

FEBRUARY 1969

# TAPE

RECORDING MAGAZINE

2<sup>1</sup>/<sub>2</sub>

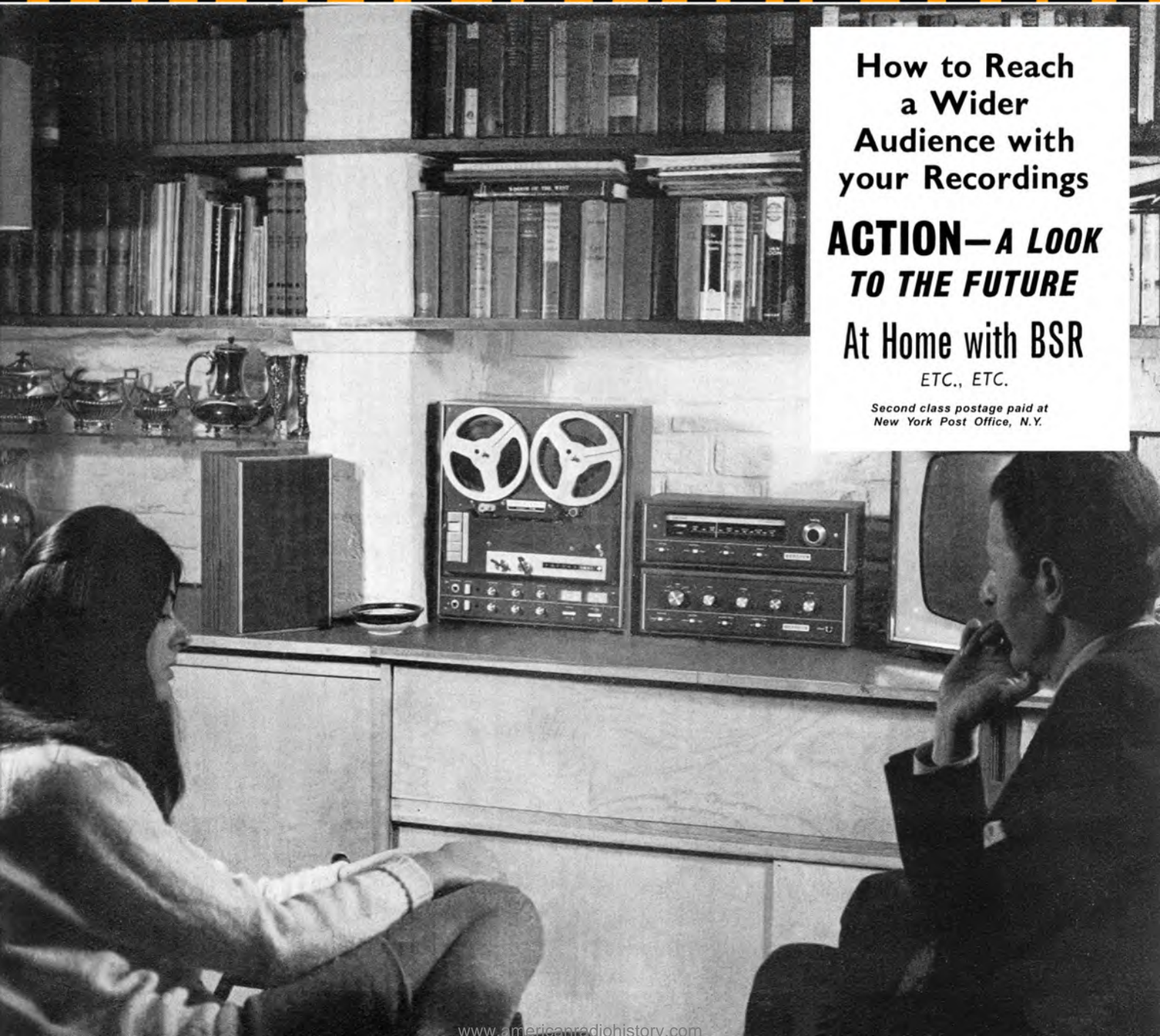
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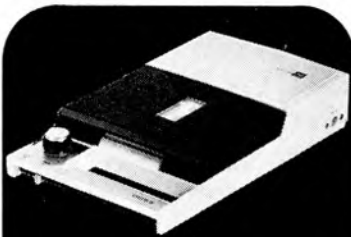
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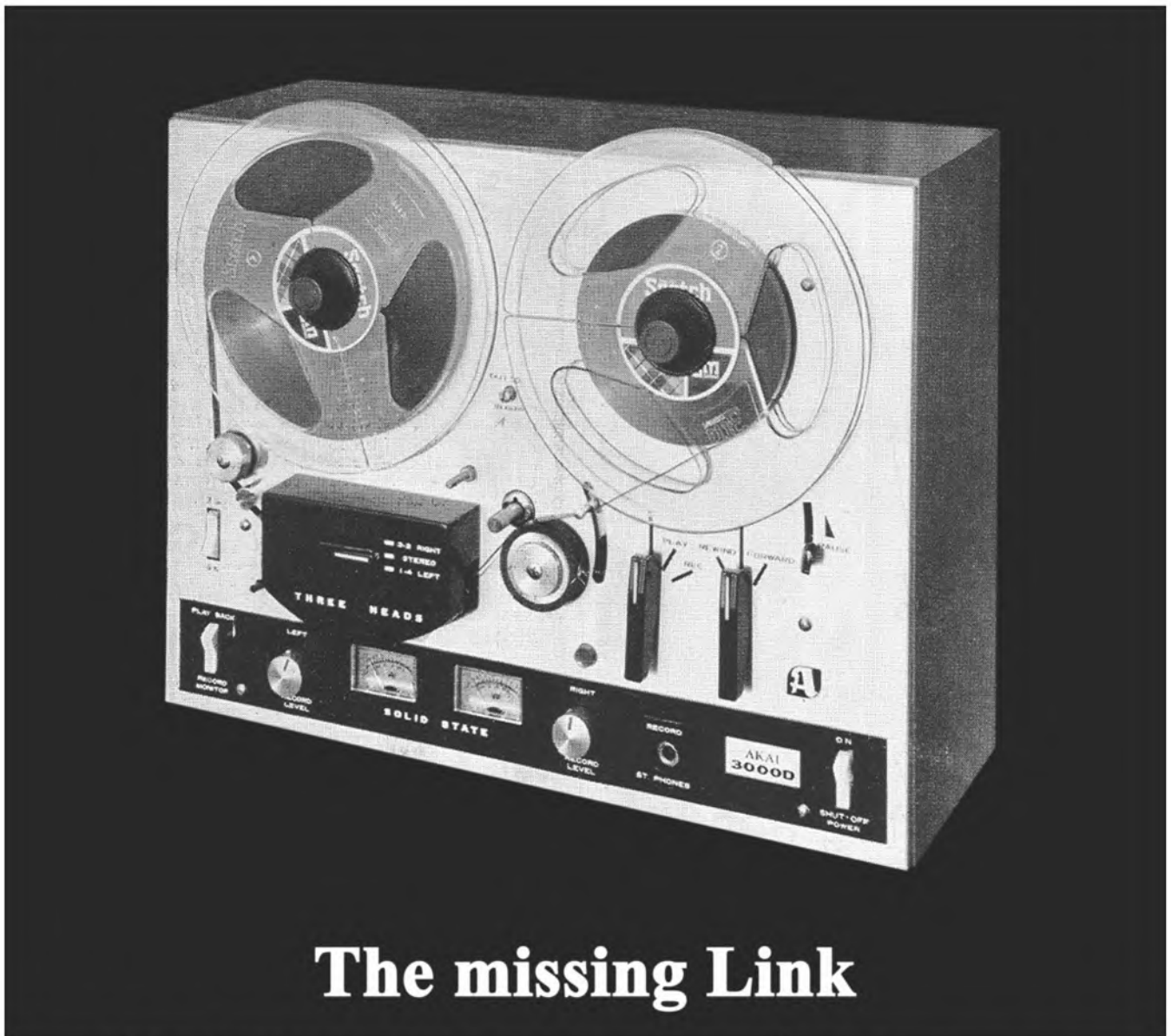
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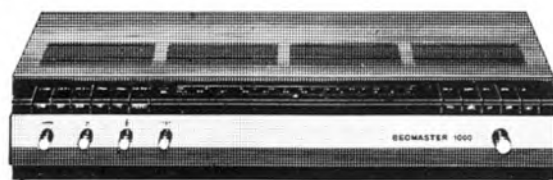
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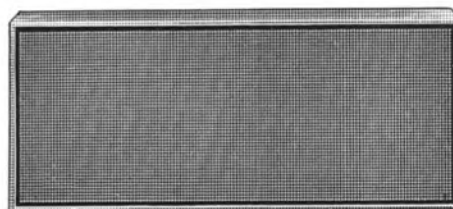
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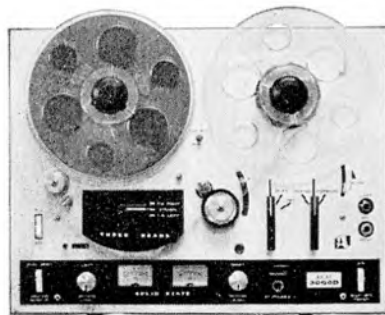
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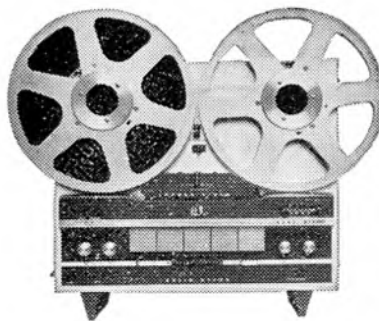
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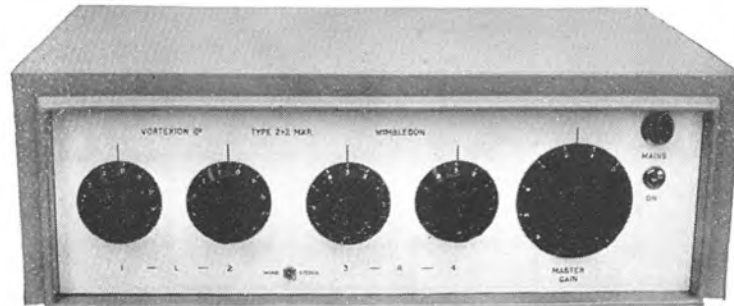
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# TAPE

## RECORDING MAGAZINE

Incorporating TAPE RECORDING & HI-FI MAGAZINE  
and STEREO SOUND MAGAZINE

Vol. 13

No. 2

February 1969

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**COVER PHOTOGRAPH:** To coincide with our review of the Truvox PD 202 tape recorder this month we feature the complete Truvox Audio Suite. This comprises an Integrated Circuit tuner, Stereo Amplifier and Speakers. Shown in this contemporary setting the equipment enhances modern decor and so proves the point that today's audio is styled with tomorrow in mind.

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# Tape trends and tape talk

By Douglas Brown

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THIS YEAR will be an important one for local radio—and, therefore, for recording amateurs in several of Britain's biggest cities. When the first group of local stations have been operating for a full year the Postmaster General, Mr. John Stonehouse, will have to make a decision about the whole future of this field of broadcasting. Expect considered conclusions next July or August.

Last month questionnaires were circulating in some of the cities concerned—Leicester, Stoke-on-Trent and Brighton—inviting local reactions. Organisations were invited to reply to 34 questions, indicating what local radio has meant to them to date.

Information reaching *TAPE Recording Magazine* suggests that tape recording clubs in the various towns may be giving varied replies. In some cases co-operation with the new station has been close and beneficial; in others, contact has been slight and the results disappointing.

