

AMATEUR

TAPE RECORDING

VOL. 4 NO. 7 FEBRUARY 1963 PRICE 2/-

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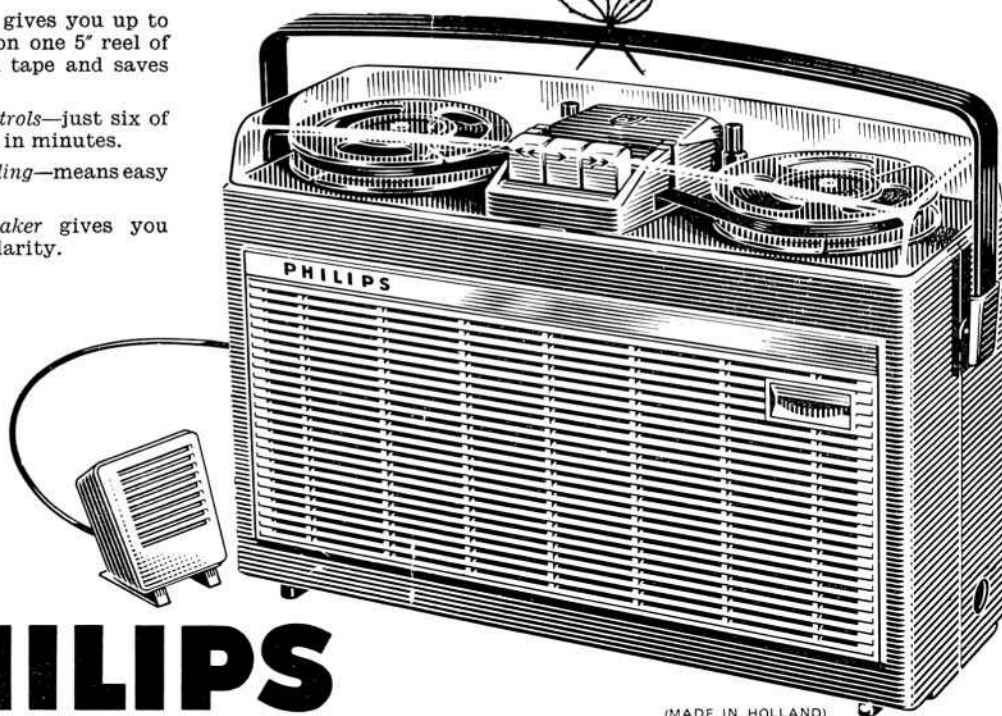
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Amateur Tape Recording & Hi-Fi

tape of the year ...

'Out of Water', a 13-minute science fantasy concerning the melting of polar ice and an experiment to enable man to breathe under water, won the Tape of the Year Award in the British Amateur Tape Recording Contest, in the Club Section, for the Triumph Owners' Motor Cycle Club, 57 Munster Road, London, S.W.6.



mike of the year ...

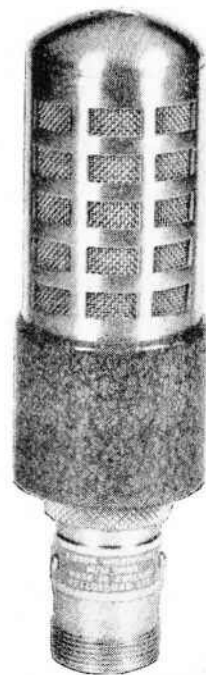
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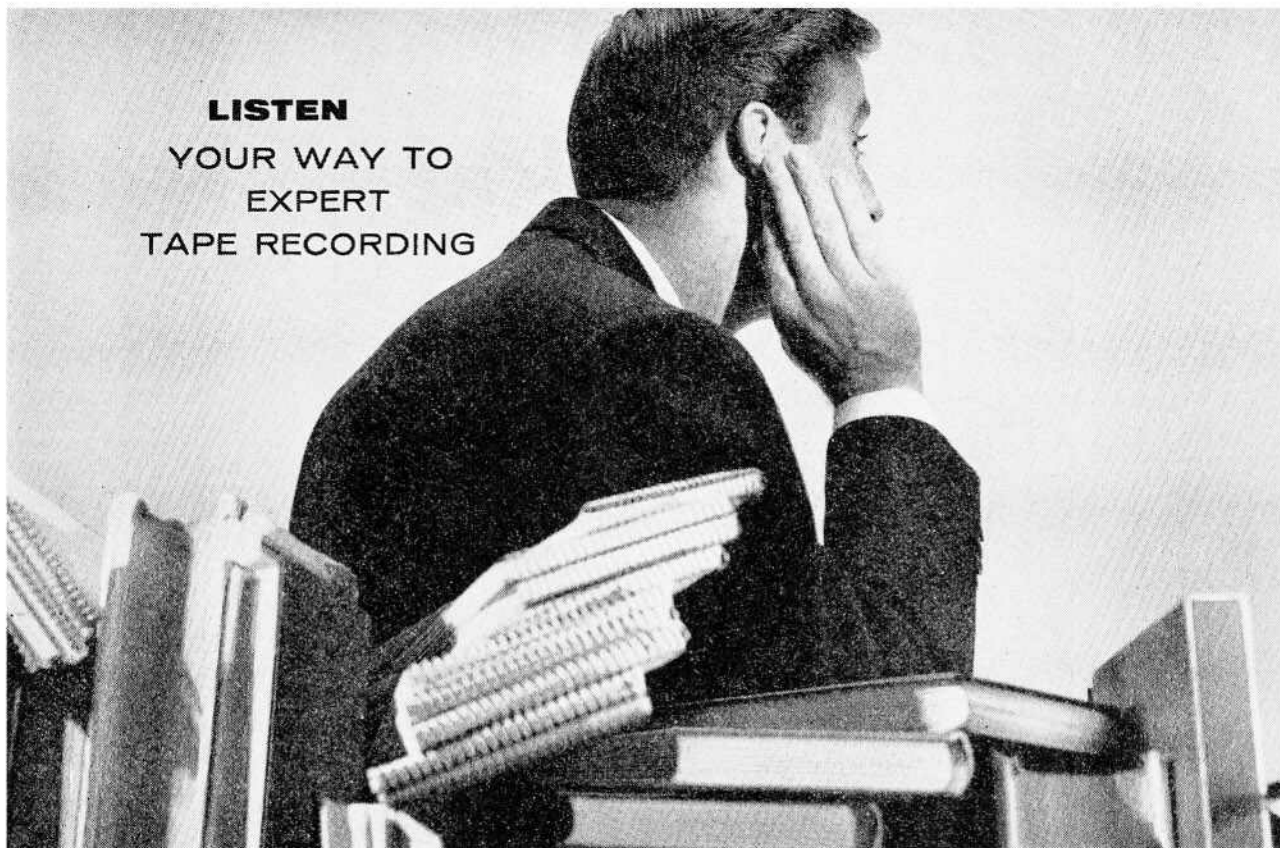
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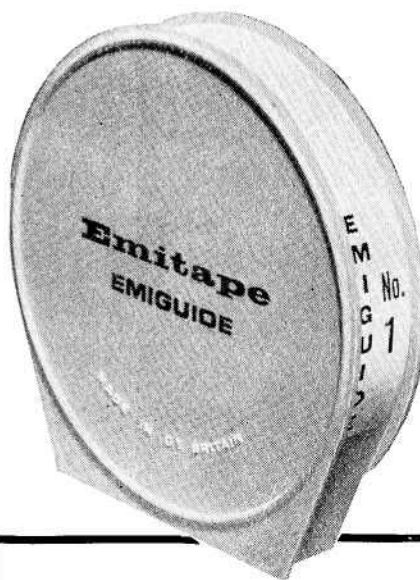


Emiguides guide where books can't take you

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AMATEUR Tape Recording & Hi-Fi

THE SOUND MONTHLY

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ON THE COVER

Subject of another money-saving construction project in this issue, the ATR Hi-Fi Power Amplifier has been designed by the Technical Editor to match the ATR Hi-Fi Preamplifier, featured in the January issue. For complete instructions and diagrams, see pages 19-22.

Vol. 4, No. 7

February, 1963

Pioneer for your pleasure

By THE EDITOR

HOW to become a tape recording enthusiast? The process, which escapes some unfortunate people, is simple.

The first step is to buy a tape recorder. The next, inevitably, is to read *ATR*. After that, the desire to make the most of your magical instrument becomes stronger as you learn how it operates and how to bend it to your will.

The enthusiastic letters arriving on my desk every day, from various parts of the world, leave no doubt that *ATR* is encouraging more and more people who once took their tape recorders for granted to make better use of them. Even to accomplish something really creative with them. It is evident, too, that many who never before did more than repair a broken lead are being inspired by the fascinating construction projects which *ATR* is regularly presenting for their benefit.



BREAKING NEW GROUND

It is worth noting that *ATR* is the first tape recording magazine to offer a series of Construction Books and features of such outstanding interest and value to the novice. Indeed, it is the only journal constituted to do so, since they are devised by one who is conceded to be the leading exponent and original researcher in the field—our brilliant Technical Editor, F. C. Judd, A.Inst.E.

Always, *ATR* has been in the van. It was the first magazine to have a pictorial cover in full colour. It has pioneered the introduction of special supplements and advertisements in colour, as well as construction books in the form of pull-out supplements. It is the only magazine with a page for women, and that conducts a Tape Club Competition. Now, it will be the first to initiate a Tape Recording Contest for the clubs whose activities it covers more comprehensively than any other journal.

DEVELOPMENT

ATR started, three and a half years ago, as a club magazine. Over the past year it has developed into a journal of much wider interest and appeal—because it recognises the unbounded possibilities of tape recording for the amateur, and the diverse interests of its constantly growing readership.

ATR succeeds because it caters for the true enthusiast, the genuine amateur whom it enables to acquire, not only a working knowledge of electronics, but the inspiration and ideas which will lead him to complete enjoyment of the hobby through practical application and experiment. No wonder that it is a journal which also commands the respect of its advertisers, who value it as a most effective medium.

Next month will see another new *ATR* development—the first of a series of Information Books on subjects of vital interest to everybody concerned with tape recording. Don't miss *WHICH ONE . . . ? The ATR Guide to Buying a Tape Recorder*. It could solve your immediate problem!

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*moment
of
triumph*



... the ballerina, curtsying at the applause, remembers the years of training, hard work, muscle-wrenching toil. Her success makes sense of that life-long discipline.

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An amateur recordist tells you how he made his first documentary tape

A PRESENTATION FROM SOUTHPORT

by **ROGER STEVENSON**

IT WAS in early autumn that the idea came. Why not make a tape recording featuring Southport Gardening Society to send to similar societies in Southport, North Carolina, U.S.A.?

A recording had already been done, in a 'helpful hints' sort of style, and sent to one particular society in America. But I wanted to improve on it; to do it in a documentary style, with interviews and sound effects thrown in for good measure. Some relatives of mine being members of the Southport society, the facilities were no problem.

My equipment consisted of a Ferrograph 3A tape recorder, a Simon SP4, and a Fi-Cord portable with which I did most of the actual recording. My plan of campaign was simple. After drafting the script, I would collect all my interviews and other useful material, edit it, and then put in the narration.

Five months

Simple it sounded, but the process took almost five months to complete, the results being a feature tape lasting 34 minutes.

All the sound effects, used as a background for the final narration, were recorded at locations varying from noisy railway stations to quiet parks and busy streets. The Fi-Cord is ideal for this type of work as it is so portable and unobtrusive.

Casting the narrator was difficult. Several people were auditioned but the right voice eluded me until I contacted the North-West School of Speech and Drama at Southport. They were most helpful, and suggested a voice that might be suitable.

It was, and credit must go to Mr. Richard Haslam. In recording his narration, the effects were linked in correct sequence on the Ferrograph, then mixed with the microphone on the Simon.

The Mayor's welcome

At the opening, the effects track provided an impression in sound of a train journey from Euston Station to Southport. Then a description of Lord Street, one of the most beautiful in the world, was given against a background of birds twittering a dawn chorus.

After this came a brief speech by the Mayor, recorded in the Mayor's Parlour at the Town Hall.

The Head of the Parks and Gardens Department then gave a short description of the floral displays in Southport, with one or two anecdotes. To provide contrast, the background was silent for this. More narration followed, to introduce some interviews with Gardening Society members at a recent flower show. A good deal of editing was necessary here, since the interviewer was inclined to say more than the members—a common fault.

Then came some trickery—in the interest of realism. I was

SEE NEXT PAGE



The author with his Fi-Cord



← *A view of Southport's Promenade
—an official photograph*

You couldn't
ask for a better
tape ...



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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A PRESENTATION FROM SOUTHPORT

— from page 9

supposed to be interviewing a local nurseryman during a visit by the society to his nurseries, but owing to his absence the interview actually took place indoors several weeks later. During the narration introducing this item a bus is heard travelling to the nurseries. So, to add outdoor atmosphere to the interview, I dubbed in a background of birdsong.

Question Time

It was fortunate that, while I was busy on this project, the BBC programme *Gardener's Question Time* visited Southport at the invitation of the society. The recording was made in the Casino Theatre and, just before it opened, Franklin Engleman and the team of experts were kind enough to record something about the programme especially for my tape.

I took the Fi-Cord to a room overlooking the promenade, where I made my recording. As the team were 'warming up' for the broadcast, the atmosphere was very homely and I collected some informative and humorous material which I thought would be of special interest to American gardening enthusiasts.

Then came the big problem—how to end my tape? Many ideas were rejected before the right one suggested itself. After a short piece of narration, the closing minutes of one of the society's meetings was faded up into the foreground, then faded down as the narration continued:

'... We leave you at the end of this sound picture of Southport, Lancashire, England, which we hope will be of wide and general interest to our Transatlantic friends, with a closing sequence from London, and say goodbye to the sound of Big Ben striking midnight...'

