips})$  fast forward and reverse re-wind, and a four-digit tape position indicator. The deck is of rugged construction, but very compact, the unit being housed in a teak case. There is no lid, but a carrying case with chrome locks can be supplied at £7 8s. 10d.

The main drive is by a Papst hysterisis synchronous motor which operates the tape drive for record and playback via a stepped pulley and belt drive to the capstan and a belt drive and clutch system for the spool hubs for re-wind and take-up.

The circuit diagram is worth studying but the actual assembly of the amplifiers, bias oscillators and power units is even more impressive. I was surprised to find triode amplifiers for the head and

SEE NEXT PAGE

### ABRIDGED TECHNICAL SPECIFICATION

Inputs, sensitivity and impedance: Two microphones, 0.00125 V r.m.s., 5 M.ohms; two high level, 0.05 V r.m.s., 1 M.ohm; two low level, 0.005 V r.m.s., 100 K.ohms. Frequency response: 30 to 20,000 cps ( $\pm 2$  dB, 30 to 16,000 cps), at  $7\frac{1}{2}$  ips; 30 to 15,000 cps ( $\pm 2$  dB, 40 to 11,000 cps), at  $3\frac{3}{4}$  ips; 30 to 7,000 cps ( $\pm 2$  dB, 50 to 5,500 cps), at 13 cm 2 ips; 30 to 7,000 cps ( $\pm 2$  dB, 50 to 5,500 cps), at 17 ips.

Noise level: 55 dB below maximum recording level. Maximum recording level corresponds to 3 per cent distortion. Bias and erase frequency: 80 to 100 Kc/s.

Wow and flutter: 0.1 per cent r.m.s. at  $7\frac{1}{2}$  ips; 0.2 per cent r.m.s. at  $3\frac{3}{4}$  ips; 0.25 per cent r.m.s. at  $1\frac{7}{5}$  ips. Speed accuracy:  $\pm 0.2$  per cent or  $\pm 3.6$  sec. in 30 min.

Cross-talk rejection: Better than 60 dB (2-track better than 70 dB).

Valve complement: 6 ECC83, 3 ECC82, 2 Selenium Rectifiers, 2 EAM86. Dimensions:  $16in. \times 12in. \times 6in.$ 

Weight: 25 lbs. (with carrying case, 30 lbs.).

### THE SOUND SCENE —from page 29

microphone inputs, but it is evident from the obviously careful design and our own tests that extremely low hum and noise levels have been achieved. Low distortion is another salutary result of this good design, probably augmented by the use of a push-pull bias oscillator and negative feedback frequency correction.

Each of the main electronic units is a printed circuit assembly which ensures good connection, rigid fixing of components and ease of servicing.

One could almost write a book on the mechanical and electrical functions of this machine. But, in fact, the service manual comprises 45 foolscap pages with some 40 illustrations, and there is a 20-page instruction book, also profusely illustrated, so that one is provided with almost everything concerning the Series 6 that can be written or illustrated.

#### **Professional quality**

The controls and different record/playback combinations, though complicated at first, can soon be mastered with the help of the instructions. Only then can the complete flexibility of this tape recorder be realised. None could wish for better facilities or quality of reproduction, both of which are comparable with the so-called 'professional' recorder. If the purists dislike this comparison, let us say that quality and performance are of the best in the semiprofessional class. In addition to my bench tests, I took the trouble to directly compare the machine with two others of the same category and price range.

The frequency responses for all three speeds have been carefully modified to avoid noise and distortion, but are still more than adequate for high-fidelity reproduction. The fact that distortion



Frequency response of the Tandberg Series 6 stereo unit; record to playback—high level input to output tr, 1,

from a recording at nearly full level does not exceed 1 per cent is proof of the care taken in circuit design. Tests involving crosstrack re-recording and mixing were more than satisfactory: it was almost impossible to tell the difference between an original and a re-copied recording. This applied also to recordings copied from another tape recorder.

With a suitable stereo microphone or two spaced microphones, some excellent stereo recording can be achieved and there is no problem with balance because the gain controls can be set independently.

### Tape economy

The mechanical function is similarly above reproach, nominal speed and speed variation over short periods being well within **SEE NEXT PAGE** 



30

specification for each of the three speeds. Those who wish to economise on tape will find that  $1\frac{7}{8}$  or  $3\frac{3}{4}$  ips provide perfectly adequate frequency response and freedom from wow for long music recordings. For absolute economy, of course, the four-track version, which is the same price and has the same facilities, should be considered.

Indeed, the Tandberg Series 6 will fully qualify as an 'ideal' tape recorder. It is a machine for the advanced amateur who wants his recordings to compare favourably with those of professional studios; and it is also a self-contained tape replaying unit which can be coupled to the most expensive hi-fi equipment. Even at 110 gns. it is by no means expensive.

The sole distributors are Tandberg G.B. Division, Elstone Electronics Ltd., Edward Street, Templar Street, Leeds, 2.

