

AMATEUR

TAPE RECORDING

VOL. 5 No. 5

DECEMBER 1963

Price 2/-

**ALL EYES ARE
ON XMAS BUYS.
WHAT YOU WANT
YOU'LL FIND
INSIDE ATR**

**ALSO
FREE
EXTRA!**

**INFORMATION
BOOKLET
NO. 6**

WHATEVER YOUR ASSIGNMENT—GET THE **FI-CORD 202**

PORTABLE BATTERY/MAINS RECORDER—
so much in so little space

Another assignment for Fi-Cord Fred, safely stowed under his belt, thanks to the compact versatility of the Fi-Cord 202. The Fi-Cord 202 caters for the most exacting professional and for the enthusiastic amateur. Whether you are in a sound-proof studio or perched on a rocky ledge, the Fi-Cord 202 gives you high-fidelity recording at your fingertips. And with this wonderful, lightweight machine you have all the practical advantages of a full-size recorder.

The Fi-Cord 202 offers all these features:
2 speeds— $7\frac{1}{2}$ and $3\frac{3}{4}$ • Standard 4" spools
Vu-meter • Fast forward wind • Fast rewind
Resettable counter • Manual volume control

Built-in loudspeaker • Sockets for microphone, extension speaker and remote control • Safety record switch • Easy-load battery cassettes • Battery warning lamp • Mains input optional.

ACCESSORIES INCLUDE: Carrying case, choice of microphones, power packs for mains and car.

There is a full range of Beyer microphones, from general purpose to ultra-studio quality, to cover every use of the Fi-Cord 202.

Price: 66 guineas, including long life mercury batteries and tape.

Write for fully illustrated brochure and address of nearest stockist to:

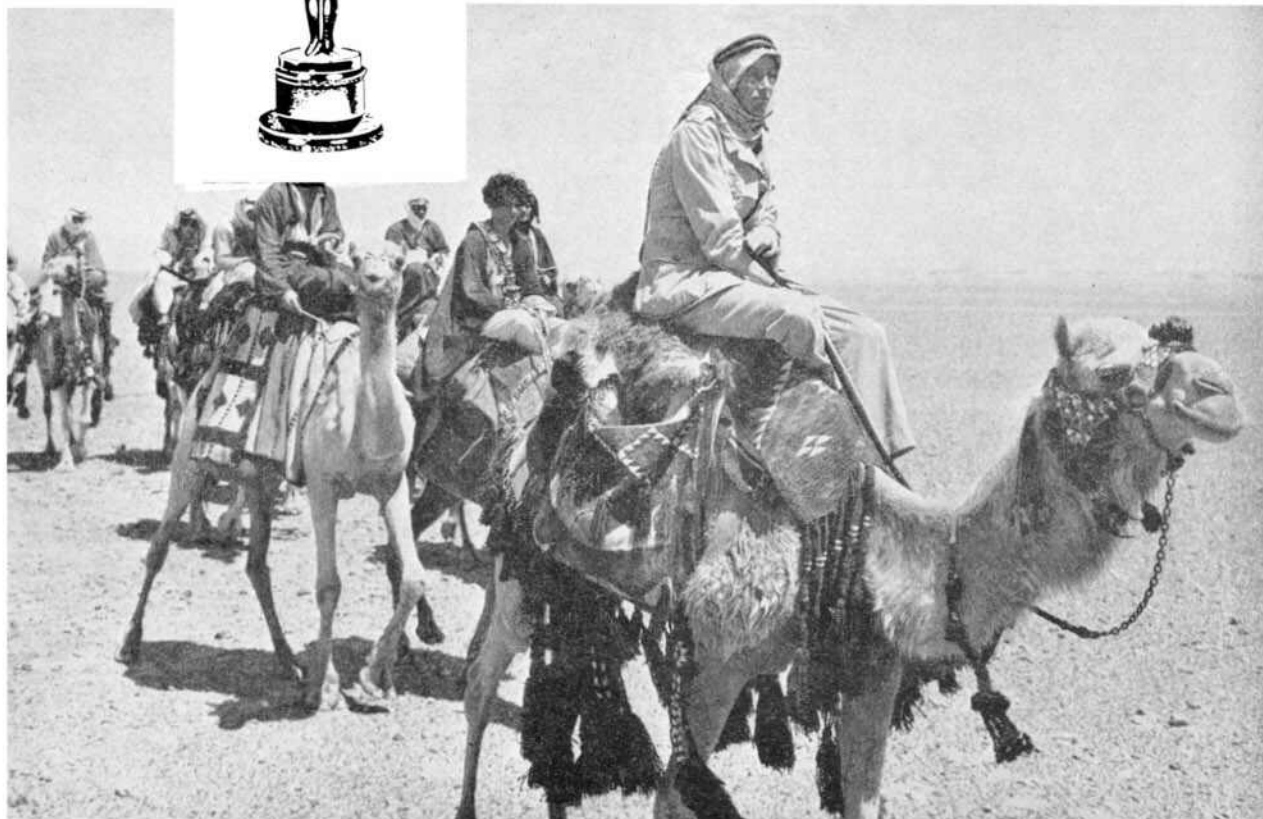


FI-CORD INTERNATIONAL 40A, DOVER STREET, LONDON, W.1. HYDe Park 3448





"Lawrence of Arabia" recorded on Zonastripe and Zonafilm magnetic tracks awarded 'Oscar' for Best Sound 1963.



THE TAPE WITH THE OSCAR-WINNING RECORDING QUALITY

Zonatape is available in four grades and four spool sizes. Each is colour coded as follows:

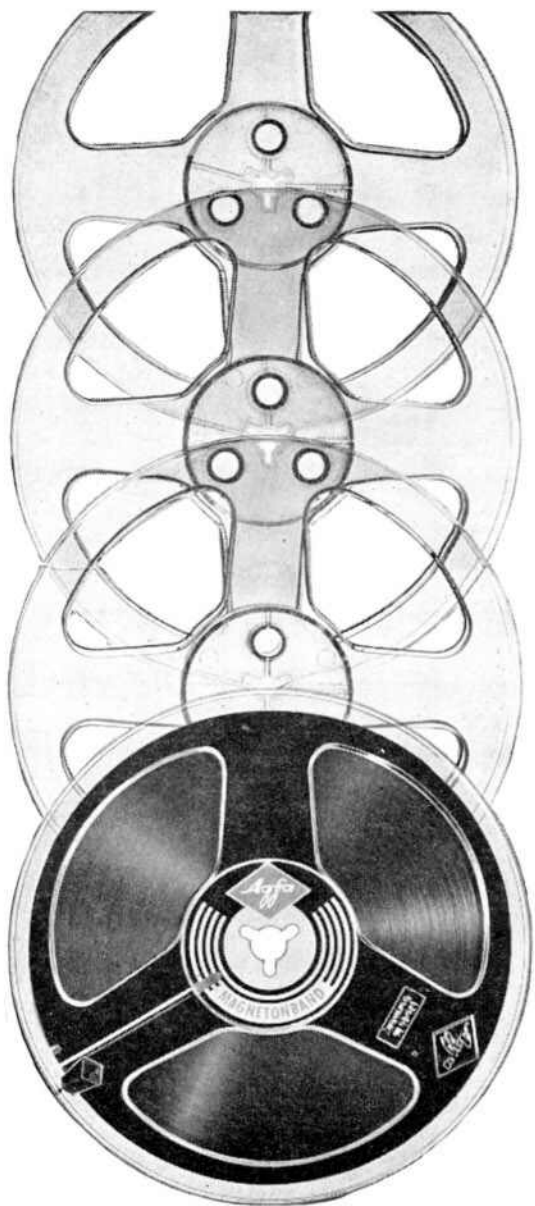
- Clear Spool: **Diacetate Standard Play.**
- Red Spool: **PVC Standard Play.**
- Green Spool: **Polyester Extra Play.**
- Blue Spool: **Polyester Double Play.**

A full range of Zonatape recording accessories includes, printed leader and timing tapes supplied in 5 colours, splicing tapes and metal stop foil.

These professional quality tapes are obtainable from good class dealers but in case of difficulty send to us for name and address of nearest Zonatape stockist.



ZONAL FILM (MAGNETIC COATINGS) LTD, ZONAL HOUSE, WESTFIELDS RD, W.3. ACORN 6841.



**three
into
one**

TRIPLE PLAY PE 65 TAPE

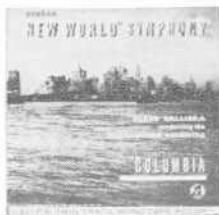
- * That lengthy opera can be recorded on a single spool without change of track.
- * Your battery recorder will play for three times as long.
- * Agfa triple play tape will not stretch, or break because it is pre-stressed during manufacture.