Not very original, but thoroughly effective.

Keep it short

The editing took four days, and after many cuts and re-recordings the finished tape was given its initial presentation at a dinner of the society. And, to my satisfaction, they seemed quite happy with the result. After which it was sent to America, to enlighten and amuse the gardening enthusiasts of Southport, N.C.

If, on the strength of this first successful effort, I was asked to offer a word of advice to others venturing into the documentary field, it would be this:

1. Record anything and everything relating to your subject, then ruthlessly edit superfluous material.
2. Keep the final tape as short as possible, working on the principle that your listeners are left wanting to hear more rather than wishing there were not so much.

But give yourself plenty of time in the production, unless you have a deadline to meet. I took five months, and enjoyed every minute. Whatever your subject, it's worth doing well, and you'll probably be sorry when you've finished it... at least, until you start on the next one!

● *Documentary and Reportage will be one of the categories in the ATR Tape Recording Contests for Clubs, to be held later in the year (see page 16). If you are a club member, it's not too early to start planning your production now...*

If you're interested in bargains in equipment or accessories it will pay you to examine the Classified Advertisements on page 38.

A. LESTER RANDS *explains*

WHAT MAKES HI-FI

A HIGH-FIDELITY reproducing system consists of a number of individual pieces of equipment, but the basis is the so-called hi-fi amplifier and loudspeaker. To meet the agreed standards of reproduction, all manufacturers who turn out the genuine article set a specification for performance.

This specification includes such items as frequency response, noise level, harmonic distortion and intermodulation, as well as sensitivity of the different input sockets and the power output. Here is a part of a typical hi-fi amplifier specification:

Output: 12 watts.
Frequency response: 15 to 22,000 cps ± 1 dB.
Power response: 20 to 18,000 cps ± 1 dB at 12 watts.
Harmonic distortion: Less than 0.1 per cent at 12 watts.
Hum and noise level: 85 dB below rated output.
Input sensitivity: 410 mV for 12 watts output.

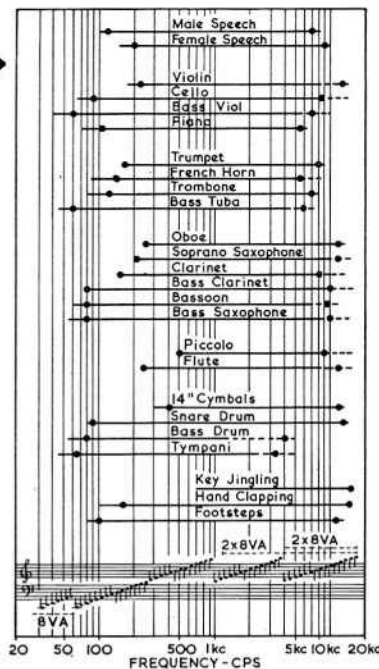
**HI-FI
WITHOUT
TEARS**

Frequency response

Probably the first question to be settled is why so much importance is attached to frequency response; though other items warrant equal consideration, and these I will deal with later.

The frequency response of any audio equipment, whether amplifier, loudspeaker, table recorder or anything else, is that part of the audio frequency range which the equipment will

This diagram shows the frequency range required for the reproduction of various musical instruments, the human voice and other noises without noticeable distortion and loss of harmonics. The dotted lines indicate noise extensions. The physical pitch range of the church organ not shown here, extends from approx. 16 cps to over 20,000 cps.



accept and reproduce without appreciable distortion or excessive noise, and—even more important—at equal level.

Reproduction will not be equal to the original if the power output from an amplifier is not the same over the whole of the desired frequency range. This means the full range of fundamental pitch of different musical instruments, speech and other sounds, including all the harmonics or overtones (see diagram). Hi-fi equipment, therefore, must have a frequency range from around 20 cps to at least 20,000 cps, and in many good amplifiers the response extends nearly to 30,000 cps.

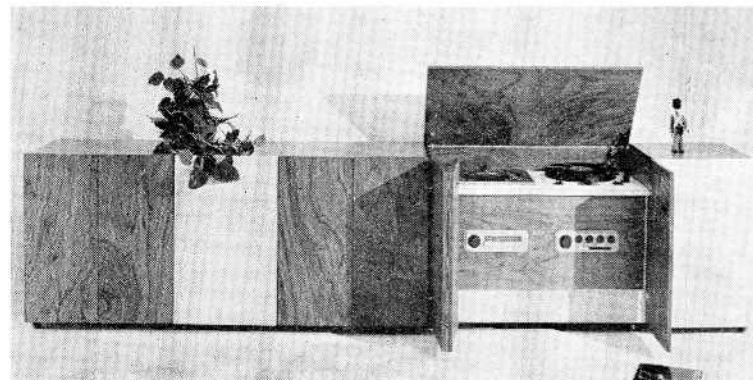
But remember that we are considering the ideal, and ideals are usually expensive. A high-fidelity amplifier with a level response from about 40 to 12,000 cps—plus a good loudspeaker, of course—will deliver perfectly acceptable hi-fi, and provided no distortion is present in either the programme source or the reproducing chain, an upper limit of even 9,000 to 10,000 cps will still give good quality. The loss of the higher harmonics would not be greatly noticed, for here we have a case of 'what you can't hear you won't miss.'

Distortion

You become a hi-fi purist only after listening to extended frequency range; but far more detrimental to pleasant satisfactory listening is distortion, of which there are different kinds.

First and most obnoxious is harmonic distortion which produces a harsh, grating sound to music. Then there is intermodulation distortion, which is the addition of spurious tones and colouration. If

SEE NEXT PAGE



← A complete range of do-it-yourself console cabinets designed by Frank Guille will house almost any combination of hi-fi equipment. They include a 3ft. cabinet for record player, radio, tuner and control panel, matching 2ft. cabinets for tape deck and records, and two small speaker cabinets. Fitted with castors so that they can be moved around to suit acoustic conditions, they are made from standard sizes of Vipboard.



At your service ...

THE SWOP COUNTER

DO YOU have a parabolic reflector (that's one in the picture) or a good 8in. to 10in. loudspeaker you want to dispose of? If you're in need of a low impedance Grampian DP4 microphone, David Cobb, 14 Dale Road, Swanley, Kent, would be interested to hear from you with a view to an exchange.

A low impedance extension loudspeaker is required by E. G. Parker, 63 Granville Park, Lewisham, London, S.E.13. He has to offer in exchange a Stuzzi Mk. 2 tape tuner with a Continental plug.

R. F. Hurd, 31 Kings Road, Dorchester, Dorset, has a Bradmatic Model 5 tape deck, speeds 3 $\frac{1}{2}$ ips and 7 $\frac{1}{2}$ ips, with three heads, and capable of taking 11 $\frac{1}{4}$ in. spools. He would like to swop this for 'something connected with hi-fi or photography.'

A new Philco VHF/AM self-powered radio tuner in polished case is offered by J. Smith, 57 Nevill Road, London, N.16, who will do a straight swop for a Garrard 4HF.

Three Grundig microphones—the GCM 3, GDM 12 and GM 1/L—are among the items offered for exchange by D. W. Martin, 10 Sussex Avenue, Bridgwater, Som., who also has a Stuzzi radio tuner and some empty 7in. spools to dispose of. He is interested in obtaining a Grampian G7 transformer (medium to high Z.), an FM tuner, a 4-track mains recorder or pre-recorded tapes, but will consider any other offers.

The Swop Counter is a free ATR service. If you have any pieces of equipment in good condition which you are willing to exchange for anything you need, send details to *The Swop Counter*, ATR, Room 532, 168 Regent Street, London, W.1. To effect exchanges, readers must write direct to the persons offering the goods.

NEXT MONTH

● Thinking of buying a new tape recorder? The answer to your problem will be found in the pull-out colour supplement included in the March issue—

WHICH ONE . . . ?

The ATR Guide to Buying a
Tape Recorder

● This will be the first of a wonderful series of special Information Books to be presented in future issues of ATR. Be certain you don't miss it. Order your copy from your newsagent without delay!

WHAT MAKES HI-FI

—from page 11

this is excessive it can also irritate the ear, but is not usually quite so annoying as unwanted hum and noise. Here 'noise' refers to the hissing kind you get from an old gramophone record or from a radio tuner with a poor aerial. Radio reception is something I will discuss in greater detail later in this series.

The basic hi-fi system

What actually constitutes a hi-fi system? This could conceivably consist of the amplifier—generally in two parts—a loudspeaker, and at least one programme source. The amplifier is conveniently split up into preamplifier and power amplifier, mainly because the power amplifier is the bulkier part and can be tucked away in a cupboard or cabinet out of sight.

The preamplifier contains the essential controls, which are programme selector switch, volume and tone—and, on more expensive equipment, extra controls for filtering out whistle on radio signals, reducing rumble from gramophone turntables, and so on. The preamplifier normally provides very little extra amplification to radio and preamplified tape outputs, and merely delivers enough signal to the power amplifier to enable it to produce its full output without noise and distortion.

When a preamplifier is operating from a low sensitivity gramophone pick-up or from a tape head it provides quite considerable amplification, however, particularly at the lower frequencies.

AMATEUR TAPE RECORDING & HI-FI

SUBSCRIPTION FORM

Make certain you receive your copy of *Amateur Tape Recording and Hi-Fi* by completing this form and sending it, with your annual subscription, to:

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I enclose the annual subscription of twenty-nine shillings (29s.) herewith.

Name

Address

Date

SPECIAL CLUB SUBSCRIPTION

Tape Club members wishing to avail themselves of the special Club Subscription rate for *Amateur Tape Recording & Hi-Fi* of 21s. per annum should apply to their local Club Secretary. All Club orders must bear the Club Secretary's signature and be sent to the Subscription Department.

● In the world of
show business . . .

IT'S TOP BILLING FOR TAPE

says **RACHEL LINDSAY**

GONE are the days when tape recorders were regarded merely as a fascinating new toy. Now they are practical aids, not only for business people dictating letters and memoranda, but also for those who work in the entertainment field.

I have told you of writers who use tape recorders to help them set the scene. Now let's turn to the world of show business—just to show you how versatile tape can be.

Most of us who have watched TV or visited the variety theatre have thrilled to the brilliant puppetry of Heather and Martin Granger. They have toured the world with their wonderful act, appearing in Las Vegas, in Australia, at the famous Lido night club in Paris, and at the London Palladium—surely the top spot of the variety world.

Split-second timing

'Our tape recorder has been a wonderful asset to us,' Martin Granger admitted when I met him and his wife. 'Our act has to be fast; otherwise adults would get bored with it. So we work everything out to the split second.'

'You could really compare our act to an acrobat's. One false move and our puppet strings would get tangled! Watch a rehearsal and I'll show you what I mean.'

I sat enthralled as Heather and Martin went into their routine. On stalked a little, pot-bellied Red Indian who loped across the stage and looked in all directions to make sure he wasn't being followed. He failed to see a tall, thin Indian looming up behind him, and when he

turned round was suddenly face to face with his enemy.

The tall Indian bent; the two puppets touched noses and started to do a mock war-dance backwards and forwards across the stage. At last the little Indian escaped. He bent down to hide behind a bush—and presented a wonderful target for an arrow.

Believe me, it's no easy task to make a puppet fire an arrow into a precise spot, but Martin Granger did it!

'It's all a matter of timing,' he repeated. 'Everything is worked out to the very second. On the fourth second, Heather must turn her puppet to the left . . . Six seconds later, I must turn my puppet to the right . . . Four seconds after that, we must both turn in opposite directions . . .'

Disaster

Martin and Heather then showed me what they meant, but disaster overtook them. The strings tangled, and the puppets fell to the floor.

'That's because we weren't using our tape recorder,' Heather giggled. 'No matter how carefully we try, we can't really time things accurately enough ourselves.'

So, Martin works out every new routine on the drawing-board, rather as if he were plotting an intricate piece of machinery. He decides where each puppet has to be at a given time, then works the whole thing out with a stop-watch. After this he records it on tape, and once that's



Heather and Martin Granger pull the strings.

done, he and his wife can begin their rehearsals.

'In that way the speed of the act never varies,' they said, 'and we can be sure of giving the audience what they want.'

Coming from this young couple who have earned top billing all over the world, it's a nice testimonial to the tape recorder.

STUZZI DISCOVER A NEW JAZZ PIANIST

Nearly 400 youngsters entered the second Stuzzi Talent Contest which started at the Boys' and Girls' Exhibition in Discovery Corner. The winner, 15-year-old Roy Budd of South Norwood, won a Stuzzi Tricorder worth 63 gns., a night out with a celebrity, a recording test and an audition for Radio Luxembourg. He also appeared on TV.

Roy's piano playing, which took in involved arrangements by jazz giants Dave Brubeck and Erroll Garner, so impressed the judges that they all voted him the winner—and asked him to play again for them.

Runners-up were 'The Dominators,' a vocal group from Barking, and trumpeter Nigel Hopkins from Bournemouth. Performances of the five finalists were taped and sent to the judges—including Kenny Ball and disc jockey Kent Walton—so that they could pick the winners independently.

THE ORGAN? KEEP IT FOR BACH!

says **RUSS ALLEN**

WHO was it said that organs and jazz don't mix? Perhaps it was me. Anyway, I'm all the more certain of it after hearing the 17-piece orchestra of **Gerald Wilson**, featuring the jazz organ of **Richard 'Groove' Holmes**, play an album entitled *You Better Believe It* on Fontana 688-101-ZL (Stereo 888-101-ZY).

That's a tough title to live with. And though Wilson's arranging talent is high, I can't really believe he chose to have old 'Groovey' with him, making an over-recorded noise that set my needle jumping. Sounds like bagpipes, and other peculiar things. . . .