Brighton has been one of the successful experiments. A fifteen minute programme entitled "Audio" has been transmitted monthly for some time and seems to be settling down well. In fact, Robert Gunnell, who is in charge of the Brighton station (and who has contributed in the past to this magazine), has promised to consider extending the coverage later on. A recent programme, which may be quoted as an example, included advice on buying hi-fi equipment for Christmas, guidance on how to record a church organ, and a reminder about the 1968-9 British Amateur Tape Recording Contest.

\* \* \*

THAT IS a subject on which I should like to add my reminder to readers. Closing date for this contest is January 31, 1969. There is still time to write to the Secretary of the Organising Committee, John Bradley, for an entry form, if you have not done so. His address is 33 Fairlawnes, Maldon Road, Wallington, Surrey.

The date of the British Contest was changed last year, so that the presentation of prizes could be a feature of the annual Audio Festival. Now that event is being amalgamated with the Photo Fair in September, the Contest Organising Committee may have to look at the time-table yet again! But for the moment, there is no change, and you have another fortnight or so to send in your tapes for the current contest. Make it a record entry this time.

Incidentally, the International Contest in 1969 has now been fixed to take place in Copenhagen next October. For years Herr Dannefeld Bothner has cherished the ambition to see the international jury assemble in his capital. Now he has secured the backing of his radio corporation and of leading firms in the country and 1969 will be a very appropriate year in which to meet in Copenhagen. It marks the centenary of the birth of Valdemar Poulsen, the Danish inventor of the wire recorder.

It is one of the little ironies of history that Poulsen invented the principle of magnetic recording more than half a century before the domestic tape recorder was made a practicable possibility by the development of plastic-based tape.

\* \* \*

A PRIZE of \$500—about £200—is offered for the winning composition of electronic music in the second competition for the Dartmouth Arts Council Prize. The work, recorded at 7½ or 15 ips on ¼-inch tape, must have been composed after April 1967 and be at least 3 minutes but not more than 20 minutes in length. Entries, which must be received by 15th March, 1969, are to be sent to Professor Jon Appleton, The Dartmouth Arts Council Prize, Electronic Music Studio, Dartmouth College, Hanover, New Hampshire 03755, USA. Readers are strongly advised to apply to that address for a full set of rules, but in the meantime, to help those who require information urgently, our editorial staff will be pleased to give all the information available over the telephone from our London office. We regret we cannot deal with this by letter.

\* \* \*

IT IS only now, with Christmas behind us, that the trade will be able to assess the real effect of the economic squeeze imposed by the Chancellor at the end of last year. I doubt if the purchase tax increases, in themselves, will have too harsh an effect; but the import deposit scheme is bound to affect agents importing machines manufactured overseas.

If I know anything about their keenness, I think some foreign manufacturers will be using all their ingenuity to find means of easing this problem—the immediate effect of the Chancellor's impost was to lead some overseas firms to release sterling locally for transfer to Britain for use as import deposits, but the government quickly took action to deal with that!

For the moment, at any rate, British manufacturers seem to have an opportunity to benefit from aggressive salesmanship on the home market. That may not be exactly what Mr. Jenkins intended, but that's the way it looks to me!

\* \* \*

MY CO-DIRECTOR of *TAPE Recording Magazine*, Peter Makings, is just back from a five weeks' business trip to Australia and reports keen interest in tape recording "down under." He met up again with a former advertisement manager of this magazine, Ken Lovett, who also did a great deal of behind-the-scenes work for the British Amateur Tape Recording Contest whilst he was in England. Mr. Lovett sends his regards to old friends.

And, as a result of Peter Makings's visit, *TAPE Recording Magazine* will henceforth be available to Australian readers at retail outlets here.



# WHERE THE ACTION IS

**A**CTION. That is the key-word for a new series of features that will be appearing in *TAPE Recording Magazine* for the first time during 1969. Action. Positive, vital action.

Things are happening in the world about us. New, exciting things. For the first time *homo sapiens* proposes to leave the narrow confines of the earth that gave birth to the species. New horizons are about to open up before us. When mankind takes a look at himself and his home from far out in distant space he will at last understand the meaning of a great truth against which his intellect has fought for as long as it has existed. We are but inconsequential specks revolving within a limitless Universe whose boundaries defy our comprehension.

Such a realisation is going to have a profound effect on our thinking; it will be seen in a changed attitude to life itself, and particularly to creative activity. What we *are* will cease to matter—what counts will be what we *do*. Actions will have a new significance, and the men who matter, the men of the future, will be the Men of Action.

In our own specialised field of sound recording we can already see clear evidence of completely new lines of thought emerging. Using what are to us familiar techniques a new breed of musicians is creating a new kind of music, the like of which has never been heard before. There has been a break with tradition—and why should there not be in a Space Age where tradition is irrelevant? New sounds are being produced, sounds that many of us might not call “music” at all. Sounds that originate in electronic equipment rather than musical instruments. Perhaps “sonic impression” would be a better term than music. Whatever we call it, it makes little difference; as an art form it already has its exponents and its masters, people like Roberto Gerhard, John Cage and Stockhausen. What we want to know is what motivates these people? What are they trying to do, and how do they go

about it? Are they pulling our legs or are they really trying to say something new in a new way?

There’s one way to find out. It is our plan to run an investigation which we are going to call “Project Alpha.” We have given it that name because it will attempt something that has never been done before. We are asking a composer, a man well known for his experimental music, to both explain his own thoughts behind the whole philosophy of the “new sound” and also to describe methods that can be used to establish elements of musical composition using only simple, domestic-type equipment. It is hoped that this information will encourage enthusiasts to carry out their own investigations along similar lines following his guidance.

This is a most difficult and ambitious thing to do. Our author will be faced with almost insuperable problems of communication—how to express in mere words concepts originating in abstract sound. But he will try, and we will bear with him. The whole will be an adventure into the unknown; he will be exploring the relationship between sound and thought and we hope he will come up with new ideas and new solutions. Since this is a genuine experiment we none of us yet know where it will lead us. We can only invite you to come along with us on the journey to find out.

We make no bones about the fact that Project Alpha is an intellectual effort at a high level. To attempt anything less in relation to its subject would be useless. On a more down-to-earth plane we are also going to investigate another phenomena—stereo.

Whether we like it or not stereo is here, and it is here to stay. The gramophone companies are gradually phasing out production of mono records; more than half the tape recorders sold are stereo models; stereo radio transmissions now cover most of the country.

Yet how much stereo recording is

actually done by enthusiasts? To the best of our knowledge the answer is very little. And what a great pity that is. Stereo, with its spatial perspective spreading out across the stereo sound stage, brings a new dimension to recorded sound. It opens up a new world of satisfaction to both recordist and listener alike. The Men of Action in the world of recording today are working stereo.

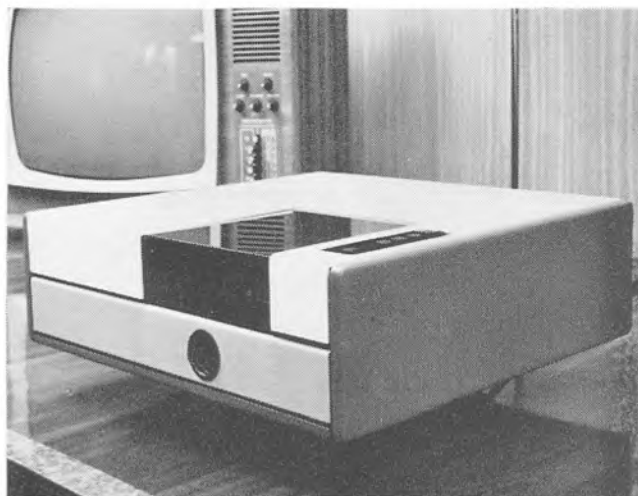
For the benefit of those who already own stereo equipment but have not yet dared to use it for live stereo recording, and for those who are seriously thinking of changing from mono to stereo in the future, we are going to follow the experiences of a team of two amateur enthusiasts who are just about to “go stereo” for the very first time. After many years of experience, working with choirs, music societies and musicians, recording in halls, churches and cathedrals, they are now turning their attention to stereo and all the problems it brings. How will they get on? Will it be easy or difficult? Will it even be worth it? All the answers to these, and many other questions, will be given in our “Where the Action Is” series in forthcoming issues.

We regard action as something immediate. It happens *now*. The things we are talking about have not yet taken place. We have not written up past experiments so that we can have a stock of old stories to tell you. All these things are about to happen in the future. And they will be told to you as they happen. Success or failure will be faithfully reported. We make no promises as to the regularity of their appearing. How can we? We can only say we will tell you about these projects whenever their authors have something important to say, whenever they have accomplished something worth writing about.

Action is what it’s all about. Action is the thing that counts. This is where the action is.

# LOOKING AHEAD

DENYS KILLICK'S VIEW OF THE FUTURE



A shape of the future. The slim lines of the new EVR playback machine that gives sound and vision on a domestic television set from pre-recorded cartridges

**D**URING the course of this series I have attempted to deal with both theory and technique as well as the equipment necessary to produce a tangible end product from a combination of the two. One can never really separate equipment from technique because the one depends so much on the other. So having come now to the end of 1968 it is an appropriate moment to take a look forward into the future and to consider what the coming months and years might bring.

Inevitably one thinks of future development in terms of the tools of the trade. Many audio journalists at this time of the year gaze hopefully into their crystal balls as they try to see the shape of things to come. But let's just stop to think a while about what has taken place over the last ten years. Technical development of tape recorders has been rapid. In the main it has taken the form of maintaining, or even improving, audio quality whilst at the same time reducing tape speeds and the width of recording tracks. In 1968 we got more and better material on a given length of recording tape than we did ten years ago. And in terms of quality we therefore got better value for money when we purchased recording equipment.

But once we have said that we have said everything. If you turn back your files to a 1958 edition of *TAPE Recording Magazine* you will find that the equipment then offered was in essence very little different from that being advertised in the pages of this issue. The equipment is basically a box containing electronics and tape transport system. There are two spools and there are heads. Apart from improvements in quality already mentioned the only other big difference is in styling. The only real breakthrough has been in the field of cassette and cartridge systems. This is something quite new that would have been impractical ten years ago—but even the Philips com-

pact cassette follows the same basic principles as any ten, or indeed twenty, year old tape recorder.

So those who look for dramatic developments in equipment in the future will, I think, be disappointed. We shall continue to see a steady improvement in performance which will be coupled to ever increasing value for money from the consumers' point of view. If there is going to be any element of explosive change it will not come from the equipment itself—therefore it can only come from the techniques employed in using it.

Now in this area there is all the scope in the world for experiment and development. Have you ever asked yourself why the sounds of fifty years ago appear to be so old-fashioned and outmoded? The popular music scene of even ten years ago reveals far more fundamental change than does the evolution of recording equipment over the same period. So in my opinion we have all of us got to stop sitting back and leaving it to manufacturers and designers to produce a dramatic breakthrough and instead we should look to our own work and ask ourselves what progress we personally have been making?

We have at our disposal the whole world of living sound in which to work. The most plastic of all media, it represents artistic possibilities that have only really been with us for some twenty years. Is anyone going to seriously suggest that in such a short space of time the whole fund of artistic interpretation has been exhausted? Are we really going to admit to impotence through satiation after so short a time? It's rather like Stone Age man declaring just twenty years after the discovery of the use of coloured pigments that he had painted all the pictures that could ever be painted in the world. The patent absurdity of the situation needs no further simplification.

So this is where we stand at the end of 1968. Behind us not much more than twenty years of development of magnetic recording equipment and recording techniques. In front a limitless expanse of time through which the medium of recorded sound will be free to evolve in whatever way we, its masters, might choose.

Unfortunately whenever one tries to use a new means of expression there are always plenty of reactionary critics around to condemn it. It happened to me quite recently. My name appears as recording director on a gramophone record which certain critics don't like. They don't like the music and they don't like the way in which it was recorded. Fair enough—I accept their judgments for what they are worth. But the great thing is that an attempt has been made to throw a new light on an old problem.