### THE HEATHKIT VHF-FM TUNER

### **Reviewed by F. C. Judd**

THE only satisfactory method of obtaining high-fidelity reproduction from radio programmes is to use an FM receiver or a tuner such as this Heathkit model.

For the benefit of non-technical readers let me explain that a tuner is really a receiver without low frequency amplifiers and loudspeaker. It can be fed directly to a tape recorder or hi-fi amplifier, and not only ensures noise-free reception but the quality of reproduction at its output is comparable with that direct from a broadcast studio microphone.

The Heathkit tuner comprises two units known as the FMT-4U tuning unit and the FMA-4U I.F. amplifier and power supply. When assembled the complete unit (shown here) is self-powered and ready for use. The assembly and wiring is not beyond those without construction experience, requiring merely the ability to solder plus a little patience and commonsense. Properly applied, these qualifications can save a good deal of money and produce a first class FM tuner.

### **Frequency** range

The Heathkit FM tuner is a compact, permeability tuned unit covering a frequency range of 88 to 108 Mc/s—the international FM band. Indeed, during my tests FM stations from Northern France were received at full strength, using only 3ft. of wire as an aerial.

There are three I.F. stages, two of which function as limiters, a double-diode detector and cathode-ray tuning indicator. Negative feedback provides a wide, flat-top I.F. band pass. A wide ratio discriminator with separate limiters is employed in preference to the more common Foster-Seeley phase detector, a method which provides lower inter-station suppression, greater AM suppression and easier alignment for home construction.

The use of a printed circuit board greatly facilitates assembly and wiring and two spare sockets are provided for adaptation for stereophonic transmissions when these commence. The following specifications are quoted in the comprehensive instruction manual which, by the way, contains 32 pages, plus six pull-out plan sheets and dozens of other diagrams: **Power requirements:** 100/130 V or 200-250 V A.C., 40 to 60 cps. **I.F. frequency:** 10-7 Mc/s.

I.F. bandwidth: 300 Kc/s.-3 dB down.

Input impedance (aerial): 75 ohms (co-axial cable).

Output impedance: 100 K.ohms.

Output voltage: Nominal 1 V at 30 per cent Mod-20 mV input.

Note: The output voltage is controlled by means of a built-in potentiometer which can be set to suit individual input requirements for tape recorders and hi-fi amplifiers.

### **Five valves**

The tuner employs five valves in addition to the tuning indcator and rectifier, and is housed completely in its own case. The tuning unit, I.F. transformers and ratio detector transformer are all prealigned at the factory and the tuner normally requires no further alignment.



The Heathkit VHF-FM tuner assembled.

In areas close to an FM transmitter it will operate on a simple aerial consisting of three or four feet of wire. A proper FM aerial is desirable, however, and is not difficult to construct; full details are in the instruction manual.

We recommend this tuner with confidence, having made some superb recordings with it, using a comparatively inexpensive tape recorder. The complete kit, comprising the FMT-4U tuning unit and FMA-4U I.F. and power unit, retails at £14 13s. 0d. The kit can be obtained from many of the larger dealers or from Day-strom Ltd., Gloucester, Glos., who will supply further details on request.

Next month's review: The Clarke & Smith Transistorised Tape Recorder.

### WELLINGTON ACOUSTIC LABORATORIES LTD.

Farnham Surrey (6461) The WAL D-MAG head demagnetiser, long nylon covered probes. £2.10.0.

WAL GAIN booster pre-amps. Mono £5.10.0., Stereo £7.10.0., Hi-Gain (CCIR) £7.16.0. The WAL Tape Eraser £7.18.6.







Ask your clealer for free descriptive leaflet GEVAERT LIMITED BRENTFORD MIDDX.

### The MULTI-PURPOSE TAPE RECORDER!



## **Revolutionary**

The K.G.M. Cinecorder is a high quality 2 track tape recorder, which can be used for all ordinary tape recording purpose as well as for adding sound to slides and cine films.

The Cinecorder is the only comprehensive tape recorder, that has been designed with additional facilities to cover the needs of the cine user. It has many new and unique features that make it so much easier to compile sound tracks for films, and even to record lip-sync. dialogue while shooting

 $\frac{A few of the}{features are \dots}$ 

- ACCURATE TAPE TIMING indicating in seconds.
- A NEW method of Superimposition, with many advantages.
- TWO-CHANNEL MIXING.
- PUBLIC ADDRESS FACILITIES.
- NEW CONTROL FOR CUEING and Cross Fading.
- **POWERFUL ELLIPTICAL HIGH-FLUX** LOUDSPEAKER in detachable stand-up lid.