Jazz it did *not* sound like, to me.

Star of the set is **Carmel Jones**, a fine trumpet player, and ably backed by the other soloists—**Harold Land**, **Teddy Edwards** and **Walter Benton**, tenors, **Joe Maine**, alto.

This is indeed a great band, but marred by the odd man out. I've heard it and I *do* believe it. But you still can't convince me that the organ is a jazz instrument.

Back to Bach, I say!

●Did someone mention the Bossa Nova? If not, you'll have heard a song, 'Slightly Out of Tune,' at least a dozen times on the radio. Originally 'Desafinado,' it comes from an L.P. called *Jazz Samba* on Verve (S)VLP 9013. **Stan Getz**, tenor; **Charlie Byrd**, guitar; **Keter Betts**, bass; **Gene**

Byrd, guitar and bass; **Buddy Deppenschmidt** and **Bill Reichenbach**, drums. Recorded—of all places—at Pierce Hall, All Soul's Unitarian Church, Washington, D.C. (Feb. 13, '62).

The title is the sort of gimmicky thing that usually puts me off before I listen. But this is a superbly relaxed jazz set which had my ear from the start and proved much more conducive to dancing than some other 'Latin' groups I wot of.

Get this. But desafinitely!

●In much the same vein—not surprisingly, considering it's the same group, less Getz—is **Latin Impressions: Riverside RLP 427**. Fabulous recording; twelve tracks, five of them solo guitar and every one a gem. Delightful, intimate and swinging, it's a must for lovers of the guitar—acoustic, not electric.

Yes; an impressive pressing.

●If you were a fan of the old Stan Kenton band you'll be familiar with the vocalising of **Miss June Christy**. **Capitol** have gathered eleven Christy tracks, with backings by **Pete Rugolo** and husband **Bob Cooper**, tagged them *The Best of . . .*, and made them available on (S)T 1693.

Whether these are reissues or originals I know not, but very nostalgic they are, and extremely good. 'Just a Sittin' and a Rockin',' 'Willow Weep for Me,' 'Midnight Sun' . . . good songs, swell backings, and delectable Miss Christy. What more?

●And while we're drawing on the superlatives, let us mention **Great Jazz Standards: The Gil Evans Orchestra**, Fontana 688-000-ZL, featuring **Johnny Coles**, trumpet, with Gil himself at the piano.

Coles kicks in with Beiderbecke's 'Davenport Blues.' A tremendous trumpet player, this Johnny, who jokes at some of Bix's own phrases; audacious, and liable to cause ardent Bixomanes to heap hot coals upon his head. Evans' arranging is excellent as ever, and the soprano sax of **Steve Lacey** is the best I've heard. Gil's piano playing,



too, is refreshing, helping to make this a truly great jazz standard.

●Verve have coupled that doyen of bassists, **Ray Brown**, of the Oscar Peterson trio, with an All-Star Big Band on VLP 9011. Arrangements and conducting are by **Ernie Wilkins**, and it's pretty tremendous.

Brown gets quite a bit of solo space and uses it with discrimination. His pizzicato cello is the finest I know among the jazz bassists. Guest star is **Cannonball Adderley**, adventurous and exciting.

A fine big sound, beautifully recorded and thoroughly recommended.

●Another Opus from **Lem Winchester** with **Frank Wess**: **Esquire 32-172**. (Recorded June 6, '60). **Wess**, flute; **Winchester**, vibes; **Hank Jones**, piano; **Eddie Jones**, bass; **Gus Johnson**, drums.

Third of the late Lem's recordings and for me, the best. The rhythm section is solid, with Basie cornerstone Jones really laying down a fine beat. Hank's piano fairly crackles, Wess whistles and even Lem's vibes

seem less rackety than usual.

Another opus for your collection.

●In a Latin Bag, **Cal Tjader** and his Sextet: **Verve CLP 1587**. (Recorded Los Angeles, August 28-29, '61).

Tjader (pronounced Tjader) is a vibraphonist, pianist and drummer who likes his jazz à la L.A. It's a gimmick I suppose, and I've no doubt it will be highly popular with a lot of people.

Cal is an ex-George Shearing man, like his bassist, **Al McKibbon**. **Paul Horn**, the alto and flautist on the set, is ex-Chico Hamilton, and when he gets the chance to take off on 'Half and Half', which keeps changing rhythmically from 6/4 to 4/4, he helps to make it the best track.

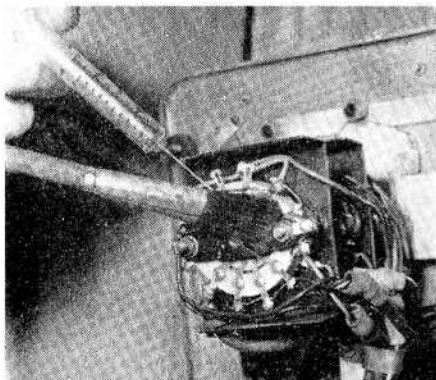
For lovers of L.A. jazz. Bags of drums and that . . .



Operation Maintenance

No. 3: KEEP IT CLEAN!

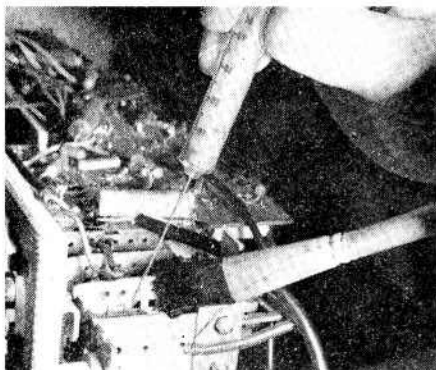
Those switches . . .



- ALMOST every tape recorder employs operating switches of some kind—for replay, record, rewind, equalisation circuits, head connections, and so on. Switch contacts carrying tiny audio signals can be a source of noise and crackle if they become dirty or oxidised through infrequent use. Constant use tends to keep these contacts bright and noise-free, but occasional cleaning can do no harm.

This necessitates lifting the deck and chassis of the machine clear of the case. As you proceed, make a note of the connections of any leads that have to be disconnected and the location of all fixing screws. Wafer switches can be most effectively cleaned with carbon tetrachloride or methylated spirit. Squirt the liquid into the switch and brush the contacts with a clean, stiff brush. Alternatively, wet the brush and go over the contacts at the same time, turning the switch backwards and forwards through its different positions.

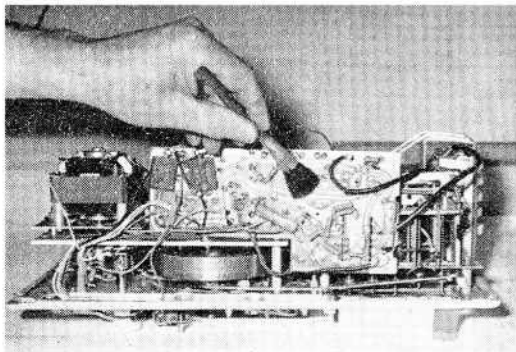
The top picture (left) shows this operation being performed on one of the switch banks of a Ferrograph tape recorder. The second picture shows a push-button type switch such as is fitted to many tape recorders—in this case, the Robuk RK3—being cleaned in the same way.



Dust does harm

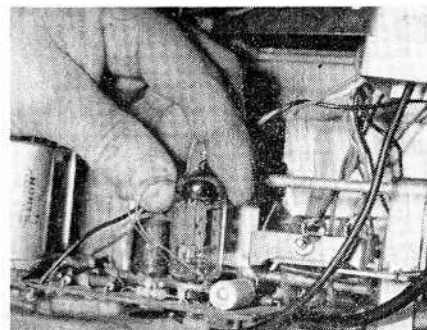
TAPE recorders can collect a good deal of dust which, combined with condensation, can cause harm to soldered connections, printed circuit boards, valve-holders and other components with exposed metal contacts. Remove the whole of the deck and amplifier, taking care to note the connections of any leads which have to be unplugged or disconnected, and the positions of fixing screws. Use a clean, dry stiff-haired brush as shown in the picture below (left) to brush away the dirt, especially between valve-holder connections and soldering tags. A vacuum cleaner may be used to suck up the dust as it is loosened.

The picture shows the printed circuit chassis of the Robuk RK3. It is hardly necessary to point out that on no account must the machine be connected to the mains supply while any of these operations are in progress.



Make a check

- AFTER cleaning make sure that all valves are firmly seated in their bases and that retaining clips are put back in position. Carefully check that no wires have been pulled off and that all other leads are reconnected as before.





The ATR Club Challenge Cup

THIS IS THE TROPHY THEY ALL WANT TO WIN IN 1963

- ▶ **THE ATR Top Tape Club Contest for 1963 is off to a fine start!**
- ▶ **CLIMAX** to the contest this year will be the Tape Recording Contest for Clubs, which is already arousing keen interest. Six trophies will be offered in this unique competition, the results of which will be taken into account in assessing the final placings in the ATR Tape Club League.
- ▶ **THE TROPHIES** will be presented by leading manufacturers including BASF, Fi-Cord, Lustraphone, Philips and Simon. There will be six categories in the contest, which will be judged by a special panel of experts. Full details will be published later.
- ▶ **MEANWHILE**, the Top Ten Clubs will be selected every month on the basis of points awarded for outstanding progress, original effort, and service to the community and charitable causes as well as to the cause of tape recording.
- ▶ **A NEW Club League Table** will appear in the next issue. The ATR Challenge Cup has been presented to Thornton Heath, Top Club for 1962, who will hold it for a year. Your club could be Top Club for 1963 if you start making the effort **NOW!**

Rally to Northampton!

The first Tape and Cine National Rally is now being planned by Northampton Tape and Cine Club, to take place at the Central Methodist Halls, Regent Square, on Saturday, March 30th, from 2 p.m. to 9 p.m.

Three halls will be available, for Audio, Cine and Trade, the trade show being open from 10.30 a.m. to 9.30 p.m. All clubs are being circularised and 3,000 programmes will be printed.

Meanwhile, anyone wishing to participate is invited to write to Secretary R. C. Foster, 17 Shakespeare Road, Northampton.

British or Continental?

AFTER listening to a tape on the same subject from Derby, the Coventry club returned the compliment by making a recording on the comparative merits of British and Continental equipment. Some 26 members and their wives assembled for an enjoyable Christmas party at which chairman Peter Warden was M.C. The club assisted at the sound controls when Brooklands Little Theatre group presented its pantomime.

With the president

Members of Dartford club visited the Wrotham studio of their president, Daphne Oram—the converted oasthouse, packed with equipment, where she composes the electronic music which earned her a

Gulbenkian award to further her researches. They were given a complete demonstration of her methods, besides hearing several compositions.

Using two microphones and a mixer he built himself, chairman Les Coates recorded the opening service of the new Brent Methodist Church, East Hill, which was also relayed to people who could not get into the overcrowded church.

Last of the trams

Glasgow club has prepared an extensive programme of talks, demonstrations and competitions to keep members occupied on alternate Monday evenings at their new meeting place—on the premises of M. & M. Electronics Ltd. at 91 North Hanover Street. It is offering to supply copies of its tape on the last days of Glasgow's trams. Anyone interested should

contact chairman Donald Anderson, 33 Millbrae Road, Glasgow, S.2.

Public notice

Interest shown by the local newspaper and other societies in the Huddersfield club's activities indicate that tape recording is attracting more devotees in the area. A return visit to the local cine society is planned. An interview with Frank Ifield was presented to patients through the hospital broadcasts service with which the club is associated.

Group activity

Since settling in their new premises Hull club members have been banding into specialised groups, one of which is intent on recording plays. Another group will build up a club library of sound effects

and experiment with creative recording, while some of the juvenile members plan to specialise in interviewing.

A new technical class for beginners is being conducted by Alan Lockwood, and Group 5 aims to make a variety of feature tapes to be linked eventually into a production entitled *The Sounds of Hull*.

For the children

The Medway club is presenting regular programmes comprising requests, stories and sound quizzes to a local children's home. As a result of organising stalls at charity fetes, members have been invited by the Council and the public libraries to help in some of their activities.

Private wires

Seven members of the Middleton club braved the fog to visit the telephone exchange at Dial House, Manchester. Unfortunately, tape recorders were not allowed. . . . Three members recorded a carol service at King Street Methodist Church with a Reslo ribbon mic slung from a beam at a height of 30ft.—and extremely good results.

Mm-mm-mm!

Members of the Northampton club are co-operating with Mr. C. W. Percy, chairman of the local brewery firm, in production of a 16mm sound film, to run for 30 mins., concerning the making of a famous brew. Completion by April is planned.

Two members recorded an interview with Richard Attenborough on a recent visit. Hymns played and sung in the modern manner by a leading local group, The Tornados, at a service attended by their followers were also taped. And the 40-strong Northampton Light Orchestra,

TOP TEN CLUBS FOR FEBRUARY	
1. NORTHAMPTON	6. COVENTRY
2. WALTHAMSTOW	7. SOUTH BIRMINGHAM
3. MEDWAY	8. WARWICK & LEAMINGTON
4. HULL	9. ROMFORD
5. HUDDERSFIELD	10. DARTFORD

conducted by Len Andrews, played for the club's recordists at a concert for the blind.

Swotting first

Encouraged by increasing membership, the new Romford and District club launched a news-sheet entitled *It's Pure Sound*, edited by member Harry Nash, secretary of Dagenham Writers' Club. An attempt at electronic music composition by sece-

Art of interviewing

At the final session of Rugby's instructional course, Les Skingley of the Coventry club gave another talk on the pitfalls of interviewing. Coventry members are judging the society's first tape competition in which one of the subjects is *The Changing Face of Rugby*. The trophy will be presented by member Terry Davis.

