

OCTOBER 1963

# TAPE

RECORDING MAGAZINE

1/6



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- Report on the 1963 British Amateur Tape Recording Contest
- News of new equipment
- Music for a drama production
- Reviews of the latest tape record releases
- Do-it-yourself feature
- Club news
- Test Bench reports on recorders
- Uses for tape recorders

# WORLD RECORD CLUB OFFERS YOU THE CHOICE OF ANY 3 PRE-RECORDED TAPES



**85** Beethoven's magnificent Emperor Concerto. A brilliant virtuoso performance by Yuri Boukoff with L'Orchestre des Concerts de Colonne under Pierre Dervaux. **Also in stereo.**



**74** Superb Sarah Vaughan in ten great numbers. If I Loved You, Saturday, It's Delovely, You'll find me There, etc. Every one a hit.



**83** Brilliant Devy Erlich gives dazzling performance of Mendelssohn's Violin Concerto, plus Kreisler Memories. Ernest Bour conducts Sudwestfunk Orchestra.



**58** The fabulous, dynamic Duke Ellington himself in eight great numbers, including Stomping at the Savoy, In the Mood and Honey-suckle Rose.



**81** Some of Chopin's loveliest melodies magnificently played by world-famous pianist Fou Ts'ong - The Four Ballades, Nocturne in F Sharp Major, etc.



**79** Patsy Cline sings 12 smash hit numbers including Walking after Midnight, Too many Secrets, I Can't Forget, Hungry for Love, etc.



**12** Beethoven Eroica Symphony. Josef Krips conducts the London Symphony Orchestra in a masterly performance of this monumental work. **Also in stereo.**



**84** Schubert's Rosamunde. Kurt Redel, conducting the Munich Symphony Orchestra, has just the lightness of touch needed for this enchanting and ever popular music.



**76** Unforgettable Art Tatum in person plays Tenderly, Body & Soul, Without a Song, Begin the Beguine - 12 superb numbers from the greatest-ever jazz pianist.



**53** These two suites, containing some of Bizet's most thrilling music, are given magnificent performances by the Sinfonia of London under the immortal Glenn Miller and his band.



**77** In the Mood, Bugle Call Rag, Chattanooga Choo-Choo, Serenade in Blue - 9 original tracks by the immortal Glenn Miller and his band.



**54** Tchaikovsky's last and greatest symphony, is here given a splendidly moving rendering by the Sinfonia of London conducted by Muir Mathieson. **Also in stereo.**



**80** Dynamic Billy Daniels sings his greatest hits including Summertime, Old Black Magic, On the Street Where You Live, Kiss of Love, and 11 more.



**69** The exquisite playing of the Virtuoso Ensemble matches the beauty of Schubert's celebrated Trout Quintet, which contains some of his most famous melodies.



**65** Our Love is Here to Stay, The Nearness of You, Guitly, and nine more great hits, all with America's top vocal group, the fabulous Four Freshmen.



**72** The magnificent Platters bring you Sixteen Tons, My Dream, Mystery of You, You'll Never, Never Know, One in a Million - 10 superb numbers



**32** Star cast and orchestra stage all the famous songs. Getting to Know You, Hello Young Lovers, I Whistle a Happy Tune, Shall We Dance, etc. 12 superb tracks in all. **Also in stereo.**



**89** The one and only Dakota Staton sings If I Love Again, On Green Dolphin Street, Pick Yourself Up, Meet Me at No Special Place, etc.



**63** Cuban Carnival, Yesterdays, Blues in My Heart, and eight more great numbers played by George Shearing with vocals by Dakota Staton



**60** Chabrier's colourful Espana, with Suite Pastorale, Joyeuse Marche and Bourree Fantastique. Paul Bonneau conducts Champs Elysees Theatre Orchestra.



**30** Ian Carmichael, Joyce Blair, star cast orchestra. As Long as He Needs Me, Consider Yourself, all the hit numbers from Laonel Bart's great show. **Also in stereo.**



**61** The world's 3 greatest sonatas - Beethoven's Moonlight, Pathetique and Appassionata - superbly played by famous T.V. pianist Joseph Cooper.



**25** Ian Wallace, Joyce Blair and 25 chorus. Some Enchanted Evening, I'm In Love With a Wonderful Guy, Bali Ha'i, and all the unforgettable songs from this great musical. **Also in stereo.**



**48** Deep in My Heart, Drinking Song, Serenade - all the old favourites fresher than ever with Marion Grimaldi, Linden Singers and Orchestra. **Also in stereo.**



**59** The silken voice of Nat King Cole in Walkin', Because You're Mine, You'll Never Grow Old, Baby Won't You Say You Love Me and 8 more.



**39** Great ballet conductor John Hollingsworth and the Sinfonia of London in a sparklingly fresh interpretation of Tchaikovsky's famous Ballet. **Also in stereo.**



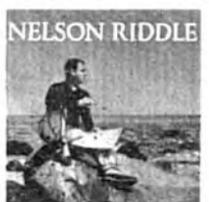
**73** Born to be with You, Mad about the Boy, Tomorrow but not Today, That old Feeling - and six more hits by the brilliant and beautiful Patti Page.



**2** Grieg Piano Concerto, Alexander Jenner in an electrifying performance with the Bavarian State Radio Orchestra conducted by Odd Gruner-Hegge



**91** Barbara Leigh with all-star cast and orchestra sings It's Never Too Late, I could be happy with You, We said We Wouldn't Look Back, 12 in all. **Also in stereo.**



**71** The smooth sound of the Nelson Riddle Orchestra in Touch of Your Lips, Body and Soul, The Tender Touch, As You Desire Me - 11 favourites in all.

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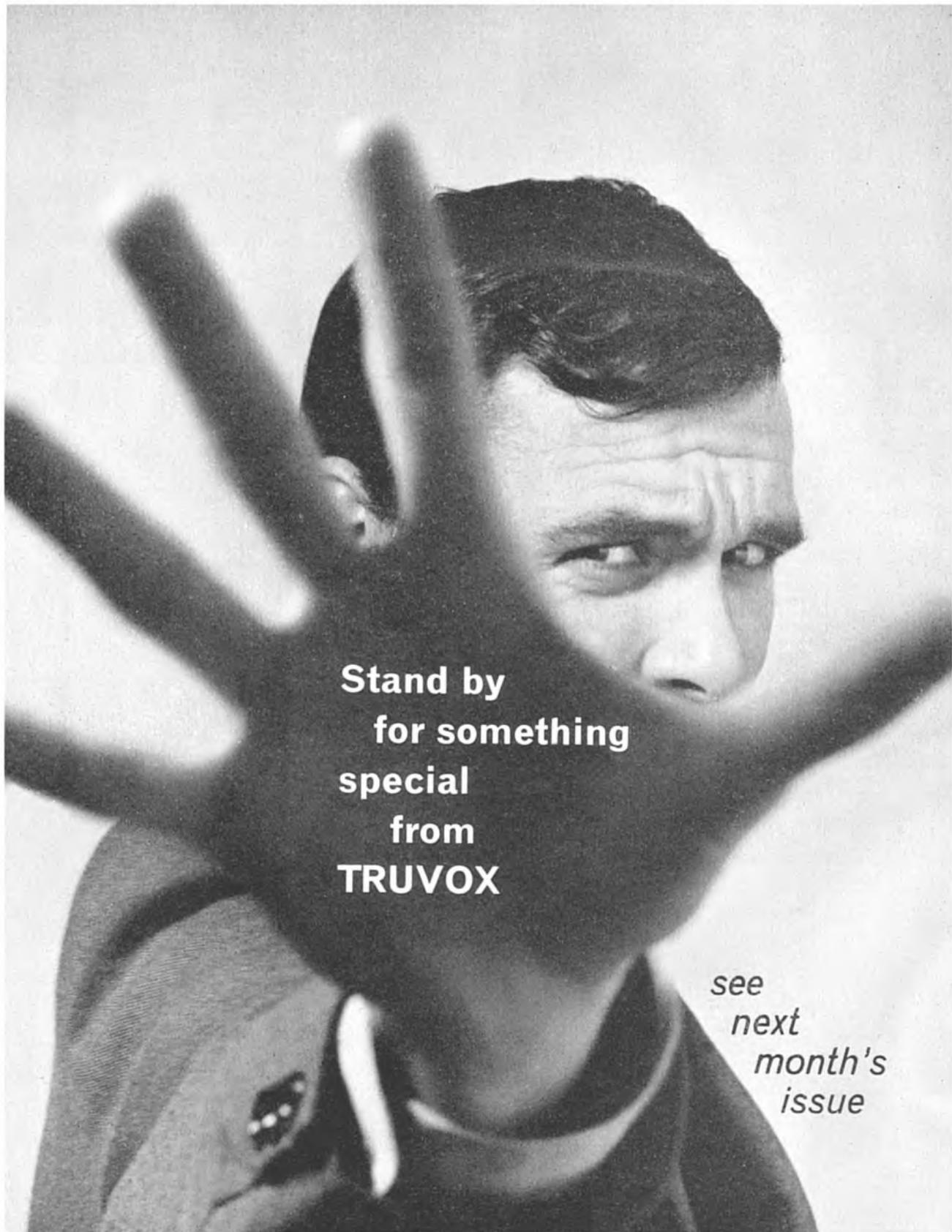
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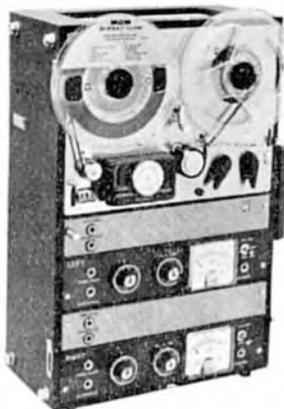
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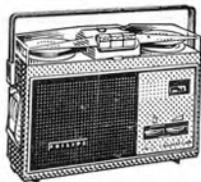
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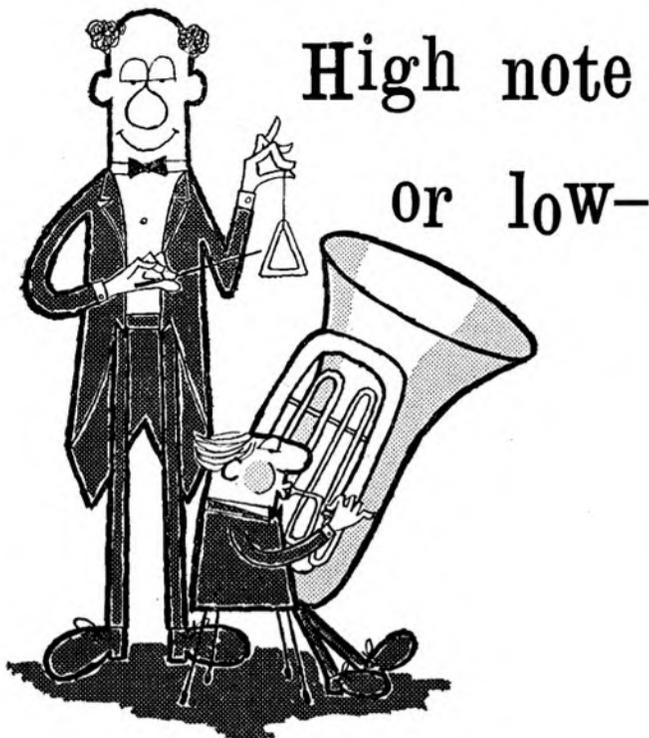
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# TAPE

RECORDING  
MAGAZINE

Vol. 7 No. 10 October 1963

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**COVER PHOTOGRAPH:** Members of the tape section of the Triumph Owner's Motor-cycle Club seen during the production of "Breakdown," this year's "Tape of the Year" in the British Amateur Tape Recording Contest. Left to right are: Mike Ray, Roy Prince (the taxi driver who laid on vehicles for the taxi sequences), Mike Avel, and Walter Buchanan.

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**EDITORIAL**                      **ADVERTISING**  
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**R. DOUGLAS BROWN**                      **MISS PAMELA DURHAM**  
 Assistant Editor, **FRED CHANDLER**

# Tape trends and tape talk

By the Editor

THE AMERICANS, it is reported, are anticipating a flood of cheap "toy" recorders on the market there this autumn. The anticipated price is about £10. A debate has started as to whether reputable audio dealers should stock and sell them.

One school of thought feels that this will queer the pitch for genuine hi-fi equipment, give people the wrong ideas, disillusion them with recording.

Another school believes that experience gained with these cheap products will stimulate interest and, provided the dealer adopts a carefully worked-out trade-in policy, will lead to increased sales of quality products.

I offer no view. There are no signs yet that this problem will arise on a significant scale in this country. But there are already machines on sale here in this price bracket which are selling and I have been surprised to find that the customers are often quite satisfied with their bargain.

A journalist friend who bought a £12 machine uses it regularly for interviewing and although the reproduction is like sand in my ears, he assures me that it is effective and labour-saving.

## Standards for servicing

I WONDER IF IT is coincidence that another item of news from the States is that the Magnetic Recording Industry Association over there is considering the possibility of establishing minimum standards for servicing of recording equipment?

The idea, according to the Association president, would be to "give the customer confidence that his recorder had been properly serviced and tested."

We do not have a comparable trade association in

this country and, if one is started as a result of current talks, this may not be among the most urgent or important tasks which it should undertake.

There is a great deal to be done in this country to spread basic knowledge of tape recording, to campaign for new customers and to educate those who have bought recorders on how to get the most out of them.

## Price no object

IN ANY CASE, the overwhelming evidence in this country is that the cheap recorders do not make a tremendous appeal. Visiting the Grundig trade show at the Hilton Towers the other day, I was struck by the fact that price is not the main sales appeal angle. The new battery portable which the firm has introduced is considerably more expensive than the earlier battery models with the Grundig label.

Manufacturers do not make this sort of change without careful investigation of the market.

The result of several market surveys made in Britain recently show that the younger males who comprise the biggest sector of the market pay out cheerfully for a good recorder. And most of them pay cash down.

Glancing back to America again, I see that the bulk of purchasers over there are men between the ages of 25 and 45.

Most of them are businessmen or professional types. Most of them are college-educated. Their education level runs much higher than the national average, according to a recent survey.

I suspect that the pattern in this country is not quite the same. For example, the average recorder owner in the U.S.A. has 12.3 reels of tape in his home—9.7 of them carrying recordings. I doubt very much that that is the general picture over here.