By its very nature the process of evolution is wasteful. Techniques that appear right to us today may be judged in error in the future and may disappear for ever. This is the law of nature and is the very way in which we ourselves came into being. Such fatalities are not tragic; to the contrary by their very existence they betray a positive striving towards a future goal. It is only when experiment ceases, when everything is mediocre and produced in the same old tediously familiar way that one needs to admit to despair.

I am not particularly concerned myself as to whether magnetic recording equipment gets smaller, lighter, cheaper or whatever direction it might take in the coming years. What does concern me is the way in which the user will put it to work. The end product is all that matters, not the means of attaining it.

I often think it's a great pity that more people don't take part in the various recording contests. Frequently they offer

the means for the competitor to display original creative ability. Perhaps people are put off by the thought that others more experienced and with better equipment are bound to win the prizes. Nonsense! It's the brain that counts, not the equipment. And every single reader stands just as much chance as any other.

My thought for the coming year then is to concentrate on the product rather than the tools. Bring to sound recording a new fresh approach. Let 1969 be the year of break-through—not in equipment but in recorded sound itself.

So much for "pure" sound. But there is another field in which startling change and development can be anticipated. Just how far it relates specifically to us and magnetic recording is not yet quite clear, but it's exciting enough to warrant a mention here. I am referring to the brilliant new "EVR" audio-visual system, first reported in the November 1967 edition of *TAPE Recording Magazine*.

In describing the EVR system Mr. J. C. Lewis, General Manager of the EVR Partnership, called it "a concept which is the analogue to the long-playing record." Naturally he meant the gramophone record. When featured in the BBC TV programme "Tomorrow's World" it was even said that EVR would make the tape recorder and the gramophone record obsolete because in the future the public would require to actually *see* performers as well as hear them. When someone makes a provocative statement like that it is up to us to find out just what lies behind it, so I have been examining EVR very carefully in an attempt to assess its future interest for us and to decide if it really does constitute a threat to conventional sound reproduction systems.

First of all EVR is *not* a new method of magnetic recording; it is essentially a *film* system. It was primarily evolved to enable the advantages of *selection* to be brought to television viewing. It works like this.

Next to the television set stands a cassette player of about the size and weight of one of the larger domestic tape recorders. The output of this player is connected to the aerial socket of the TV set. Programme material is contained on a "teleartridge" which looks rather like an ordinary 7-inch tape spool. The player is fitted with the usual controls, Playback, Fastwind, etc. When the cartridge is inserted, and it's self-threading, by the way, and the playback key is depressed the programme in sound and vision appears at the television set. There are two tracks of material contained on a black-and-white cartridge with a duration of 30 minutes per side. When available in colour (promised for 1970) the duration will be halved because both tracks are needed for the colour information.

First point to note is that the player is strictly a player only. Recording is not possible. This is because the information is carried in pictorial form; the film on the teleartridge contains two rows of what under magnification appear to be cine frames, together with parallel magnetic stripes for the sound. Highly sophisticated equipment is needed to "record" a cartridge and a special factory is being built by Ilford at Basildon to carry out the work.

The programme itself can start life as either film, 16 or 35 mm, or as a video recording prepared on a "compatible" machine. From this a master is made, and from that master copies are run off. At the present state of the art the cost of the teleartridge is too high for the amateur at around £20. Because of the complex manufacturing processes involved and the need to make a master the cost of the copies decreases with quantity. So it is likely that the production of programmes will be undertaken as a commercial enterprise rather than as an expression of private creativity. But we are looking at this situation now from the very beginning of its development. Who can say what improvements and cost reductions will not be made in the future? Even at this point of time the first licensee to manufacture the playback machine, Rank Bush Murphy, is suggesting a probable price tag on the equipment of "under £200."

Plans for marketing are at present confined to the commercial and educational fields, where EVR has an obvious application. Not only can the film be "inched" through the machine to give perfect single-frame still reproduction, but a number of TV sets can be connected to a single player to give multiple viewing. The value of such a system for all manner of training applications is only too clear.

But this is a very narrow view of the potentialities of EVR. Having seen it demonstrated I can assure you it is so good it will have an immediate appeal for the ordinary consumer, provided suitable programmes are available. Just as the pre-recorded tape or gramophone record offers the consumer selective listening, so the teleartridge could offer selective viewing *and* listening; it is therefore important to establish just what level of audio quality we can expect to hear.

This raises a most interesting point. The gentleman responsible for the invention of the EVR system is Dr. Goldmark; it was the same Dr. Goldmark who produced the first commercial long-playing gramophone records fifteen or more years ago. So the prime mover in this exercise is a man who is steeped in the tradition of good audio quality.

I was able to ask Dr. Goldmark myself what standard of audio quality the teleartridge is capable of producing. Without quoting figures he assured me it would be up to the normal specification of an l.p. record. As the film transport mechanism operates at a speed of 5 ips, a halfway house between the standard magnetic speeds of  $3\frac{1}{4}$  and  $7\frac{1}{2}$  ips, there is not the slightest reason why audio quality should not be as good as an ordinary tape recorder working at that speed.

Even more interesting was Dr. Goldmark's promise that a colour version would be demonstrated by mid-1970. And he added that because both film tracks are needed for the visual colour information a pair of magnetic stripes would then be available for stereo if required!

Such thoughts raise a number of very important queries. Sound quality on ordinary domestic television sets today is very poor indeed. As long as people get the pictures they don't seem to worry about the sound. Is that attitude going to change? Are we going to see television sets with "Hi-Fi" sound? We would have to if EVR was ever to threaten the existing music market. Stereo EVR—which is really stereo television—is a most intriguing prospect. How on earth can one have sound presented across a wide stereo "sound stage" when the vision is confined to a 23-inch screen? Apart from which, do we really want to *see* performers as we listen to their work? Remember that the techniques used in making the best sound recordings are very strictly non-visual. The best that EVR could offer would be the equivalent of a film of a live performance and in terms of both performance and sound quality it could never compare with "pure" sound recording.

In my opinion there is little danger of EVR replacing either the gramophone or the tape recorder. To the contrary, it might well provide an added incentive for amateurs to make even more use of their own recording equipment. It is not difficult to visualise the time when it is economically possible for the private individual to have his own home movies processed into EVR cartridges. When he does he will have no problems with the visual content. If his film is colour it will give a colour cartridge which will reproduce as black and white on a non-colour TV set if necessary. But without a sound track it will be silent television, and no one is going to endure that!

Far from detracting interest from sound recording, EVR is going to make a basic knowledge and skill in the handling of microphones and tape even more necessary than before.

# Ferrograph Series 7 - a lifetime of recording

Ferrograph Tape Recorders have been famous ever since 1949. A lifetime's experience of making fine recorders goes into every one of Ferrograph's brilliant new Series 7.

And there is a lifetime's recording *in* every Ferrograph instrument. Many of the earliest Ferrographs are giving perfect service today – twenty years later. You can be sure your Ferrograph will do the same for you. It will give dependable service for many, many years to come. It will keep its value. It will need the minimum of service. Spare parts will remain available for a lifetime's recording. That's how Ferrograph got its name.

Available in Mono, and in Stereo with and without end amplifiers; combining a unique range of 30 recording facilities, including:

- All silicon solid-state electronics with FET input stages and wide input overload margins.
- Vertical or horizontal operation.
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- 3 motors (no belts). 3 tape speeds.
- Variable speed spooling control for easy indexing and editing.
- Electrical deck operation allowing pre-setting for time-switch starting without need for machine to be previously powered.
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- Single lever-knob deck operation with pause position.
- Independent press-to-record button for safety and to permit click-free recording and insertions.
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- 4 digit, one-press re-set, gear-driven index counter.
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- Signal level meter for each channel operative on playback as well as record.
- Tape/original switching through to output stages.
- Re-record facility on stereo models for multi-play, echo effects etc, without external connections.
- Meters switchable to read 100 kHz bias and erase supply with accessible preset adjustment.
- Three outputs per channel i.e. (1) line out—level response. (2) line out—after tone controls. (3) power output—8-15 ohms.
- Power output 10W per channel.
- Independent tone controls giving full lift and cut to both bass and treble each channel.
- Retractable carrying handle permitting carrying by one or two persons.



U.K. Retail prices from £150 incl. P.T.

See and hear Ferrograph Series 7 recorders at your local Ferrograph stockist, or post coupon for details and address of nearest Ferrograph specialist (or ring 01-589 4485)

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To the Ferrograph Co Ltd, Mercury House, 195 Knightsbridge, London SW7

Please send me **FREE** brochure on Ferrograph Series 7 Tape Recorders  Please   
 OR send me the new Ferrograph Manual, for which I enclose £1  tick

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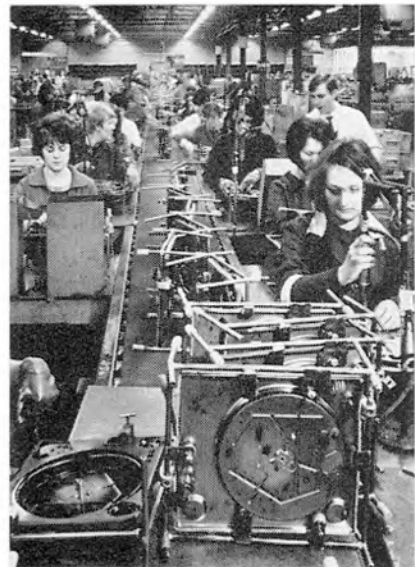
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TRG



Delicate work assembling cartridges at the BSR Stourbridge factory

## A TRM REPORT



Production lines stretching as far as the eye can see at Old Hill, Birmingham, the home of BSR

# AT HOME WITH BSR

**B**BETTER Sound Reproduction. That's what the initials stand for. But to most of us BSR stands for a range of low- to medium-cost turntables and changers and a famous tape deck. To see how this British firm's products are made we paid a visit to two of their factories, one in Old Hill, near Birmingham, and the other in Stourbridge.

Before taking a look around the works we were given some startling figures. Apparently this firm holds nearly fifty per cent of the total *world* market in the commercial changer field. And in the UK they claim to account for nine out of every ten changers sold. That's a pretty good answer to our recent editorial (*The Tax Man Cometh—Again*) about the position of the British audio industry in the light of import restrictions.

Selling to more than 80 countries throughout the world, BSR claims to hold 90 per cent of the South African market, 70 per cent of the USA market and 60 per cent of the Canadian market. Quite a record (no pun intended!).

At the Old Hill factory all was bustle and movement. Giant presses spewed out parts—more than a million pressings without changing tools—conveyor belts moved bits from here to there, a multitude of girls' fingers flew in a deft succession of repetitive actions. At the end of it all the record players emerged. Complete units, tested and working. Into giant cartons and away in sealed containers.

In some of the shops we couldn't hear ourselves speak. The noise was deafening. In other departments all was quiet concentration. Over at Stourbridge the girls were assembling cartridges. A very delicate job; it would take us all day to put one together, but with dextrous touch they were being turned out at the rate of so many a minute. Stourbridge is a more spacious factory than Old Hill. A newer



Modern machines turning out plastic components in the spacious Stourbridge works. Included in this picture is no more than a corner of the productive floor space; the scale of operations is immense

building, there's a feeling of light and airiness. Here they make the transcription units as well as cartridges and they also have their own plastics department to make their own plastic mouldings.

In fact BSR have got into the habit of doing everything for themselves. Even transport. They have their own helicopter—it saves time on the journey to the airport—and when they arrive their own jet plane is waiting to take their executives on business trips abroad. And if they want to put up a new factory, why, they turn to their own building department. Most of the time they are putting up a new factory somewhere.