### RETAIL PRICE IN THE U.K. £75

For complete details :---

KGM electronics Ltd

BARDOLPH RD., RICHMOND SURREY RIChmond 7171 (5 lines)

### A POWER SUPPLY CIRCUIT

### -from page 28

Microphone transformers could be mounted inside the case and the jacks wired for balanced or unbalanced inputs, though in the former case three-terminal jacks and sockets are necessary. It is important that blocking capacitors are incorporated in the grid leads of V1 and V2 as shown in Fig. 2. These are necessary to maintain the grid current bias provided by the high-value grid resistors. Radiospares Hygrade mu-metal screened microphone transformers are quite suitable.2

### **Output** monitoring

Details for headphones or external amplifier monitoring will be found in Tape Guides on page 35.

Here are other points worth noting:

1. The cathode follower output will match into almost any tape recorder input from 600 ohms up to the usual high impedance socket for gram/radio. Do not use the microphone input of a tape recorder. The Mixer has sufficient gain for most types of microphone and its connection with a recorder's mic socket may result in excessive hum and noise, and overloading,

2. Those who contemplate using low to high impedance transformers may incorporate them within the Mixer but not with a built-in power supply. In this case an external power supply with about 2ft. of connecting lead should be used, enabling it to be placed about the same distance from the Mixer. This is to obviate the risk of hum pick-up between microphone transformers and the power transformer.

<sup>2</sup> Also obtainable from the Esisolder Iron Co.

### PRESENT PROBLEMS SOLVED

### -from page 27

Metro-Sound's Klenzatape does a quick, efficient job of cleaning heads; it's a good buy at 12s. 6d. And their Tape Accessories Gift Set, price 44s., provides everything for cleaning equipment and editing tapes, including Klenzatape, splicing kit and other necessities.

#### How about a book?

Let's suppose that someone is lucky enough to get a new Philips or Grundig tape recorder for Christmas. He'll be able to make much better use of it if you make him a present of The Philips Tape Recording Book (13s. 6d.) or The Grundig Book (12s. 6d.), both written by Frederick Purves and published in the Focal Press Southbook series. The All-in-One Tape Recorder Book by Joseph M. Lloyd (12s. 6d.) is another sug-gestion; and anyone who teaches will be interested in Teaching by Tape by J. Graham Jones (15s.).

Women with tidy minds whose menfolk are enthusiastic readers of this magazine need only direct their attention to the ATR Binder advertisement on page 18 to find an answer to the problem of how to keep those back copies in order.

If after all this you still can't decide what to give your tape recording friend—or yourself—for Christmas, just go along to your local dealer and see what he can suggest. He'll almost certainly succeed where I may have failed.

### HOME CHROMASONICS CIRCUIT

Readers constructing the Home Chromasonics Display featured in the November issue should note that if the capacitor C3 (12 mfd) specified in the control circuit (Fig. 4) is not obtainable it may be replaced by a 10 mfd.



### Good mixer

#### OR. Hamilton, Barking, Essex, writes:

**I** FEEL I must write to thank you for publishing the *ATR* 4-Channel Mixer circuit. I had needed such a gadget for some time but the price had always been the problem. Now, for as little as 5 gns. and a few evenings' effort, I have a mixer with which I am truly satisfied.

Used in conjunction with my Vortexion tape recorder it gives excellent results—far better than I expected. And I hope in the near future to convert the microphone sockets to 30 ohms impedance, at moderate cost.

### OD. K. Thomson, Montrose, Angus, writes:

The series of constructional features planned for future issues of *ATR* will be greatly welcomed by readers like myself—keen but poor! The 4-Channel Mixer is an excellent start and will be satisfying to make and use.

### OR. Bentley, Clifton, Rotherham, Yorks., writes:

Thanks for the simple 4-Channel Mixer in the September issue. I am a Do-It-Yourself fan.

(These letters are typical of scores we have received from readers who have built the ATR Mixer, pictured above. Many requests for details of modifications and special facilities have been answered individually by the Technical Editor. For answers to the more general questions, see the followup article on page 28 and also Tape Guides, page 35, in this issue. That Mixer certainly stirred up some activity!—Editor.)

### Eager to learn

### A. S. Forbes, Berkhampsted, Herts., writes:

Having recently returned to 'civilisation' from the Middle East I am hoping to start a tape library of music, which has been a long-standing ambition. Unfortunately I know very, *very* little about electricity, radio or sound, and I think it would be as well to start learning something about the technical side of recording before buying expensive equipment which may prove unsuitable for my requirements.

I am already reading your excellent publication, but find the technical part entirely beyond me. Could you please recommend some suitable reading matter and, if possible, the order of studying to start me off?

(The series of articles by Lester Rands, Tape without Tears, which has been running in ATR since last February provides a short, simple course in the basic principles of tape recording. Back copies are still available. You should be able to follow the book, Tape Recording for Everyone, by our Technical Editor, F. C. Judd, published by Blackie at 10s. 6d. We can also recommend the BASF Tape Manual, which covers a lot of ground for 1s. 6d., and lists other

Your suggestions, criticisms and questions of general interest are welcomed for this page. Address them to The Editor, ATR, Room 532, Ulster Chambers, 168 Regent Street, London, W.1.