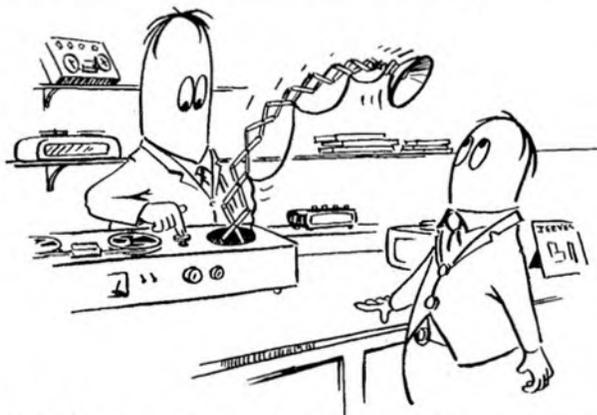
But, as I have said, we still have a long way to go in the business of selling and popularising tape recording.

## The Birds is gone

THE SOUND OF screeching birds caused a flutter in the West End of London recently. Cause of the trouble was a publicity stunt by the Rank Organisation for Alfred Hitchcock's new film *The Birds*.

A talking poster site, the first in Britain, had been set up in Shaftesbury Avenue. Behind a poster advertising the film, a tape recorder sent out the twittering of thousands of birds, part of the film's sound-track. The tape was switched off when complaints were received from the police, the Noise Abatement Society and the Westminster City Council. A shaken taxidriver was reported as saying: "It sounded like Trafalgar Square gone mad."

## LAUGH WITH JEEVES



"And this model has a built-in extension speaker"

## How many dimensions are there in two-channel stereo?

By H. BURRELL HADDEN

**D**URING question time following a recent lecture on stereophony, somebody asked how many dimensions could be said to exist in a two channel stereophonic system. Without any hesitation I replied that there was an illusion of three dimensions, and went on to explain why this should be so.

The questioner had assumed, quite logically from one point of view, that two channels could only give two dimensions, in other words, width, and that a completely separate channel, or channels, would be necessary to reproduce depth. Whilst a better reproduction of the depth of the sound source might be achieved if some such complex system of recording, transmission, and reproduction could be developed, this would without doubt be very expensive to realise. In any case, it is not really necessary.

Let us consider for a moment how we appreciate the distance away of a given sound source in everyday life, not via any electrical reproducing system. In order to determine this, the brain makes use of two sorts of information, and although each of these separately can tell us how far away the sound source is, they are completely interdependent, and one cannot be said to act, normally at any rate, without the other.

In a confined space, whether it be indoors or outdoor, with nearby buildings,

any sound arriving at the ears can be broken up into two major components. The first of these is the sound arriving directly at the ear by the shortest possible route, usually a straight line. It is this signal, incidentally, which, arriving at the two ears at slightly different times, gives the angular position of the sound with respect to the head, though this particular function is not part of this article. The second sound arriving at the ear is the reflected or reverberant sound due to the nearby reflecting surfaces: the walls, ceiling, and floor of a room, or the walls of buildings outdoors or the walls for rock formation in hilly districts.

The ratio of direct to reverberant sound, then, is one of the factors which the brain uses to tell us the distance of a sound source, but this will obviously only function when there are reflecting surfaces present to produce the reverberant sound. This would suggest that when we are standing on a hill top out in the country with no walls or higher ground anywhere near us, we can still make a reasonable estimate of the distance away of, for example, the sound of a railway train. Clearly, some other factor must be at work.

In this case it is the loudness of the sound itself which gives us the clue of the distance away. This clue does not operate in such absolute terms as the direct/reverberant sound information, but relies for its success upon our having an earlier knowledge of the sound of, in this instance, a train at close quarters. To quote another example, a very quiet-sounding pneumatic drill must be a considerable distance away.

In monophonic microphone technique

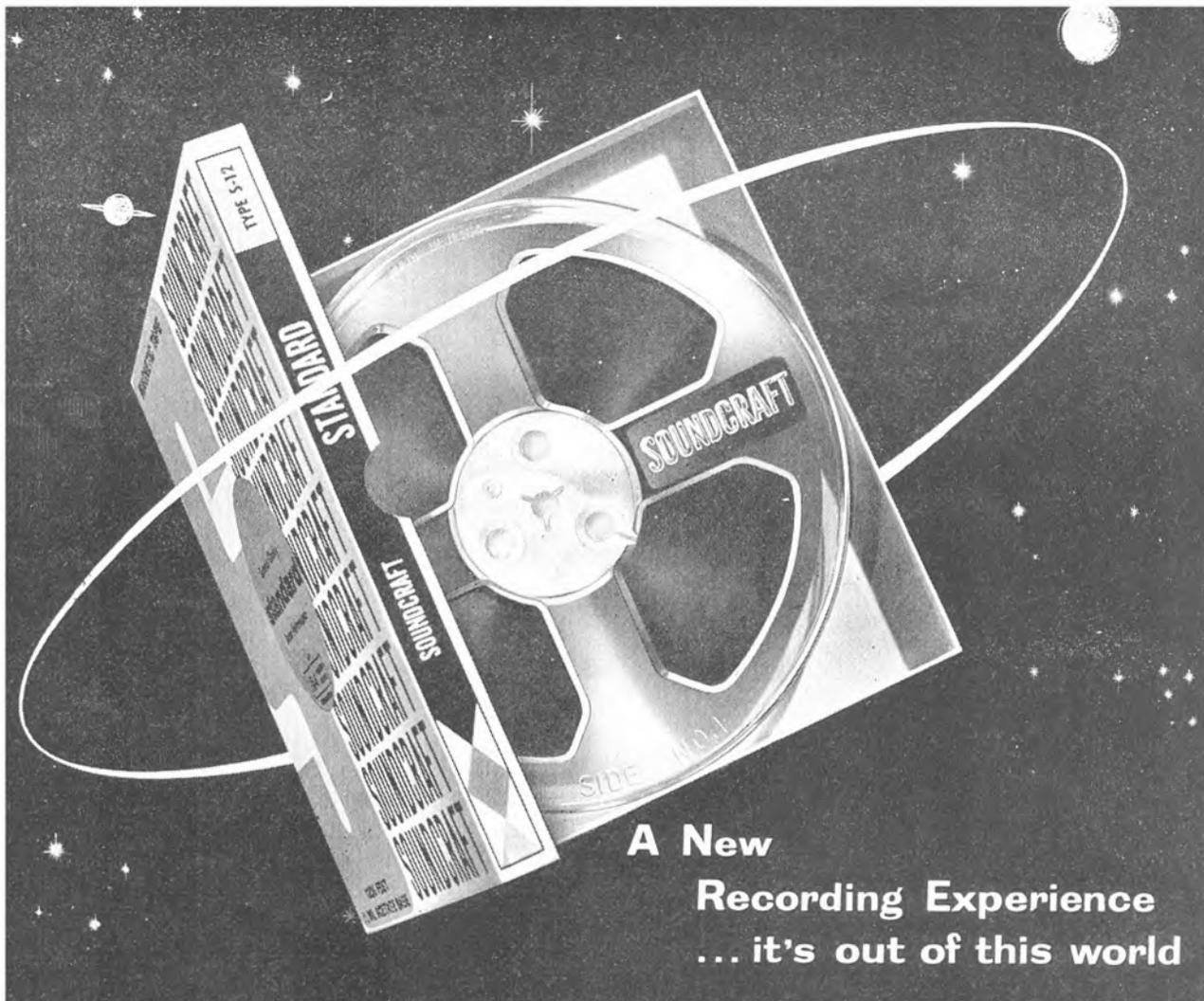
a single microphone placed in a studio in front of a source of sound will pick up both the direct sound from that source and the reverberant sound due to the reflection from the studio walls. Depending on the position in which the microphone is placed, the direct sound can be made more prominent than the reverberation or so weak that it is hardly heard at all. Whatever the position of the microphone, assuming a studio that is reasonably "live" acoustically, the amount of reverberant sound picked up by the microphone will be more or less the same. Hence, by moving the microphone about we can control the amount of direct sound relative to the reverberant sound present.

When the output of this microphone is reproduced on a loudspeaker this control over the direct/indirect sound ratio enables us to produce an illusion of the distance away of the sound source. In the symphony orchestra, for example, where some instruments are in fact further away from the audience than the others, a suitable choice of microphone position enables us in a monophonic system to create the illusion of these varying distances although in fact, the reproduced sound is all coming from a more or less point source. It must not be forgotten that in choosing a microphone position to give the right "sound perspective," the requirements of musical balance must also be satisfied, and it is the skilful combination of these two factors which produces the best monophonic reproduction.

Turning now to stereophony, we can clearly see that if monophonic reproduction can give us an illusion of depth, that is two dimensions, the addition of a second channel will now give us width as well. Hence, the stereophonic reproduction will appear both to have width and depth, an illusion of three dimensions. The placing of the stereophonic microphones in the studio must therefore be chosen with at least three main factors in mind: the musical balance, the width of the picture and the perspective in depth.

The technique just described is capable of producing a satisfactory illusion when only the reproduction of the sound source is required. If this happens to be a public performance with audience, a slightly confusing situation may arise, confusing that is to some listeners. Since the system has in fact only two channels, it can only reproduce such sounds that originate in front of the seated audience in the studio or hall. This will mean that any applause by that audience will appear to come, as far as the listeners to the sound reproduction are concerned, from the same place as the programme material.

This will clearly become one of those things accepted by listeners to future stereophonic broadcasts of, say, the Henry Wood Promenade Concerts. In order to "put the audience in its place" as far as the domestic listener to such a concert is concerned, more channels would undoubtedly be necessary. This "applause from the orchestra" instead of from around and behind the listener seems so small a matter as not to warrant the undoubtedly far greater cost. Some experimenters have made recordings using four channels and four reproducing chains, two in front and two behind the listeners, but so far these seem to have little practical application for domestic entertainment.



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# Alan Edward Beeby's TAPE TALK

**A** DISTURBING report reaches me concerning the activities of certain people acting as agents on behalf of Mail-Order

## Elizabethan give dealers a Roman holiday

**L**UNCH in London, dinner in Rome . . . followed by a four-day Roman holiday is the award for fourteen wholesalers from all parts of the country who qualified in a summer sales promotion scheme organised by Elizabethan Tape Recorders Limited.

A further twenty-two airline tickets awaited trade buyers visiting their Mayfair Hotel Trade Fair at the beginning of September in a simple treasure-chest competition to find the right key in a bowl containing over 400 keys of all shapes and sizes.

Elizabethan offered the trip, all expenses paid, to wholesalers meeting a set order target during the quiet summer months. The trip included a civic reception, preview of a 1964 Spring fashion collection, a coach tour, visit to the Vatican, and lunches and dinners at some of the capitol's top restaurants and night clubs.

## Grundig presentation of new Braille recorder

**A**T a special ceremony held during the three-day Grundig Tape Fair at the London Hilton recently, Managing Director Dennis Marks presented the first production model of their Braille recorder to Mr. John Jarvis of the Royal National Institute for the Blind.

The recorder, a modified version of the TK18, has an automatic recording level

Firms which offer spools of recording tape in their lists.

According to my informant, it is not entirely unknown for the tape which the customer eventually receives from the agent to turn out to be, not new tape at all, but, in fact, used tape rewound on to the new spool, having thus been "switched" by the agent who, of course, keeps the genuinely-new tape for himself. My correspondent tells me that, apart from untidy rewinding, the thing which really gives the game away in most cases is the fact of inadequate erasure, and the agent's voice or some other previous recording manifesting mysteriously

control and Braille symbols instead of the usual markings on the controls.

The TK18B was designed in conjunction with the Worcester College for the Blind, who will use the presentation model.

## Tape recorder defies Council hecklers

**V**ISITORS to the Ostend City Hall are shown the tape recording installation in the Council Chamber by the Burgomaster. The set-up includes a microphone for each member of the Council. One of the great advantages of this, says the Burgomaster, is that every speech is clearly recorded in spite of interruptions and heckling from other members.

St. Pancras, London, Town Hall, has a similar installation, and when Councillor Mrs. Hilda Chandler was elected Mayor this year the entire ceremony was recorded privately and a tape presented to her afterwards.

## Design awards for Ferguson recorder

**T**HE four-track Ferguson 3202 tape recorder has been accepted for the Design award in the July lists published by the Council of Industrial Design.

Piano-key controls with light pressure operation are incorporated in the machine which has its own deck. The 3202 sells at 33 guineas.

## Lecture series on sound reproduction

**T**HE Hendon College of Technology are to hold nine two-hour courses on sound reproduction on Wednesdays at 7 p.m. beginning October 9. The first lecture, "What is high fidelity," will be given by James Moir, well-known audio specialist and contributor for *TAPE Recording Magazine*. John Borwick, another *TAPE* contributor, will speak about "Tape Recording Techniques" for the December 4 lecture.

Other subjects in the series of lectures are as follows: Loudspeakers, By Ralph L. West (October 16); Tape Recorders, R. B. Dyer (October 23); Turntables and pick-ups, J. Crabbe (October 30); Room Acoustics, James Moir (November 6); Frequency Modulation, A. W. Wayne (November 13); Stereo, Ralph L. West (November 20), and Amplifiers, J. K. Manners (November 27).

The fee for the course is twenty shillings, and application forms are available from the Bursar, Hendon College of Technology, The Burroughs, Hendon, London, N.W.4.

from a supposedly "brand-new" spool of tape!

As yet, I have no concrete evidence on hand to offer in support of this somewhat alarming accusation, although it does, I feel, merit further investigation. If, therefore, any of my readers have good reason to suspect that they may have been cheated in this way, I should be glad if they would write to me in confidence with full details.

**ON THE HOOK?** One of the questions most frequently asked by our readers concerns the still ridiculously-high price of recording tape, especially in view of the enormous amount of the stuff being sold nowadays. "Why doesn't the price come down?" they demand to know—and quite rightly. So I asked five leading British tape-manufacturers on your behalf.

The SCOTCH 3M Company told me: "We have recently reduced our prices fairly considerably." The remaining four, to date, have not even acknowledged my query.

Curiouser and curiouser! (Said Alice.)

**R**EADER, Leslie Moores, of Birkenhead, comes up with a query which may, he feels, be of interest to other collectors of mood-music recordings like himself. Leslie has been reading a copy of an American publication, "Famous Monsters of Film-land," which lists in its advertising section a number of LP-discs containing theme-music from various well-known "horror" films. Upon inquiring at his local record shop, however, he was told that the items were not available in this country—only in the U.S.A. "Can you help?" he asks. I think I can.