Noises off

Asked to furnish sound effects for a five-performance presentation of Mary Hayles Bell's *Duet for Two Hands*, involving over 40 different cues, South Birmingham club faced many problems, from a piano solo to a thunderstorm. But the appeal of the Alexandra Playgoers was answered so successfully, after several hectic weeks, that other societies are seeking the club's help in this field.

WIN THOSE POINTS!

- 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.

tary David K. Kirk and a talk on tape-sponding were features of a recent meeting.

In view of the fact that several young members have to swot for their G.C.E., plans for a hospital service have not yet been implemented. A change of name for the club is being considered.

Talking newspaper

Walthamstow society's scheme for a 'talking newspaper' for the blind aroused interest in the national and local Press. The borough council is assisting in finding premises where the club will set up a permanent studio, and a service which will be a useful welfare amenity.

Many other offers of help have been received, and money for equipment will be forthcoming from a source not yet disclosed. Distribution of taped news bulletins to several blind clubs and groups in the area will be undertaken by a local motorcycle club.

Disc copies of a recording of the anniversary service of a local boys' club, the League of Three, which was attended by the Mayor and Mayoress, are expected to find their way to many parts of the Commonwealth. The civic heads also attended the club's Christmas party, which was an outstanding success.

Sounds of the Assizes

To encourage members in the use of the tape recorder to supplement their interests, chairman Graham Harris of Warwick and Leamington initiated a feature called *Personally Speaking*. Junior members Malcolm Taylor and Derek Harris produced an unusual tape-slide show from assorted slides and odd sound effects. At another meeting, members demonstrated



Members of the Dartford Tape Recording Society pictured on a visit to the studio of their president, Daphne Oram, of electronic music fame.

TURN TO PAGE 24

NOW THEY'VE GOT THE ICEQUAKES TAPED!

TAPE recordings of 'icequakes' on Ross Island, brought back from Antarctica by New Zealand scientists, were made on a commercial machine adapted to use half an inch of tape per minute and left to run for three weeks.

Played back at normal speed, the vibrations became audible to researchers of the Geophysical Survey Department, who are developing the method to provide a 'fix' on icequake centres.

Sound lesson

The screech of tortured gears, contrasting with the sound of sweetly meshing cogs, illustrates the lectures of Sgt. Arnold Hill, Traffic Officer of Brierley Hill (Worcs.), to learner drivers having trouble with gear-changing. It's all done by tape, of course . . .

The Good Word

Members of the Presbyterian Church of Wales, meeting at Dolgellau, considered compiling a tape library of sermons for loan to churches without ministers, and for playback to the sick and elderly.

Our heritage

The story of the Gunpowder Plot and a description of cricket were included on a tape made by pupils of Rosherville Primary School, Northfleet (Kent), for scholars in Massachusetts, U.S.A., with whom they are tapesponding.

True record

To support their claims for entertainment expenses as required by new income tax rules, a Chicago restaurant offered its patrons the loan of tape recorders to prove that luncheon talk was strictly business . . .

Last word

As an aid to settling queries in shorthand reports of debates, tape recorders were permanently installed in the House of Lords after several months of experiment. As yet, there is no intention to follow suit in the Commons . . .

Stable talk

To enable his fellow members of New York Jockey Club to hear the views of some of Britain's top turf personalities, racehorse owner Danny Van Clief taped the speeches at the York Gimcrack dinner at which he was principal guest.

All the news

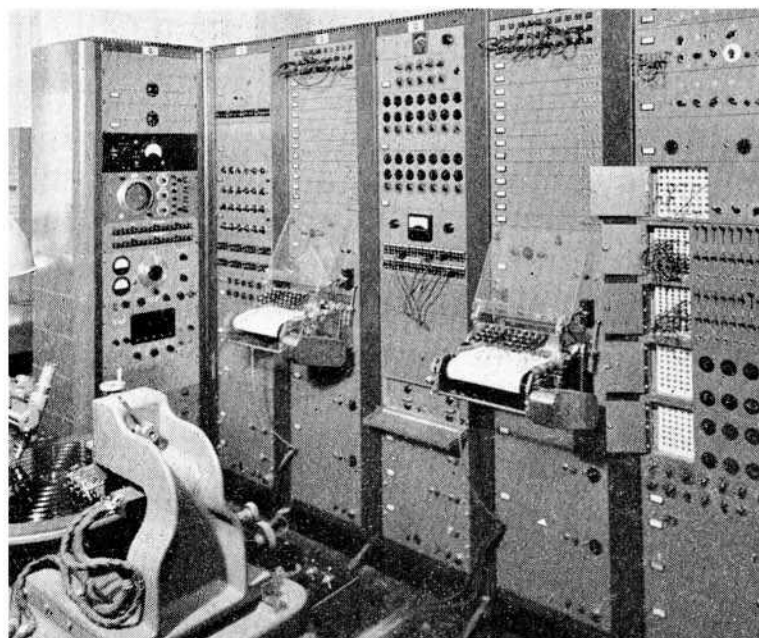
Student nurses at Chesterfield Royal Hospital are providing a service of news on tape for temporarily blinded patients who cannot read the papers. For the children's ward, they record fairy tales . . .

As she is spoke

Tape recordings sponsored by the Irish Education Department will be made available to parents so that they can help in teaching children the native tongue. . . And Birmingham teachers are considering the use of tape in teaching English to immigrants.

Teenage talent

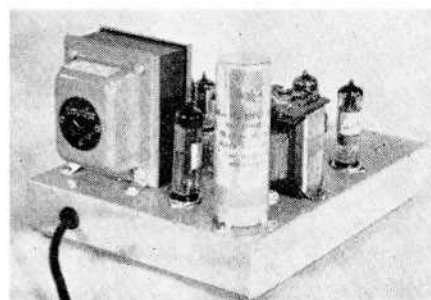
Poems written by senior pupils of Intake County Secondary School, Leeds—including 'The Silent City' and 'The Grimy Town'—were tape-recorded by the headmaster for presentation to parents at a musical evening . . .



◀ The Electronic Music Synthesiser installed at Columbia University, New York, can generate electronically any imaginable musical tone. Developed by an R.C.A. Laboratories team under Dr. Harry F. Olsen, it produces sounds in response to coded signals fed into the system on perforated tape prepared by keyboards as shown in the picture. It is used to programme composition and research in electronic music by Columbia and Princeton Universities. An exclusive feature on how it works will appear shortly in ATR.

HOW TO BUILD THE 'ATR' HI-FI POWER AMPLIFIER

Designed by the Technical Editor, F. C. JUDD, A.Inst.E.



THE ATR Power Amplifier has been designed to match and operate with the Preamplifier which was the subject of ATR Construction Book No. 2, presented in the January issue.

The two pieces of equipment form a complete amplifier system with a frequency response and output power considered adequate for high-fidelity reproduction of radio programmes (from an FM tuner), gramophone records, and tape recordings or pre-recorded tapes.

Specification

The Power Amplifier is rated for 10 watts undistorted output over the frequency range 20 to 20,000 cps, though the response at almost full output extends from 10 to 30,000 cps.

The actual specification is as follows:

Frequency response, full power: 20 to 20,000 cps ± 1 dB.

Frequency response, extension: 10 to 30,000 cps ± 3 dB.

Hum and noise level: At least 70 dB below rated output.

Harmonic distortion: Less than 0.5 per cent.

Negative feedback: 25 dB.

Output: 3, 7 or 15 ohms.

Input: 400 to 500 mV at 470 K.ohms.

The Amplifier has an ultra-linear output stage designed around two Brimar EL84 output valves which are driven from a conventional phase splitter. The negative feedback applied between the output and cathode of V1A results in a 25 dB reduction in overall gain, considered sufficient to maintain hum, noise and distortion to the minimum required for hi-fi reproduction. The input valve and phase splitter is a Brimar 6BR8. The complete circuit of the Amplifier is given in Fig. 1 (see next page).

Layout

The general layout is shown in Figs. 2 and 3. The entire Amplifier and power supply can be assembled on a chassis 10in. \times 8in. \times 1½in. No precise measurements have been given for the location of valveholders, transformers, etc., but provided the components are located approximately as shown in Figs. 2 and 3, no trouble will be experienced with hum or instability.

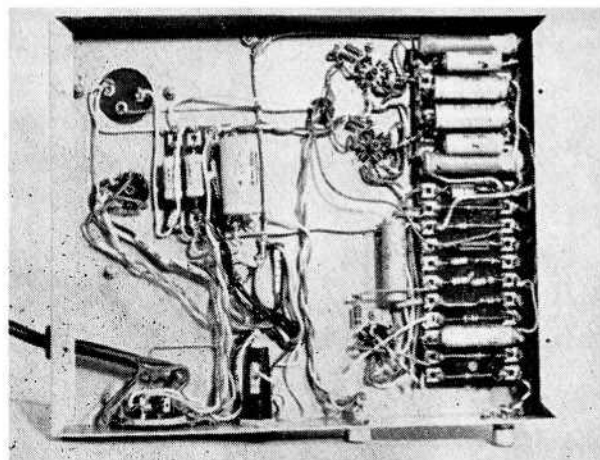
The power supply

The power supply circuit is shown separately in Fig. 4 but the components may all be assembled on the same chassis as in Figs. 2 and 3. Note very carefully the separate ht+ feeds to the output valves, phase splitter and Amplifier, and to the octal socket for the Preamplifier. It is important, too, that component values are used as shown, but C11 and C10 may be 68 mfd + 100 mfd, which is a standard Radiospares dual capacitor.

It is suggested that a heavy gauge common earth wire, say 16 swg, is run around the chassis and connected to earthing tags at two or three points. To this should be connected all earthed components such as the mains transformer internal screen and ht centre tap, the heater winding centre tap, and so on.

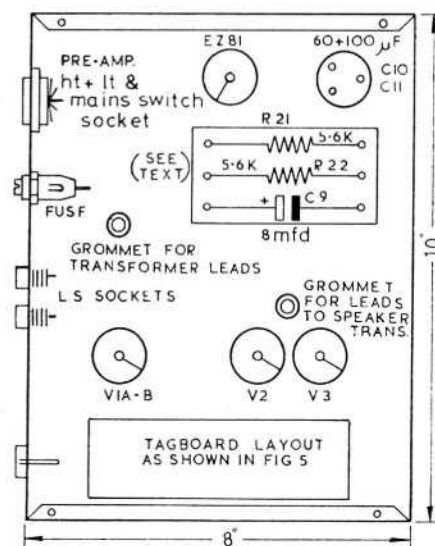
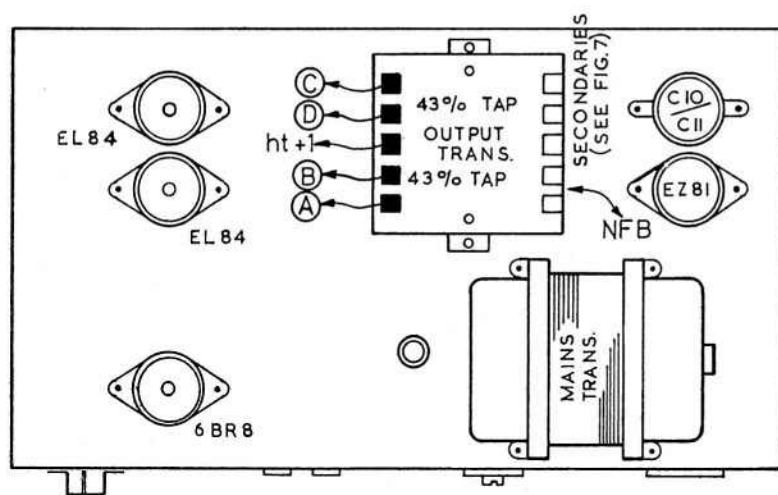
The octal valveholder carries the 6.3 V heater supply and ht+3 supply for the Preamplifier or other external equipment such as a mixer or radio tuner. Up to approximately 10 mA can be drawn from the ht+3 rail and up to 1.5 amps on the heater line (see Fig. 5).

The remaining four sockets on the octal holder are for taking a twin mains line through to the Preamplifier for a double pole on/off switch attached to the volume control, if desired. Otherwise, an ordinary toggle switch can be mounted on the main chassis for switching the mains supply.



Underside view of the Power Amplifier.