PE65 tape available on 3 · 4 · 4 $\frac{1}{4}$ · 5 · 5 $\frac{3}{4}$ & 7 inch spools
27 REGENT STREET LONDON SW1 · REGENT 8581



THE MIKADO
H.M.V. TA-CLP1592/3



NEW WORLD SYMPHONY
COLUMBIA TA-33SX1025



MADAM BUTTERFLY
H.M.V. TA-CLP1334



RACHMANINOV PIANO CON. No 2
H.M.V. TA-CLP1478



SWAN LAKE
H.M.V. TA-CLP1018

THE BIGGEST CHOICE IS ON E.M.I. 3 $\frac{3}{4}$ I.P.S. MONO TWIN TRACK TAPE RECORDS



BLITZ!
H.M.V. TA-CLP1569



THE MERRY WIDOW
H.M.V. TA-CLP1226



SEMPRINI
H.M.V. TA-CLP1137



THE SOUND OF MUSIC
H.M.V. TA-CLP1453



BOBBY DARIN
CAPITOL TA-T1791



THE KING AND I
CAPITOL TA-W740



LEE/SHEARING
CAPITOL TA-T1219



FRANK SINATRA
CAPITOL TA-W1491



SHIRLEY BASSEY
COLUMBIA TA-33SX1178



MR. ACKER BILK
COLUMBIA TA-33SX1493



RUSS CONWAY
COLUMBIA TA-33SX1464



SUMMER HOLIDAY
COLUMBIA TA-33SX1472



BEYOND THE FRINGE
PARLOPHONE TA-PMC1145



CONNIE FRANCIS
M-G-M TA-MGM-C870



Ask your dealer for
FREE leaflet giving
full details of the
many other tape
records available, or
write to the address
below



GIGI
M-G-M TA-MGM-C770



EARTHA KITT
M-G-M TA-MGM-C878



BOBBY VEE
LIBERTY TA-LBY1112



FERRANTE AND TEICHER
UNITED ARTISTS TA-ULP1010



THE GREATEST RECORDING
ORGANISATION IN THE WORLD

E.M.I. RECORDS LTD., DEPT. E, E.M.I. HOUSE, 20 MANCHESTER SQUARE LONDON W.1.

moment of triumph



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

... the SIMON SP5 makes sense of the technological development, the use of transistor circuitry, the new thinking about design, that have gone into its conception.

... to put it bluntly, no other tape recorder in the high quality range offers the amateur or the professional so much; nor quite the same modern, logical, treatment of shape and controls.

... where else can you buy for 93 guineas (or 106 guineas for stereo) such a remarkable range of facilities—uni-directional twin-track recording, two speeds, seven-inch spools, dual channel mixing, master fader, loudspeaker monitoring, level setting, controlled echo, track to track recording, bias control, and metered recording control?

... and where else, at such an inexpensive cost, can you buy equal or even comparable performance?



SIMON SP5

For full technical details of SIMON tape recorders and microphones, please consult your dealer.

In case of difficulty we shall be glad to help if you write to:

SIMON EQUIPMENT LIMITED 48, George Street, London W.1.

AMATEUR TAPE RECORDING & HI-FI

*Gives the
amateur the
professional
touch . . .*

Vol. 5, No. 5

December, 1963

In this issue :

Compose Your Own Music	10
Russ Allen	13
Learn While You Sleep !	15
Studio Ten (Recording Dens)	19
16-page Pull-out Booklet :	
SOUND DATA AND REFERENCES	21
Electronics Without Tears	31
Tape Club News	34
Sound Scene — some ideas for Christmas gifts	38
Approved Dealers	45
Classified Advertisements	46

Editorial Office:

Room 532, Ulster Chambers,
168 Regent Street, London, W.1.
REGent 4833/5

Advertisement Office:

145 Fleet Street, London, E.C.4.
FLEet Street 7732/2110

Editor: F. C. Judd, A.Inst.E.

Advertisement Manager: H. V. Gould

ON THE COVER

- An attractive girl wearing a whimsical expression. She's worried about Christmas gifts. Are you? If so turn to Sound Scene on page 38—it offers a variety of ideas.

A THOUGHT FOR CHRISTMAS . . . by the Editor

IN the midst of the season's plenitude, we will spare a thought for the significance of Christmas. When the spending spree is over, and we are stretched to the point of discomfort by our intake of Christmas pud, most of us are content to bathe in the pleasant glow of the family get-together.