A spokesman for an independent firm of record wholesalers tells me that they will, in fact, import certain types of records (LPs only) on special order from individual customers, and that the aforementioned "horror" items may be obtained in this way. Delivery is approximately four to six weeks from the date of placing the order, and a copy of this firm's current price list is available on request from Zodiac Record Distributors, 19, Gerrard Street, Shaftesbury Avenue, London, W.1. This list doesn't include details of any of the LPs in question, by the way. You'll need to read these up from the magazine mentioned above.

Before leaving this subject—a brief note about a similar LP-item by the Dick Jacobs Orchestra entitled, "Themes from Horror Movies," and which is obtainable over here, being No. LVA 9102 on the "Coral" Label. The Mole-People, Flying Saucers, Dracula, Frankenstein's Monster, Werewolves . . . all good nursery-type stuff for getting the kiddies off to sleep, and guaranteed to send anybody's magic-eye bloodshot inside ten minutes! Can thoroughly recommend it—all 14 tracks!

**"AWARDS" DEPARTMENT:** A **BOUQUET** to the BBC's sound-men responsible for the truly convincing and spine-chilling effect of the attack by hundreds of unseen "ghost-dogs" in the recent "Suspense" play, "The Dogs of Durga Das." Effects-composition at its most masterly. Wonder how they did it. . . .

A **BRICKBAT** to ITV for their (by now) boringly familiar effects-backing of street scenes in their plays. Buy yourselves another disc, ITV, for pity's sake. If I hear that H.M.V. "Street Noises" item just once more, I shall scream!



# The 1963 British Amateur Tape Recording Contest

## Special report by THE EDITOR

THOSE who heard the last "Sound" programme on B.B.C. will have heard extracts from some of the winning tapes in the 1963 British Amateur Tape Recording Contest—the seventh in the series.

And they will have heard something of the tremendous efforts that were put into producing the "Tape of the Year" by the tape recording group of the Triumph Owners' Motor-cycle Club.

It was the second time this group had produced the best tape. They have some substantial natural advantages: a talented script-writing team, some very competent actors and actresses, and a lot of sound technical knowledge about recording.

When Mike Ray, one of the producers, came along to the BBC studio to be interviewed, he brought with him a battery portable recorder and a four-channel mixer unit which he had constructed himself and which were part of the equipment used for the winning tape.

I hope the fact that this group operates at this level will not discourage individuals from trying next year to take the top prize in the Contest. Although it has been a dramatic production that has taken the honours in 1962 and 1963, it was the opinion of the judges that amateurs ought to try in other fields rather than this difficult sector which demands so many resources.

If, however, you are keen to experiment in dramatic productions, form a team to do the job. This is where you can get tremendous advantage from co-operation with a local drama group or from membership of a local tape recording club.

"Breakdown" was described by its producers as a "re-action for radio." It is a ten minutes' play describing the situation when the transport system of the United Kingdom takes over from the humans. Cars and taxis run amok. Underground trains and lifts go berserk, buses paddle in the Round Pond in Kensington Gardens.

This fantasy is developed not only with skill, but with rich humour. There are many sound effects, and they are excellent. Most of them were gathered on location. Editing and mixing is of near-professional standard.

"Breakdown" emerged quite clearly as the "Tape of the Year"; but not simply because of the good work that had been put into it. Its supremacy was based to a degree on the fact that none of the tapes that won in the other classes of the Contest was of really outstanding quality.

As in previous years, the preliminary judging of entries was done by a panel composed of officers of the Federation of British Tape Recording Clubs and members of the staff of *TAPE Recording Magazine*. They produced a "short list" of tapes to be considered by the augmented panel of judges when they met at the Hotel Russell.

Those who joined the panel for this occasion included Timothy Eckersley, BBC Assistant Director of Sound Broadcasting (Recording), and John Borwick the well-known audio author, lecturer and broadcaster. Miss Jo Douglas, who has been a judge at every Contest since 1957, was unfortunately not able to be present on this occasion.

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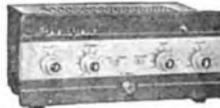
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Four of the winning entrants. Left to right: T. Kurkowski, Dennis Affleck, Peter L. Bastin, and Philip P. Towell

We listened first to the best of the (disappointingly few) tapes submitted in the Technical Experiment section. Attention focused on two entries; Denis Affleck's "The Double Reverse" and R. O. Broome's "Eldritch."

Mr. Affleck had developed further an idea which he tried in an entry the previous year. Then he had analysed speech sounds by recording and playing backwards. This time he imitated the sound of speech played backwards, recorded his imitations and then compared that recording, played backwards, with normal speech. "Double reverse"—get it?

It was interesting, amusing and ingenious. And, although it was a development, rather than an original idea, the judges thought it was commendable that he should have persisted with the experiment, particularly as, in the process, he greatly improved the recording quality over his entry a year ago.

Mr. Broome's tape was a piece of electronic music—of the orthodox type. I almost wrote; but nothing in this field is orthodox. The judges felt that, while he had worked hard on its composition, its development and meaning did not emerge sufficiently clearly and that it was inadequately shaped. "It could have been started or stopped anywhere," one of the judges commented.

So Mr. Affleck was judged the winner. British recording enthusiasts, I can report, are trailing a long way behind their Continental friends in this field of technical experiment. Potentially, it is one of the most fascinating fields for activity; but we have barely scratched the surface yet.

The Documentary-Reportage class was judged next. Three tapes were considered in the final round: a sound picture of the "Snowdon Mountain Railway" produced by R. F. Beaton; a documentary about hose repairing, "Sole and Heel," by A. F. Stanway; and a feature called "Worcester Jail" submitted by Peter L. Bastin.

Mr. Beaton's tape was a factual piece: interviews with station-master and guard, sounds of the journey up the mountain, commentary about the scene. The judges decided that the sound effects were not all well chosen to give the best clue to what was happening and that the editing was sometimes rather jerky.

Mr. Stanway's effort was better liked. The sound effects in the shoe repair shop were clearly explained and there was an interesting point—counterpoint between male and female commentators. But some of the scenes were thought to be rather pedestrian, it was suggested that more of the story could have been told in the form of interviews with operatives rather than as straight commentary, and the general conclusion was that "it did not quite come off."

Mr. Bastin's report on some of those who have been imprisoned in Worcester

Jail began with echoing footsteps in the cells and a dramatic commentary, and gained from the contrast with the subsequent dead acoustic in the courtroom, as well as from changes of voice in the telling of the story.

The script was considered to be imaginative and the editing well done, but the judges were not uncritical. There was some mild criticism of the sound effects.

The Actuality class was narrowed down, for final judging, to three tapes: Arthur Acland's "Gossiping Frogs," Ronald Guttridge's "Dance Canaria" and John Bradley's "Down those Steps."

Mr. Acland had recorded his frogs near Hastings; the judges felt there was rather too much gossiping—that the tape would have been improved by editing and by a little explanation of the type of frogs and their habitat. After 3½ minutes' listening, one judge commented that it might almost have been a ten-seconds tape loop!

A warning here that tapes should never overrun the interest of their subject. It doesn't matter how short they are—if they tell their story effectively.

Mr. Guttridge had recorded 74 seconds of a local group of musicians performing at a hotel in Las Palmas, in the Canaries. The judges felt that, while it was a pleasant recording, its interest was limited and that the microphone had simply been used uncritically as a "collector of sounds."

So the prize in this section went to Mr. Bradley, who had taken his portable recorder into an underground convenience and interviewed the custodian. This produced a brief tape capturing something of the personality of an amusing human being.

So we came to the Schools tapes. To start with, the judges felt the decision must rest between a recording of a recorder group at the Park Primary School at Boston, Lincs., and a dramatic presentation of a smuggling episode in the New Forest 150 years ago, produced by the children of Pennington J. M. School at Lymington.

Because the extent and the degree of participation by schoolchildren was greater with the Lymington tape and because it had demanded a much greater production effort, the judges gave their decision, tentatively, to Pennington.

But they expressed their disappointment that the standard of the school tapes had not improved over the last year or so. And when, later, they heard another tape which they agreed could, under the rules, qualify as a Schools entry, they unhesitatingly transferred it to this class and made it the first prize-winner.

This was "A meditation on the Crucifixion," which Mr. H. J. Wadding had entered in the Composition section—he had already submitted a schools tape, which did not get through to the final judging.

But the Crucifixion tape was produced with the assistance and participation of the

nine-year-olds at Stimpson Avenue C.P. School at Northampton and it seemed more appropriate in the schools section than in among the compositions.

Its simple narration, its sound effects, created a deep effect. Some judges had reservations, but one felt it was so good that it should be broadcast in its entirety by the BBC on Good Friday. There was general agreement that it was the best tape produced in a school this year.

Its transfer left the decision in the Composition section between two entries: Mr. T. Kurkowski's "Ode to an Inca God" and Terry Devereux's "The Strikers."

Mr. Kurkowski used the sounds of exotic birds, plucked strings, drums and a dramatised commentary to create his effects. Mr. Devereux dramatised a rather elaborate pun.

Mr. Kurkowski appealed to the judges because of the limitations he had imposed on himself: "he stuck to the things he knew he could do well." It was felt that Mr. Devereux's joke was a little too laboured and that, in terms of acting and sound-effects, he did not achieve the full potentialities of his idea.

Mr. Kurkowski emerged as a clear winner.

Stereo entries were grouped with those in the music or speech category and judged together. Altogether, we heard half a dozen tapes and it is only honest to say that, with one exception, the judges received them unenthusiastically.

The exception was Philip P. Towell's "Somervell's Magnificat in F," a stereo tape and one which made full and proper use of stereo to give an improved sense of presence. It emerged a clear winner in the class.

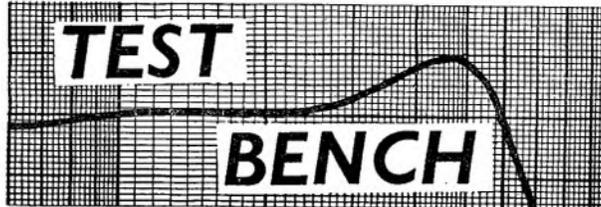
So, finally, to the club entries. Here, of course, "Breakdown" was awarded supremacy, on its way to becoming the "Tape of the Year."

The runner-up was the Boston Soundhunters' stereo documentary feature on the "Ceremony of the Freedom of the Borough." This was a workmanlike piece of recording and its merits were recognised by the judges, but it was felt that the stereo possibilities were not adequately exploited.

Thus were the prizes distributed.

Those who wish to study more closely the sort of recording that appealed to the judges, can do so by obtaining from the Federation of British Tape Recording Clubs, two tapes which they have produced. One presents all the winning tapes in their entirety; the other contains the comments of the judges recorded at the time of the final judging session.

Overall, I felt the Contest displayed steady, painstaking progress by British amateurs. But there is still plenty of scope for new achievements next year.



## GRUNDIG TK18

By John Borwick

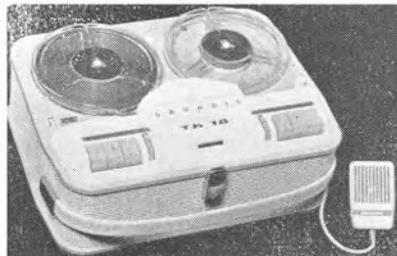
**I**N the TK18 Automatic Tape Recorder we see a great manufacturing company adding to their already extensive and varied list of machines, a model which is designed to have a special appeal to non-technical users. This special feature, embodied in the word "automatic," is that you have no controls to worry about during recording. There is no control knob to adjust the recording volume, and, since you can do nothing about the volume anyway, there is no magic-eye volume indicator.

The secret lies in the electronics of the recording amplifier which include a volume limiting circuit. Signals at average volume entering via the microphone or radio/pick-up lead are passed to the recording head in the ordinary way. But extra loud signals are automatically reduced in volume so that there can be none of the overload distortion that we associate with failure to fade down

the recording volume on loud passages with an ordinary recorder.

I go along with this automation idea in principle—for instance, I already possess an automatic camera which selects its own aperture and shutter speed to suit the lighting conditions—and I am forced to admit that many home recordings are spoilt by unskilled use of the recording volume control.

I therefore put the TK18 through its paces by speaking into the microphone in an average voice, then shouting and whispering by turns at various distances. The limiter



certainly ironed out extremes of volume, so that on playback I got reasonably good reproduction throughout—of course, there is playback volume control to allow you to adjust the loudness to taste.

I then recorded from a second tape recorder into the TK18 at normal and excessively high levels. Here the limiting effect was quite remarkable, and it was almost impossible to tell when the volume had been stepped up. Next I injected a steady tone into the TK18, increasing the level in 5 dB steps. Playing this back produced a straight line rising graph to begin with, which then levelled out to indicate that further increase in input produced no increase in record/reproduce volume.

The usual frequency run was then recorded, giving the results shown in the accompanying diagram.

Granted then that the limiter system greatly simplifies operation for the uninitiated in recording techniques—or the person who is too busy interviewing or whatever it is, perhaps in noisy surroundings, to keep an eye on recording levels—how else does the TK18 cater for easy working?

Well, on the credit side, I approve of the fact that it is two-track (not four-track) and has the single speed of 3½ ips. This eliminates a couple of selector switches (which gremlins might be tempted to push into the wrong position when we weren't looking). I also found the tape easy to lace up, and I liked the recessed quarter-inch wide channel on top of the head cover to hold the ends of tape during editing. The three-digit tape position indicator has large numbers, easy to read, and the playback volume and tone controls are edgewise rotary discs with a red mark to guide you—though additional reference marks would have helped.

On the debit side, for a machine designed specially for the man in a hurry or the man allergic to operating controls, just read this extract from the instruction leaflet on "Recording from the microphone": "Press



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the temporary stop button and the microphone button. Press and hold down the recording button, whilst pressing the start button. Release the recording button which will remain locked down. . . . *There are no further controls to adjust* (my italics) . . . Release the temporary stop button by pressing it again to start recording."

Now I know that, like tying a bow tie, these operations soon become second nature and are easier to do than they are to describe in words. But this is still about twice as complicated as the starting sequence for an ordinary tape recorder. And it was further complicated on my machine by the fact, as intimated by a red notice imprinted on the instruction leaflet, that "The recording button must be turned clockwise before depressing."

My only other minor criticism is that the six piano-key-type controls are all in the same grey colour and are labelled in rather small print on the deck itself. (They are arranged in two sets of three—Rewind, Temporary Stop, Microphone and Start, Stop, Fast, Forward.) I found it necessary to look twice to find the fast, forward and rewind keys each time, and I regularly missed the stop button altogether when winding back to a prearranged point on the tape.