# The Things You Say...

useful books. The Emiguide instructional recordings by John Borwick will prove valuable, too.—Editor.)

### From the radio

### D. A. Terrell, Plumstead, London, S.E.18, writes:

At the moment I am recording from the extension speaker socket of a fairly old radio. This is adequate for pop but not for orchestral music. I have also a good transistor set, and propose to disconnect the speaker and feed direct to my recorder.

I am told that this will damage my transistor set and the recorder. I am also told that a crystal receiver, sometimes known as a radio jack, directly connected to the input socket of a tape recorder will give the very best recordings. Is this correct?

(You could damage the output transistor of your transistor radio by disconnecting the speaker leads; it depends on whether the set has an output transformer. A radio technician could advise you; but we suggest that the Stuzzi radio tuner reviewed in July ATR would be most suitable for your purpose.—Editor.)

### Mono-stereo

#### J. F. Davidson, Deal, Kent, writes:

I have played back on my Philips Stereo recorder a number of pre-recorded stereo tapes and am puzzled by the fact that, as far as I can detect, the effect is the same whether they are played as stereo or monaurally with both speakers switched in and set apart as for stereo.

The only difference I have noticed is in playing back an American brass band stereo recording, when at times there is a definite silence from one speaker when the switch is in the monaural position

and both speakers are switched in. The owner of this tape has a machine with controls for each track when recording.

I am wondering whether it is really worth while buying stereo tapes in this country, unless you can explain this?

(It is quite easy to be deceived by stereo recordings played first over two channels as intended and then over two channels combined, in mono. It is possible that the balance controls of your machine need setting more accurately or that the stereo recordings are at fault.— Technical Editor.)

### Superimposition

#### ●G. A. Housten-Bowden, Eton College, Windsor, writes:

On re-reading the article in September ATR, 'Put that tape recorder to work,' I thought of the idea of recording 150 lines of Latin verse at dictation speed, so that the next time I receive punishment—which will almost certainly be some Latin verse—I will be able to do it in record time. I'll just press the button of my tape recorder and let it dictate to me.

(Rachel Lindsay's articles undoubtedly spark off some ingenious ideas for fresh applications of tape recording. Yours is one which every unfortunate scholar will applaud.—Editor.)

## THE SOUND OF SONY... A WONDERFUL SOUND

### The SONY 521 Stereophonic Tape Recorder

Here is brilliant engineering in sound. The Sony 521. Here is perfection in dimensional recording and reproduction. The Sony 521. Here are the many extras usually reserved for professional instruments—built-in amplifiers and speaker units, two and four track play-and-record features and trouble-free synchronous motor drive. The Sony 521. Here are sensitive level meters and split-second stop lever, assuring true fidelity, precise cueing and editing. The Sony 521.

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- \* instant stereo/mono switch
- \* tone control
- \* automatic cut-off
- \* additional fine outlet
- \* headphone monitor jack
- \* professional mixing

124 gns. including 2 dynamic microphones and all accessories



Detailed specifications on the range of Sony tape recorders are available from the

Sole U.K. Distributors: TELLUX LIMITED A member of the K.G. (Holdings) Group of Companies AVENUE WORKS, GALLOWS CORNER, COLCHESTER ROAD, ROMFORD, ESSEX. Telephone: Ingrebourne 43971

# **TAPE GUIDES**

Have you a useful tip to send in? It could win you a guinea.

### **Microphone suspension**

**R** IBBON and moving coil microphones usually have an exceptionally good bass response; so much so that they are very prone to picking up floor vibration unless suspended from a boom or vibrationproof microphone stand.

One of the oldest forms of microphone suspension is shown in *Fig. 1*. This was used in the early days of broadcasting and recording and, as the diagram shows, is simple to construct from stiff wire and a short piece of brass tube.

### Transistor pre-amplifier

Many readers have requested a circuit for a transistor microphone pre-amplifier which also provides its own impedance matching—low impedance input and high impedance output. The circuit shown in *Fig. 2* will operate with low impedance microphones (20–60 ohms) and provide sufficient output to fully load the average high impedance input of a tape recorder.

The current consumption of the amplifier is very low, enabling it to operate almost indefinitely with a  $1\frac{1}{2}$  V cell. An on/off switch is almost unnecessary. All resistors are  $\frac{1}{4}$  watt 20 per cent tolerance; capacitors with a maximum working voltage of 5-6 V are suitable.

OC 70

8 JIF

The amplifier should be built into a small metal box which is earthed as shown in the circuit.

### Sound for cinefilm makers

Focal Press recently published a new book by John Chittock dealing with



Fig. 1: Shock-proof mic suspension.



The remaining seven chapters cover such items as tape and film synchronising —dealt with pretty extensively—magnetic recording on film, using sound with films, editing accessories in recording, and so on. It's a well-written and illustrated book that should prove valuable to all tape-cinefilm enthusiasts.

### Monitoring with the Mixer

R15

Many readers have requested a modification of the ATR 4-channel Mixer to permit headphone monitoring at the output. This entails very little extra, and the necessary circuit change is shown in *Fig. 3*.