TURN TO PAGE 22



HERE ARE YOUR WORKING DIAGRAMS FOR THE 'ATR' HI-FI POWER AMPLIFIER

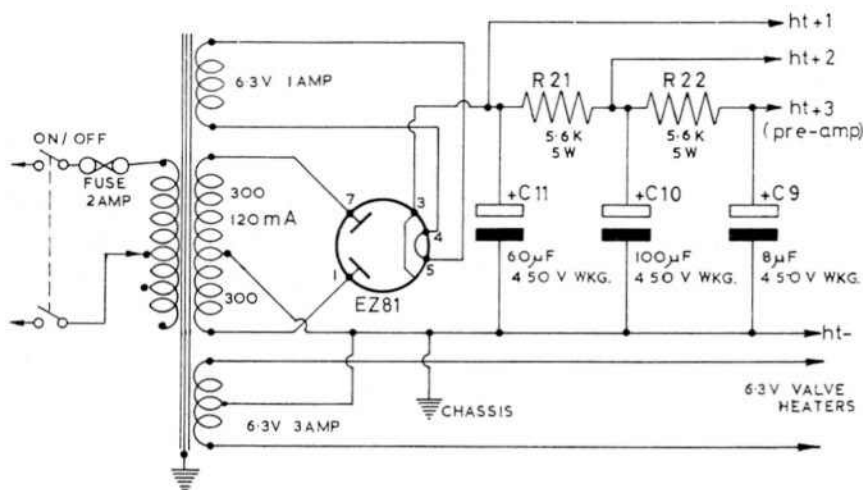


FIG. 4: POWER SUPPLY FOR THE 10 WATT POWER AMPLIFIER

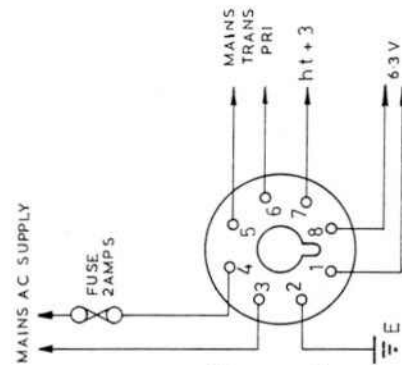


FIG. 5: CONNECTIONS TO OCTAL SOCKET FOR PREAMP HT AND LT SUPPLY AND MAINS ON/OFF SWITCH

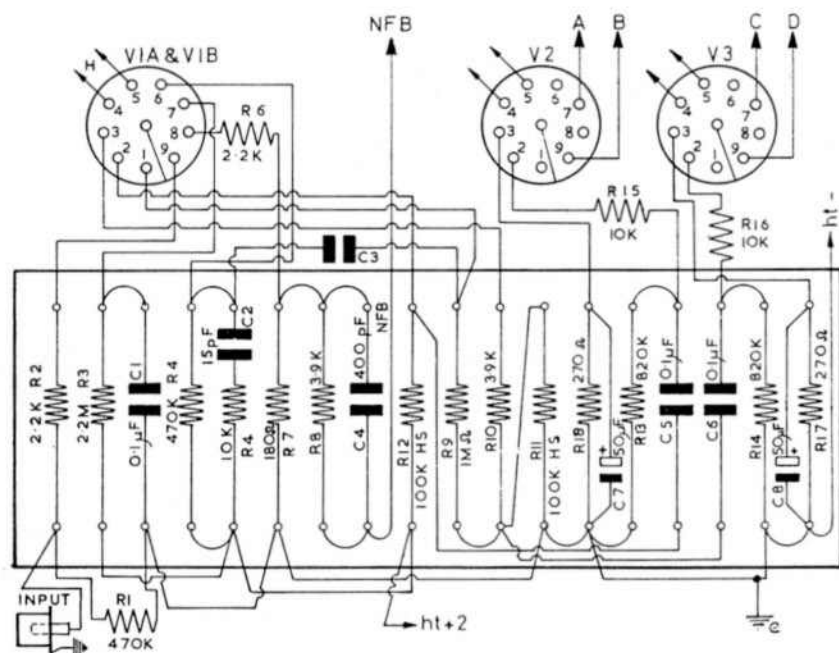


FIG. 6: TAGBOARD LAYOUT OF THE POWER AMPLIFIER

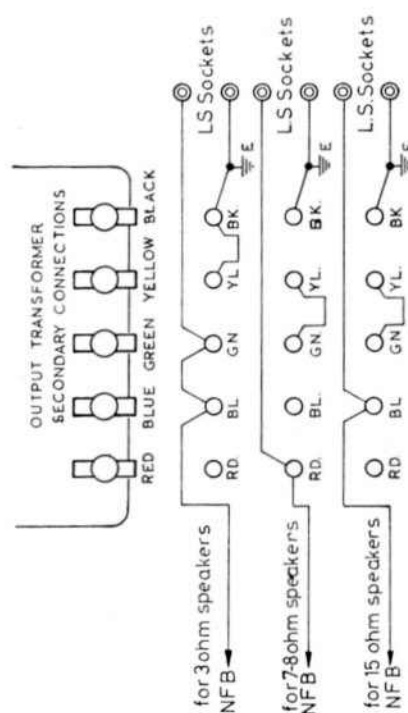


FIG. 7: CONNECTIONS FOR THE EL84 RADIOPARES OUTPUT TRANSFORMER

SAVE MONEY ON THIS CONSTRUCTION PROJECT

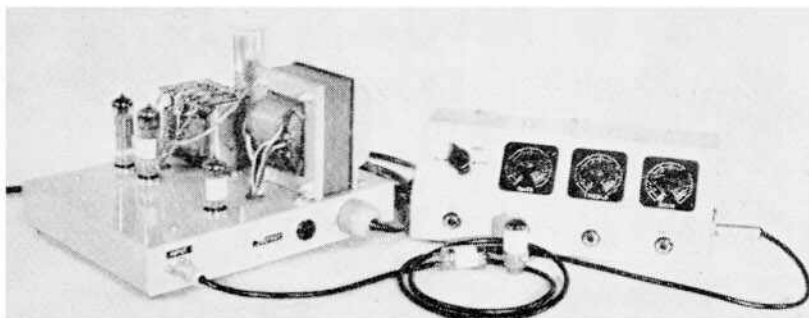
The 'ATR' Hi-Fi Power Amplifier has been specially designed to make it as inexpensive as possible to construct. An equivalent piece of equipment, bought in a shop, would cost between £15 and £17. By building it yourself you can save at least £6. See the Eisolder advertisement on page 28 for special Construction Kit offer.

HOW TO BUILD THE 'ATR' HI-FI POWER AMPLIFIER

—from page 19

Assembly and wiring

The tagboard layout for the components is shown in Fig. 6. Note carefully the connections to the anodes of the output valves and make sure that these and the grid 2 (screen) connections are also correct before attempting to operate the Amplifier.



The Power Amplifier with the ATR Preamplifier.

Components for the Power Amplifier

Capacitors:

C1, C3, C5, C6	0.1 mfd 350 V wkg.
C2	15 pfd silvered mica
C4	400 pfd do.
C7, C8	50 mfd 25 V wkg. electrolytic

Resistors:

R1, R4	470 K.ohm $\frac{1}{2}$ W 20 per cent
R2, R6	2.2 K.ohm do.
R3	2.2 M.ohm do.
R7	180 ohm do.
R8, R10	3.9 K.ohm do.
R9	1 M.ohm do.
R11, R12	100 K.ohm $\frac{1}{2}$ W high stability
R13, R14	820 K.ohm $\frac{1}{2}$ W 20 per cent
R5, R15, R16	10 K.ohm do.
R17, R18	270 ohm 2 W (matched values)
R19, R20	100 ohms $\frac{1}{2}$ W 20 per cent

Valves:

V1A and V1B	Brimar 6BR8
V2, V3	Brimar EL84

Output transformer (see text): Radiospares EL84 output type

Other items: 1 co-axial socket—input; 2 insulated sockets LS; 3 B9A noval valveholders; 1 18-way tagboard.

Components for the Power Supply

Capacitors:

C9	8 mfd 450 V wkg. electrolytic
C10, C11	60 + 100 mfd 450 V wkg. electrolytic (Radiospares 68 — 100 mfd)

Resistors:

R21, R22	5.6 K.ohm wire-wound 5 W rating
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Other items: 1 B9A noval valveholder; 1 EZ81 rectifier—Brimar; 1 mains transformer 300-0-300 V 120 mA, 6.3 V 3 amp and 6.3 V 1 amp; 1 octal valveholder—Preamplifier supply socket; 1 panel-type fuseholder and 2 amp cartridge fuse; 1 4-way tagboard

(The complete kit of parts can be obtained from The Eissolder Iron Co., Worthing. See their advertisement on page 28.)

Equally important is the negative feedback circuit connection marked *NFB*. This must be connected as shown if a Radiospares EL84 output transformer is used. The connections for the different output impedances and phase are shown in Fig. 7. If the phase should be reversed the amplifier will become unstable, resulting in a violent howl. Should this happen, *switch off immediately* and reverse the earth and *NFB* connections at the output transformer.

Testing

When assembly and wiring have been completed the Amplifier may be given a preliminary test by coupling an audio generator to the input. A 1,000 cps sine wave of approximately 400 mV should produce full output. Alternatively, the output from the *external amplifier* (only) socket of a tape recorder will provide sufficient output for test purposes. The Preamplifier can now be coupled up and each input tested as required.

For test purposes the following table of ht voltage readings is given. These were taken with an AVO Model 7; note that readings taken with other types of meter may not agree with the figures given below:

Rectified HT— at EZ81 cathode: 345 to 350 V.

HT+ rail to V1A and V1B: 310 to 320 V.

HT+ rail to Preamplifier: 270 V approx.

V2 and V3 anodes: 325 to 330 V.

V2 and V3 grid 2 (screen): 325 to 330 V.

V2 and V3 cathodes: 10.5 V \pm 0.5 V.

V1B cathode: 85 V approx.

V1B anode: 155 V approx.

V1A anode: 35 V.

V1A cathode: 1 V.

Preamplifier HT current on load: 4 mA at 270 V.

V2 and V3 anode current: 48 to 50 mA (each valve).

V2 and V3 grid 2 (screen): 5 to 6 mA (each valve).

Total ht current of Power Amplifier and

Preamplifier: 120 mA approx.

Loudspeakers

The Amplifier is suitable for driving 3, 7 or 15 ohm loudspeakers designed to handle 10 watts or more output. It has been tested with the Stentorian Clumber, Wharfedale FSL/8 in a PST/8 enclosure, and Wharfedale W2. Other recommended speakers are the Wharfedale Slimline models and Goodmans Axiom 10 in a suitable enclosure.

We have also tested the complete amplifier system with the Heathkit VHF FM tuner (reviewed in the December '62 issue), and with Ferrograph, Simon and Tandberg tape recorders.

TAPE GUIDES

What's your idea? A guinea is paid for every practical tip used on this page

Quiet, please!

READER Malcolm Slater of Garswick, Yorks., found noise and interruption by members of the family rather tiresome when he was at the microphone. So he decided to adopt professional tactics.

Now there's an illuminated sign over the door of the room in which he does his recording. This consists simply of a box in which he fretsawed the words *RECORDING IN PROGRESS* backed with red paper behind which a light is fitted.

The lamp could be either battery or mains operated (see Fig. 1). Those who have no taste for fretsaw work might fit the front of the box with glass. The wording could then be printed in Indian ink on thin red paper mounted behind the glass.

A simple radio tuner

Much better quality can be obtained from the output of a simple tuner, such as that shown in Fig. 2, than from the extension speaker terminals of a conventional radio receiver.

The ferrite rod should be wound with 80 to 120 turns. 28 or 30 swg wire enamelled, depending on the thickness of the rod,

which can be between $\frac{1}{8}$ in. and $\frac{1}{4}$ in. It is probably best to wind on the maximum number of turns, then take off a few at a time to locate the two stations—Home and Light—which are comfortably within the range of the 100 pfd tuning capacitor.

The diode is connected to a tapping at about one-tenth of the total winding up from the earth end of the tuning coil.

The output can be fed into the radio/gram socket of the tape recorder but if there is insufficient signal to obtain full recording level, try orientating the tuner (ferrite aerial tuners are directional) or couple up a short aerial—say three or four feet—to the top of the coil at X.

Delayed record monitoring

Many tape decks allow no room for an extra replay head *before* the capstan, with which to monitor an actual recording. If you are not too fussy about possible slight flutter effect, an extra replay head can be fitted *beyond* the capstan and roller so as to engage the tape before it goes on to the take-up spool.

The diagrams of Fig. 3 show alternative arrangements. It may be necessary to fabricate an extra tape guide to keep the tape in line with the head gap.

Actual monitoring can be carried out with the help of a Walgain transistor preamplifier which has inputs for high or low impedance heads, a switch for approximately C.C.I.R. correction, and enough output for a pair of headphones. Alternatively, the preamplifier could be fed into another amplifier with enough gain and output to operate a loudspeaker.

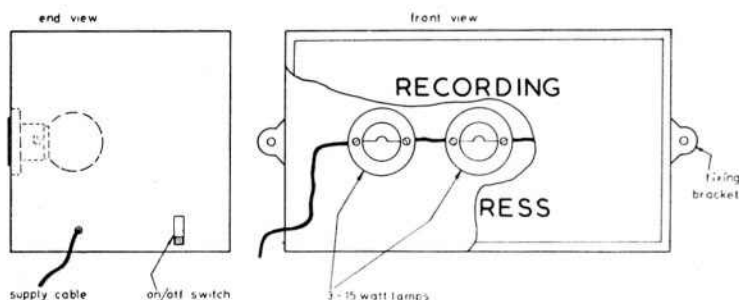


Fig. 1: A refinement of reader Malcolm Slater's idea.

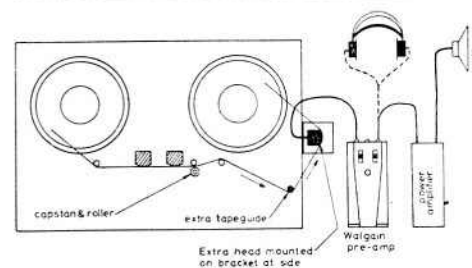
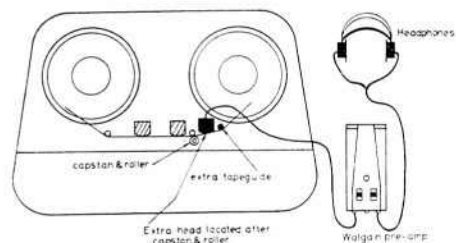


Fig. 3: Alternative methods of mounting an extra tape head for monitoring.