Aside from these matters, I found the TK18 to be a worthy and interesting newcomer. It is wonderfully compact and produces better-quality sound than most recorders at the price.

### Manufacturer's Specification

Frequency Response: 40-12,000+3-5dB.

Maximum Spool Size: 5½-inches.

Signal-to-Noise Ratio: Better than 50dB.

Wow and Flutter: Less than ± 0.2 per cent.

Output Power: 2½ watts.

Loudspeaker: 5½ x 4½ inch multi-octave elliptical, with ceramic magnet.

Controls for: Recording level/volume, Tone/mains switch.

Valves: ECC83, ECL86, EM84, plus two metal rectifiers.

Dimensions: 14½ x 11½ x 6½ inches.

Weight: Approximately 20 lb.

Manufacturers: Grundig (Great Britain) Limited, Newlands Park, Sydenham, London, S.E.26.

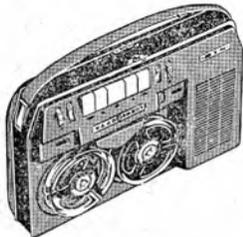
## OPTACORD 414

By G. R. Miller

THE Optacord 414 is a transistorised portable recorder that can be operated from internal batteries or 40-60 cycle mains supplies of 110 to 220v. It is therefore entirely self-contained which

makes it ideal for both outdoor and indoor work. The Optacord 414 is compact, being not a great deal larger than a lady's handbag. It will accommodate spools of 4½ inches diameter so with double play or triple play tape, long playing times are possible.

This recorder, manufactured in Bavaria by Loewe-Opta A.S., has a single operating speed of 3½ ips and the usual fast forward and reverse rewind facilities. Deck operation has been simplified by the use of a



piano-key controls for the tape drive, the remainder of the controls being the more usual ones for volume, tone, record/playback and temporary stop.

The manufacturers have included a record level meter, which also indicates the state of internal batteries, and a three-figure tape position indicator. Input sockets are provided for microphone or radio signals, and there are outputs for an external amplifier or loudspeaker.

It will operate from five large 1½ v flash-light cells or five D.E.A.C. cells type RS-3.5 from which a longer life can be obtained. The track standard is international half-track. Erase and recording bias is provided by a 55 Kc/s oscillator which ensures clean and noise free erasure.

An abridged version of the technical specification is shown separately and the tests for this review were based on the figures quoted by the makers. I feel, however, that other technical features are worthy of mention, for instance, the Optacord 414 employs a printed circuit chassis and is fully transistorised. The mechanical parts of the deck are well designed and the recorder as a whole lends itself for ease in repair and service, not that it should need very much in view of the reliability of transistors and printed circuits.

The 414 is provided with a good quality microphone, tape, spare spool and connecting leads and a well illustrated instruction book. There are also a wide variety of accessories available which are described in the instruction book. These include a special test tape, a transparent dust cover as well as alternative microphones, etc.

### PERFORMANCE

My tests included measuring the overall frequency response, record to playback via the tape, from the radio input to the external loudspeaker output. The makers quote 50 to 12,000 cps and give no reference frequency, but apart from a rapid fall away at 70 cps and the 5 to 6 dB bump at around 200 cps, the response is quite smooth to well over 12,000 cps. The reference for the response shown in the accompanying graph is 0 dB = 1,000 cps.

Speed variation I found to be a little on the high side, at least by present day standards, but only enough to audibly effect the pitch of pure steady tones. No flutter or other speed variations that effect the high frequencies were noticeable, and the nominal running speed of 3½ ips is maintained right to the end of a spool of tape.

The noise level of the recorder was well within the maker's quoted figure of -46 dB and as I mentioned earlier the erase is clean and produces no additional noise of its own accord.

Practical recording and playback tests included making recordings from an FM tuner and high quality pick-up as well as the microphone supplied with the recorder. Tapes recorded on the Optacord were also checked for recording quality by replaying them on a high grade studio machine feeding high fidelity amplifiers and speakers.

Correctly used the Optacord 414 is capable of making excellent recordings which judging by the tests I've just mentioned can be greatly enhanced by using an external amplifier and/or speaker. Many who purchase domestic class recorders in the lower price bracket often overlook this point.

To sum up, the Optacord 414 is a versatile little recorder for it lends itself to all kinds of outdoor work with complete freedom and mobility. At home it can be used directly on the mains with the possibility of high quality replay with extra equipment. On the other hand the more casual recordist will find that the internal speaker itself still provides ample volume and satisfying reproduction.

The retail price, complete with accessories is £49 7s.

### Manufacturer's Specification

Power Supplies: AC Mains 40-60 cps. 110-280 v; Batteries—5 Mono-cells 1.5 v each; D.E.A.C. cells five RS-3.5; Car Battery 6 volts or 12 volts with resistance LR.412.

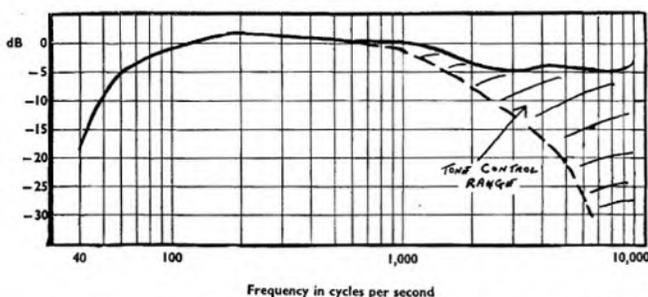
Frequency Response: 50-12,000 cps.

Output Power: 1 watt at 10 per cent maximum distortion.

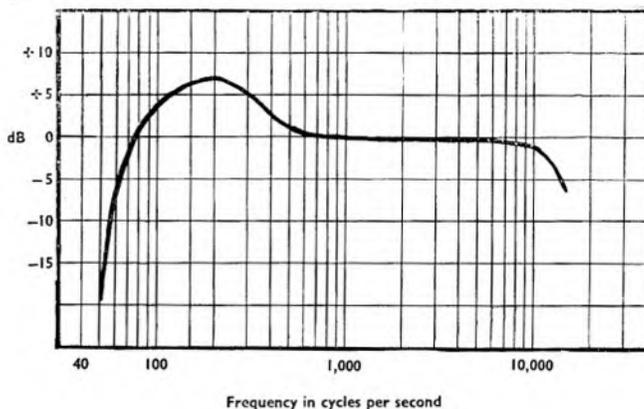
Dimensions: 15½ x 4½ x 9½ inches.

Weight: Approximately 8.8 lb. (nett).

UK Agents: Highgate Acoustics, 71-73, Great Portland Street, London, W.1.



Record/replay frequency response of the Grundig TK18 (above) and Optacord 414 (right)





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# Tape to success

By David Lazell

“AND I owe all my success to my tape recorder!”

So may say the prosperous Managing Director who has made full use of the many pre-recorded aids to fame and fortune now available.

The ambitious young man can now lose his feelings of inferiority—an essential beginning for any aspiring tycoon—by purchasing a pre-recorded tape for a few guineas. If he requires private, personal attention on tape, the charge is a little higher. A traditional method of losing those much-advertised “feelings of inferiority,” is that of repeating to oneself words of cheer and reassurance.

Now, the pre-recorded tape—or endless cassette—enables us to surround ourselves (in stereo, even!) with phrases designed to do away with despair. Thus, the first step to fame and fortune is taken. Bubbling with zeal and confidence, the bright young man can obtain a special tape on “speech training.”

This wonderful five-inch spool will perform that which is sometimes known as a “Professor Higgins”—although rather more gently than Mr. George Bernard Shaw’s hero. The ability to express one’s thoughts clearly and concisely is a major asset to the social climber, although few of us, alas, are naturally bestowed with this gift. Therefore, a pre-recorded tape has the advantage of being flexible to the needs of the purchaser, and also spares the erstwhile orator from the embarrassment normally resulting from the presence of a stern, critical teacher.

Speech training is no new development; a teacher of mine, years ago, advised me that the secret of clear speaking is to be found in repeating the word “Bells,” pungently and precisely at intervals. I tried this formula for success. It made little difference to my way of speaking. I must confess, although people regarded me with a new wonder whenever I forced that word upon their unsuspecting ears. However, the tape recorder remains a fine instrument for speech training, and certainly better than “Bells.”

Pre-recorded tapes on a variety of careers are now becoming available. Confident and well-spoken, the bright young man can, for instance, learn to be a super salesman through tape tuition. And selling is the gateway to success, is it not?

The art of getting along with people, with its more noble name of “human relations,” is also the subject of a pre-recorded tape.

Many commercial subjects—economics, management, law, for example—lend themselves to this new aural method of learning, so that we may soon be able to obtain a wide selection of pre-recorded tapes to aid our careers. It may, indeed, be but a matter of time before one of the agencies supplying these teaching-tapes produces a suitable “old school tie,” another asset to the bright young man.

Success, of course, brings its own opportunities, and perils; public life may make heavy demands upon top people. But even these perils are disappearing. One American organisation sells prepared speeches on a variety of topics, including inauguration ceremony addresses, talks for various clubs and associations, calls to civic duty and exhortations to greater effort in one’s work. Prices of speeches vary from about twenty-five shillings for a five-minute item, to approximately three pounds for a twenty-minute talk.

There is even a prepared speech to be made on those occasions upon which the speaker is presumed to be unprepared. One wonders of the nature of a prepared “unprepared speech”; undoubtedly, many successful men carry such a work around with them, in case of emergency, in the same way as lesser folk carry tranquillizers!

Some prepared speeches can be obtained on tape—the purchaser, anticipating anxiously some great event, listens to, and learns, the suggested diction, the methods of emphasis, pauses and the rest. Then, composed, the social climber goes along to the great event, and repeats his speech, just as though it had really been spontaneous! You might even say that he acts the part of a tape recorder.

This approach to speech-making offers many advantages. Even pre-recorded tapes of prolonged applause (already used in commercial entertainment) might be played from a concealed machine, by the determined speaker.

Little wonder that it has been said that the ladder to success is really a length of recording tape. Only a sad and conservative fellow might reflect that the way to fame and fortune was once a hard road, and travellers upon it, men of originality. Time, indeed, that someone produced a special tape, “How to be original” . . . it could be very successful!

## High flying hi-fi fan

By F. J. G. Hodge

STANDING outside the theatre, I recorded the comments of the crowds coming out. Jimmy Logan was top of the bill, and, before moving backstage to meet him, I wanted to get some idea of what a Manchester audience thought of this Scots comedian. Judging by the remarks I taped, he was a success on his first “live” show south of the border.

Once settled down in his dressing-room, the talk naturally turned to tape. My main objective was to ask Jimmy about his interest in tape and tape recording, and how it helped him in his stage work.

He uses a Grundig recorder and at some time or other most of his sketches and other material have been taped for easy reference. When he broadcasts (as he frequently does) his wife or secretary record the programme so that later he can study his performance and learn from any errors. He can hear what’s getting the laughs—which parts can be cut—what needs speeding up—and what can stand improvement. He keeps a written record as well as a sound one, as he also has a typewritten copy made of all his tapes for his films.

Since tape recording became a popular pastime many of the people who used to send in piano music of new tunes, songs and sketches for his consideration now tape their efforts and all Jimmy has to do is put the spool on his tape deck and sit back and listen—in his opinion a great improvement on the old method!

At one time Jimmy had a Minifon. This was found to be unsuitable for his requirements and so he bought a mains model. However, he is keenly interested in the possibilities of a battery portable, and spent some time examining the one taping our interview. Often when driving he would hum a few bars of music, and a mains-free model would be ideal to catch the fleeting theme.

“Of course the trouble with tape recording enthusiasts is that, like hi-fi fans, they can become obsessed with the technicalities of their hobby, and so lose the entertainment value of their equipment.” This in reply to a question as to whether he had any ancillary equipment. “No, I am not clever enough,” he said. “I just know how to plug the microphone in and watch the recording level. When these technical enthusiasts reach the stage of obsession they become bores—like I am with cine.”

He had just been looking at some models which combine sound and cine in one machine—where you can record sound as you shoot the film. He was rather taken with the idea, but was more fascinated by the latest Ampex recorders he had seen in the BBC Studios when he was doing a television series. These recorders really fascinated him. Before you know it he’ll have bought one for himself.

He was also interested in the recording techniques used in the studio when he was making his LP *Loganberry Pie*. “Selling quite well,” he said, “I bought six copies myself.” And again he went back to the Ampex subject.

Like a lot of stage stars Jimmy Logan takes an active interest in various charities. In recent years he has made the Christmas appeal on Scottish BBC for the “Children in Need” Fund, and he has used his tape recorder in the preparation of the appeal. He rehearses on tape until he’s got the speed and style of the appeal’s delivery perfect, because for the children only the best is good enough for Jimmy.

When I left him he was considering the possibility of buying a battery portable recorder—one which would give professional standard recordings. Proving again, that in his hobby as well as in his stage work, Jimmy Logan is a perfectionist.

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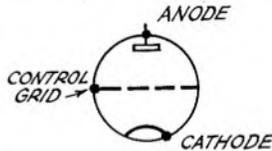


# Decibels and noise

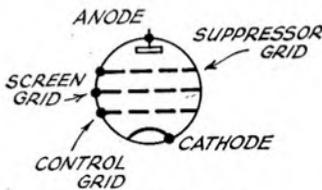
By ROBERT HIRST

**T**HIS month we are delving into the mysteries of electronics. What is a decibel? It is a measurement of a signal, in our case a signal or sound within the audible range. Sound is measured in decibels as distance is measured in inches.

How many decibels variation may we have in a sound source before our ear notices the difference. Results of many tests throughout the world suggest that a change of two decibels is heard only as a slight apparent change of volume to the listener, therefore for sound applications a specification of  $\pm 1$  dB would be ideal. This specification, however, is most stringent. Maintaining figures like this in production call for the utmost skill in



(a) TRIODE



(b) PENTODE

Fig. 1

design and production techniques and usually an article to this specification is most expensive.

It is generally recognised that for normal recording and reproduction of sound a specification of  $\pm 2$  dB is considered to be of a high standard and quite acceptable.

Bearing this in mind, the designer will sit down and prepare his schedule of valves and components for the specification he has to meet.

Let us take a look at the input circuit of an audio amplifier. Usually the middle frequencies will take care of themselves, it is the lower and higher frequencies which cause the most trouble.