By using a potentiometer, sufficient control over the signal level is available and the output could therefore be fed to a monitoring amplifier as well as headphones (high impedance). If low impedance headphones are to be used, a matching transformer (high to low) may be necessary.



Fig. 2: Mic pre-amplifier (low impedance in; high impedance out).

8 uF

Metal box -

1.8KA

39K.A

ş

loks

0.25 µF

Fig. 3: Headphone or external amplifier monitoring for the ATR 4-Channel Mixer.

- E

330N

## This is the LUSTRAPHONE 'Micridyne'

## MICRO-MINIATURE RIBBON MICROPHONE

Another outstanding contribution to microphone progress

Of the many advancements in microphone design made by LUSTRAPHONE the VR/70 'Micridyne' micro-miniature Ribbon must be one of the most outstanding yet. This amazingly small instrument incorporates a completely new conception of magnetic design to enable the smallest ever ribbon microphone to be produced. Improvements of many kinds are incorporated. The head, which has a volume of less than I cu.in. permits unobstructed air flow all round, thereby achieving extended frequency response. Substantial blast screening is used. Entirely new anti-vibration mounting technique with 3-pin plug and socket connections which permit the microphone to be used on its own miniature tripod base, held in the hand or mounted on a stand. The microphone is complete with stand and appropriate cable in high, line or low impedances.

### BRIEF TECHNICAL DETAILS

- Sensitivity— Low Imp. 90 dB below IV/dyne/cm High Imp. 56 dB below IV/dyne/cm
- Response—Substantially flat from 50–14,000 c/s
- Pattern—Figure of 8
- Head Dimensions—2.1/16th" × 15/16th" × 5/16th" (Height of microphone unit on stem—6")



- Overall Height on base—7<sup>1</sup>/<sub>4</sub>"
   Base diameter—5<sup>1</sup>/<sub>4</sub>"
- Finish—Satin chrome and black with rubber cushioned legs
- Weight-complete-6<sup>1</sup>/<sub>2</sub> ozs.-Low impedance

10 gns.

Literature on request from:— LUSTRAPHONE LIMITED

### ST. GEORGE'S WORKS, REGENTS PARK RD., LONDON, N.W.I Phone: PRImrose 8844 KEEPS FAITH WITH SOUND

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STANDARD PLAY (Acetate Base)           3in.         175ft. 4 for 18/- or 48/- per dozen           4in.         300ft. 4 for 26/-           5in.         600ft. 2 for 26/-           5 <sup>a</sup> / <sub>4</sub> in.         850ft. 16/-           7in.         1,200ft. 19/-	
ARCHIVE GRADE (SP Polyester) 7in. 1,200ft. 22/6	
LONG PLAY (Acetate Base) 7in. 1,800ft. 28/-	
LONG PLAY (Polyester Base) 3in. 225ft. 4 for 22/- or 60/- per dozen 4in. 450ft. 2 for 21/- 5in. 900ft. 2 for 35/- 5¾in. 1,200ft. 24/- 7in. 1,800ft. 31/-	
DOUBLE PLAY (Special polyester bas 3in. 375ft. 4 for 40/- or 108/- per dozen 4in. 600ft. 2 for 30/- 5in. 1,150ft. 27/- 5¾in. 1,750ft. 35/- 7in. 2,400ft. 45/-	ie)
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### **H.M. FORCES**

Sgt. SYDJHEAD, 32, c/o Sergeants' Mess, 10th Royal Hussars, B.F.P.O. 16. Motoring; pop music (vocals). Philips 4-track, 5‡in. 1¼, 3‡. England. JOHN A. DIESTLER, 19, tactical operator, R.N., 3 Mess, HMS Loch Alvie, c/o G.P.O., London. Travel, outdoor recording, 8mm cine; pop instrumentals. Clarion, 3‡in. 3‡. Australia, U.K., Canada, U.S.A., anywhere English speaking; females preferred.

### AUSTRALIA

AUDIKALIA RICHARD FEENEY, 24, and PETER SUGDEN, 25, Australian Army officers, 43 Stewart Avenue, Hammondville, Via Liverpool, N.S.W. Current affairs, all sports; pop. Pye UG8, 5in. Anywhere English speaking. Rev. BARRY WHITLOCK, 23, proba-tionary Methodist minister, P.O. Box 23, Biloela, Queensland, Sport, youth club activities; jazz to opera. Philips 4-track, 7in 11, 34, 71. Anywhere, including youth clubs. S. A. STERNE, 37, engineer, 10 New Jersey Road, Five Dock, Sydney, N.S.W. World events, humour: classical. B.S.R. deck 6in. 34. Anywhere; Scandinavian countries welcomed.

### NORTHERN RHODESIA

G. H. HARRIS, 42, civil servant, P.O. Box R.W.27, Ridgeway, Lusaka. Ham radio, DIY (especially woodwork); light classical. Tele-funken 74K, 54in. 34. Anywhere.