Sons, daughters and close relations are with us—and, for two days during the year, most of us like it that way!

Editorially we are not going to exhort you to rise from the armchair and record what the young people of the family are saying. But we are going to suggest, that you tape enthusiasts, especially those of you with emerging teenage sons and daughters, do start thinking how you can embrace these young people in your tape club activities.

Tape recording as a hobby is very much the latter half of the twentieth century. As such, it becomes a young person's hobby. The youngsters are with-it. They recognise the tape machine as a part of their age. They quickly see its potential for entertainment and communication with their own age group.

Why not encourage that son of yours—that daughter—that boy of your pal's who lives five doors up the road—to join you when you next have that tape session? The gadgets on the machine and what they do will interest him! And he may surprise you with how much he knows about how many ohms making five.

As for the daughters, once they can record their favourite pop stars, dad will emerge from squaresville and become a go-go-go man! Then, who knows, those two days in the year when the family gets together and likes it that way, may stretch into two or three evenings a week!

What is more, tape clubs and tape recording circles may find a surge of interest stirring the dust of flagging enthusiasm.

Or is that kind of Christmas too dragsville for words?

Looking back over the last twelve issues gives us a slight glow of satisfaction. Not enough for us to feel smug or contented, but sufficient for us to feel a sense of achievement and progress. We have pioneered the pull-out booklet. We have introduced do-it-yourself constructions kits at special prices. We have offered a fine series of sound effects discs.

These extras have been well received by you, our readers. Also we have managed to retain your interest with bright, yet informative features.

All this is good and indicates our determination to keep ATR enterprising and lively. Next year we intend to continue and develop these extras. And you may rely on us when we tell you that this is no idle editorial forecast.

Meantime, help us to improve ATR by doing two things. Send us your constructive criticism. Let us have your suggestions for booklets, sound effects discs, and do-it-yourself premium offer kits.

Meanwhile, from the perimeters of our pudding-stretched tummies, we will say happy Christmas! And thank you for your loyal support during the last year.

The title Amateur Tape Recording & Hi-Fi is registered at Stationers' Hall, London. Contents are copyright and may only be reproduced by permission of the Proprietors. Signed articles represent the views of the authors and are not necessarily those of the Editor.

December, 1963



introducing the **TRUVOX 90**

A NEW THOROUGHbred SERIES FROM A FAMOUS BRITISH MARQUE

Clinically professional in every line. Crisply precise in operation. Full and faithful in reproducing sound . . . this sums up the new

Series 90—the finest yet from Truvox.

No concessions here to mass-market "styling". No fancy plastic moulding; no pretty-pretty cover fabrics. No "cosmetics" at all. Instead—clean, rugged and functionally austere, the new Truvox looks every inch what it is . . . a thoroughbred instrument for the enthusiast.

For the man who wants a *real* tape recorder; not a gilded toy on the one hand, nor a status symbol on the other.

Among the outstanding features of the Series 90 are:

- * "Piano Key" operation.
- * A cathode follower output.
- * Recording level meter.
- * Positive lock reel carriers.
- * 4 digit counter—instant reset button.

- * Hinged editing panel.
- * 'No-tape' autostop.
- * Mixing facilities.
- * Superimposition.
- * Forward facing Rola-Celestion loudspeaker.
- * 3 tape speeds— $7\frac{1}{2}$ $3\frac{3}{4}$ $1\frac{7}{8}$ ips.
- * 3 motor drive—Papst capstan motor.



PD.93 2-track mono tape unit.
PD.95 4-track mono tape unit.
Each 59 gns. (U.K. only)



PD.97 2-track stereo tape unit.
PD.99 4-track stereo tape unit.
Each 79 gns. (U.K. only).

These handsome self powered tape units, in superb Afrormosia plinths, polyester finished, provide an ideal means of adding tape to the existing Hi-Fidelity system at a very economical price. They can be used with any amplifier at present available and be operated horizontally, vertically or any angle between.

To enable purchasers to make their own personal choice of microphone and tape, we do not supply these items with any tape unit.

Make your own electronic music

By F. C. JUDD,
A.Inst.E.

SCIENCE AND ENGINEERING have become almost indispensable factors in the world of today, so it is hardly surprising to find that technical methods are being applied to the creation of new sounds and music. The tape recorder and magnetic tape are very prominent here; in fact, without them, sound recording itself would be set back at least twenty-five years.