Normally we would have a choice of two valves, a triode (Fig. 1a) or a pentode (Fig. 1b). Each has its own peculiarities. The triode has only a low comparative gain as well as severe attenuation of high frequencies when used near its maximum amplification. It has, however, the advantage of low noise and the fact that two of these valves may be built into one glass envelope overcomes the problem of the low gain. This also helps in the economy of design. The pentode on the other hand has a restricted attenuation of the high

frequencies and gives more amplification (approx. four times) than a single triode. Table One will give a clearer picture of these problems. Noting the points for and against we can see that the twin triode gives plenty of amplification and a good signal-to-noise ratio but could create problems with reference to high frequency response and distortion. The pentode on the other hand has a reduced gain but the other features shown in Table One make this the first choice for a high quality input valve, even though a further valve will be necessary to give the amplification produced by a twin triode. So much for the treble response.

The bass response is usually governed by three points (a) the grid leak resistor, (b) the cathode decoupling arrangements and

would not occur. Well, as usual another problem appears. This time it is in the form of the excess grid current which can cause the valve to do all sorts of peculiar things. First it could cease to function and this does not delight the production manager. Valves of the grid resistor as laid down by the valve manufacturers should not be exceeded.

We must realise that even though the results in example B (Table Two) look well within the specification of  $\pm 2$  dB, this loss

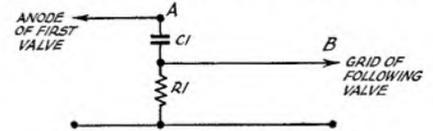


Fig. 2

of 0.1 dB will take place in all similar valves in the circuit and the effect will become more pronounced as more valves are used.

The other main bugbear is noise which is caused by electrons moving in the valve and noisy components surrounding this valve. The internal noise of the valve is the worst problem. This is shown most clearly when

TABLE ONE

	Noise	Approx. Gain	Treble	Microphony	Distortion
Two Triodes ..... (in one envelope)	Good	2,500 (50 x 50)	Poor	Fair	Fair
Pentode .....	Fair	200	Good	Good	Good

It will be appreciated that this table refers to valves designed for audio input circuits.

(c) the coupling condenser to the following valve.

The cathode decoupling can be easily arranged. The condenser to the following valve and the associated grid resistor can, however, be more of a problem.

We can now see in Fig. 2 and Table Two that the condenser (C1) and the resistor (R1), can act as a bass attenuator, bearing

referring to tape replay heads. As was shown in a previous article "Tape Electronics" if the output of the tape head at 1,000 cps is nine millivolts the theoretical output at 30 cps should be thirty times less, i.e., 300 millivolts.

In a well designed pentode valve, noise levels equivalent to one microvolt at the grid may be achieved. Therefore the maxi-

TABLE TWO

Frequency	C1 ohms	R1 ohms	Ratio	At B voltage	At B difference dB	
1,000 cps	1,600	160,000	100:1	100 v	0	A
50 cps	32,000	160,000	5:1	84 v	-1.5 dB	
1,000 cps	1,600	1,600,000	1000:1	100.9 v	0	B
50 cps	32,000	1,600,000	50:1	99 v	-0.10 dB	
1,000 cps	1,600	16,000	10:1	90 v	-1.0 dB	C
50 cps	32,000	16,000	0.5:1	67 v	-3.5 dB	

Point A=101 volts. C1=0.1 $\mu$ f=1,600 ohms at 1,000 cps; C1=0.1 $\mu$ f=32,000 ohms at 50 cps; R1=160,000 ohms E x A; R1=160,000 ohms E x B; and R1=16,000 ohms E x C.

in mind that a condenser will double its resistance as the frequency is halved. In Table Two C1 is constant in value but R1 (the grid resistor) has been altered. It shows that the lower the value of R1 the greater the bass losses, example A being about passable, B ideal, and C hopeless. In example C, which is deliberately drastic, we can see that even the one kilocycle note has been reduced by 1.0 dB.

From these conclusions it would be reasonable to ask why not make R1 very large every time, then these bass losses

num signal to noise level to be had would be 300:1 or 50 dB. In order to better this the only alternative in the case of a tape replay amplifier would be to restrict the bass response to 60 cycles, the output at this frequency being 600 microvolts (6 dB more). This would now give a signal-to-noise ratio of 600:1 or 56 dB, as you can see we cannot get something for nothing.

Were we to use this valve in a normal amplifier which had no bass lift, we should, with an input signal of nine millivolts,

(Continued on page 38)

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# Music and sound- effects for

## Macbeth

Part Two

By ALAN  
SUTCLIFFE

LAST month, I described the recorded effects I provided for a production of *Macbeth*. In this article we shall discuss the music that I devised.

As with the effects, the producer had decided where music was to be used, and it appeared that three distinct types were needed. First there was music for the three scenes in which the witches appear. Secondly, there was to be music on the two occasions when *Macbeth* sees a vision not visible to others—first a dagger and later the ghost of Banquo.

The third use of music was to be in the two murders, that of Banquo and those of Lady *Macbeth* and her son (the murder of Duncan does not take place on the stage). I decided that I could produce music suitable for these different purposes using only the piano.

The general approach was roughly the same in all three cases: having decided on the type of texture to be used (for example, a texture made by drumming on the strings with fingers and hands) I recorded an appropriate length of such sound, and then superimposed one or two more layers of similar texture on top of it. This gave me about the required density of texture: one strand alone sounded too thin, while more than three simply sounded confused. Each strand was added at a different speed, to give variety in pitch rhythm.

Within each texture I used my judgement to control the amount of variety in the patterns used: varying pitch, loudness and speed the whole time, within moderate limits. There was no question of repeating patterns exactly, and I tried to avoid regular rhythmic patterns and any sequence of pitches that would suggest melody. For music that was to be listened to by itself this would not have been good enough, for it gives simply a very loose structure, with no sense of form, but just a texture. For incidental music, however, it is sufficient,

since the words and actions supply the form and give the music meaning.

Superimposition was done without monitoring what was already on the tape, which meant accepting a large element of chance in the result. Although this method would not appeal to some, I found it produced effects that couldn't have been obtained so easily, particularly in the freedom and complexity of the rhythms, by the more usual method of listening to what I was doing. It helped to overcome some of the problems of self-consciousness, and prevented my doing the obvious things that would have occurred to me had I been listening.

In the case of the witches' music, the texture did not remain constant. At the opening of each scene thunder is called for, and here the music acted as an effect. Drumming on the strings—with the sustaining pedal fixed down—I began loud, hitting the bass strings quite hard, and then, to allow the voices to come in, played more quietly. At the same time, I let the hitting give place to plucking of the strings. This was done by taking several strings at once and scraping them with my nails as much as plucking them, to give what was intended to be an unnerving sound. This texture was maintained for the remainder of the section, with occasional quiet thundering sounds.

The music for the witches was by far the longest of the three types that were needed. As the longest of their scenes lasted over six minutes, this was the hardest to make: in fact, I had three attempts and ended by using the first one. One problem was that although I produced some quite gruesome sounds by scraping the strings very gently, they were just not loud enough, and were quite lost in the recording. Ideally, this would have only been the beginning of the music, and would have been followed by many hours of editing, but there just wasn't the time available for this.

The music for the murders, of which only one minute was needed, was made the same way as the witches' thunder, but playing over the whole pitch range of the piano, and not at the same roaring level of loudness.

Another important difference was the number of strings hit at once: for the thunder I played with my open hand, getting about an octave of strings for each note, while for the murder music I played with different parts of the hand and varied the number of strings. The result was a sound more like that of drums than of thunder, but drums of many different sorts: the variety of sounds that can be produced in this way is quite amazing. To keep the sounds crisp and prevent everything becoming blurred by still reverberating strings, the hand was brought to damp the strings just been struck to produce a note of any length.

For the music to accompany *Macbeth's* visions, I first tried some of the murder music played backwards. There was, however, too much difference in volume between the gradual crescendo of each note and the bang at the end of it. That was of course the attack of the note as it had been played. But the idea did seem promising, as the overlapping crescendos had an appropriately ominous and supernatural sound. The problem then, was to remove the attacks, and while this could have been done by cutting each one from the tape, this would have taken too long. Eventually, I played much more quietly, and recorded at a correspondingly higher level. In this way the marked attack quality of the notes disappeared, and in reverse they merely ended at the top of

their crescendo, and not with an extra bang added to it.

In the reverse direction the notes lost a lot of their characteristics of colour and pitch, so that the general effect was less varied than in the forward direction, and after the first few seconds it was not a particularly interesting sound to listen to by itself. But in the theatre I think it was effective, and gave the impression of something forming or almost forming out of nothing, and then fading and again forming.

One great advantage of composing textures such as these, rather than more conventional music, was that there was no question of exact timing of words and sounds. When I assembled the master tapes, I simply put in enough of the appropriate texture to cover the longest time for the scene and brought it in and faded it out with the volume control.

The witches' music for example always had a definite beginning with the thunder, and after their first scene it had to be cut sharply for an abrupt change of scene. In their second scene, however, they vanish while Macbeth and Banquo are left on the stage, so that a definite fading, not too prolonged, seemed to be called for.

Assembling the master tapes containing both music and effects for the performance was quite straightforward, though lengthy, for there were almost fifty separate cues. As this was being done the night before the dress rehearsal, I decided to save time by copying each item in turn on to one tape, rather than splicing the pieces together. This meant that there were clicks on the tape from the switching on and off, but I allowed a gap for these, and marked the beginning of each item carefully with a bit of adhesive tape. Since many of the items were used more than once, and so had to be copied in any case, I think this was a quicker way than a mixture of copying and cutting.

Our main problem in performance was one of balance. While we heard the actors from microphones on the stage, we heard the tape directly from the recorders. This meant that only after criticisms of the first performance were we able to get anything like a reasonable balance, and learn, for example, that Lady Macbeth's voice didn't carry to the auditorium in the way it carried to the microphones. As time went on we became more expert in adjusting the volumes during the performance to suit particular effects and particular actors.

There were of course, minor hitches. We were able to switch the stage speakers on and off, and this was very useful as we could then check the next cue before it was due, but there was no indication except the position of the switch, whether they were on or off—in either case we heard the tape direct. Naturally this led to the audience hearing one or two noises they shouldn't have, and one performance beginning without music.

Finally, it may be asked whether it was a good thing to use this sort of music in an otherwise straightforward production of Macbeth. Personally, I'm not sure, though I'm inclined to say that Shakespeare takes such a beating in our schools and elsewhere that a few more kicks from me couldn't do any harm. Certainly I would have been happier with a modern play—but then modern plays don't have witches and ghosts. It is clear that there is very great scope in the theatre for recorded music of this type—concrete music if you like—and that in the amateur theatre there is great scope for the amateur recorder, where music, that can so magically alter a production, has been for too long neglected.

## A reference book for the serious-minded amateur

### HIGH-QUALITY SOUND PRODUCTION AND REPRODUCTION by H. Burrell Hadden.

Published by Illife Electrical Publications Ltd., Dorset House, Stamford Street, London, S.E.1. 273 pp. Price 42s.

**T**HIS book by Mr. H. Burrell Hadden, who needs no introduction to readers of *TAPE Recording Magazine*, is basically a training manual for the BBC's Central Programme Operations Department. Nevertheless, the sixteen chapters contain plenty of interesting material which would benefit any serious-minded amateur, quite apart from the description of BBC apparatus and procedures.

The book can really be divided into three parts: (1) Basic principles of sound, electricity, musical instruments and studio acoustics; (2) A description of BBC studio equipment; (3) Microphone placement, control of volume, sound effects and stereophony. There are 257 pages of text, 175 line drawings, and just over forty pages of half-tone illustrations—all excellent reproductions.

Part one delves deeply into the theory of sound waves, although with a welcome absence of complicated mathematics. Logarithms are only introduced to explain the precise meaning of the "Decibel" as a unit for expressing volume ratios. I found the detailed description of musical instruments extremely interesting, covering all the sections of a symphony orchestra. A noticeable absentee is the Guitar, Spanish and Electric, which is so popular in present-day jazz groups.

The author's advice on studio acoustics is admirable and clearly written, although some of it would be difficult to implement in the home. Part One ends with basic electrical theory which takes us right back to Ohm's Law, and includes a brief description of the working of valves and transistors.

Apart from chapters on microphones and loudspeakers, Part Two can only be of passing interest to non-BBC personnel. But the sight of a well-known crystal microphone in a self-operated outside broadcast kit will be a revelation to most readers, as will be the complex wiring of the most simple studio mixing console.

Part Three is probably the most useful section of this book, since it contains numerous diagrams of microphone placings for all types of voice and music recordings. The detailed information on the BBC's methods of programme volume-control are also illuminating. In the final chapter, the theory of stereophony is explained at length.

The sound effects chapter is rather poor, and covers only six pages of text—half of which describe the work of the BBC Radiophonic Workshop. But, in general, this is a welcome publication which has many uses as a reference work for the non-technically minded, both professionals and amateurs. It is rightly called a manual, and is not a text-book. A nine-page index is included, which enables information on any subject to be quickly located.

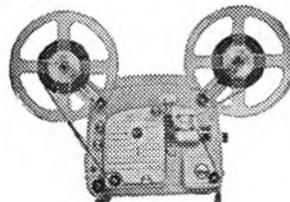
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## Tape records reviewed

**The team POPULAR**  
**in a**  
**class**  
**apart**



By Don  
Wedge

**ON STAGE WITH THE GEORGE MITCHELL MINSTRELS. H.M.V. (TA-CLP-1599), 3½ ips, mono. 35s.**

The Mitchell Minstrels, from television's "Black and White Minstrel Show," repeat the formula of their two previous big selling albums. They are in a class apart at recalling old songs and stamping them with their own brand of nostalgia.

Not that *The Lady is a Tramp* was ever sung in old-time minstrel shows. But authenticity was never a strong point of the Mitchell's.

The well-paced medleys of familiar melodies again makes this record another must for lovers of this team and provides a fitting preview to welcome them back to Sunday night autumn television.

**A TASTE OF HONEY. Mr. Acker Bilk. Columbia (TA-33SX 1493), 3½ ips, mono. 35s.**

Acker Bilk is back with his plum-toned clarinet surrounded by lushly-orchestrated fiddles directed by Leon Young. It is the team that made "Stranger on the Shore" so successful.

The title track did not have the same impact on the hit parade in this country. Nevertheless, its beautiful melody has become a standard.

The Bilk-Young revival of *Only You*, once a No. 1 hit for the Platters vocal group, which had a successful run in the American chart, is also included on the album. The rest of the material is tunes not previously associated with Bilk.

It is a surprise to hear *Underneath the Arches* played in this mood, just as it seems a trifle incongruous for the bowler-hatted, cider-swigging trad man from Somerset to pick his way thoughtfully through *Jeannie with the Light Brown Hair*.