This is really modern business on the modern scale. We have only one criticism

to make. Of course BSR are concentrating on meeting a demand for a certain type and level of equipment, and they are doing that job very well indeed. However, we would be pleased if we could see signs of this successful and go-ahead firm seriously entering the high fidelity market at the upper end.

The bulk of their products fill what is generally described as a "commercial" requirement. As the public become better acquainted with better quality sound—a parody of their own name—more sophisticated equipment is going to be expected. Will BSR be able to supply it? We came away without a direct answer to that question. But there was a hint—just a suspicion of a hint—that it could be yes!



# This is a page of hi-fi news.

Into the world of Hi-Fi, now and again there comes a product that represents terrific value to the enthusiast.

Such a product is the Grundig TK247 de luxe Stereo tape recorder.

Never before have so many professional features been incorporated in a machine at a price the amateur enthusiast can afford.

£130-18-9.

Permit us to dangle the specifications in front of you.

Four track, full stereo record and playback to Hi-Fi standard.

Independent record/playback controls and tone control.

Facilities for in-input mixing, super-imposition and multiplay.

Also monitoring via ear-phones, automatic tape-stop, parallel track operation, tape inching, and a tape joining channel.

More?

Right. Plated steel chassis and frame ensure perfect mechanical alignment.

Tape pressure band prevents drop-outs.

Double-action safety clutch. Easily modified for 60Hz mains operation. Amplifier hinges for easy servicing.

Two tape speeds give up to eight hours playing time.

Less than 0.15% wow and flutter.

Twin-edged illuminated VU level meter.

Two  $6\frac{3}{4} \times 3\frac{3}{4}$ " high-quality elliptical speakers with two-inch tweeters.

It is  $17\frac{1}{2} \times 13 \times 7\frac{3}{4}$ " and weighs 30 lbs.

Quite a tape recorder for anybody.

For £130-18-9.

Please send me details of the Grundig TK 247 de luxe.

Name .....

Address .....

R.M.2



Dept. R.M. 2, Grundig (Great Britain) Ltd., Sydenham, S.E.26.



WITH Christmas safely behind us, ghastly neck-ties hidden deep in the darkest corner of the wardrobe and the last vestige of turkey bone (I really didn't think it would last *quite* so long; we'll have a smaller one next year!) consigned to the bin, we can breathe again.

Funny how it all seems so familiar when it's here, yet so far away when it's gone. In mid-summer one can't believe it exists at all. Then, with scarcely a tick of the clock, it's back with a traditional jollity that always includes quaint customs like the postman shooting bags of mail through the letter box—all of it addressed to someone else. With ritual reverence the coloured lights went on in Regent Street, and with what seems to be no more than a couple of twinkles they'll be out again. Santa came and went. Small children either got—or did not get—the presents they asked for. Parties were inflicted unwillingly on the majority and enjoyed by a warped minority. The dog got cross and bit Auntie Maude and the cat was sick and that was that.

It would take a brave man to wield a microphone in the midst of such frightful chaos. There should be a special honour awarded for such unspeakable bravery. I readily admit that I lacked the courage. But it would have been fun to be able to record all those mixed impressions on tape. They'd be fun to listen to in ten or twenty years' time. Of course, I should have reminded my readers about this at least a month ago. But that's the trouble with Christmas, it creeps up on you all unawares, takes you quite by surprise and then is gone—flash! Yet the signs were there all right. Even in October giant stores were hoisting equally giant decorations. They looked a bit washed-out by the time the day came, but that doesn't seem to matter. No, we should have been prepared for it, but we weren't.

Perhaps next year we'll set a trap for Christmas. Try to catch it unawares, so to speak. Then with valiantly turning spools and eager microphone it will all be there, imprisoned within the magnetic coils of a 7-inch spool of standard play.

As Addison once said, it happens very well that Christmas should fall in the Middle of Winter. Could be awkward if it chanced to arrive around July or August; confusing for the summer holidays. And talking of holidays I actually booked mine three weeks before Christmas. Absurd, isn't it? No wonder December 25 almost escaped us.

Actually it was a bit of one-upmanship on my part. Knowing that the daily papers, the weekly papers and the monthly magazines would be stuffed to the very eyebrows with holiday advertisements the instant the sun set on the day of the twenty-fifth I figured that by booking three weeks earlier I would have made

# CROSS TALK

## By Audios

all the advertisers waste their money. Clever? Can hardly stop laughing every time I pass the travel agents.

We're going back to the Rhine valley again for a week, and then, greatly daring, we booked another week on the Costa Brava later in the year. Not because I love General Franco or because I have a down on the very good people of Gibraltar, but for the very excellent reason that it happened to be the cheapest holiday in the book. Ten days for 19 and a half guineas. Not bad, eh? And that includes all travel and accommodation. If it kills me I'll pack a portable machine in my luggage and bring back some crackling recordings. After all, I must—after dodging the issue at Christmas.

\* \* \*

*HAS anyone been having trouble trying to synchronise sound with cine film? If you've not it means just one thing—you've not been doing it. But it's not only amateurs who get themselves into difficulties with this most tricky process. Even the professional studios are glad of all the help they can get to make the job easier. One British firm who is determined to help them is Audio Engineering Ltd. of Endell Street, London.*

*Audio Engineering have produced a gadget they call the "Crystamatic". It's a box of electronic wonders containing more than 700 transistors in micro-miniature integrated-circuits and is for export only at a cost of around 1,800 dollars, in round figures £700.*

*It is worth mentioning for two reasons. Firstly, to give a resounding pat on the back to a British manufacturer for inventing a unique piece of electronic equipment, and secondly to point out just how complex this question of film sync really is.*

*Even if you had the money and could buy it, you would need an Arriflex camera (or similar) to go with it, and a pulse producing tape recorder (such as the Nagra) as well. The Crystamatic comes in two parts. One unit fits under the camera, and that contains an electronic shot counter, a digital film marker, a precision crystal motor-control system, a VHF radio transmitter for scene marker bleeps, a talk-back microphone with automatic volume control and an automatic fault-warning system. The other unit goes with the tape recorder and contains a precision crystal oscillator for 50 and 60 Hz reference tones, a high performance radio receiver for talk-back and scene marking and*

*a phase locked oscillator to synchronise the camera with an external signal.*

*I have handled this piece of equipment. Although having no use for it I would love to own it, just for the sheer pleasure to be found in such a beautiful piece of precision miniature engineering. It is a delight to hold. I wish I understood its many functions.*

*If things are going badly in the cine department, cheer up! At least you now know what you're missing. . . .*

\* \* \*

THE Audio Engineering Society is an American institution of the highest reputation. Its members must be either graduates or have equivalent experience in the audio industry. It publishes a Journal, at present quarterly but soon to be bi-monthly. A few weeks ago a meeting was held at the Russell Hotel, London, when a group of British engineers resolved to investigate the possibility of forming a British section of the Society.

This is brought to readers' attention because although full membership would be restricted, associateship will be offered to all who are seriously interested in audio. Proposed fee is around five guineas a year, and for that both members and associates will receive copies of the Journal and the right to attend such meetings as will be arranged. Will those interested please write to: Audio Engineering Society, 10, Museum Street, London, WC1, enclosing a stamped and addressed envelope. I would add that all those with a dedicated interest in the subject would not only find membership well worth while, but by stating their willingness to join they would be materially assisting in getting the project "off the ground."

\* \* \*

SGS-FAIRCHILD is a well-known name in the electronic component field as manufacturer of a vast range of devices with special attention to micro-circuits. But not any more. From December 16 the name was changed to SGS (United Kingdom) Ltd. following the acquisition by Olivetti of the one-third American shareholding, Fairchild Semi-conductors.

This change was announced at a reception in London when I had the pleasure of meeting a number of their executives. They are quite a firm. I was particularly impressed by remarks made to me by Mike Meaden, the Manager of the Customer Service Group. He told me that they interpret the word "customer" literally, and if approached for advice it makes no difference whether the enquiry originates from a company planning mass production of a product requiring thousands of components or a private amateur doing a little construction in his spare time. How refreshing! Thanks for a very pleasant evening, Mike, and good luck to SGS (United Kingdom) Ltd. Long may you continue to offer such worthwhile service.

If you wonder what we talk about on such occasions I am not ashamed to admit that I spent quite a while trying to convince Mike Meaden and his colleague, Finance Manager Colin Thomson, that the only civilised way to roast a joint of lamb is to score the flesh and insert tiny pieces of garlic before it goes into the oven. . . .

\* \* \*

FUNNIEST Christmas story came from the David Frost Show. Four-year-old girl talking to a four-year-old boy protested, "It's easy to be a shepherd, anyone can do that, but it's jolly difficult to be a virgin. . . !"

WHEN I began this series of articles on "The Home Studio" I said: "I want to encourage the idea that serious tape recording is possible in the home environment. Conversely I hope that 'domestic' recording equipment, properly organised, can produce recordings that fall only a little short of the full-scale professional job."

Well, here we are at the twelfth and final instalment and I hope my brief notes have given you a few pointers in the right direction. But it would be frustrating indeed if all your good work in the home studio got no further than your tape shelves. The artistic and technical skills you have expended deserve to reach a wider audience. Here are some ideas.

### Tape Letters

Even if you can find only one other tape enthusiast with common interests to yourself, you will at least have an audience of one. It is only when you are preparing tapes for other ears besides your own that you learn to develop powers of self-criticism and the incentive to improve your tapes, edit more precisely, incorporate more "programme" polish, is invaluable.

If your tape pal lives nearby, then you can exchange visits and tapes quite easily. But if you live miles apart you will have to resort to tape letters (I don't like the word "tapesponding," but I can't think of a better one). One word of warning: don't talk too much. Resist the temptation to ramble on about nothing in particular. Map out a plan of the things you want to talk about: be brief and introduce other recorded material wherever possible.

Tapes will travel through the post quite safely. Most leading tape manufacturers now supply small spools in handy packs for "Phonopost" posting. Another very good idea is the Jiffy bag which is a strong padded envelope. This will survive quite a number of journeys and protect the tape from damage. Postage rates on tapes are low but a declaration of "Personal tape recording. No commercial value" must be printed on all tape letters going overseas. By the way, there is also a minimum size of package below which the GPO can refuse to deliver. It is an area of 4 x 2½ inches and so a box measuring just 3 x 3 inches is strictly speaking too small to handle!

Besides corresponding with a fellow tape enthusiast, you will find that it is a special pleasure to exchange tapes with friends and relations overseas. The best recordings for this job contain contributions from the whole family and snippets of "local colour" sounds which are everyday noises to you but, perhaps because of this, have special evocative qualities for absent friends.

# REACHING A WIDER AUDIENCE

### Tape Clubs

You can reach a wider audience too by joining a tape club. There are two sorts of tape club: the first extends the tapesponding idea and produces regular lists of members with details of their special interests to enable you to choose suitable tapespondents at home and abroad; the second is a local affair with regular club evenings, talks, competitions and the like.

There are over one hundred of these clubs in this country and they have a central organisation, the Federation of Tape Recordists and Clubs, through which they are linked to an international organisation, the *Federation Internationale des Chasseurs de Son*. If you are really keen on developing your own tape recording activities, and finding out what other tape amateurs are doing, I should say that joining your local club was an essential step. And if there is no club in your area—start one! There is so much to learn in this game of sound recording that getting together with other practising recordists can be of enormous benefit. Also you can invite professionals to come along and demonstrate recording techniques, make programmes for your local hospital patients or old people's home, organise the sound for local fêtes . . . the list is endless.

If you are unable to join or establish a club, there are still benefits from becoming an individual member of the FBTRC. These include participation in a scheme which allows you to record copyright music on payment of a small annual fee and access to an interesting archive of tapes. The address for further information is The Publicity Officer, FBTRC, 33 Fairlawnes, Malden Road, Wallington, Surrey.