Many of the technical methods employed by composers and studios for what is now popularly called 'electronic music' are, of course, fairly well known, but from time to time new experiments are carried out, such as the recent application of a computer and sound transducer programmed to compose and create music. It could produce synthetic voices, as well! Even 'pop' record groups and recording studios are employing electronics and tape to create new musical sounds and unusual, though not always elegant, effects called 'gimmicks'.

New techniques, however, usually call for special equipment. But quite a number can be employed using a modern tape recorder plus a few simple electronic circuits that any keen technical enthusiast may construct for himself. For instance, a **ring modulator** can be made quite easily from readily available components, but let me turn first to a simple technique with tape which may well interest those with a flair for music.

THE TAPE RECORDER —A MUSICAL INSTRUMENT

The use of tape loops is well known, and a loop of sounds will be repeated

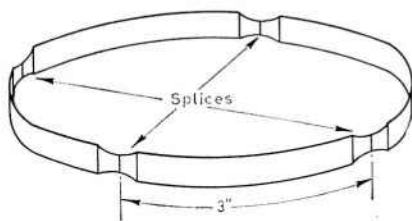


FIG. 1. SIMPLE LOOP OF FOUR DIFFERENT SOUNDS, FOR A CONTINUOUS RHYTHM AT A SPEED OF $7\frac{1}{2}$ I.P.S.

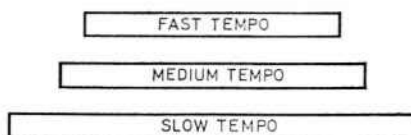


FIG. 2. USE THESE AS A GUIDE TO CUTTING PIECES OF TAPE FOR LOOP RHYTHMS AT $7\frac{1}{2}$ I.P.S.

over and over again, so long as the tape recorder is left running. This same technique can also be used to provide a perfect rhythm against which to play a musical instrument, and with timing as accurate as a metronome.

Here is a simple exercise to show what can be done:— Record four different sounds on a short piece of tape and cut out about 3 inches of each. Join these together with splicing tape to form a loop and replay the loop at $7\frac{1}{2}$ i.p.s. (see Fig. 1)

Exercise 2: Record various transient sounds, such as sounds of small drums or cymbals — in fact, any percussion sound — at $3\frac{1}{2}$ i.p.s. Cut about 3 inches of each set, join into a loop and replay at $7\frac{1}{2}$ i.p.s. You will find that you have now produced a complex rhythm with a fundamental 4/4 or common 4 in a bar beat.

The chart of Fig. 2 shows the length of tape required for slow, medium and fast tempo, but remember, these are suitable only for $7\frac{1}{2}$ i.p.s. To achieve similar

results at $3\frac{1}{2}$ i.p.s., the measurements given would have to be halved, which would make the loops too small for practical use.

THE TAPE RECORDER PLAYS BASS

Aside from the rhythms made up of percussive noises, one can also produce bass accompaniments in 4/4 time. Exercise: Record piano or signal generator tones of the notes C, E and G, two octaves below middle C, that is, C=130.812 c/s, E=82.406 c/s. and G=97.9 c/s. (see Table 2 of Information Booklet). Now form up a four-note loop as shown in Fig. 3 and replay at $7\frac{1}{2}$ i.p.s.

Once you have tried these simple exercises, the making and use of the loops should be fairly obvious. For instance, a given number of bars from different loops can be re-recorded and joined end to end to make up a 32-bar sequence of constant rhythm. With a stereo recorder this technique can be extended to both tracks. Record percussive sounds on one track at $3\frac{1}{2}$ i.p.s. Record bass notes on the other at $7\frac{1}{2}$ i.p.s. Cut the strips of tape as shown in Fig. 3 and join into loops. You will now have a complex percussion rhythm against a steady 4/4 bass part.

For further information on rhythm loop techniques, I would like to recommend Ken Peters' new book called 'Modern Tape Recording and Hi-Fi' (see Information Book No. 6), for in this he deals with the making of rhythm loops by both tape cutting and spot erasure methods).