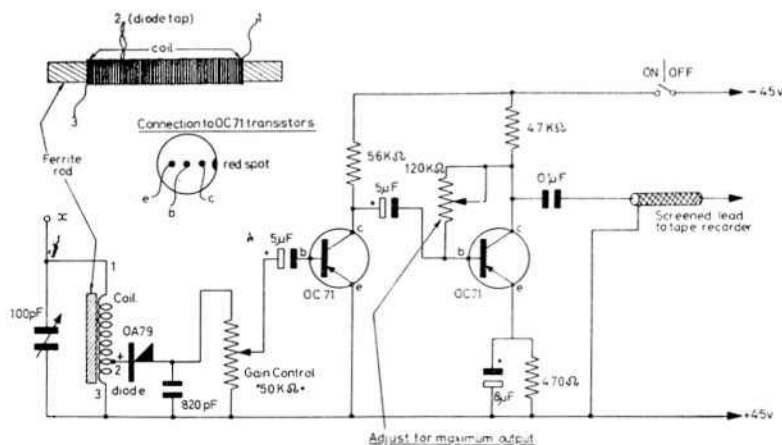


Fig. 2: A simple diode tuner with preamplifier.

THE WIRING OF THE 'ATR' HI-FI PREAMPILFIER

DUE to errors in draughtsmanship which were not detected until the issue had gone to press certain omissions occurred in two of the diagrams in *Construction Book No. 2*, included in the January issue.

In Fig. 7 showing *Layout and Wiring of the Front Panel* (page 12), the resistor to the right of the Gain Control should have been identified as **R23** — 68 K.ohms.

In Fig. 5 showing *Underside of Tagboard wiring* (p. 10), the value of **R10** should have been given as 39 K.ohms. The diagram omits the necessary connections to pins 7 and 8 of **V2** and also shows an error in the lead from pin 6, which should only be joined to the tag connecting **R26** and **C13**.

The corrected diagram for Fig. 5 is printed below.

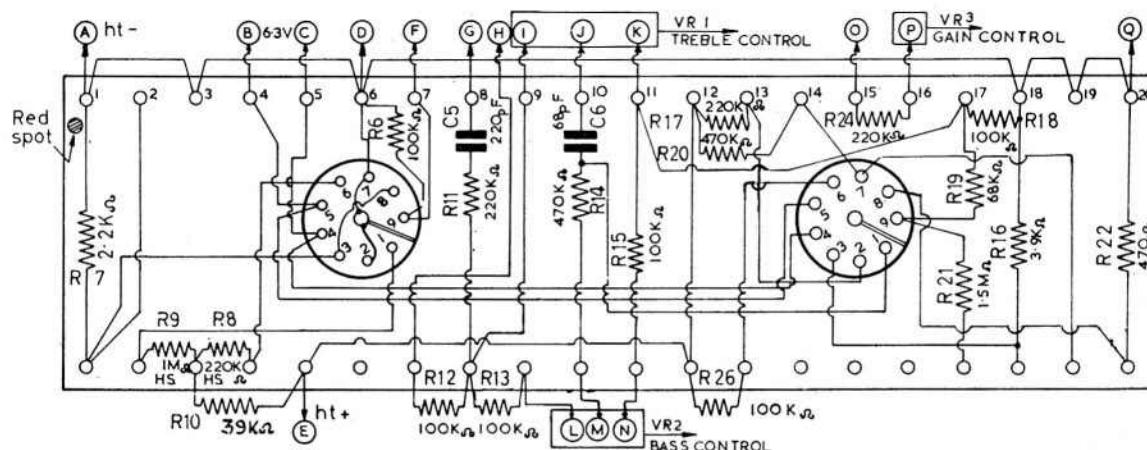


FIG. 5: THE CHASSIS WIRING—UNDERSIDE OF TAGBOARD

NEWS OF THE CLUBS—from page 17

extension speakers of their own construction.

To climax a busy year collecting sounds peculiar to Warwick Town, member Fred Vittle recorded the opening of Warwick Assizes—with very special permission. His recording of the bells of St. Mary's, Warwick, created interest in the U.S.A.

House full

First difficulty encountered by the new West of Scotland Tape Recording Club was accommodating more members than a small room would hold. The club now

meets at Glasgow High School for Girls, Garnethill Street. Membership is open to anybody living in the West of Scotland, who may keep in touch through the club's tape magazine. Details from Secretary A. McCullum, 9 Glendevon Square, Glasgow, E.3.

Young and healthy

With 36 members on the roll and £20 in the bank, Whitstable's one-year-old club decided to reduce subscriptions to 15/-, and exempt wives, girl friends and juniors under 17. A new technical sub-

committee to give advice and assistance was set up at the AGM, when all officials were re-elected. A change of meeting place was also announced.

NEW CLUBS

Ayr and District Tape Recording Club. Inquiries to S. J. Hourston, 93 Whitletts Road, Ayr, Scotland.

Loughton: Inquiries to S. F. Prickett, Cleland Path, Loughton, Essex.



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● **What's new on
the production line?
It's all reported
for you in—**

THE SOUND SCENE

LUSTRAPHONE'S RADIOMIC SYSTEM

A TRANSISTORISED FM radio microphone system, Radiomic, produced by Lustraphone has so many possible applications that it is creating interest in circles varying from sport and entertainment to teaching, radio interviewing and factory control.

Completely mobile, it has been designed and built to meet Post Office specifications for frequency stability, which is claimed to be exceptional because of the double crystal control feature. This is present in the transistorised FM transmitter (FMT/604) and receiver (FMR/605), both of which are remarkably small and lightweight.

The transmitter, measuring $3\frac{5}{8}$ in. \times $2\frac{3}{8}$ in. \times $\frac{7}{8}$ in., will fit into a shirt pocket or purse, or can be concealed under the operator's clothing. No connecting cables are necessary, the power supply being an internal 9 V battery or rechargeable nickel-cadmium accumulators. The weight is about 4 ozs.

Miniature receiver

The receiver, measuring $7\frac{1}{2}$ in. \times $4\frac{1}{2}$ in. \times $4\frac{1}{2}$ in. and weighing $3\frac{1}{2}$ lbs., has a built-in 9 V battery supply, enabling the system to be used with other transistorised equipment for outside broadcasting, public address, recording and all short-range communications. The frequencies are crystal controlled to match the transmitter; the output impedance is 600 ohms and the output power 10 mW. A.F. frequency response is given as ± 2 dB from 30 to 15,000 cps.

Microphones used with the system are the pencil dynamic miniature Lavalier (LV/59), with neck halter, and the miniature electro-magnetic lapel mic (LP/62), which measures 1 in. \times $\frac{3}{4}$ in. \times $\frac{1}{2}$ in. and has a frequency response substantially maintained to 6,000 cps. Frequency response of the Lavalier mic is given as 50 to 12,000 cps.

Price of the system, which operates in the 174.6 and 175 M/cs. band and can be supplied to other frequency requirements, is £94 10s.

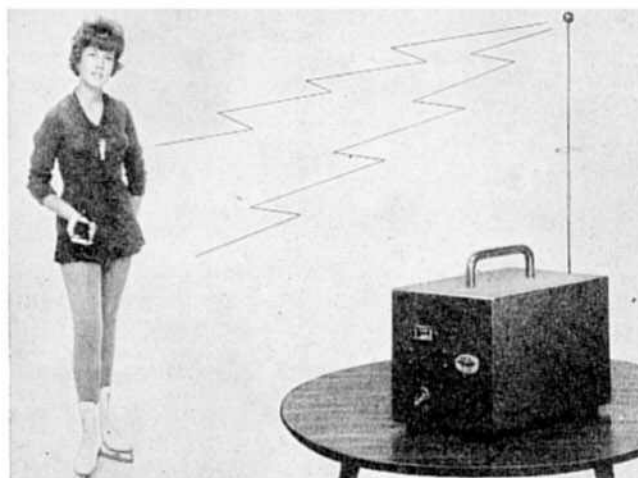
4 SPEEDS FOR PHILIPS 4-TRACK

The trend towards all-transistor mains machines among Philips' higher priced models is continued with the new 4-speed, 4-track EL3549. Successor to the well-known EL3542, this superior design also incorporates a new low speed for speech recording and a bigger loudspeaker.

As with other recent models, the superimposition feature has been discarded in favour of the parallel track replay switch system which enables two recordings on separate tracks to be played back simultaneously. Among the advantages of the all-transistor amplifier is the elimination of warm-up time. The extra speed of $\frac{1}{16}$ ips enables tapespondents to record for four hours on a 3 in. D.P. tape.

The spacious deck layout groups all controls on the forward panel. In the centre, a new moving coil recording level meter replaces the magic eye, and the four-digit rev. counter at the rear is

SEE NEXT PAGE



ABOVE: The ice show — one use for Lustraphone's radio microphone system.

BELOW: Philips' new 4-speed, 4-track model, EL3549.



THE SOUND SCENE—from page 25

illuminated to indicate on/off position. A 5in. x 7in. elliptical speaker is installed in the cabinet.

New preamplifier

A stereo socket for connection of the new Philips preamplifier EL3787 is among other features. As well as providing a second channel for stereo playback through the radio, the Duoplay facility is also possible with the preamplifier and headphones and even, it is planned, Multiplay.

Frequency response at the lowest speed is given as 60 to 4,500 cps ± 3 dB, and as 60 to 16,000 cps ± 3 dB at $7\frac{1}{2}$ ips. Signal to noise ratio better than 40 dB is specified. Moving-coil microphone with speech/music switch, 7in. reel of L.P. tape and connecting leads are all included in the price of 62 gns.

NO 'FRILLS' IN NEW STUZZI

Now in production, the Stuzzi 401 has been designed to offer the serious enthusiast a thoroughly useful 4-track, two-speed machine with all the important facilities but without unnecessary frills, so that it can be priced accordingly.

It includes a built-in mixer, separate bass and treble controls, two inputs going to the two mixer controls, and five outputs—extension loudspeaker, amplifier line, inter-track transfer unit, headphones and stereo.

The Stuzzi deck provides for $7\frac{1}{2}$ ips and $3\frac{1}{2}$ ips and is fitted with the Papst external rotor motor. This has the effect of reducing

wow and flutter to 0.15 per cent at the higher speed and 0.25 per cent at $3\frac{1}{2}$ ips, according to the tentative specification. Frequency response is given as 50 to 14,500 cps ± 3 dB at $7\frac{1}{2}$ ips, and 80 to 9,000 cps ± 3 dB at the lower speed.

The amplifier gives straight-through facilities with the motor automatically cut out, and there is provision for playing 4-track stereo with an add-on amplifier.

One section of the amplifier is switched so that it always monitors the other track from the one in use. Re-recordings can be made by transferring signals from one track to another while listening through headphones. For stereo there is a socket for direct connection to a second channel.

Further details are available from Recording Devices Ltd., 44 Southern Row, Kensington, London, W.10.



The new Stuzzi 401.

SEE NEXT PAGE

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- 3 SPEEDS**
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- *4 TRACK**

and 2 TRACK

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SERIES

7

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- 2 HEADS**

and 2 Power Amplifiers

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- Two Monitor Speakers.
- Two outputs for additional speakers or Hi-Fi.

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2 track model 72
(Luggage type carrying case. £7 1s 8d. extra).

93 gns

L.P. TAPE FROM ILFORD LIMITED

A new high quality L.P. recording tape is being marketed by Ilford Limited. Known as Ilfortape and manufactured in France, it is on pvc base 0.001 in. thick and is available on standard polystyrene spools in three sizes.

Prices are: 5 in. spools (900 ft.), 28s.; 5½ in. (1,200 ft.), 35s.; 7 in. (1,800 ft.), 50s. Each tape has a coloured leader and trailer incorporating automatic stop foils.

UNDER TEST

THE UHER 4000 REPORT

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

PORTABLE tape recorders with a high standard of performance are usually expensive. Considerably more care and ingenuity goes into the design of a machine that must operate from a dry battery or mains power supply, under all kinds of conditions.

The Uher 4000 Report is a transistorised portable in this category. It has an almost professional performance, plus complete flexibility and simplicity of operation. It will cater for long periods of dictation at a tape speed of ½ ips and for high quality recording at 7½ ips. It also runs at 3½ and 1½ ips, so that one has a choice of four speeds with appropriate performance.

Capable of being operated at any angle, the 4000 Report can be driven from internal dry cells or rechargeable battery, or from a combined mains charger/power supply obtainable at extra cost. Compact and strongly constructed, it is housed in a steel case fitted with a stout carrying handle, and has an engineering finish in grey enamel with chrome control knobs.

Remote control

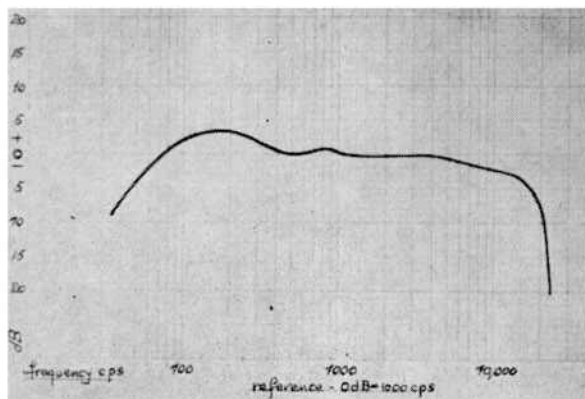
The tape mechanism is push-button controlled, and the instrument has a VU-type recording level meter and built-in monitor speaker. Various DIN sockets cater for microphone and radio/gram inputs, for headphones, external amplifier and extension loudspeaker, and for remote control from a switch on the microphone.



The Uher 4000 Report.

The machine submitted for review included a Reporter microphone, rechargeable battery and mains power supply, so I was able to test it thoroughly. The first practical test was a 200-mile operational run in a car, with the '4000' going the whole time on its own internal battery.

After various recording and playback tests, several recordings made outdoors were checked on a standard mains machine for quality and speed consistency. In these respects, the '4000' deserves full marks. But I feel that a



Frequency response of Uher 4000 report at 7½ ips.

better microphone might be employed to produce even greater realism from outdoor recordings, a point that will interest the sound collector.