### Tape Competitions

As in other fields—from bathing beauties to pop groups—the first rung on the ladder of success can often be winning a prize in a competition. I can think of several people who are actively and successfully engaged in tape recording and can date their spring to fame from the time they walked off with a prize in the British Amateur Tape Recording Contest.

They include Ray King—his rewards included a free trip to America; Norman Paul—later the author of a book on tape recording; and Alan Brown—now working in E.M.I. studios.

These prize-winning tapes can be documentaries, playlets, music etc. The one thing they all have in common—as you can hear for yourself, because copies are obtainable from the FBTRC Librarian—is the kind of polished and imaginative working out of a good idea that we can sum up in a single word—professionalism. I have taken part in the judging of the Annual Contest several times and I can tell you that the elusive quality of professionalism counts for much more than mere technical or artistic excellence.

There is still just time for you to enter the 1968 Contest: the closing date for entries has been extended to January 31, 1969. Write to the FBTRC Secretary for an Entry Form and I for one will look forward to hearing your tapes.

There are other competitions you can enter. BBC Northern Region have held summer contests for the last two years and you should keep an eye open for manufacturer-sponsored contests such as the Wildlife Sound competition just organised by Scotch Tape (the 3M Company) in association with the recently formed Wildlife Sound Recording Society.

### Tape in a supporting role

Ironically, another good way to reach a wider audience for your tapes is to seek out performers. Amateur choirs, musicians and actors are turning more and more to recordings both as an aid to improving their performances and as part of the performance itself—e.g. to provide the incidental music and off-stage effects in drama productions.

Volunteering to make recordings for a local group could be your introduction to a most rewarding side to your hobby. With other people depending on you—and people intent on high artistic levels of achievement at that—you will find your own standards being raised automatically.

# REACHING A WIDER AUDIENCE

continued...



**The business of the Home Studio is to deal in sound. Here an enthusiast is collecting sounds at the London Zoo, but she is concentrating on the visitors rather than the animals. The equipment is a Philips Compact Cassette machine and the material will later be copied on to standard  $\frac{1}{4}$  inch tape for editing**

A likely outcome of this kind of collaboration will be that you will be asked to supply copies of your recordings to individuals in the group—on tape sometimes, or maybe, for those who have no tape recorder, on custom-made gramophone records.

## Use the professionals

At this point I must declare my interest. I am the Secretary of the Association of Professional Recording Studios and so I am naturally concerned to think that the spread of amateur recording may threaten the livelihood of the true professional. And yet here I have been urging you to set up a home studio and even model your activities on the professional approach. Well, I see nothing inconsistent in this, provided amateurs play fair by the professionals.

We have a similar situation in photography. The business lost to professional photographers when amateurs occasionally take and distribute wedding pictures, etc. is not serious. But it certainly becomes a matter for comment if the amateur starts charging for his services or produces only imperfect quality and thereby brings the profession of photography, or recording, into disrepute.



**Using a Grundig TK 14L the boys of Dame Alice Owen's School find programme building an absorbing occupation**

Since you will in any case need to turn to a professional studio to organise disc copies for you, either as direct cut lacquer discs or pressings, may I suggest that you make friendly approaches to your local studio. If they see that, far from poaching on their preserves, your activities may indeed increase their business, they will be happy to collaborate.

## Turning professional

It is only natural that keen recordists often get the idea that they would like to turn their hobby into their work and I receive dozens of letters from people who either (a) want a job in a large recording studio or (b) want to set up on their own. I hate doing it, but I have to strike a slightly pessimistic note in my replies. Where (a) is concerned, the fact is that recruitment to recording studios is a mere trickle. The BBC probably employs more recording engineers, and certainly employs more producers, than all the recording studios put together (although there are almost 150 APRS Members and Associates). I therefore tell my correspondents to try the BBC.

For (b) I invite people to apply for APRS membership but they must give details of their equipment and send sample recordings and photographs of the studio (if any). If these are not up to professional standards, membership is not granted.

## Growing markets


In case you have found these remarks depressing, let me end by saying that I believe these are stirring times for amateur recordists. The BBC's local broadcasting experiments are only low-budget at present and confined to a few towns. Still, any general go-ahead would vastly step up the demand for local colour and news recordings. This would create plentiful outlets for amateurs and professionals alike.

The BBC archive library is also anxious to add *good* recordings to its shelves. These include natural history, dialect etc., etc. But the technical standard must be high and, since the library already contains many thousands of discs and tapes collected over the years, it is only worthwhile offering top-class recordings of a unique nature which the BBC may really find interesting enough to audition and purchase.

I hope these sketchy suggestions have been enough to persuade readers of *Tape Recording Magazine* that the hobby of recording is absorbing, worth every bit of time and effort you put into it, and a potential source of personal as well as material rewards.

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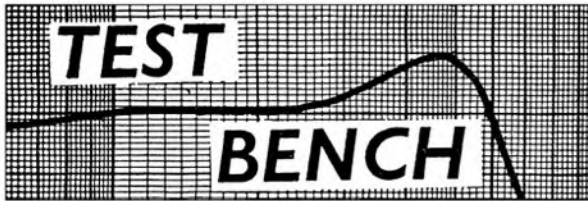


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# TRUVOX PD202

INVESTIGATED BY R. HIRST AND D. KILLICK

## MANUFACTURER'S SPECIFICATION

### Truvox PD202

Tracks: Half track stereo.  
 Tape speeds:  $7\frac{1}{2}$  ips,  $3\frac{3}{4}$  ips,  $1\frac{7}{8}$  ips.  
 Wow and flutter:  $7\frac{1}{2}$  ips better than .08 per cent,  $3\frac{3}{4}$  ips better than .12 per cent,  $1\frac{7}{8}$  ips better than .2 per cent.  
 Maximum reel diameter: 7 in.  
 Frequency response:  $7\frac{1}{2}$  ips 30—18000  $\pm 2$ dB,  $3\frac{3}{4}$  ips 30—12000  $\pm 2$ dB,  $1\frac{7}{8}$  ips 40—7000  $\pm 3$ dB.  
 Signal to noise (unweighted): PD202—better than 50dB.  
 Recording meter: VU.  
 Equalisation: To new CCIR.  
 Oscillator frequency: 90 kc/s.  
 Inputs: Microphone: 1 mV at 50 kOhms, radio/PU: 50 mV at 200 kOhms.  
 Outputs: Fully variable, 0—1 volt emitter follower.  
 Wind/rewind: Better than 120 secs. for 1,200 ft.  
 Operating voltage 50 c/s, 200—250 volts A.C.  
 Dimensions: 16 in. x  $16\frac{1}{2}$  in. x 8 in.  
 Weight: 28 lb.  
 Price: £150 11s. 7d. including purchase tax.  
 Manufacturers: Truvox Ltd., Hythe, Southampton.

## TRUVOX PD202 TEST CHART

Frequency Hz	Overall Response dB			Playback Only dB	Signal/Noise Ratio dB	Distortion	Crosstalk dB
	$7\frac{1}{2}$ i.p.s.	$3\frac{3}{4}$ i.p.s.	$1\frac{7}{8}$ i.p.s.	$7\frac{1}{2}$ i.p.s.	48	2.8%	50
30.....	-4.3	-5.5	-5.5	-3.6			
40.....	-2.5	-2.5	-3.1	-1.8			
50.....	-1.2	-1.8	-2.8	-0.8			
60.....	-1.2	-1.6	-2.1	-0.7			
100.....	-0.1	-1.6	-1.0	0			
250.....	0	-0.2	-0.2	0			
500.....	0	0	-0.1	0			
1000.....	0	0	0	0			
2000.....	0	+0.5	+0.4	0			
4000.....	-0.1	0	0	0			
6000.....	-0.4	-0.4	-3.1	-0.3			
8000.....	-1.0	-0.8	-6.0	-0.8			
10000.....	-1.7	-1.7		-1.4			
12000.....	-2.0	-3.1		-1.6			
14000.....	-2.0	-6.0		-1.6			
16000.....	-1.8			-1.5			
18000.....	-1.8			-1.4			
20000.....	0			+0.2			
22000.....	-0.1						
24000.....	-5.5						
Wow and Flutter	0.16%	0.24%					

NOTES.—The Overall Response figures relate to record and playback. Playback Only relates to the reproduction of a 70 microsecond test tape at  $7\frac{1}{2}$  i.p.s. (C.C.I.R.). For Signal-to-Noise Ratio the tape was recorded at peak level and then the input signal was removed from the record amplifier, but see text for further information. By reference to the signal level recorded and the resultant tape noise, the noise voltage was read off, with the tape still in motion. Distortion is quoted against a 1,000 Hz signal recorded at the correct maximum level as indicated by the manufacturers and the figure is an R.M.S. value. Wow and Flutter is also R.M.S., the test frequency being 3,000 Hz. Test equipment used includes: Bruel and Kjaer Signal Generator, B & K Frequency Analyser Type 2107, B & K Level Recorder Type 2305, Marconi Distortion Factor Analyser and Gaumont-Kaylee Wow and Flutter Meter.

**D**URING recent months our reviews have been dealing with imported equipments; we are therefore now very pleased to be able to investigate a British tape recorder, the Truvox PD202. This is a half-track mains stereo deck and pre-amp (it requires the use of existing amplifier and speakers) fitted with three heads to offer before- and after-record monitoring facilities. A four track version of the machine is available under the reference number PD204.

Before detailing our findings we should like to make one point quite clear. We do not believe it is in the interests of either the public (as potential purchasers) or the manufacturer for us to gloss over any defects or faults we might come across merely because we want to boost a British

product. To the contrary, if we err at all it will be in the other direction. It is our wish and very earnest hope that the British manufacturer will produce equipment to compare favourably with foreign products, and since the excellence of many of these is beyond question the standard required is very high indeed. We shall therefore criticise the PD202 against the most stringent criteria.

Results of our laboratory investigation are set out in the usual tabular form. The

frequency response section of the chart reveals a situation of which the manufacturer can justly be proud. Reproduction of a CCIR calibration tape shows a deviation of less than 2 dB from level throughout the range 40 to 20,000 Hz. With remarkable consistency the figures give us what must be the closest possible approach to the "ideal" straight line that could ever be achieved under practical conditions. Encouraged by these measurements we turned to overall response

(record/playback). Determined to establish at what point the curve really did take a nose-dive we had to push the signal generator right up to 24,000 Hz at  $7\frac{1}{2}$  ips before finding an appreciable fall-off. Again the straightness of the line is most impressive with no more than 2 dB deviation from flat within the exceptionally wide range of 50 to 22,000 Hz. At  $3\frac{3}{4}$  ips we tail off above 12,000 Hz and just for fun we checked at  $1\frac{7}{8}$  ips as well. There is no doubt at all that in terms of frequency response the PD202 stands right at the top of the league. Congratulations Truvox!

But frequency response is by no means the end of the story. Distortion and noise are at least as important—perhaps even more so. Since distortion and noise are interrelated we must discuss them together.

We have said before that “under 3 per cent” should be regarded as the standard distortion measurement for truly high fidelity magnetic recorders. With a figure of 2.8 per cent the Truvox fits nicely into that category; it is precisely the reading we would hope to get from a machine in this price bracket. So far so good. If we could now couple to this a signal-to-noise ratio of around 52 dB (as is claimed in the specification) or better we should be safely over the worst of the technical hurdles. Unfortunately we were disappointed to get a first reading of only 48 dB. This is not terrible, but it's not as good as it should be. So we investigated the noise factor rather more deeply. The level of the input signal was increased above the point of maximum modulation as shown on the level meters until the distortion of the recorded signal rose from 2.8 per cent to nearly 5 per cent. This condition arises at 1,000 Hz when the gain is increased by some 4 dB. Since the tape is now more heavily loaded the signal-to-noise ratio improves and the new reading was 51 dB. We must stress that we do regard this as “cheating” since in terms of real quality such a procedure defeats itself—there's no point in gaining on the swings only to lose on the roundabouts.