As well as three compositions credited to Bilk, there is a pleasant collection of standards like *Nature Boy*, *Stella by Starlight*, and *La vie en Rose* which admirably suit the honey sound of the Bilk-Young team.

**BEAU JAZZ. Mr. Acker Bilk and his Paramount Jazz Band. Columbia (TA-33SX 1456), 3½ ips, mono. 35s.**

Bilk with strings can be criticised for lack of warmth in his clarinet in the high register of violins. But Acker is at home with no reservations in this record made with his Paramount Jazz Band.

I have a sneaking feeling that Bilk's future will see him as the Louis Prima-type performer rather than the trad man or the soloist with string orchestra. There is evidence of that as he sings on this record,

particularly one-time Doris Day hit *Sentimental Journey* and *Oh! Marie*, credited to Prima himself.

But at present it is a trad band he is leading. The numbers vary from a New Orleans opening with *Grandpa's Spells* through *Creole Love Call* to an exciting *Bula Bula* by the band's trombonist Johnny Mortimer and featuring the group without Bilk.

The other special features, *Sneak Away* (for pianist Stan Greig and drummer Ron McKay only) and a pleasant guitar-piano duet for Roy James and Greig on *This Town*, are particularly rewarding.

The band is best, however, when it is blowing full out and swinging on *Wilbur*.

**I'LL REMEMBER YOU. Frank Ifield. Columbia (TA-33SX 1467), 3½ ips, mono. 35s.**

"I Remember You" was Frank Ifield's big hit last summer, the success that, after years of learning about the pop music business, catapulted him to international fame and stardom.

This tape, which doesn't include the hit and has a slightly reworded title, was the follow-up. *Just One More Chance* is in the "Remember" mood but I feel the album has much more to offer.

There are Ifield's own compositions *Lonely Teardrops* and *I just can't lose the Blues*, and an exciting revival of *The Wisdom of a Fool*, very different and much more worth hearing than the original Norman Wisdom hit.

Probably best is *San Antonio Rose*. Ifield's fans will quickly snap this record up. Many more people will like it too.

**SONGS TO A SWINGIN' BAND. Connie Francis with orchestra conducted by Richard Wess. M.G.M. (TA-M.G.M.-C-870), 3½ ips, mono. 35s.**

"Robot Man" long forgotten, Connie Francis reaches out for wider acceptance here, wins no Oscars, but gives a competent performance.

She has fun with *Ol' Man Mose*, goes dreaming with *Lost in his Arms*, and invades June Christy territory for *Gone with the Wind*.

But her beaty style comes out best when in straw-hat mood she revives *Swanee*, and she contrasts nicely with a rarely-heard vocal version of *Taboo*.

**SWINGIN' EASY. The Modernes. Saga (STG 8075), 3½ ips, mono. 32s. 6d.**

Sub-titled "Rhythm for dancers," this is an unusual record. It deals with the type of hotel dance music which so many of the small tape firms seem to prefer. Saga, however, offer a light bright swiny sound—much closer to 1963's music.

That is for most of the time. The Modernes are a small group, pleasant enough when the melody is in the hands of an accordion and vibes.

But it is asking a lot to take seriously the melody carried by tubular bells as in *Foggy Day* and others.

**SOMETHING OLD, SOMETHING NEW, SOMETHING BLUE, SOMETHING ELSE! The Crickets. Liberty (TA-LBY 1120), 3½ ips, mono. 35s.**

The Crickets, a vocal instrumental team that started the late Buddy Holly on his climb to fame, continue a rewarding career without him.

This vocal-instrumental trio perform in a way that clearly provided some of the inspiration for the Beatles and the other British groups which have come to the fore this year.

The Crickets have a much more sophisticated and less frantic approach. Indeed, the

last number on this record, *Blue Monday*, is very close to jazz.

Several of the titles, including *Don't ever Change* and *He's Old Enough to know Better*, have been hits for the group. It also includes borrowed numbers—such as Craig Douglas's *Pretty Blue Eyes* and Eddie Cochran's *Summertime Blues*—from other artists' hit repertoire.

This record will be highly prized by most teenagers.

**GOLDEN THEMES FROM MOTION PICTURES.** Ferrante and Teicher. United Artists (TA-ULP 1010), 3½ ips, mono. 35s.

The American piano duo goes heavy-handed at famous film theme tunes, attempting to turn them into concertos.

If you prefer your music strong, rather than a lilting background melody, you will enjoy their treatment of *Secret Love*, *Tammy*, *My Foolish Heart* and nine others.

**THE BEST OF MARTIN DENNY.** Liberty (TA-LBY-1024), 3½ ips, mono. 35s.

Martin Denny's amazing following in America is not repeated here. Perhaps it is because Polynesian restaurants aren't as popular in Britain!

Denny has a quite unique approach. He uses a small group which has an amazing field of varying dynamics. It is electronic music, but at the same time gives a distinct impression of the South Seas—or at least the tourist conception of it.

The melody is carried mainly by vibes and sometimes by piano. It may be spoiled for you by the inserted bird noises and the constant use of cymbals which can create a worrying hiss.

Material is mainly well-known standards such as *Ebb Tide* and *Bali Ha'i*. The tracks were originally recorded as single discs which explains the occasional presence, particularly effective on *We kiss in a Shadow*, of a ladies' choir.

If you want variety in your recorded music then this is a good buy. But stand by to adjust your volume control.

**ANITA SINGS JAZZ.** Anita O'Day with the Oscar Peterson Trio and Milt Holland. World Record Club (TT 244), 3½ ips, mono. 29s.

This is a major contribution to the tape record catalogue. Anita O'Day, controversially brilliant jazz singer, is teamed with pianist Peterson, undoubtedly one of the outstanding jazz musicians of the day.

All this, of course, makes it a specialist record. It suits my taste but is not for everyone. Miss O'Day's singing is an inspiration, but one's ear needs to be attuned to it.

Peterson, though equally involved, is more easily followed by the non-jazz fan.

The numbers are all well worn standards—such as *Tenderly*, *Bewitched*, *Stella by Starlight* and *We'll be Together Again*. Typical classy songs which are meaty enough for interpretation by this type of singer and musician.

The tape records reviewed this month are issued by the following companies:

"Columbia," "H.M.V.," "Liberty," "M.G.M.," and "United Artists," E.M.I. Records Ltd., 20, Manchester Square, London, W.1.

"Graphic Sound," Graphic Sound Ltd., 37, Jesmond Road, Newcastle upon Tyne, Northumberland.

"Saga," Saga Records Ltd., 127, Kensal Road, London, W.10.

"W.R.C.," World Record Club, Box 11, Parkbridge House, The Little Green, Richmond, Surrey.

**SONGS OF LATIN AMERICA.** Dorita y Pepe. Saga (STG 8098), 3½ ips, mono. 32s. 6d.

Despite the Spanish names, Dorita y Pepe are an English couple. They have specialised in the less well-known rhythm of the South Americans.

On this record they have drawn material from Mexico, Argentina, Venezuela, Paraguay and Chile. It is even more specialised than Anita O'Day-Oscar Peterson.

Dorita's voice has a haunting quality, but one feels the real brilliance of the duo comes from husband Pepe's technique and control of the many guitar-like fretted instruments.

**THE GRASS ROOTS OF BOSSA NOVA.** Dom Carlos e Seu Grupo. Graphic Sound (SC-0001), 3½ ips, mono.

South America again provides the inspiration for a set of British artistes. The newly-launched Graphic Sound of Newcastle puts out this tape made by a group of Tyneside musicians.

Bossa nova is virtually forgotten about in Brazil though its world impact last autumn is likely to keep some interest alive in this mixture of jazz and latin rhythm.

Most famous of the bossa novas *Desafinado* is included on the record. But most of the numbers are standards like *Summer Time* and *Lady is a Tramp*; coupled with some of the well-worn pop Latin American songs such as *Peanut Vendor*, *Besame Mucho* and *Amapola*.

The group is principally a guitar, backed by Latin percussions. It has a thin sound, but is ideal music for early in a party.

**BEAT TROPICALE.** Featuring Richard Campbell, Harry Coon and José Bethancourt and his Orchestra. Saga (STE 3023), 7½ ips, stereo. 63s.

After hearing so many mono tapes it was a pleasure to have one's equipment jump fully alive to the crisp stereo of this "savage drum fantasy."

The first half consists of cha-cha and other latin rhythms, presumably by Bethancourt. He has a spirited marimba-latin rhythm group which would hardly qualify as an orchestra by British standards.

The accent is on the percussion effects which have been so well developed in stereo recording.

The second part is a series of drum numbers designed purely for effect—and very dramatic they are too—but have no musical content.

## Study courses on tape

SUBJECTS as varied as auditing, imports, transport, hire purchase and civil law are available on Study Tapes recently introduced by Rent A Tape (Recordings) Limited. Advanced and elementary courses are available on sixteen subjects prepared by Chartered Accountants and Secretaries.

Recorded with Emitape on 3¼-inch spools, the 12-13-minute talks may be rented for a ten-day period (longer by special arrangement) at 5s. 6d. each, or purchased outright at 13s. 6d. each.

Arrangements can be made to supply tapes at 7½ or 1½ ips, and two or three talks are available on five-inch spools. One talk incorporates nearly 3,000 words, equivalent to ten or more hours of studying time.

Free catalogues of the subjects are available from Rent A Tape (Recordings) Limited, Northfield Lane, Brixham, South Devon, who can also arrange the hire or purchase by instalments of tape recorders.

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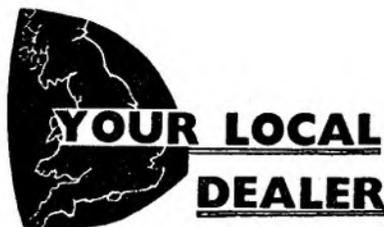
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## NEW PRODUCTS

### NEW BATTERY PORTABLE BY GRUNDIG

A TRANSISTORISED battery/mains operated tape recorder is the latest addition to the Grundig range. Exhibited for the first time at their recent Trade Show at the London Hilton Hotel, the recorder is a two-speed, two-track model which will retail at 65 guineas.

The quoted frequency response is 50-13,000 cps at the top speed of 3½ ips, and 30-9,000 cps at 1½ ips. The signal-to-noise ratio is given as 48 dB.

Among the facilities are monitoring through the loudspeaker, fast rewind, digital rev. counter, pause control, combined tone control and a dual purpose recording level/battery voltage indicator. Inputs are supplied for 0.3 mV/10 K ohms, and outputs are



550 mV and 500 mV (battery operation) and 1.6 W (mains operation). A loudspeaker extension socket (5 ohms impedance) is incorporated.

The transistor complement includes ten transistors, one zener diode, two selenium diodes, and one rectifier. Power supply is 110-240 AC, 50-80 cycles.

Up to 4½-inch spools can be accommodated, providing a maximum playing time of two hours per track using triple-play tape.

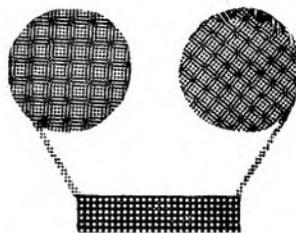
The TK6 measures 12½ x 9 x 5½ inches, and weighs approximately 13½ lb., including batteries.

Grundig (Great Britain) Limited, Newlands Park, Sydenham, London, S.E.26.

### PHILIPS IMPROVE THEIR BATTERY MODEL

A NEW and improved version of the Philips battery portable tape recorder, Type EL3585, was recently introduced. A number of improvements have been incorporated into the new version, Type EL3586, for only a guinea more in price—it is to sell at 25 guineas.

Having basically the same outline as the former model, the front face has been altered to give a charcoal grey speaker grill and a matt aluminium ornamental control panel. An edge-operated rotary control has



been added—for variable tone control and these have been placed below the modulation level meter.

Other improvements to the machine include increased accessibility of the input and output sockets; headphone monitoring facilities; remote control for stop/start during recording and playback; a socket for connection of the new optional extra mains supply unit, EL3786, which allows the batteries to be left in position, but automatically switched out of circuit; a higher output; improved frequency response due to a new record/playback head design; and a better audio performance. A standby button enables the recording level to be set with the tape stationary thus saving tape and battery life.

The machine is supplied with a moving coil microphone, three-inch reel of double-play tape, providing 32 minutes' playing time per track, an empty three-inch take-up spool, and special record/playback screened connecting lead, Type EL3768/03. If a four-inch reel of triple-play tape is used with the clear perspex lid removed, the playing time is increased to 96 minutes per track. The quoted frequency response is 80-8,000 cps ± 3 dB, and the four-inch high efficiency loudspeaker gives an output power of 500 milliwatts.

Philips Electrical Limited, Century House, Shaftesbury Avenue, London, W.C.2.

### PROFESSIONAL RECORDER BY DYNATRON

DYNATRON Radio Limited announce the introduction of their Specialist 1200 tape recorder.

This is described as a semi-professional recorder designed to C.C.I.R. specifications. Tape speeds are 7½ and 3½ ips, with the respective quoted frequency response as 50-10,000 cps ± 2 dB (13,000 ± 3 dB) at 7½ ips, and 45-7,500 cps ± 2 dB at 3½ ips. Signal-to-noise ratio is given as -50 dB (unweighted including hum); and wow and flutter as better than 0.2 per cent r.m.s. at the top speed.

The two-track Specialist 1200 will accommodate up to 8¼-inch reels, providing a playing time of 93 minutes per track using standard-play tape at 3½ ips. Among the features are variable speed rewind, with a mechanical "park" position; clock-type tape position indicator; Bib tape splicer; tape inching control; auto-stop switch actuated by metallic foil; separate record and playback amplifiers providing continuous monitoring from tape or input signal; separate record and playback heads; and an edge-wise meter recording level indicator.

Input sensitivities include Mic High: not more than 6 mV; Mic Low: not more than 0.1 mV; and Radio: not more than 0.25, for peak recording levels. Output voltages are: Pre-amp "hi-fi" socket, 150 mV r.m.s. medium impedance; and from L.F. amplifier, three watts across 15 ohms. The erase



and bias frequency is 63 Kc/s. Tape speed equalising is automatic.

Valves include one EF86, ECC83, ECC82, 6BR8, EL84, EF91, and an EZ80. The monitor speaker is a 10 x 7-inch Goodman's high-flux elliptical.