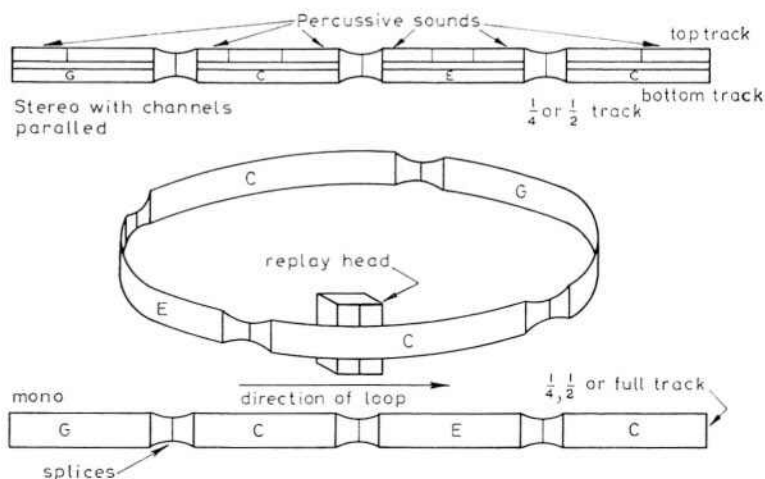
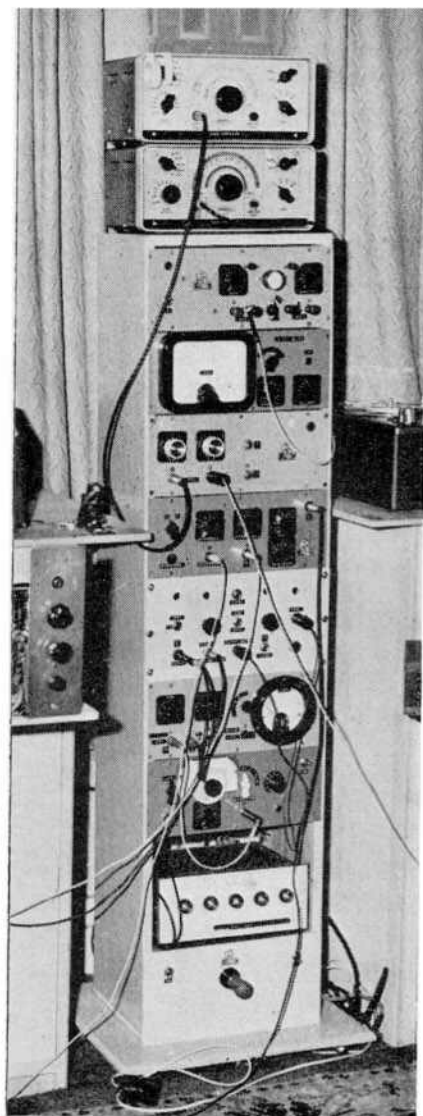


FIG. 3. MAKING A 4/4 BASS PART FROM A TAPE LOOP

BACK VIEW OF CONTROL EQUIPMENT



- ← AUDIO GENERATOR
- ← AUDIO GENERATOR
- ← OSCILLOSCOPE
- ← SIGNAL LEVEL METER
- ← RING MODULATOR
- ← 4-CHANNEL MIXER
- ← PASSIVE MIXER
AND PATCHING PANEL
- ← FILTER } AUDIO
- ← FILTER }
- ← PREAMPLIFIER
- ← PREAMPLIFIER

FIG. 4.

EXPERIMENTAL EQUIPMENT

The photograph of Fig. 4 shows a simple rack arrangement which contains various items of equipment I use for special effects recordings. The rack is constructed from wide, planed boards, and the different items of equipment are housed in metal boxes of uniform size. Amongst this equipment is a multi-way passive mixing panel, which is extremely useful for mixing and patching high level outputs from other mixers, tape recorders and preamplifiers (but not microphones). The circuit of Fig. 5 shows the two different circuits in use, both of which are assembled on a metal panel

about 8 ins. high and the same width as the rack.

THE RING MODULATOR

Another item of equipment in the rack is a ring modulator, and although we have published the circuit for this before, it is shown again in Fig. 6, this time with provision for input controls and external connections. The ring modulator can be used in a variety of ways to produce new musical sounds. For example, feed the output of a tape recorder and carry a four-bass-note loop into one terminal of the modulator. Connect a pre-amplified microphone (the output from a valve mixer or pre-amplifier) and play single

notes into the microphone from another musical instrument.

The ring modulation will produce two new tones for each one you play. These extra tones will be at the sum and difference frequencies of those fed into the modulator. If, for example, one of the loopnotes were C-natural at 261.625 c/s. and the note played D-natural at 146.832 c/s. the new notes (added to the originals) would be 261.625 plus 146.832=408.457 c/s. This lies between G-natural and G-sharp! The other note would be 261.625 minus 146.832=114.793 c/s, which lies between A-natural and A-sharp! The result is a chord of unusual musical quality. (See table 2 ATR Information Booklet, this month.)