The rest of my tests were concerned with the technical specification (see panel), which quotes no reference frequency or level and for 7½ ips, for example, simply gives the frequency response as 50 to 22,000 cps. The response curve, which was taken with a pen-recording output meter, shows the actual response relative to 0 dB at 1,000 cps and extends, usefully, to over 15,000 cps.

At the other three speeds the response falls off fairly quickly, being -10 dB at 10,000 cps for 3½ ips, and -10 dB at 4,000 cps for ½ ips. The useful limit at 1½ ips is about 8,000 cps.

The wow and flutter content of this tape recorder is the lowest I have found in a portable machine, and the audible steady tone test, which shows up wow much more than a meter, proved that this is noticeable only at the two lowest speeds. Hum and noise is almost non-existent, but a small amount of spark interference from drive motor was audible with the machine running at ½ ips.

The '4000' is easy to operate and can be held ready for recording on a separate 'stop' tab which also allows the recording level to be pre-set. It features 'through' monitoring over its own speaker or headphones, and has all the normal functions of a mains recorder—

SEE NEXT PAGE

ABRIDGED TECHNICAL SPECIFICATION

Playing time (double-play tape): 2 × 4 hrs. at ½ ips; 2 × 2 hrs. at 1½ ips; 2 × 1 hr. at 3½ ips; 2 × ½ hr. at 7½ ips.

Frequency response: 70 to 5,000 cps at ½ ips; 50 to 11,000 cps at 1½ ips; 50 to 18,000 cps at 3½ ips; 50 to 22,000 cps at 7½ ips.

Signal to noise ratio: 50 db or better.

Wow and flutter: ±0.15 per cent or better at 7½ ips (audible frequencies only).

Power output: 1 watt (push-pull power stage).

Power supplies: 4 flashlight cells (1.5 volts each); Dryfit storage battery; Model 880 mains-operated power unit, or car battery of 6 to 24 V.

Transistor complement: TF 65, TF 65, TF 65, TF 65, AC 117, AC 117, AC 120, TF 65, AC 117.

Inputs and outputs: Microphone, radio, phono, external loudspeaker, earphones, remote control, power unit and battery charger, Model 817 Akustomat.

Dimensions: 10½ in. × 8½ in. × 3½ in. app.

Weight (less batteries or power unit): 7 lbs. app.

3 OF THE BEST



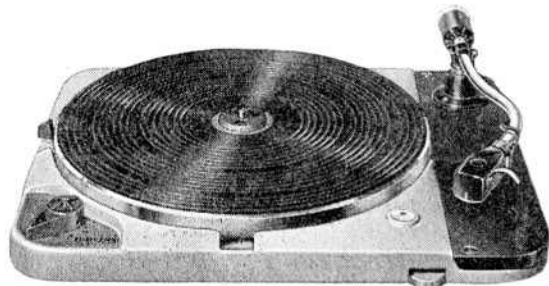
ORTOFON SPU-GT STEREO CARTRIDGE

This high-fidelity cartridge has built-in transformers and will match into virtually all equipment without the need for pre-amplifier or other stages.

Channel Separation: 20-25 dB. Frequency Response: 20-20,000 c/s. Stylus Pressure: below 2 gms. Compliance: 10⁵ cm/dyne. The cartridge is fitted with a low mass (1 mg.) Diamond stylus. Price £25 15 6 inc. P.T.

Model SPU-G, without built-in transformers, available at £23 4 0 inc. P.T.

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THE SOUND SCENE—from page 27

fast forward and reverse re-wind, tape length scale, instantaneous speed change, and so on. The deck will accommodate 5in. spools, which are locked on.

From four flashlight cells the machine will run continuously for five hours; from the Dryfit rechargeable battery, for ten hours. These times are longer for intermittent operation.

This excellent machine offers further proof that Continental manufacturers are in the lead with portables of this type. It is the kind of tape recorder sought by serious recordists for fieldwork, and versatile enough to meet many other demands. It retails at 93 gns., complete with a Reporter microphone, 5in. spool of tape and spare spool. Available accessories include the Dryfit rechargeable battery and power unit at 16 gns., and a leather carrying case at 9 gns.

The Uher 4000 Report is distributed in the U.K. by Bosch Limited, 205 Great Portland Street, London, W.1.

ELPICO TIMES CROSSWORD

Did you do the crossword puzzle in the second edition of *Elpico Times* No. 2? Here is the correct solution:

Across: 1, Stopper. 7, Splashy. 13, Rhino. 14, Pally. 15, Dipsomaniac. 17, Dail. 19, Ukase. 20, No No. 22, Ornate. 23, Did Mar. 24, Wean. 25, Gladly. 26, Salt. 29, Oslo. 30, Heat. 31, Pear. 32, Tear. 36, Tram. 40, Arno. 41, Here. 42, Sniper. 44, Erects. 45, Semi. 46, Ideal. 47, Days. 48, Academician. 51, Targe. 52, Rhone. 53, Spelter. 54, Sine Die.

Down: 1, Shadows. 2, Ordinal. 3, Philanthropical. 4, Pip. 5, Ensue. 6, Rook. 7, Spas. 8, Paned. 9, L.L.I. 10, A Land for the Dane. 11, Sycomas. 12, Yes or No. 16, Maxim. 18, Area. 21, Nail. 27, Pat. 28, Wet. 32, Tassels. 33, Erne. 34, Animate. 35, Totem. 37, Re-caned. 38, Arty. 39, Message. 43, Ridge. 44, Elchi. 49, Art. 50, Ion.

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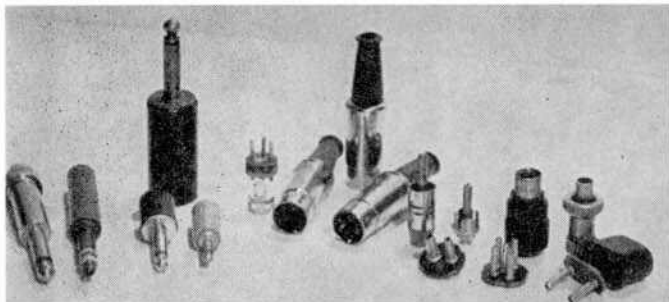
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THE THINGS YOU SAY

Plugs plea

●Iain W. Donaldson, Chairman, Hull & District Tape Recording Club, writes:

DURING the past ten years many advances have been made in the design and performance of the domestic tape recorder. In one aspect of design, however, no advance has been made; in fact, the reverse is true. We refer to the farcical variety of input and output plugs and sockets fitted to modern machines.

Not only do the various manufacturers fit the type of their particular choice to their machines but in many cases one machine may be fitted with as many as five different types! Though we admit this may prevent the ham-fisted beginner from plugging his microphone into the external speaker socket, this is surely a minor advantage compared with the difficulties arising when the beginner becomes an addict.

How often does a simple dubbing session involve a lengthy period spent in rewiring plugs or arranging 'pill-box' connecting boxes? Much as we would like to support the aluminium pill-box trade, we deplore the fact that such operations are necessary. Our members are agreed that a maximum of two types of plug would suit *all* requirements:

- (1) The standard jack;
- (2) The 3/5 pin DIN, according to special needs.

The use of one, or both, of these would be wholly adequate, we think. But the voice of one tape recording club alone will not be heeded. We require the support of every club in the country if we are to impress the views of the amateur recordist on the manufacturers. Our plea, then, is a simple one: Please, please, may we have uniformity and standardisation of plugs and sockets on *all* tape recorders?

(ATR has repeatedly urged this point, which was the subject of comment by the Technical Editor in the August '62 issue. We hope that other tape recording clubs will join with Hull in trying to persuade manufacturers to adopt the recommendation for standardisation issued, some time ago, by the British Radio Equipment Manufacturers Association and the Audio Manufacturers Group. Until they do, the bewildering array of plugs pictured above will continue to deter the beginner and vex the addict.—Editor.)

Minding your heads

●M. S. Myers, Managing Director, Metro-Sound Manufacturing Co. Ltd., London, N.I., writes:

My company manufactures Klenzatape, a kit designed to clean the playback and erase heads of tape recorders. We consider it the only method of performing this function safely, the application being made by a special tape run past the heads

in the same manner as recording tape. The Klenzatape fluid with which the tape is moistened is the result of extended laboratory tests and will not affect any component parts.

We note that your November *Operation Maintenance* feature, 'Mind Your Heads!' recommends the use of methylated spirit. Our tests prove that this is an unacceptable agent. After five or six applications, the brass parts of a tape recorder mechanism or the heads become corroded, with considerable detriment to performance. Lighter fuel is also unacceptable due to the fine oil content deposited after evaporation.

I would point out that over 100,000 Klenzatape sets are being used all over the world and that this product is the only tape head cleaning system approved, recommended and endorsed by the leading tape recorder manufacturers.

(We advocated the use of methylated spirit or pure lighter fuel because, in our experience, they are both perfectly harmless cleaning fluids and are widely used for this operation. At the same time, we have no hesitation in recommending Klenzatape to indi-

vidual readers in answer to inquiries, because we know it has many satisfied users.—Technical Editor.)

Which tape?

●Peter Golding, Ilford, Essex, writes.

I have a Philips EL3541 tape recorder and would like to try different makes of tape, but have been told it is essential to keep to one brand with the correct bias for my machine if I want to obtain good recordings. Could you advise me what brands of tape are suitable for my recorder?

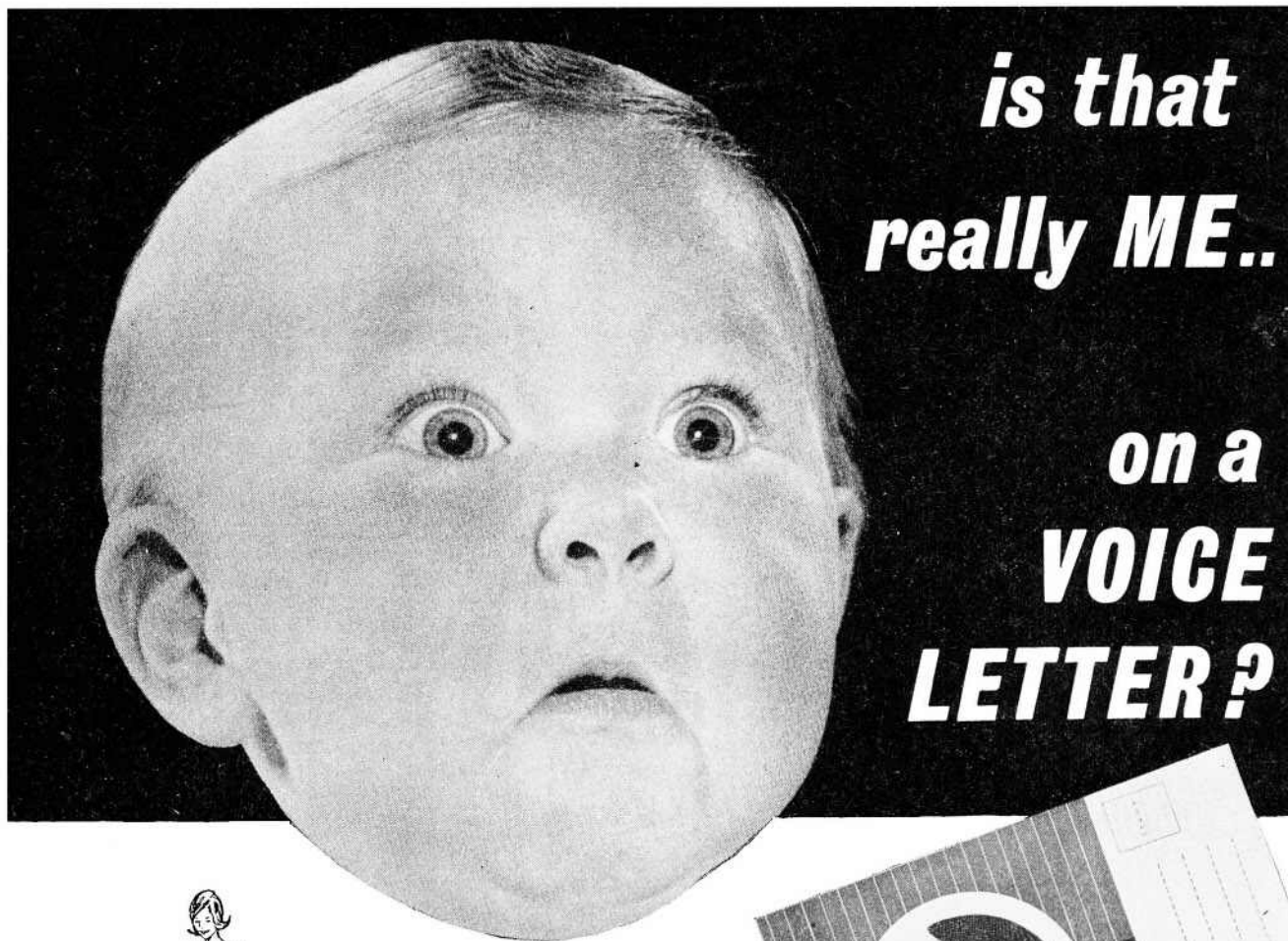
(Domestic grade recording tapes do not require critical bias adjustment. Any of the well-known brands such as BASF, Mastertape, Scotch, Emitape, etc., will be suitable for your machine.—Technical Editor.)

Commendation

●Harold Konz, Uralla, N.S.W., Australia, writes:

I am delighted with your magazine and would like to commend you for it. As far as I know, no magazine of its type is published in this country, and it is with great interest that I read *ATR* when I am able to secure a copy. I would like to see more articles giving hints and techniques for the amateur, but not at the expense of your present informative features. Thank you for a wonderful magazine.