### SOUTH AFRICA

DENIS BURD, 39, recording engineer, Box 6, Margate, Natal. Fishing, squash, sound effects; boogie to Bach. Revox, up to 10in. 37, 7½. Anywhere English speaking; all tapes answered immediately. RAE LAMBERT, 20, insurance official, P.O. Box 2838, Johannesburg, Motor racing, Seme between und

P.O. Box 2838, Johannesburg, Motor racing, 35mm photography; all except heavy classical. Philips 4-track, up to 7in. 34. British Isles, U.S.A., Canada; no need to write first. JOHN STEIN, 15, schoolboy, Observatory Extension, Johannesburg, General, jazz and rock. Philips, up to 7in. 34. Any English speaking countries.

### U.S.A.

STEPHEN E. BUGGIE, 16, 2421 Garfield Avenue South, Minneapolis, 5, Minnesota. English folk music and customs, travel, electronics, hi-fi, poetry, science fiction, humour (especially Spike Jones, Stan Freburg). Norelco 400, Sony 101, 7in. 13, 34, 72. Young people in U.K.

### December, 1962

### BEDFORDSHIRE

DAVE BESWICK, 31, 63 Ashton Road, Luton. General, sound effects, Harry Secombe, Mario Lanza; classical, opera. Editor De Luxe, up to 7in. 3<sup>1</sup>/<sub>4</sub>, 7<sup>1</sup>/<sub>4</sub>. Anywhere, especially East Africa; Swahili spoken (first tape in English).

### CORNWALL

ROSAVILLE K. ROSS, 51, loose cover maker, Higher Tregerest, Newbridge, Pen-zance. Photography, composing; all kinds. Regentone, 4 to 7in.  $1\frac{2}{5}$ ,  $3\frac{3}{4}$ ,  $7\frac{1}{2}$ . Liverpool, British W. Indies, South Africa.

### SOUTH DEVON

WENDY M. SPALDING, 17, student, 37 Chatsworth Road, Torquay. General; all except opera. Grundig TK20, 51in. 31. Anywhere English speaking.

Particulars of Tapespondents are given in the following order: Name, age, occupation, address; special interests, tastes in music; type of machine, spool sizes, speeds; area of tapesponding required.

### ESSEX

TERENCE BOYCE, 17, clerk, 114 Hillcrest Road, Hornchurch. Films, literature; modern

Road, Hornchurch. Films, literature; modern jazz, pops. Truvox 4-track, 7in. 3<sup>‡</sup>, 7<sup>‡</sup>. America, Australia, N.Z., Canada; females preferred. RAY HAWKINS, 17, junior draughtsman, 20 Lyndhurst Drive, Hornchurch. Films, motor racing; pops, modern jazz, Spectone 161, 7in. 3<sup>‡</sup>, 7<sup>‡</sup>, 15. U.K., U.S.A., Australia, N.Z., anywhere English speaking; females only.

#### GLOUCESTERSHIRE

MICHAEL WATSON, 19, trainee tool-maker, 22 Darwin Road, Gloucester. Photo-graphy, DIY: trad jazz, pop, light classical. EAP Major, 7in. 1<sup>2</sup>/<sub>8</sub>, 3<sup>3</sup>/<sub>4</sub>, 7<sup>1</sup>/<sub>2</sub>. Anywhere English creating speaking.

### HAMPSHIRE

MICHAEL BENFIELD, 23, R.N., c/o 34 Campbell Road, Southsea. Films, amateur dramatics, model theatre; from concerto to cha-cha. Grundig TK24, 53in. 33. Anywhere English speaking.

37

MICHAEL FIELDER, 17, trainee quantity surveyor, 48 High Street, Lyndhurst. Aircraft, travel; all music. Optacord 403, 53in. 13, 33. U.S.A., N.Z., Australia; card or letter first, please.

MICHAEL STENSON, 18, salesman, 38 MICHAEL STEINSON, 18, satesmail, 35 Coopers Lane, Bramley, Basingstoke. Experi-mental recording, meeting people; trad and modern jazz, pop, some classical. Pakasound Enthusiast, 52in. 33; U.K., N.Z., Australia, U.S.A.; females preferred.

### LANCASHIRE

GEORGE E. WEST, 23, textile worker, 187 Oldham Road, Middleton. Anything to do with tape; modern jazz, light classical. Simon SP4, 7in. 3<sup>a</sup>, 7<sup>b</sup>. Anywhere, especially North and South America, Spain, Holland. ALEX HARVEY, 20, driver's mate. Photography, radio, weather; pop, C. & W. Philips 4-track, up to 7in. 3<sup>a</sup>. Anywhere.

### LINCOLNSHIRE

TERENCE JONES, 25, storeman, 173 Yarborough Road, Grimsby. Football, photo-graphy; modern jazz, classical. KB RT20, 5in. 3<sup>+</sup>. U.K., West Germany; English speaking.