During the course of this deeper probing we also uncovered another rather disturbing feature. Checking the overall noise level (record/playback) we found a cyclic variation between 48 and 43 dB. This appeared to be a  $\frac{1}{4}$ -cycle fluctuation, possibly due to the replay constant hum going in and out of phase with some recorded hum at approximately 0.25 Hz. This situation does not arise on playback only.

There then followed discussions with the manufacturer on the telephone and we were assured that the most likely explanation was that the review sample had a fault that would not appear in the general production run. Unfortunately

there was not time to take up the offer of another random selected machine for further examination to confirm this, but we are inclined to accept it as a highly probable solution, particularly as we are assured that special attention will be given to checking the noise level of production models in the factory to make quite sure that this fault does not occur again. As a matter of interest we have accepted an invitation from Truvox for *TAPE Recording Magazine* to visit their Southampton factory to satisfy ourselves on the testing procedure and we shall be reporting on this in due course.

Crosstalk of 50 dB between tracks is excellent, and the wow and flutter figures of 0.16 per cent at  $7\frac{1}{2}$  ips and 0.24 per cent at  $3\frac{3}{4}$  ips are acceptable without being outstandingly brilliant. Summarising our technical findings we can say that the only cause for concern lies in the signal-to-noise ratio, but we do have evidence of a fault in the review machine which might well account for the rather disappointing figures; in all other respects the results vary from acceptable to good to excellent. From here we went on to user tests.

The physical weight of the machine inspires confidence; it is heavier than some other tape units, and weight usually means robust construction and sound engineering. This was confirmed by the general appearance of the deck and also by the lack of obtrusive mechanical noise when running. We were not impressed by the wood casing which is severely box-like, and we are sorry to note that it lacked any form of anti-scratch cushioning to protect furniture when used in the vertical position. This a small point, but manufacturers must understand that no house-proud lady will permit her precious sideboard to be damaged by chunks of raw wood, which is what we have here. Rubber feet are provided for horizontal use, which, when you come to think of it, is somewhat contradictory!

The layout of the deck and controls has some original features. A massive built-up panel runs across the full width of the deck immediately in front of the sound channel, and it carries the five push keys to operate tape transport, giving Stop, Start, Rewind, Wind and Record Interlock. Also on this raised console are the two rotary controls, one for Record and Playback function selection and the other Speed Change. An efficient Pause or Cue control is on the right, together with a 3-digit numeric counter. We have complained before about the unfortunate habit of fixing obstructions in front of the sound channel—a method of construction to be deplored because it makes editing unnecessarily difficult. But Truvox have neatly overcome this problem by providing a hinged flap at the critical point; when opened it gives clear access to the front of the heads and then also provides

a plastic editing block precisely where it is required. If we were using this machine for serious work we should feel tempted to remove the hinged flap completely and fix a proper metal splicing block to the plastic where, by the way, there's plenty of room for it.

On a second control panel forward of this we find a pair of standard jack sockets for microphone connection, two press key Record controls, coupled to which are a pair of brilliant red warning pilot lights, six rotary knobs for separate gain on each channel for Microphone, Radio/Phone and Playback Volume. Two pairs of small white press keys give playback selection, Source or Tape, and Mixing from track to track. A pair of suitably large illuminated level meters complete the control array.

We were not completely happy about the functioning of the various press keys. They are all of the “press to engage and press to release type”, unfortunately they do not always engage at the first go. We found that the Record keys would work every time if they are pressed down and away from the operator; Mixing and Playback Selection have to be used gently as otherwise one goes through “engage” to “release” and the key simply comes up again. And as for those gain knobs...! Oh dear! oh dear! They are perfect examples of what we term “Design Centre Styling.” We would be prepared to bet that the person who decided to use those knobs never took a serious recording in his life. So they look pretty—but as functional controls they are *hopeless*. With a tiny little shank that could only be gripped by a dwarf, finished in smooth metal to ensure finger slip, they are abominations. Please, please let us have proper knobs to permit accurate fine adjustment, and please let them rotate against a numeric reference scale instead of meaningless lines. These are basic requirements for any recording device that is more than an expensive toy.

Full marks, though, for the method adopted for retaining spools in place when used vertically. A turn of a plated screw fitting in the centre of the hub boss expands a nylon collar to give a firm and positive grip very neatly. So much better and more thoughtful than rubber caps as often used by other makers.

Input and output sockets are mounted on a recessed panel on the right-hand side. They comprise four phono sockets, one pair for Radio/Phono In and other Line Out. We were sorry to find that a 5-pin DIN Record/Playback socket had not been included. This is the standard connection on most Continental machines and is duplicated on many amplifiers. When present it enables a single lead to give all the stereo Record and Playback connections—without it four separate

*Please turn to page 64*



# NATURE NOTES FOR FEBRUARY

BY RICHARD MARGOSCHIS

ALTHOUGH an old country saying calls this month "February fill dyke" I see that I have recorded in my diaries for the past two years such conditions as "sunny and warm after frost;" "calm and sunny after early rain."

There is no doubt that this can be the month when things begin to happen in the world of nature, at least in the British Isles. Conditions such as I have described above are ideal for spending a couple of hours on a Sunday morning, or any day for that matter, quietly sitting at the edge of a wood to watch and listen—with recorder at the ready of course. Whether you stand or sit it is a help to get fairly close in to a tree or bush so that your figure does not stand out against the skyline. With absolutely no leaves on the trees visibility through the woods is probably at its best and so a vantage point at the edge can give observation into the wood and over open country.

One sunny Sunday morning last February I was sitting by my favourite pond, which, incidentally, is surrounded on three sides by trees, when I saw a fox come out of the hedge on the far side of the four acre field alongside the pond. Whether it was a dog fox or a vixen I do not know but that made no difference to the thrill of watching the animal wandering around the field no more than thirty yards away in broad daylight. Eventually it "winded" me, stood for a moment and looked at me, then trotted away; no panic just a steady graceful movement of the sleek and beautiful body as it went back along the way it had come.

Minutes later a faint rustle took my attention to the edge of the pond and I watched a stoat working his way along the edge of the water, eventually to disappear among brambles at the foot of some bushes. He, or she, must have had a nest there for it was in this same spot that some months later I watched a blackbird stalking a stoat; an incident described in my notes for last August.

Before I moved away I watched three blackbirds, two cocks and a hen. The cocks were repeatedly attacking each other and occasionally the hen attacked one of the cocks. Eventually one cock flew off and the other, with wings down, was persistently picking up a leaf and dropping it near the hen; this was no doubt some form of courtship display.

Of course there are plenty of sounds in February. Among the winter visitors still with us will be the Fieldfare, a member of the thrush family with blue-grey head and rump, black tail and whitish underwing; his friendly "chack-chack" can be heard for some distance as he moves about in quite large flocks. Many of our native birds, like the Dunnock and the Wren, will also be coming into song.

Proper and adequate documentation is a very important matter which goes hand in hand with the indexing system about which I wrote last month. For any recording which is stored for future use there should be available information as to (a) Species, (b) Place, time and date, (c) Activity at time of recording; these are minimum requirements to which might be added (d) brief description of location (e) weather conditions (f) duration and (g) any other useful or interesting information. I keep the full details on the index sheet of the species concerned, but certain other information is also entered on the red leader (see last month's notes) in front of each recording. This relates principally to the equipment used to make the original recording and is in the form of a sort of code. For example, 19.30:3.7.68:R1.DP6.U(T) would tell me that the recording was made at 7.30 on the evening of July 3, 1968 using my No. 1 reflector (a home-made one) with a Grampian DP6 microphone to the Uher recorder, a T at the end would indicate that the reflector was mounted on a tripod.

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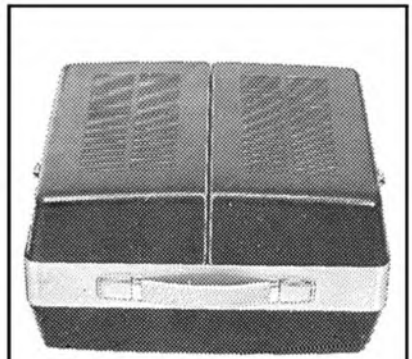
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# MUSICASSETTE

## REVIEWS

**FESTIVAL OF LIGHT CLASSICAL MUSIC.** Boxed sets of six or nine Musicassettes. £11 4s. 6d. or £14 18s. 6d. including postage, packing and purchase tax. The Reader's Digest Association Ltd.

So the Reader's Digest Association have done it again. With a resounding crash they have broken through the Musicassette price barrier to bring us what is the lowest cost music in this medium yet. The set of six works out to 37s. 5d. each, and the set of nine to 33s. 2d. each. For some reason the larger collection is described as containing eight cassettes—plus one free one! In my language that means nine.

As is usual with Reader's Digest specialist products, painless easy terms are offered. The six set requires a deposit of only 4s. 6d. plus ten payments of 22s., and for nine the same small deposit but with twelve payments of 24s. 6d. Both sets are neatly packed in pictorial containers illustrated with a print of the Degas painting, *Les Musiciens à L'Orchestre*. Very handsome. It only remains to check repertoire and recorded quality to pronounce judgement.

Listing the items is quite a problem, but since the value of such collections lies in the choice offered I will give them in detail. Cassette 1: *Zampa Overture*, Herold, *Xerxes Largo*, Handel, *Funeral March of a Marionette*, Gounod, *La Gioconda Dance of the Hours*, Ponchielli, *The Moldau*, Smetana, *Moto Perpetuo*, Paganini, *Liebestraum No. 3 in A Flat*, Liszt and *Music of the Spheres Waltz*, Josef Strauss. Cassette 2: *Swan Lake Ballet Suite*, Tchaikovsky, *Aida Grand March*, Verdi, *Zigeunerweisen*, Sarasate, *William Tell Overture*, Rossini and *Radetzky March*, J. Strauss 1st. Cassette 3: *On the Beautiful Blue Danube*, J. Strauss 2nd., *Tales from the Vienna Woods*, J. Strauss 2nd., *Estudiantina*, Waldteufel, *Invitation to the Dance*, Weber, *Thunder and Lightning Polka*, J. Strauss 2nd., *Artist's Life*, J. Strauss 2nd and *Tritsch-Tratsch Polka*, J. Strauss 2nd. Cassette No. 4: *Capriccio Italien*, Tchaikovsky, *Pizzicato Polka*, Johann and Josef Strauss, *Perpetual Motion*, J. Strauss 2nd, *Marche Militaire No. 1. in D*, Schubert, *Eine Klene Nachtmusik*, Mozart and *Faust Ballet Music*, Gounod. Cassette No. 5: *Andante Cantabile from Quartet in D Op 11*, Tchaikovsky, *Carmen Suite*, Bizet, *The Thieving Magpie Overture*, Rossini, *La Traviata, Preludes to Acts 1 and 3*, Verdi and *Russlan and Ludmilla Overture*, Glinka. Cassette No. 6: *1812 Overture*, Tchaikovsky, *Marche Slave Op 31*, Tchaikovsky, *Fingal's Cave Overture*, Mendelssohn and *Les Préludes*, Liszt.

That marathon list includes all the items in the smaller set. The additional pieces in the collection of nine are: Cassette No. 7: *Semiramide Overture*, Rossini, *Rakoczy March*, Berlioz, *Night on the Bare Mountain*, Mussorgsky, *Light Cavalry Overture*, Suppé, *Kamemoui-Ostrow*, Rubinstein and *Hungarian Rhapsody No. 2*, Liszt. Cassette No. 8: *The Nutcracker Suite*, Tchaikovsky, *Tannhäuser Overture*, Wagner, *Damnation of Faust Minuet of the Will-o'-the-Wisps*, and *Ballet of the Sylphs*, both by Berlioz. The ninth "bonus" cassette, not listed on the container, by the way, contains: *Die Götterdämmerung Siegfried's Rhine Journey*,

*Wagner, Hungarian Rhapsody No. 9*, Liszt, *Poet and Peasant Overture*, Suppé, *Academic Festival Overture*, Brahms and *Lohengrin Prelude to Act 3*, Wagner.