*(Thank you, Mr. Konz, for your commendation. You can, of course, ensure that you receive regular issues of *ATR* by joining the many keen subscribers it has in Australia.—Editor.)*



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*on a
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AUSTRALIA

DAVID PAGET, 18, printer, 12 Allington Street, Elizabeth Grove, South Australia. Soccer, writing; pops, instrumentals. Philips, 5in. 3 $\frac{1}{2}$. England, U.S.A., any other English speaking country.

ROGER HATTON, 26, company director, 4 Linden Avenue, Pymble, N.S.W. Sailing, stocks and shares; classical. Technicorda, 7in. 3 $\frac{1}{2}$. Anywhere.

SOUTH AFRICA

JAN DE VILLIERS, 37, 37 Burnside Road, Tamboerskloof, Cape Town. Swimming, dancing, cinema, records, 35mm photography, St. John Ambulance; all except heavy classical. Philips EL3516, Stuzzi portable, up to 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. Anywhere; English, Afrikaans, some German and Dutch spoken.

BERKSHIRE

MILENKO DAMJANOVIC, 25, fitter welder, 99 Waldeck Street, Reading. Electronics, cars, records, radio; accordion, all kinds. Korting 2-track, 7in. 3 $\frac{1}{2}$. Anywhere English speaking.

CO. DURHAM

KEITH OGLESBY, 25, teacher, 40 Arncliffe Gardens, West Hartlepool. Modern and mainstream jazz. Philips 4-track, 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. Anywhere.

TOM STANBRIDGE, 32, coal miner, 20 Edison Street, Murton, Seaham. Swimming, sunbathing, good humour; pops, light classical. Grundig TK25, 5 $\frac{1}{2}$ in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$. Germany, U.S.A., Canada, U.K.

ESSEX

W. A. FROUD, 48, diesel fitter, 34 Woburn Avenue, Theydon Bois. Motor-cycle racing, swimming, sunbathing; all kinds. Brenell 3 Star stereo, Robuk RK3, 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. U.K. Europe, U.S.A. (males only).

HAMPSHIRE

RAYMOND E. SHORE, 42, butcher, 10 Second Avenue, Farlington, Portsmouth. Photography, anything unusual; steam organ, anything except jazz. Alba Duchess, Philips portable, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. Anywhere, especially Italy.

HERTFORDSHIRE

KEN TYLER, 33, roofing felt maker, 110 Tudor Way, Hertford. Travel, TV, reading, hi-fi; modern jazz (small groups). Philips EL3542, 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. U.S.A., France, anywhere English speaking.

LANCASHIRE

DEREK WHITTAKER, 20, mule spinner, 20 Midland Street, Accrington. Scouting; pop, guitar. Alba Duchess, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$. Anywhere.

JOHN PARKINSON, 17, apprentice electrician, 14 Ada Street, Blackburn. Scottish pipe bands, guitar; anything not too highbrow. Stella ST454, 7in. 3 $\frac{1}{2}$. England (females only).

NORMAN E. BEAUMONT, 18, apprentice joiner, 21 Amersham Close, Davyhulme, Urmston, Manchester. Model railways, dancing, records, religion; jazz, pop, classical, shows. Elizabethan FT3 2- or 4-track, mono or stereo, 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. Anywhere English speaking (age 17-22, either sex).

JACK BARKER, 36, 8 Wellington Terrace, Littleborough. 35mm photography; Dixieland. Walter 303, 7in. 3 $\frac{1}{2}$. Anywhere.

LINCOLNSHIRE

PHIL CHILDS, 43, local government officer, 25 Brattleby Crescent, Ermine Estate, Lincoln. Cine and still photography, minicar racing, hi-fi, location recording, zany humour; modern jazz, electronic organ, classical. REPS R10, Stella portable, 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. U.S.A.

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.

LEICESTERSHIRE

ARTHUR H. NEAL, 42, civil servant, 37 Tamerton Road, Eyres Mensell. 35mm photography, darkroom techniques, hi-fi, German language; modern jazz, some classical. Simon SP4, Telefunken 95, 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. Anywhere English speaking; possibly German.

LONDON

DOUGLAS NORMAN GOULD, 29, trainee manager, 67 Queens Crescent, Kentish Town, N.W.5. Guitar, stamps, 35mm photography, railways; piano, electronic organ, all types. Portadyne TR200, Sony 111, Akai M6, Fi-Cord 202, 7in. 3 $\frac{1}{2}$, 7 $\frac{1}{2}$, 15. Germany, Italy, Spain, France, Turkey, Iceland, Norway, Russia, U.S.A.; all languages understood.

ARTHUR HOWE, studio attendant, 46 Rathbone Street, W.1. Circus, caravanning,

theatre; pop, light, theatre. Ferguson, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$. Anywhere English speaking (males only).

KENNETH G. ARNOLD, 35, town planning officer, 31 Wentworth Gardens, N.13. Cars, camping, piano playing, photography; classical Philips EL3515, 7in. 3 $\frac{1}{2}$. Anywhere English speaking.

THOMAS F. POSTANS, 30, warehouseman, 59 Barcombe Avenue, Streatham, S.W.2. Films, photography; pop, C & W, jazz. Philips 4-track, 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. U.K. Spain, N.Z., U.S.A.

NORTHAMPTONSHIRE

CLIFFORD PACK, 41, radio and TV engineer, 10 York Road, Rushden. 9-5mm and 8mm photography, 35mm colour transparencies, tennis, badminton, family chatter; pop to light classical, especially theatre organ dance music. Grundig TK8, 7in. 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. U.S.A., Canada, Australia, N.Z., France, Switzerland, U.K.; English speaking only.

PETER C. ROBINSON, 34, driver-salesman, 91 Purser Road, Northampton. 35mm photography, music recording; pop to classics. Brenell Mk. 5, 8in. 1 $\frac{1}{2}$, 7 $\frac{1}{2}$, 15. Anywhere English speaking.

DAVID JOHN CASSON, 20, photographic salesman, 15 Cameron Drive, Northampton. 8mm photography, cinema, science fiction; all except heavy classical. Grundig TK20, Sound Riviera, Philips portable 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$. Anywhere, especially the Continent.

NORTHUMBERLAND

JOHN LEE, 39, accountant, School Cottages, Sandy Lane, North Gosforth, Newcastle upon Tyne. 3. Travel, people and places, ships, Esperanto, reading; light, trad jazz. Fidelity Argyll Minor, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$. Anywhere; Esperanto and French spoken.

MALCOLM WATT, schoolteacher (Grammar School, Westmoor), 31 Ridgewood Gardens, South Gosforth, Newcastle upon Tyne. 3. General school activities. Clarke & Smith, Telefunken, Wyndson, Elpico, Argyll Minor 2-track; Philips, Argyll Major 4-track, 7 $\frac{1}{2}$ in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. Anywhere.

OXFORDSHIRE

REGINALD J. E. GRANT, 39, electrical fitter, 6 Hamilton Road, Oxford. Collecting material for Oxford Blind Tape Magazine; pop, light, musicals. Telefunken single-track, 5in. 3 $\frac{1}{2}$. U.S.A., Canada, Australia, N.Z.

SHROPSHIRE

KENNETH NICHOLLS, 32, wine waiter, Lion Hotel, Shrewsbury. Short story writing; Latin American, pop. HMV 4-track, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$. Anywhere overseas.

SUSSEX

REGINALD JAMES WARE, 33, driver, 30 Woodsland Road, Hassocks. Photography, art, science fiction, phonograph records, hi-fi, anything unusual; pop, modern jazz (Shearing, Brubeck), classical, electronic. Ferrograph 4A/N, 8 $\frac{1}{2}$ in. 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. U.S.A., especially New York, Los Angeles; letter first.

PETER BASTABLE, 32, crane driver, 39 Clive Way, Pound Hill, Crawley. Sound effects, 35mm photography; trad jazz to classical. Philips EL3542, 7in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. Anywhere English speaking.

ROY BANNISTER, 41, musician/piano tuner, 43 North Farm Road, Lancing. Electronics, music recording; popular classics, modern jazz, Vortexion, Ferrograph, Butoba, 8 $\frac{1}{2}$ in. 1 $\frac{1}{2}$, 3 $\frac{1}{2}$, 7 $\frac{1}{2}$. Sweden, U.S.A., U.K.

SEVEN'S COMPANY ON ONE REEL

IF you're considering establishing some more tapesponding contacts, why not give a thought to running a 'round robin' tape? This is popular among members of international tapespondence clubs, since it enables several people to get together on a single spool.

The reel of tape is cut into equal lengths joined up with leader tape. If it is divided into three sections and two tracks are used, seven people can be accommodated. How? Well, nobody wants to hear his own contribution when the tape comes round to him again. So each person records over the track of the person to whom he is sending the tape next. Simple isn't it?

One way for contacts on a round robin to get to know one another is to play the 'new tape recorder' game on the first few rounds. You start by assuming you have each got £30 to spend on a new tape recorder, and each person must say which one he would buy—and why. Next time round, the figure is increased to £40, and so on up to the £100 mark.

In this way you will all get to know everybody's ideas on equipment and how they use—or would like to use—their tape recorders. You also get the chance to discuss the merits of different machines with which you may be unfamiliar and which you may want to buy when you really have the money.

The Overseas Circle

Many tape recording clubs find that tapesponding with others, particularly by the round robin method, helps to keep them alert to all the latest developments and new ideas. The Walthamstow and District club, whose interests are as varied as the members themselves, has recently organised an Overseas Circle—the brainchild of the club's founder, W. J. Tomlinson.

Membership of the Circle is gained by introducing an overseas tapespondent with whom the group can talk. 'Our members' extensive experience with all makes of tape recorders and their many activities should make this rewarding for the overseas contacts,' said Mr. Tomlinson. 'At the same time, we will learn and share the combined experience of the whole group.'

Any English speaking enthusiasts overseas who would like to link up with the Circle at Walthamstow should write or send a tape to Mr. Tomlinson at 62 Beacontree Avenue, London, E.17.

Calling all Esperantists

Another reader who is a keen Esperantist has asked me to sound out the

possibilities of a club devoted to what he calls 'the perfect medium for tapesponding.' He would like to contact other Esperantists who would be willing to exchange tapes within their own country with people interested in learning the language.

Some time ago the pupils of the Thomas Bennett School in Crawley, Sussex, made a tape about their school in Esperanto at the request of a Dutch radio station which broadcast it in a series of Esperanto programmes. I believe there are other schools which tapespond in this way, and the British Institute of Blind Esperantists has members who are enthusiastic about tape recording.

I would like to hear from anybody who is interested in this project and wants to make contact with my correspondent, who writes from Newcastle upon Tyne.

MAKE A RECORDING FOR THE TAPE LIBRARY

READERS of *ATR* overseas are invited to send in recordings for inclusion in a special series in the *ATR* Tape Library. Recordings should be of good quality, at the highest possible speed, and consist of a short descriptive commentary on a particular town and the country in which it is situated.

As far as possible the recording should include geographical details such as mountain ranges, rainfall, average temperatures and other weather information; comment on principal industries, especially those peculiar to the country concerned; and particulars of the recordist's own town, including any sporting or holiday activities associated with the locality.

If there are any famous buildings or geographical features in the area, they should be mentioned, and any sounds peculiar to the region—famous bell chimes, traffic or railway noises, dockside and factory sounds, animals, national anthem or other music—will help to impart atmosphere.

Recordings should be single-track and last about five minutes. They should begin with an announcement of the recordist's name, town and country. All tapes will be returned intact. Don't forget to include your full name and address when sending your recording to: The *ATR* Tape Library, 152 Maybank Road, South Woodford, London, E.18, England.

The Tape Library Service is for exclusive use by tape recording and cine clubs and *ATR* readers. It is also available to schools and colleges and amateur dramatics societies. Full particulars may be obtained from the above address.

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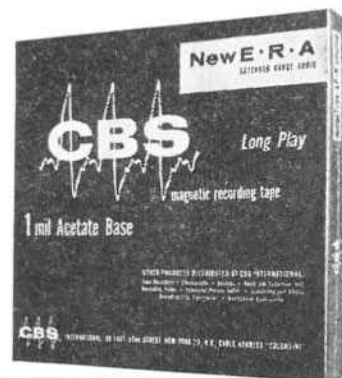
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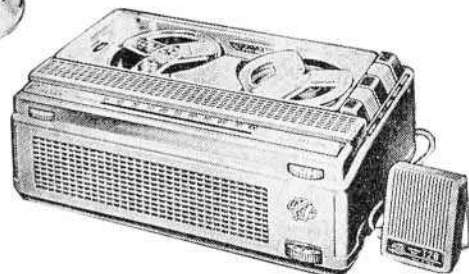


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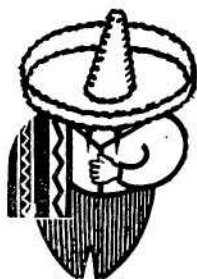
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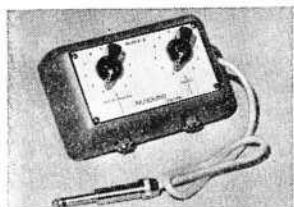
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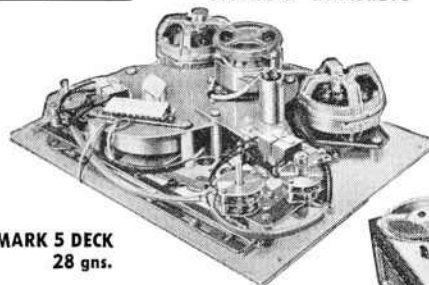
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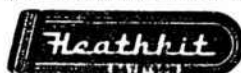
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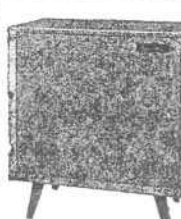


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