### LONDON

MICHAEL VEAL, 18, civil servant, 10 Craven Hill, W.2. Films, records, travel; most types. Cossor, up to 7in. 31. Anywhere; some

types. Cossor, up to /in. 32. Anywhere; some French and German spoken. FRANK D. PEARMAN, 37, representative, 44 South Croxted Road, S.E.21. Wrestling, car racing, records; pop. Brenell Mk. 5, Grundig TK830, 7in. 33, 74. U.S.A. MICHAEL MOULD, 23, tape importer, Estate Office, Dalgarno Gardens, W.10. Camping, travel, modern and trad jazz, blues and rhythm. Fidelity 2-track, 51 in. 33. Anywhere English sneaking. Anywhere English speaking.

### MIDDLESEX

JOHN ALLEN, 16, student, 17 Leaner Gardens, Perivale, Greenford, Films, litera-ture, hi-fi; all music. Fidelity Argyll, 5‡in. 3<sup>3</sup>/<sub>2</sub>. Anywhere English speaking, especially U.S.A.

### STAFFORDSHIRE

BARRY J. SCRIVIN, 28, van driver, 10 Crabourne Road, Dudley Wood, Cradley Heath. Cine and still photography, DIY, motoring, travel, hi-fi and stereo: trad jazz, pop, light classical. Philips 2-track mon. 4-track stereo and battery portable, up to 7in. 1<sup>\*</sup><sub>8</sub>, 3<sup>\*</sup><sub>4</sub>, 7<sup>\*</sup><sub>4</sub>. Anyone English speaking in Europe, N. & S. America, Africa, Australia, N.Z.,

N. & S. America, Africa, Australia, N.Z., Japan, Russia. BRIAN BARNES, 21, electrician, 40 Fox Green Crescent, Hall Green, Birmingham. Motor-cycling: pop, trad jazz. Robuk, 7in. 1<sup>5</sup>/<sub>8</sub>, 3<sup>1</sup>/<sub>4</sub>, 7<sup>1</sup>/<sub>8</sub>. U.S.A., Canada, South Africa. JOHN SHORTRIDGE, 17, student, Water Works Cottage, Cresswell, Stoke-on-Trent. Learning Russian; classical. Grundig TK14, 5<sup>1</sup>/<sub>8</sub>in. 3<sup>1</sup>/<sub>4</sub>. U.K. only.

### YORKSHIRE

MALCOLM NEWSOME, 32, sales execu-tive, 92 Kings Road, Harrogate. Theory and practice of sound recording, collecting dialects; all except heavy classical. Home-built, 8in. 1½ to 15. Anywhere, especially France. J. L. BELLAS, 27, driver, 39 A.M.Q., RAF Regt. Depot, Catterick, Richmond. General, motor racing; light, pops. Philips EL3527, Robuk RK3, up to 7in. 1½, 3½, 7½. Anywhere English speaking

Anywhere English speaking.

### SPOOL TALK . . . by Jon Edmunds

## HOW TO WIN FRIENDS—BY TAPE

WHAT does it take to be a good spooltalker? Some people just seem to have the knack; some don't. It's much like making—and keeping—friends. It's an art which for many just comes naturally while others have to make the effort—and often fail miserably.

Personality? Personality? You have to project yourself —but not too much! It's a two-way process... The gift of the gab? That helps, but it *can* be your downfall.

'Many people think it's only a matter of of sticking a tape on their machine, switching on, and yapping away into the microphone,' said Mr. Alan Hunt, public relations officer of World Wide Tape Talk, when I discussed it with him. 'But there's much more to it than that.

'Which is why we are issuing this leaflet, Etiquette for Tapetalkers . . .'

### Hints for newcomers

The leaflet had landed on my desk that morning. Having been harping on the subject in this column, I was interested. I found it answered many of the queries I receive from those who want to know how to take up tapesponding—and keep it up.

'It's our constant aim to encourage such people, especially if their tape recorders are gathering dust under the stairs,' I was assured by Mr. Hunt, 'But we're also concerned with the right and wrong way of going about this most enjoyable hobby.

'We think these hints we have compiled will help newcomers to tapesponding to get better results.'

So, if you want to make a success of spool-talking, invest a sixpenny stamp in sending for this leaflet to WWTT secretary Charles L. Towers, 35 The Gardens, Harrow, Middlesex. It's issued free to new members ...

Who wrote it? Why, their public relations officer, of course!

### Booster

Another organisation serving the tapespondent's cause is The Voicespondence Club, with its headquarters in Virginia, U.S.A. Representing it over here is Robert Coote, who writes in this issue of ATR on sending a Christmas message. Bob has sent me a 20-minute tape demonstrating in lively style the fun and friendship which comes of tapesponding.

comes of tapesponding. He made it himself, and it has been the rounds of several tape clubs. Playing it back, I decided it would fill many uncertain souls with enthusiasm for a hobby which is still attracting adherents and is truly international in scope.