The term "Festival" is hardly misplaced! These collections have the basic advantages and disadvantages inherent in all such combination offers. Using famous name orchestras, including The New Symphony of London, conducted by Sir Adrian Boult, Vienna State Opera conducted by Josef Leo Gruber etc. they give us excellent performances of well-remembered favourites at rock-bottom prices. As is bound to happen with such a vast collection, recorded quality does vary slightly; the best are very good indeed—thrilling, in fact. One only was definitely sub-standard with obtrusive drop-out, but included in the pack is a note of the Aylesbury address of the Quality Control Engineer who I am assured will replace genuinely faulty cassettes immediately and without question. We all know that troubles of this kind can crop up occasionally in any high-speed multiple copying process and such an assurance is very welcome.

In terms of value for money they just cannot be bettered. It only remains to decide if the repertoire offered is what the reader really wants. And this is the universal disadvantage of bulk buying in this way. To a person just starting his music library they form an excellent low-cost basis on which to build in the future; one is in trouble if a large proportion of the works are already owned either on tape or disc, but even so the convenience of cassette might well make the investment worth while.

Individual criticism is obviously not possible, but I would like to just add another word about quality. After listening again I must confirm that the best of the bunch are at least as good, if not better, than any Musicassettes I have heard. There has been no scrimping to bring the price down, and the individual cassettes are separately packed in the usual plastic containers with colourfully illustrated sleeves and appropriate programme notes.

Of the two sets the larger is best value for money, as unit price comes down. Either collection can be strongly recommended as an ideal way to acquire a popular classical repertoire without trouble and at a bargain price. I believe the Reader's Digest Association performs a valuable public service by offering such products and I wish them every success with this venture into Musicassettes.

**MANUEL ROSENTHAL CONDUCTS OFFENBACH.** *Gaite Parisienne*. Rias Symphony Orchestra. Sentry SS940. 50s. including purchase tax.

There was a time when the city of Paris stood for bubbling champagne and spontaneous frivolity. No-one excelled Offenbach in his musical interpretation of the carefree atmosphere of this gayest of all cities.

What remains today of the frivolity of that other age? Unhappily little other than the music and the fading memories of a few octogenarians. Perhaps that is why I find a touch of pathos in this recollection of the dancing girls and the night life that has gone for ever.

Unhappily this recording is slightly undermodulated, which itself tends to emphasise the fact that these are days gone and are truly without recall. Apart from this fault the recorded quality is generally reminiscent of bygone days, although I must mention that background noise is sufficiently low so that one may increase the play-back volume level without bringing up any obtrusive background mush or hiss.

Earlier in this review I spoke of pathos. There is indeed something pathetic about this somewhat tarnished jewel. Recommended to all who mourn the fact that they were born too late to share an absinthe with Lautrec in the Moulin Rouge.

**HERB ALPERT'S NINTH.** Herb Alpert and the Tijuana Brass. A & M CYP 180. 55s. 11d. including purchase tax.

We're on pretty safe ground here. The commercial success of the Tijuana Brass sound assures a good reception for this cassette. Yet I find the whole thing very uninspiring. Gone is the old verve—instead a pedestrian interpretation which, to me, is quite colourless. What a disappointment! If I'd been recording this session I'd have told the boys to pack up, go home and come back after having had a good rest.

Side one gives us: *A banda, My heart belongs to daddy, The trolley song, The happening, With a little help from my friends and Love is so fine*. On No. 2 we have: *The love nest, Bud, Flea bag, Cowboys and Indians and Carmen*.

Pardon my yawn, but I'm feeling a little sleepy myself. Can't think why. Probably a good album for those addicted to insomnia.

**PLASTIC PENNY.** *Two Sides of a Penny.* Page One CPO 10001. 55s. 11d. including purchase tax.

"What will Mrs. Grundy say?" ask the Plastic Penny in their first number. What indeed? Well, this group knows some of the answers after having been accused of not performing themselves in their first hit record. Letting sleeping dogs lie, I really must confess that *Mrs. Grundy* amused and pleased me greatly. But some of the other items left me cold.

This group have talent, there's no doubt about that. It shines through when in satirical vein; like many others they are not at their best when making sheer noise for its own sake.

The first side of the Penny includes: *Mrs. Grundy, Take me back, I want you, It's a good thing and No pleasure without pain my love*. The obverse side of the coin carries: *Everything I am, Wake me up, Never my love, Genevieve, Strawberry fields for ever and So much older now*.

You may like it—or again you might not. In *It's a good thing* a studio splice sticks out like a sore thumb, and as for those roaring sounds they keep interpolating—one almost feels inclined to offer the bicarbonate of soda . . .!

**LOVE SONGS FROM SOUTH OF THE BORDER.** *The 50 Guitars of Tommy Garrett.* Liberty C-0844. 55s. 11d. including purchase tax.

Fifty guitars. I can't swear to have counted them, but I reckon they're all there. Certainly sounds like it. So if you have ever felt a compulsive need for fifty guitars—a need you probably thought was doomed to eternal frustration—this is without question for you.

This large ensemble produces some strange effects. At times it is definitely reminiscent of an outside barrel organ. But don't get me wrong; everything they do is done well and the sum total is an extremely pleasant collection, although I found sustained listening to be scarcely possible.

The numbers include: *Spanish eyes, Always in my heart, Piel canela, La comparsa, Tender moments, Sabor a mi, La golondrina, Siboney, La Malaguena, Time was, Yours and Perhaps, perhaps, perhaps*.



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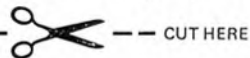
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- 2 Swan Lake: Ballet Suite TCHAIKOVSKY; Aida: Grand March VERDI; Zigeunerweisen SARASATE; William Tell: Overture ROSSINI; Radetzky March J. STRAUSS I.

- 3 On the Beautiful Blue Danube J. STRAUSS II; Tales from Vienna Woods J. STRAUSS II; Estudiantina Waltz WALDTEUFEL; Invitation to the Dance WEBER; Thunder and Lightning Polka J. STRAUSS II; Artists Life Waltz J. STRAUSS II; Tritsch-Tratsch Polka J. STRAUSS II.
- 4 Capriccio Italien TCHAIKOVSKY; Pizzicato Polka JOHANN & JOSEF STRAUSS; Perpetual Motion J. STRAUSS II; Marche Militaire SCHUBERT; Eine Kleine Nachtmusik MOZART; Faust: Ballet Music GOUNOD.
- 5 Andante Cantabile from Quartet in D. Op. II TCHAIKOVSKY; Carmen Suite BIZET; The Thieving Magpie: Overture

- 6 ROSSINI; La Traviata: Preludes to Acts I & III VERDI; Russlan & Ludmilla: Overture GLINKA.
- 7 1812 Overture TCHAIKOVSKY; Marche Slave TCHAIKOVSKY; Fingal's Cave Overture MENDELSSOHN; Les Préludes LISZT.
- 8 Semiramide: Overture ROSSINI; Rakoczy March BERLIOZ; Night on the Bare Mountain MUSSORGSKY; Light Cavalry Overture SUPPÉ; Kammenoi-Ostrow RUBINSTEIN; Hungarian Rhapsody No.2 LISZT.
- 8 The Nutcracker Suite TCHAIKOVSKY; Tannhauser: Overture WAGNER; Minuet of the Will o' the Wisps BERLIOZ; Ballet of the Sylphs BERLIOZ.

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### 7½ ips STEREO

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#### DUSTY SPRINGFIELD'S GOLDEN HITS. Philips PTC 6220. 4-track 7½ ips Stereo. 104s. 10d. including purchase tax.

Just lately we seem to have heard a great deal of our Dusty's voice. What with her own TV show and numerous guest appearances some might think that a rest from Dusty would be more than welcome. But here we are with a collection of her numbers, although not all of the items have been smash hits in this country.

Frankly, this is a sound that does not particularly appeal to me. The recording itself is not as good as one might expect from other albums in this range. Glancing reflectively at the back of the box I came across the following legend in small type. "Partially recorded in Electronic Stereo." Sorry, but that's Greek to me. What on earth is "Electronic Stereo"? I suspect it's not stereo at all, but just a gimmicky way of saying "artificial stereo"—in other words the programme includes some mono recordings that have been "fiddled" into two-channel reproduction.

The items offered include: *All I See is You, Wishin' and Hopin', In the Middle of Nowhere, My Coloring Book, Stay Awhile, All Cried Out, You Don't Have to Say You Love Me, I Only Want to be with You, Little by Little, Losing You, Goin' Back and I Just Don't Know What to Do With Myself.*

You will note that I have retained the American spelling which, of course, is how the titles appear on this imported tape. Which makes you think. Good old Dusty is exported to the States—and back she comes as a tape import! That's life, I guess.

I wish I could be more enthusiastic about this tape. Some of the numbers are certainly well recorded, but there's a lack of consistency in the quality department, probably due to the miscellaneous sources of the originals. So if you don't mind a mixed bag and have a "thing" about Dusty, buy it; otherwise you might well be disappointed.

#### THE GENIUS OF JANKOWSKI! Mercury STC 60993. 7½ ips, 4-track Stereo. 104s. 10d. including purchase tax.

"Don't let the name fool you," requests the publisher in extra heavy type on the rear of the box. Which seems to me to be a very strange thing to say. I wasn't fooled for a moment; why should I have been? Sorry, but I can't explain the mystery because there's not another word about this odd message.

There's nothing incomprehensible about the content of the album, a collection of arrangements and compositions by Horst Jankowski. The sleeve notes point out that he is one of the youngest European arrangers, and at the age of 28 he has had a prolific and adventurous musical career. Described as "musical dreams played by

an exciting new blend of strings and chorus" this recording presents the highly personal sound that Jankowski has himself evolved for the interpretation of his own music. The result is a smooth expertise that carries us faultlessly through a nicely contrasting programme.

On side one we have: *My Yiddische Momme, Clair de Lune, Eine Scharzwaldfahrt (A Walk in the Black Forest), When the Girls Go Marching In, Donkey Serenade and Sing-Song.* On side two: *Toselli Serenade, Simpel-Gimpel, Parlez - Moi D'Amour, Caroline-Denise, Bald Klopft Das Gluck Auch Mal An Deine Tur (Soon Luck will also Knock on Your Door) and Nola.*

Both the arrangements and the performance are full of sparkle and fun—the whole thing bubbles like a glass of champagne. The use of the choral voices is particularly interesting to me. Jankowski treats them as instrumental elements of composition, but doesn't hesitate to introduce the vocal humour where needed. This triple involvement of piano, strings and voices does indeed achieve a pleasant blend of sound that can either be listened to or used as background music where it will not obtrude on any gathering.

With good recording and excellent stereo this cheerful collection of light-hearted numbers is well worth acquiring. My favourites? Why, *A Walk in the Black Forest* and *Simpel-Gimpel*, of course!

### 3¾ ips STEREO

BEETHOVEN. Violin Concerto in D Major, Opus 61. Yehudi Menuhin, violin, and The New Philharmonia Orchestra conducted by Otto Klemperer. HMV TD-ASD 2285. 4-track 3¾ ips Stereo. 47s. 4d. including purchase tax.