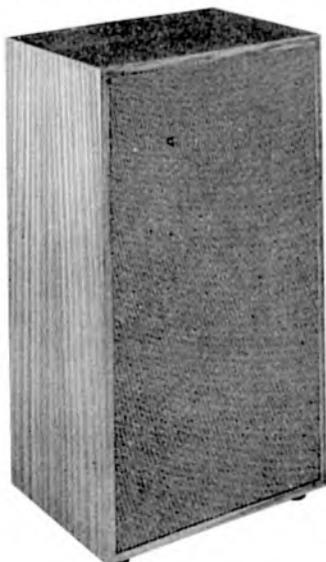
The recorder measures 20½ x 18½ x 10½ inches, and weighs 45 lb. The price is 139 guineas.

*Dynatron Radio Ltd., St. Peter's Road, Furze Platt, Maidenhead, Berkshire.*

## AUDIO SERVICES ANNOUNCE NEW LOUDSPEAKER

AUDIO SERVICES LIMITED have introduced a new loudspeaker, the Dyna-Sonic, illustrated below. Smaller than their earlier Dyna-Static unit, the new speaker incorporates many of the features that have made its predecessor popular.

A cluster of four dynamic tweeters with staggered resonances cover the upper register, and a 13 x 8-inch elliptical moving coil unit with half metal cone, covers the lower register. The overall response is given as 35-17,000 cps. The power handling



capacity is rated at 15 watts, and the impedance is 15 ohms.

The Dyna-Sonic measures 34(h) x 18(w) x 4(d) inches, and weighs approx. 50 lb. The price is £36.

*Audio Services (hi-fi) Limited, 82, East Barnet Road, New Barnet, Hertfordshire.*

## BATTERY/MAINS MODEL FROM JAPAN

A JAPANESE battery/mains operated transistorised tape recorder, the "Julie-corder" Model DA-301, announced by Taiyo Bussan Kaisha Ltd., is to be available in September.

Preliminary specifications describe it as an AC/DC, four-speed, two-track recorder incorporating 11 transistors, and with accommodation for up to five-inch reels.

The quoted frequency responses are 100-10,000 cps  $\pm 3$  dB at 7½ ips, limiting to 7,000, 5,000, and 2,500  $\pm 6$  dB at 3½, 1½, and 15/16 ips. Wow and flutter is given as less than 0.3 per cent at the two top speeds, and less than 0.35 per cent at the other speeds. Signal-to-noise ratio is rated as more than 40 dB.

Six hours continuous operation is available using one nine volt UM1 unit plus six cells. A built-in AC adaptor enables operation on 220 volts, AC.

The output is given as one watt undistorted through two oval 5 x 3-inch loudspeakers. A remote control dynamic microphone is supplied, and other features include NARTB specification, tape counter, recording level meter, pause control, tone control and fast forward operation.

It measures 12¼(l) x 11½(h) x 4¼(w) inches. Further specifications and price are available from the manufacturers.

*Taiyo Bussan Kaisha Ltd., 2, 2-Chome, Kodemmacho Nihonbashi, Chuo-Ku, Tokyo, Japan.*

## KEF PRICE CHANGES

K.E.F. Electronics Limited announce certain price and design changes in their range of cabinet systems and baffles.

Their original K1 series which includes the Monitor, Slimline and K1 Baffle has been redesigned internally to improve woofer and tweeter performance. The latest production omits the midrange unit with attendant reduction in phasing trouble at the crossover points giving enhanced smoothness.

The Duette and K2 Baffle assemblies have had a full half section crossover network added.

Prices of the units are now: Celeste £24 19s.; Duette, £39 19s.; Slimline, £39; Monitor, £52; K1 Baffle, £28; and K2 Baffle, £22.

*K.E.F. Electronics Ltd., Tovil, Maidstone, Kent.*

## CHEAPER 3M TAPE

THE 3M Company, makers of "Scotch" magnetic tapes have announced reductions in the prices of most of their tapes.

Examples of the reductions include the five-inch reel of double-play down from 45s. to 41s.; 5½-inch long-play down from 35s. to 32s. 6d.; and a seven-inch long-play down from 55s. to 44s. 6d.

All the boxes have been redesigned employing a new colour coding system, black for standard-play, green for long-play, and blue for double-play.

*Minnesota, Mining and Manufacturing Co. Ltd., 3M House, Wigmore Street, London, W.1.*

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#### **MORE GOOD NEWS**

—A new standard play tape, polyester-backed No. 175 brings down the price of top quality polyester recording. And there's an exciting new pack, colour coded for easy identification. Now more than ever before, insist on "SCOTCH" Magnetic Tape. Get full details of the new prices and alterations in the range from your nearest "SCOTCH" stockist.



**3M** MINNESOTA MINING AND MANUFACTURING CO., LTD. 3M HOUSE, WIGMORE STREET, LONDON, W.1.



## CAMBRIDGE

The new season for the Cambridge club members opened on September 3, and meetings are now to be held every Tuesday at the secretary's home.

Secretary: D. Cowan, *The Spring, Chesterton Road, Cambridge.*

## GOSPORT

Members of the Gosport tape club had a grand opportunity to make live recordings when two local bands of contrasting styles attended one of their meetings. With expert guidance from Peter Copeland very creditable recordings were achieved, and microphone placing technique much improved.

The drama tape section have produced their first really serious play, and played it back to members for criticism. Earlier, a representative from Grundig visited the club to give a stereo demonstration. Earlier still, Yolande Robinson produced the winning entry in the club's regular competition, with her tape entitled "My Job."

Secretary: J. R. Rennie, 65, Linden Grove, Gosport, Hampshire.

## H.M.S. "HARTLAND POINT"

A hard core of twelve members are claimed for the tape club aboard H.M.S. *Hartland Point* serving in the Far East. However, they also have a large and willing floating population who are always prepared to help out with any of the more ambitious projects.

Japanese recorders predominate, the most popular being the Sony 464, writes Lt. D. V. Lindsay, mainly because English machines are rare objects out there.

Activities of members cover a wide field, and fall into three groups. First there are the technical lectures. The highly trained ship's electronics department is backed up by excellent workshop facilities. Programme production is next on their list, and these are compiled for internal transmission whilst the ship is at sea. By far the biggest and most important activity, the members derive a great deal of fun from the planning, recording, editing and relaying of their efforts. The reaction from the ship's company, being in a sea-going service, can be anything but polite or restrained.

The third group includes outside visits. These are still in the planning stage, but the members have high hopes of visiting such places as Radio Singapore, Radio Hong Kong, Rediffusion, and local manufacturers.

Programmes so far have been confined to the "Down your hatch" type, with interviews of the ship's company followed by a piece of music of their choice. They also produce a type of nautical "Goon Show" called "Screaming Point." This contains sketches, music, mock commercials, indeed anything to create a programme of mixed humour giving, they hope, something for everybody. They are also making plans for documentary production, although it is admitted this is a long-term project. In my days at sea we produced various kinds of operas?

The members always welcome, and reply to, any club or individual tape exchanges, and particularly any tapes that could be used when the ship is at sea. The ship's address is c/o G.P.O. London, or for non-U.K. based readers, c/o Fleet Mail Office, Singapore.

## HUDDERSFIELD

A change of meeting place is announced for the Huddersfield club. As from September 11, meetings are to be held on the 2nd and 4th Wednesday in each month at the Chamber of Trade, 8, Byram Arcade.

Secretary: John D. Iredale, 9, Ingfield Avenue, Dalton, Huddersfield.

## I.T.C.S.

A change of secretary is announced for the International Tape and Cine Society, with Mr. R. Pirie replacing Mr. V. Bull.

Secretary: R. Pirie, 83, Warrens Hall Road, Dudley, Worcestershire.

## LEEDS

Some confusion seems to have occurred regarding the details published last month for the Leeds club. Their earlier letter was signed by C. M. Eagle, who is the publicity officer, and not the secretary as published. Would club members please ensure that the address to which prospective members should write is given with each communication to the "News from the Clubs" section.

A number of future activities are lined up for the

# News from the Clubs

members. These include a demonstration and recording of *musique concrete*, for which several recorders by different manufacturers are to be used; snap decision outdoor recordings, to prepare members for the unexpected; and continued assistance with the Friends of St. James' Hospital in running a patients' request service.

Secretary: L. F. Turner, 3, Paddock Close, Garforth, Leeds.

## READING

A ladies' night held by members of the Reading tape and cine society provided proof that the female members of the club can do more than provide the refreshments. A varied programme of films, slides and tapes was produced to give the male members much to consider.

Earlier, one of the most important nights of the club year saw members watching entries for the Bourne Cup competition for the best film of the year. The award went this time to Mr. Helder for his comedy *Mr. Cram*, a tale about an odd brand of biscuits and the extraordinary effect they had on anyone who ate them. There was a big entry this year, and the Aldershot club, who acted as judges, had quite a job to select the winner.

Members, considering the question of acquiring new equipment for use during the summer months were able to see a demonstration of some of the latest products at one of their regular dealer's evenings held just before the close of the club's year.

Secretary: T. Fisher, 5, Mapledurham Drive, Purley, Reading, Berkshire.

## RUGBY

The first meeting of the Rugby club's new year, following their AGM on June 20, was held on July 4. Keith and Ron Longmore of the Coventry club provided the evening's entertainment. For the first half of the programme Ron demonstrated his Saba TK84 recorder and the Sony 801 battery/mains machine. These were used in conjunction with a Goodman's Tri-Axiette speaker. Among the tapes heard were musical selections including Swiss recordings and an Amsterdam street organ.

Keith Longmore demonstrated his Vortexion WVA, a Goodman's ten-inch speaker, and a home-built Verdik amplifier.

During the evening the secretary described the part members had played during an official visit by the Queen and Duke of Edinburgh. The society had contributed a recording of interviews with the parents of children whose lives had been reclaimed by the "kiss of life" respiration technique. The tape, recorded by Peter Scott, was used in the ambulance display tent and played on a Grundig TK14.

At their meeting on July 18, Mr. J. W. Long demonstrate his Optacord battery/mains recorder and his cinecorder. His programme was followed by the president's talk on the progress made by the Association of Midland tape recording Clubs, and a demonstration by Ernie Crane of Klenzatape using the club Magnavox recorder.

Secretary: Mike Brown, 219, Clifton Road, Rugby, Warwickshire.

## SLOUGH

A new meeting place is announced for the members of the Slough club. They now meet at the Britwell Tenants' Community Association, Longfurlong Drive, on alternate Wednesdays.

Among the recent visitors to the club was a representative of Fi-Cord International who demonstrated the battery portable 202. The machine became damaged during the evening, but the technical members of the team took the repairs in hand and the machine was as good as new with little delay.

A recent club competition saw members producing tapes on the subject of a Martian's eye-view of an everyday event on earth. Local school-teacher Jim Taylor judged the entries which included a funeral, a cricket match, golf tournament, hike, and a pot of tea being made. Chairman L. Jenkins' cricket match took first prize.

**M**EMBERS of the H.M.S. "Hartland Point" Tape recording club seen "fell-in" with their equipment. Left to right (back row) are L/Wtr. Ball, LME) Fagg, M(E)I Booker, LSB(A)V) Boddy, and Lt. Macmillan; (centre row) SBA Pardy, Lt. Smith, LSA(S) Bridges, and SBA Woodman. Seated (front) are Lt. Cretney and Lt. Lindsay.

A number of future demonstrations have been arranged, and members look forward to seeing representatives of Agfa, Geveart, Grundig, and Lustraphone.

Secretary: B. J. Jackson, *The Meads, Park Road, Stoke Poges, Slough, Buckinghamshire.*

## SOUTH BIRMINGHAM

The South Birmingham club's film "Parade" was completed and shown to members for final checking prior to its presentation at the Northampton Rally of tape recording clubs.

The film, with four-track stereophonic commentary, described the club members' activities with their hospital programmes service. The commentary was produced from a centre speaker, with music mixed in from the left and right speakers. A Revox tape recorder, modified to play back on all four tracks in the same direction, was used.

Other items in the film included a Go-Kart race meeting, and scenes recorded at an air display. A fourth speaker brought into use for the latter sequence gave the effect of planes coming from all directions.

The members described the production of the film as a little ambitious and requiring a considerable amount of equipment. However, judging from the interest aroused, their work had been very worth while. The film has been shown in Leamington and requests have also been received from other clubs.

More recent activities of the members has included a return trip behind the footlights. This time they supplied sound effects for a religious play presented by a local amateur drama group. The script called for sounds of motor cars, and aeroplanes which were quite easily produced, but the members considered themselves stumped by the need for chanting by jungle tribes. These were eventually manufactured in quite a convincing manner—no details were supplied.

At the club's recent AGM Mr. Rex Trueman was elected chairman. The original committee were re-elected.

Secretary: J. T. Gilbert, "Woodcote," Box Trees Road, Dorridge, Solihull, Warwickshire.

## YORK

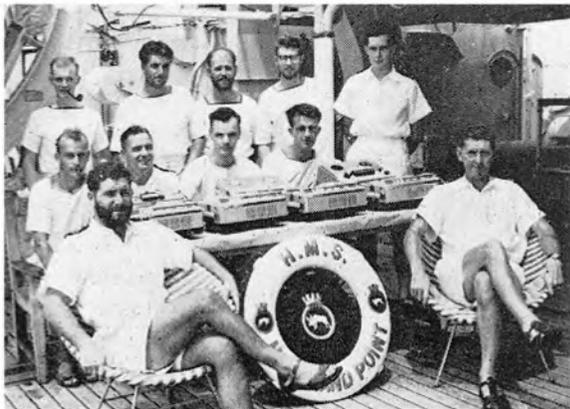
The secretary of the York club makes a special plea this month for assistance from other clubs in the compilation of tapes of bells from various UK cathedrals and churches. He has received a letter from a Canadian who is collecting such sounds and asks club members to assist by sending him recordings of bell changes of ten or more. The York secretary will accept any such tapes and prepare them onto one tape. Recordings should be recorded at 3 $\frac{1}{2}$  or 7 $\frac{1}{2}$  ips, and should be identified with the name of the church and the locale.

The writer then goes on to list some thirty bell peals he would like to have. Any offers? Write to the York secretary.

Here also the hospital service is in full swing. Geoffrey Machen visited a local theatre recently to record interviews with some of the stars taking part in the show "Thank Your Lucky Stars." The chats he had with the performers have since been edited and inserted into the hospitals programme.

Another recent recording activity of Mr. Machen's resulted from his falling off a bus earlier this year. When his doctor and a member of the nursing staff were married he recorded the ceremony and presented the completed tape to the bridal couple as a wedding present.

Secretary: Geoffrey Machen, 17, Melbourne Street, Street, Fishergate, York, Yorkshire.