### **Free French**

If you're a student of French you qualify for free membership of L'Union Mondiale des Voix Françaises, which conducts its tapespondence entirely in this language. Founded just over a year ago by a Frenchman in New York, and backed by the Fédération Internationale des Chasseurs de Sons and the French Radio, it is rapidly gaining members throughout the world.

One of the club's main attractions is its 'round robin' tapes—tours-aux-rubans which are sent out by the founder and go to four members in different countries, thus offering five French-speaking friends on one reel. The club is represented here by Mrs. Phyllis Copinger, 2 Seaford Street, Kilmarnock, Ayrshire, who will be glad to send details on receipt of a s.a.e.

Here's to more—and better—tape-talk, voicespondence, spool-speech, call it what you will . . . in any language!

### - CUT HERE -

### ATR TAPE DIRECTORY SERVICE

If you wish to be included in The Tape Directory fill in this form and send it in. Your particulars will be published as soon as possible.

To: The Tape Directory, ATR, Room 532, Ulster Chambers, 168 Regent Street, London, W.1. I would like you to include the following particulars in The Tape Directory, and agree to acknowledge all replies I receive in response to my entry.

	(USE BLOCK LETTERS)
Name	
Address	
Age Occupation	
Special interests	
Tastes in music	
Tape recorder used	
Maximum spool size	
Countries you wish to contact	



38

# is that really ME..

## on a VOIGE LETTER ?



More and more people are getting their letter writing 'taped' with the Mastertape Voice Letter. Anywhere in the world far away friends and relations can receive and exchange a living, spoken message which can include the whole family-even down to the baby! Giving 20 minutes

playing time at 32 i.p.s. on a twin-track recorder, the Mastertape Voice Letter, complete with box and ready-to-address envelope weighing only 2 oz., costs only 5s. 3d.

### **British Mastertape** Makes Sound Sense



obtainable from stockists everywhere



M.S.S. RECORDING CO. LTD., COLNBROOK,

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# FROM CHOICE... you'll choose



With all the tape recorders on the market today, choosing a model to satisfy your own personal requirements, at a price you want to pay, can be quite confusing.

It need not be. These two new ELPICO models have been specifically designed to satisfy every requirement of twin-track or four-track enthusiasts who want the maximum performance and entertainment value at the lowest economical price, consistent with high quality reproduction and simplicity in use.

All the experience gained over our many years of tape recorder design, development and manufacture have been embodied to provide a lifetime of troublefree use. Expert styling and cabinet finish give outstanding appearance to these wonderful models. Ask your dealer to demonstrate them today.

### ABBREVIATED SPECIFICATIONS (Both Models)

 Tape Speed
 ...
  $3\frac{3}{4}$  i.p.s.

 Tape Reel
 ...
  $5\frac{3}{4}$ "

 Frequency Range
 80-8,000 c.p.s.

 Output
 ...
  $2\frac{1}{4}$  watts

 Dimensions
 ...
 15"  $\times$  6"  $\times$  12 $\frac{1}{4}$ "

 Weight (approx.)...
 17 lb. 7 ozs.

### MODEL TR 702 (Twin Track)

Supplied complete with high impedance crystal hand/desk microphone,  $5\frac{3}{4}$ " reel of standard tape (850'), spare spool and recording lead.

Retail price: **23**<sup>1</sup>/<sub>2</sub> Gns.

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Telephone; BIShopsgate 6711 (all lines)

manufacturers.

MODEL TR 704 (Four Track to B.S.S.)

Supplied complete with high

impedance crystal hand/desk microphone,  $5\frac{3}{4}$ " reel of long playing tape (1,200'), spare reel and recording lead.

Retail price: 29 Gns.



channel unit (Mic. and other source) low- or high-impedance feeds. The 'NUMIX' 2 can be used with ANY TAPE RECORDER WHICH WILL ACCEPT A HIGH-Z MICRO-PHONE. Near professional results are guaranteed.



are guaranteed. PRICE £6.10.0. complete Write for leaflet on NUMIX 1, NUMIX 2, and NUMIX 3 Transistor



Approved by the manufacturers of the incomparable Ferrograph Recorders whose decks are drilled and fitted to accept the incomparable Bib Splicer.

## RECORDING TAPE SPLICER

Gives you a professional touch! This handy precision tool lets you edit tapes quickly and accurately—with no tape wastage and no post-editing clicks. The Bib Tape Splicer can be mounted directly on the tape deck. It uses all your odd lengths of tape, and pays for itself in tape saving over and over again. Bib value at 18/6!



18′6

### TAPE REEL LABELS

For identifying recorded tapes. Self adhesive—for typing or writing. Space provided for title, composer, date, speed and type of tape. 24 in a packet for 2/6d.

### AT YOUR DEALER'S NOW!

In case of difficulty, send remittance to: MULTICORE SOLDERS LTD. MULTICORE WORKS, HEMEL HEMPSTEAD, HERTFORDSHIRE



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