Can there be anyone who does not know and love this famous Beethoven Violin Concerto? Beloved by concert-goers throughout the world it must be one of the most familiar items in the established repertoire. There is a school of thought that complains bitterly about the proliferation of more and yet more versions of works by the "classic" composers. They would prefer us to give more attention to lesser known writers. Whilst I would agree in principle one has to admit that there is always a new generation coming along with fresh and innocent ears, and for them the discovery and appreciation of the "greats" is a new and exciting experience. For them, and for those who are now beginning to build up their library of music on tape I welcome this album.

Recorded quality is good—better than one might expect at 3¾ ips. E.M.I. have achieved a delightfully silent background which enables them to make full use of a really wide dynamic range, and the benefit of this is at once apparent. Klemperer gives us a typically personal interpretation and the performance of Menuhin is accomplished in a quiet way, lacking histrionics. So the whole offers an excellent version of a work that should be in every collection of music. Recommended.

HAYDN & BOCCHERINI CELLO CONCERTOS. Jacqueline Du Pré, cello, and The English Chamber Orchestra conducted by Daniel Barenboim. HMV TD-ASD 2331. 4-track 3¾ ips Stereo. 47s. 4d. including purchase tax.

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is well deserved, yet there is something far more delicate than mere mellowness. The instrument produces a range of tonal colour and expression second to none. Perhaps it is this "plastic" quality, this ability to respond to the performer's deeper feelings, that endears it to us. At all events the cello is an instrument that calls for sympathetic treatment by both performer and recording engineer, and at the same time demands the very best of equipment for reproduction.

Our album comprises the *Concerto in C Major* by Haydn and the *Concerto in B Flat Major* by Boccherini. Both are performed exquisitely by Jacqueline Du Pré. One feels that she and her cello are a single, composite unit. Each is part of the other, and together they produce for us a remarkable listening experience.

Recording is so good I can almost smell the rosin on the bow. It's delightful. Nothing of the richness of the sound is lost. I shall listen to this tape with undiminished pleasure for (I hope!) many years to come. Strongly recommended.

**MUSIC BY SIBELIUS.** The Hallé Orchestra conducted by Sir John Barbirolli. HMV TD-ASD 2272. 4-track 3½ ips Stereo. 47s. 4d. including purchase tax.

It is always a pleasure for me to talk about the works of that great Finn, Sibelius. The haunting magic of his music is one of my earliest memories, and through it I came to appreciate the beauty and grandeur of the vast and desolate open spaces. Places where Man is cut down to size against the over-

whelming glory of Nature. It's one thing to experience such profound feelings, but to express them musically calls for nothing short of genius. Sibelius has not only accomplished this feat to perfection, but he has done it in a way that you and I can understand. His is the music of the earth and the wind, the trees and the lakes, the mountains and the fjords—and the solitary man.

The programme gives us an interesting collection of his works, beginning (inevitably!) with *Finlandia* and the *Karelia Suite*, continuing with *Pohjola's Daughter*, *Valse Triste* and *Lemminkäinen's Return*.

Recording is well up to standard and the Hallé Orchestra under Barbirolli give a spirited performance. This is the music for me, and this 3½ ips tape gives me the quality I want. What more can I say? In this age of mechanical-everything there's a special place for Sibelius, and to him we owe an inestimable debt of gratitude. Recommended.

*Sentry* are distributed by Transatlantic Music Tapes Ltd., of 36, High Street, Salisbury, Wiltshire.

*Philips, Mercury, A & M, Page One, and Liberty* are distributed by Philips Records Ltd., of Stanhope House, Stanhope Place, London, W.2.

*E.M.I., H.M.V.* are distributed by E.M.I. Records Ltd., 20, Manchester Square, London, W.1.

*Reader's Digest: Reader's Digest Association, 7/10 Old Bailey, London, E.C.99.*

### TEST BENCH from page 58

leads must be used. We would have thought that the DIN socket was obligatory for export, and it is certainly a convenience at home.

With the mains lead (too short at less than four feet) connected and the machine switched on pilot lights illuminate the pair of level meters. Tape is merely dropped into the sound channel for lacing up and firm pressure on the transport keys gives the desired motion. A very simple finger grip is provided by the side of the keys, and this makes positive operation possible without any movement of the machine itself. As we remarked earlier, mechanical noise is minimal, and what there is is not obtrusive.

The PD202 fairly bristles with safety features to prevent accidental tape erasure. To set the record mode one first depresses the Record control on the forward panel and this illuminates a red warning light. Next the Record Interlock key must be depressed and at the same time the function control is turned to Record. The Start key now runs the machine in the Record mode; when Stop is actuated the main function control flies out of Record and into Playback. All very simple and efficient when you get used to it.

User tests followed our normal pattern—playback of tapes of known quality, recording of mono and stereo radio trans-

missions and re-recording 15 ips master tapes. No problems were encountered, apart from irritation with those absurd gain control knobs. Checking recorded quality is simplicity itself and is achieved by operating the playback selection keys at the front of the deck to give before-and after-record monitoring. Use of the Pause control gives an almost instantaneous start, and when fast winding this can also be used as a Cue device to slow down the tape whilst listening to the "twittering" signal at the speakers.

As all controls are quite independent for both channels a sophisticated range of advanced creative and experimental work can be carried out. Track to track transfer and full mixing make possible all the multi-track effects, a prospect that will delight the hearts of enthusiasts.

In writing up this review we have certainly been critical. It is hoped that our remarks will be taken in the spirit in which they have been given, one of constructive helpfulness. It is our opinion that the Truvox PD202 is a fine machine, a very fine machine indeed. Much thought has been given to its layout and design, but there are areas in which it could be improved still further. In many respects this machine has nothing to fear from imported models; with very little modification it could not only be as good as the best but better than the best. And that is what we all want of British equipment today.

## NEW PRODUCTS

### LOWER COST COMPACT CASSETTES

A NEW presentation for Philips-type Compact Cassettes is introduced by Translantic Music Tapes (Distributors) Ltd., of Salisbury.

Said to contain high grade virgin tape by one of America's leading manufacturers, the cassette is offered in a "blister" pack instead of the more familiar plastic container. As a result prices are proportionately lower for the various playing times, and are quoted as: C60 12s. 6d., C90 17s. 6d. and C120 23s. 6d.

Translantic also bring us the first Compact Cassette head cleaner available in this country. The device is contained in a standard Philips-type cassette and consists of a specially impregnated nylon tape which is drawn past the heads in the same way as tape and is operated by the Record or Play control.



The unit is guaranteed non-abrasive and does not require the application of liquid, being entirely self-acting. The simple snap-in cleaner is claimed to be safer, more effective and certainly more convenient than the conventional method of head cleaning. Effective life under normal domestic conditions of use is claimed to be more than one year. Presented in plastic "blister" package the recommended retail price is 12s. 6d.

Yet another new item from Salisbury is the Concorde low-priced mono and stereo phones.

Robustly constructed with large plastic washable earcups and fully adjustable head-band, they are attractively finished in grey. Claimed frequency range is from 25 to 15,000 Hz, and impedance is 8 ohms.

A full bass response is claimed from the two 2½-inch dynamic speakers and the reproduced tone is said to be realistic. Avail-



able in mono or stereo versions the Concorde phones are claimed to be particularly suitable for monitoring whilst recording. Recommended retail price is 99s. 6d.

*Translantic Music Tapes (Distributors) Limited, 36, High Street, Salisbury, Wilts.*

### EAGLE ACCESSORIES AND CATALOGUE

THREE useful accessories are announced by B. Adler & Sons from their range of Eagle products.

Reference FS 268 is a studio quality two-section adjustable floor stand with a 15-inch base extension for maximum stability. Fully extended the stand measures 68 inches; minimum height when closed 39 inches. The list price is £7 10s. 0d.

Under reference BA 132 Adler offer a matching boom arm with adjustable counter balance weight and angle lock. The counter balance weighs 1 lb. 10 ozs., the maximum extension is 27 inches and the vertical transverse angle is 170°. The price of the boom arm is £3 10s.



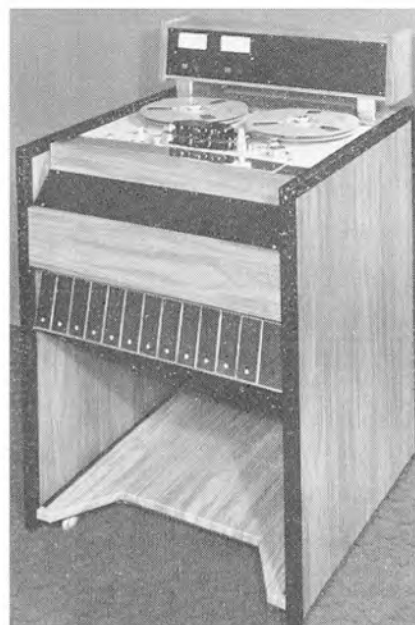
Completely new Eagle stereo headphones, reference SE 28, incorporate dome chambers to extend the response down to a claimed 20 Hz, whilst a specially designed co-axial tweeter is said to extend the upper limit to 20,000 Hz. Impedance is 8 ohms, and the list price £10 10s.

Full details of these and other Eagle products are given in the Eagle Catalogue which can be obtained free from:

*B. Adler & Sons (Radio) Limited, 32a, Coptic Street, London, W.C.1.*

### PROFESSIONAL EQUIPMENT FROM LEEVERS-RICH

PRODUCTION of the new Leever-Rich Type E Mark 6 professional tape recorder is scheduled for January, 1969.



In making this announcement Leever-Rich state that they have already received a £70,000 export order from Ross-Ace of New York for studio recorders from this new family of equipment, and they have contracts worth threequarters of a million pounds under negotiation. Many of these enquiries have originated from Common Market Countries and the Middle and Far East.

*Leever-Rich Equipment Limited, 319, Trinity Road, Wandsworth, London, S.W.18.*

### MANUFACTURERS' ANNOUNCEMENTS

The service department of the **Ferrograph Co. Ltd.**, has been transferred from their premises at 84, Blackfriars Road, London S.E.1. to Edgware Road, Colindale, London, N.W.9. and are located on the South side of Messrs. Wilmot Breeden.

A new division has been formed by **Carston Electronics Ltd.** which will provide, for either long- or short-term hire, a range of Tape Recorders, Microphones and other studio sound equipment as well as audio test equipment.

In addition to the Nagra tape recorders already available it will be possible to hire professional stereo machines and multi-track recorders for use in record production studios. Hire periods may be from a week up to three years or longer. All equipment will be maintained at no additional charge throughout the hire period. Full details can be obtained from Carston Electronics Ltd., 71, Oakley Road, Chinnor, Oxon.

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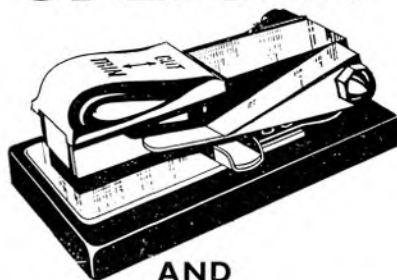
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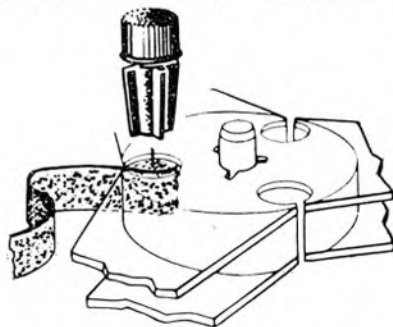
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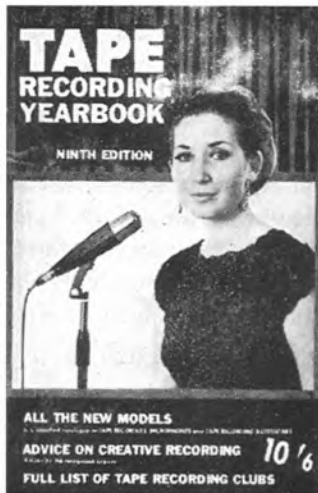
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