# CLASSIFIED ADVERTISEMENTS

Rate—Sixpence per word (minimum 5s.); Trade, ninepence per word (minimum 10s.); box numbers, one shilling extra. Payment with copy. Copy should be sent to Advertising Department, "Tape Recording Magazine," 7, Tudor Street, London, E.C.4.

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## MISCELLANEOUS

8 mm. Home Movies. Send 1s. for fully illustrated catalogue. (Dept. 31), Mountain Films Ltd., 1, New Burlington Street, London, W.1.

Good cash prices for tape recorders—Tel: Maryland 5879. (See page 8).

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Recorder need repairing? Then let City and Essex Tape Recorder Centres do it for you expertly and economically. (See page 8).

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Ferroglyph 5 A/N, 422 and 424, Revox E36, etc., always in stock. City and Essex Tape Recorder Centres. (See page 8).

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TAPE-TO-DISC RECORDING SERVICE. All speeds. 50-minute LPs. Photographic sleeves with all recordings.—E.R.S., 162, Shirland Road, London, W.9.

## TAPE EXCHANGES

Catholic Tape Recorders International—Details from Mrs. Warren, 16a, Hendon Lane, Finchley, London, N.3.

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JUNIOR SALESMAN, aged 17-20, with keen interest and general knowledge of tape recording, required for City showrooms of City & Essex Tape Recorder Centres. Excellent prospects for right applicant. Apply in writing, stating experience, etc., Mr. Allerhand, 2, Maryland Station, Stratford, E.15.

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WANTED FOR CASH. Good quality tape recorders and audio equipment—Part exchanges—Sales—Recording Services. Magnegraph, 1, Hanway Place, Oxford Street, London, W.1. Tel.: LANgham 2156.

## Decibels and noise

(Continued from page 29)

theoretically be able to obtain a signal-to-noise ratio of 9,000:1 or 79 dB. This need- less to say would be more than adequate.

Here we have only dealt with the first valve of an amplifier but this is the most important stage especially with reference to signal-to-noise ratios. Frequency response problems, however, are present in every stage throughout an amplifier and similar precautions to those mentioned above must be taken.

These figures of signal-to-noise ratio are the maximum figures attainable, generally speaking in practice it is safer to calculate 6 dB below what is expected.

If the signal-to-noise ratio is critical as in a tape replay amplifier it will be necessary to select the first stage valve from a considerable number. Noise level in a valve is a function of the hardness of a valve, that is the greater the vacuum the quieter the valve. Running of a selected valve under normal operating conditions prior to the insertion in the equipment tends to harden the valve and is used in a circuit working to a rigorous specification. This is called "ageing."

The main difference between professional and domestic equipment is the accuracy that it is required to work to throughout its life. This calls for repeated tests at all stages of production to ensure the one hundred per cent reliability that is a must.

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Brenell 5/2 ...	7 5 0	5 8 8	69
Reps R10 ...	6 4 0	4 12 11	59
Telefunken 95 ...	6 4 0	4 12 11	59
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Grundig TK18 ...	4 2 0	3 1 5	39
Truvox R62 ...	4 2 0	3 1 5	39
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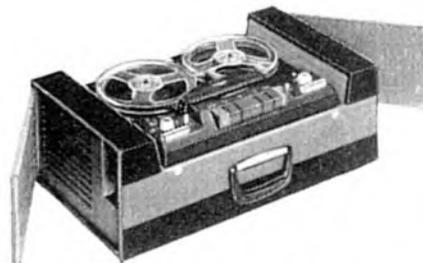
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**Bird, David Frederick** (24). Rodac House, 92, Gardiner Street, Gillingham, Kent. Electronic music, cine, most music. 3½ ips. 7-inch spool. Philips EL3514. **Germany, Tahiti.**

**Brudenell, Peter Ian** (22). 36, Trevor Road, Southsea, Hants. Photography, cinema, pop music. 7½, 3½, 1½ ips. 5-inch spool. Philips EL3542. **UK, Malaya.**

**Cahill, Patrick** (27). 3, Farnworth Road, East Heringthorpe, Rotherham, Yorks. Photography, cars, pop music. 7½, 3½, 1½ ips. 7-inch spool. Truvox PD82. Letters not required.

**Cleeve, Roy**. 82, Lichfield Road, Coleshill, Warwickshire. 35mm photography, travel, stamps, most music. 3½, 1½ ips. 5-inch spool. Grundig, H.M.V., Alba. **USA, Canada, Alaska, Middle and Far East.**

**Collier, Richard** (32). 44, Crindace Road, Fulham, S.W.6. Stereo. 7½, 3½, 1½ ips. 7-inch spool. Telefunken 76 and 97. Females preferred.

**Crew, Richard** (21). 8, Batten Road, off Hillside Road, St. George, Bristol, 5. Motor cycles, all music. 7½, 3½, 1½ ips. 7-inch spool. Robuk RK3. **Bahamas, Cuba, S. America.**

**Froud, William** (49). 34, Woburn Avenue, Theydon Bois, Essex. Motor racing, camping, most music. 7½, 3½, 1½ ips. 7-inch spool. Sony 521, Robuk RK3. **UK, USA.** Male contacts only.

**Gomez, Philip Joseph** (34). 35mm photography, books, travel, most music. 15, 7½, 3½, 1½ ips. 7-inch spool. Philips EL3542, Brenell MK 5M. Male contacts only.

**Herbertson, Frank** (38). 42, Cecil Street, Glasgow, W.2, Scotland. 8mm cine, music. 3½, 1½ ips. 7-inch spool. Sound Riveria. Male contacts only.

**Ibbotson, Peter** (20). C.C.H.K., R.A.F. Kai Tak, BFPO 1, Hong Kong. Photography amateur radio, jazz, pop music. 3½ ips. 7-inch spool. Sony 464. Female contacts preferred.

**Jackson, Henry** (37). 200, Watling Way, St. Alban's, Herts. Humour, current affairs, satire, psychology, jazz. 15, 7½, 3½, 1½ ips. 8½-inch spool. Brenell MK 5M, Philips EL3527. **UK, USA, Canada, South Africa, Australia, Israel.**

## TAPE EXCHANGES

**T**APE recorder owners who wish to contact others with similar interests to exchange news and views by tape are invited to fill in and return the form shown on page 42, giving their name, age, address, special hobby or interest for this section.

The details, given here, also include speeds and spool size to be used, name of recorder, and special areas to be contacted.

**Kennedy, Morgan** (40). 315, West 4th Street, New York, 14, USA. Photography, equipment modification. 7½, 3½ ips. 8½-inch spool. Ferrograph 3/AN. **UK.**

**Lane, Leslie** (39). 54, Vandyke Road, Leighton Buzzard, Bedfordshire. Photography. 3½ ips. 5½-inch spool. Bush TP50.

**Lansbury, Basil** (42). Photography, sound effects, travel, motoring, music. 7½, 3½ ips. 7-inch spool. Vogue.

**Liknaitzky, Toby** (23). 60, Boksburg Road, Germiston, South Africa. Photography, cars, music. 3½, 1½ ips. 3-inch spool.

**Lockie, Fiona, Miss** (30). 4, Maryfield Place, Bonnyrigg, Midlothian, Scotland. Jewellery making, historical buildings, music. 3½ ips. 5-inch spool. Philips four-track. **Norway, Holland.**

**Lundie, Robert** (35). 131, Pietermaritz Street, Pietermaritzburg, Natal, South Africa. Photography, sport. 7½, 3½ ips. 7-inch spool. Sony 464.

**Mahendra, Raja Jain** (30). Central Public Library, Twickenham, Middlesex. Photography, Indian music, film songs. 3½, 1½ ips. 7-inch spool. Grundig TK40.

**Neason, Kenneth** (31). 98, Highbury Road, Kings Heath, Birmingham, 14. 35mm photography, swimming, most music. 7½, 3½, 1½ ips. 7-inch spool. Sony, Simon, Stella. **Japan.** Letters not required.

**O'Callaghan, Dennis** (45). 239, N. Hartley Street, West Corina, California, USA. International affairs, economics. 3½ ips. 5-inch spool. **England.**

**Statham, Raymond** (29). 105, Worsley Road, Winton, Eccles, Lancashire. Railways, politics, most music. 3½ ips. 7-inch spool. Philips EL3541.

**Thomas, F. J.** (42). 27, Stuart Crescent, Hayes End, Middlesex. Most music. 7½, 3½ ips. 3½-inch spool. Wyndors Victor. **London and Home Counties.**

**Urwin, Col. W. 1920064** (32). S.S.F., R.A.F. Little Rissington, Cheltenham, Gloucestershire. Photography, 8mm cine, motoring, most music. 7½, 3½, 1½ ips. 7-inch spool. Philips four-track. **Sweden, France, Germany.** Letters first please.

**Wilson, George** (38). 23, Highfield Street, Cemetery Road, Pudsey, Yorks. Travel, motoring, pop music. 7½, 3½, 1½ ips. 7-inch spool. Philips EL3549 four-track. **Yorkshire and Lancashire.** Male contacts only.

**Wood, Dennis** (33). 73, Aireville Road, Frizinghall, Bradford, 9, Yorkshire. Hiking, camping, modern jazz, classical music. 3½ ips. 5½-inch spool. Grundig TK20.

## TEENAGE

**Baumont, Raymond** (16). 49, Deans Lane, Edgware, Middlesex. Photography, sport, pop music. 3½ ips. 5½-inch spool. Peto Scott. Female contacts preferred.

**Cole, Maurice** (18). 14, Hereford Road, Seaforth, Liverpool 21. Humour, music. 7½, 3½ ips. 7-inch spool. Philips EL3527 and EL3542.

**Davidson, William** (19). 7, Ferguson Street, Johnstone, Renfrewshire. Camping, most music. 3½ ips. 5½-inch spool. Grundig TK24 four-track. **UK.** Female contacts only. Letters not required.

**Dennerley, Michael** (19). Marsh Lane Farm, Chudleigh, South Devon. Water sports, film music, Elvis Presley. 1½ ips. 4-inch spool. Philips EL3585. Letters first. Female contacts preferred.

**Foster, Geoffrey** (14). 34, Whitefoot Lane, Downham, Bromley, Kent. Pop music. 3½ ips. 5-inch spool. Ferguson 441 TR. **UK, USA.** Letters first.

(Continued on page 42)

# ADVERTISEMENT INQUIRIES

## SERVICE

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October 1963

# TAPE EXCHANGES

(Continued from page 41)

**Lieb, Natie** (18). 134, Leicester Road, Kensington, Johannesburg, South Africa. Photography, Electronics, cars. 3½ ips. 3-inch spool.

**Panich, Jerrold** (14). 204, Harvard Street, Malden 48, Massachusetts, USA. Photography, radio, music 3½ ips. 5¼-inch spool. **U.K., Europe.**

**Pollintine, Leslie** (15). "Avalon," Parkmill, Swansea, Glamorgan, South Wales. Photography, electronics, pop music. 7½, 3½, 1½ ips. 7-inch spool. Elizabethan LZ29. **U.K.** Female contacts preferred.

Tape recorder owners wishing to make contact with others of similar interests are invited to complete and return this form. (BLOCK LETTERS PLEASE).

Name .....

Address .....

.....

..... Age.....

Special interests .....

.....

.....

Speeds to be used..... Spool size.....

Recorder owned .....

Special areas to be contacted .....

(Unless otherwise stated, I am prepared to accept tapes from any part of the world).

**Riall, David** (19). 26, Nursery Avenue, Hale, Altrincham, Cheshire. Satire, politics, motoring, reading, pop, light and classical musical. 3½, 1½ ips. 7-inch spool. Wyndor Victor. Female contacts preferred.

**Rose, Brian** (18). 6, Mill Ridge, Edgware, Middlesex. Photography, classical music. 3½ ips. 5¼-inch spool. Grundig TK20. **U.S.A.**

**Sirota, Alan** (15). 200, Harvard Street, Malden 48, Massachusetts, U.S.A. Photography, radio and TV music. 7½, 3½, 1½ ips. 5¼-inch spool. **U.K., Europe.**

**Spedding, Alex** (15). 6, Burnslane, Warsop, Nr. Mansfield, Notts. Model engineering, books, radio, jazz. 3½ ips. 5¼-inch spool. Grundig TK5. Male contacts only.

**Stambridge, Susan** (18½). 40, Ascot Park, Neasden, London, N.W.10. Photography, tennis, dancing, films, most music. 3½ ips. 5¼-inch spool. Portadyne. **U.S.A., Australia, Canada, Holland, Italy, New Zealand, Norway, Switzerland.**

**Triggle, Anthony** (17). "Lundi," 74, Lockingwell Road, Keynsham, Bristol. Photography. 3½ ips. 3-inch spool. Ferguson 3200.

**Walters, Colin** (15). 10, Fallsbrook Road, Streatham, London, S.W.16. Golf, tennis bowling, pop music. 7½, 3½, 1½ ips. 7-inch spool. Elizabethan FT3. **U.K., U.S.A.**

**Washbourne, John** (16). 38, Upper Walthamstow Road, Walthamstow, E.17. Radio, cinema, camping, pets, pop music. 3½ ips. 7-inch spool. Philips EL3549 four-track. **U.K., U.S.A.**

**Wilson, Don** (16). 180, Middlemarch, Coventry. Radio control, motor sports, pop music. 3½ ips. 3-inch spool. Stella. **U.S.A.**

## FAMILY EXCHANGES

**Nye, Mr. and Mrs. R. J. H.** (26). 49, Ousedale Close, Lewes, Sussex. Handicrafts, records, music. 7½, 3½, 1½ ips. 7-inch spool. Elizabethan FT3 four-track. **U.K., U.S.A., Belgium, Holland, Sweden, France, Germany, Norway.**

**Pennington, Mr. and Mrs.** (39). 9, Crookings Lane, Penwortham, Preston, Lancs. Photography, travel, music. 7½, 3½, 1½ ips. 7-inch spool. Wyndor Trident four-track.

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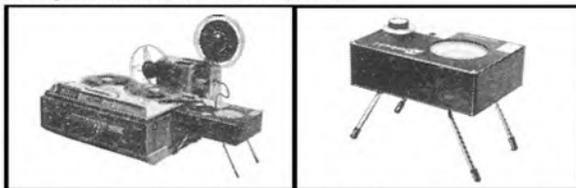
for fully synchronised top  
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It is now recognised all over the world that the Automatic Synchrodek is the best answer yet for putting sound on tape in absolute synchronism with home movies.

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