THE TONE GENERATOR

We recently published a circuit for an audio tone generator (ATR September issue) which can be used to great advantage for electronic music, etc., for it will provide single tones of known frequency or frequency glide effects and so on. With the aid of a ring modulator it can also be used to provide tremolo effects to other tones fed into the modulator or chord effects as outlined in the previous paragraphs. Example: Connect the output from the generator to one terminal and set the dial to the lowest frequency i.e., 15 c/s. The tones or signals to be modulated are now fed into the other terminal. If the signals are recorded at $7\frac{1}{2}$ i.p.s. and relayed at $3\frac{1}{2}$ i.p.s. the resultant will be a signal with a vibrato of $7\frac{1}{2}$ c/s. The variations of tones and effects that can be produced with a tone generator and ring modulator are almost unlimited for these are the two items of equipment most used in electronic music studios.

SQUARE WAVE TONES

The square wave produces a tone which contains a very large number of harmonics and therefore sounds extremely rich when played through a loudspeaker. For this reason the square wave oscillator, or multi-vibrator as it is called, is often used for electronic organs. The circuit shown in Fig. 7 can be keyed as shown across the output. When the key is opened the tone is present at the end of the 1M.ohm resistor.

This arrangement allows several of these oscillators to be connected to a common amplifier and keyed individually as would be an electronic organ. The components C, R and VR determine the operating frequency which is roughly set by R and C and tuned to pitch by VR. For the mid-range octave (around middle C) the capacitor C would be 0.01mFd, R approximately 100K.ohms and VR 50K.ohms variable. I am at present using 50 K.ohms variable.

The circuit of Fig. 8 shows an electronic attack and decay control which is not difficult to construct; but remember, it is also a fairly high gain amplifier and needs to be treated as such.

continued over page

Electronic tremolo or vibrato is quite easy to produce with the circuit of **Fig. 9**.

NOTE: The values of the components in the circuits of Figs. 7, 8 and 9 are nominal values and may require modifica-

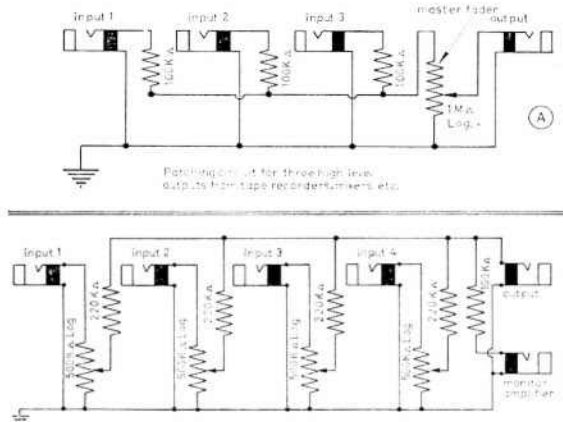


FIG. 5. PASSIVE MIXING NETWORK FOR 4 HIGH LEVEL OUTPUTS FROM TAPE RECORDERS, MIXERS AND AMPLIFIERS, ETC.

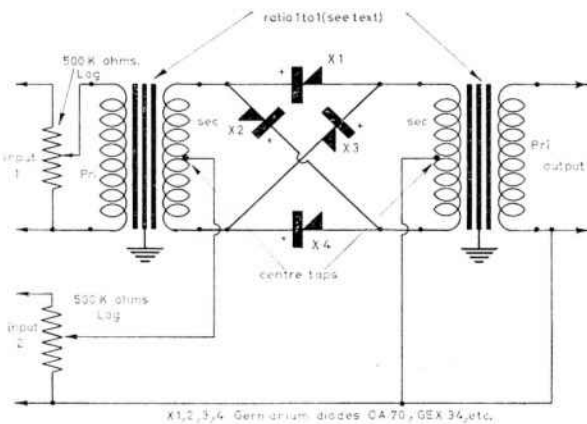


FIG. 6. CIRCUIT FOR A PRACTICAL RING MODULATOR.

Frequency determined by C, R and V_R (see text)
 V_1 and V_2 ECC81, 82 or 83.

FIG. 7. SQUARE WAVE TONE OSCILLATOR

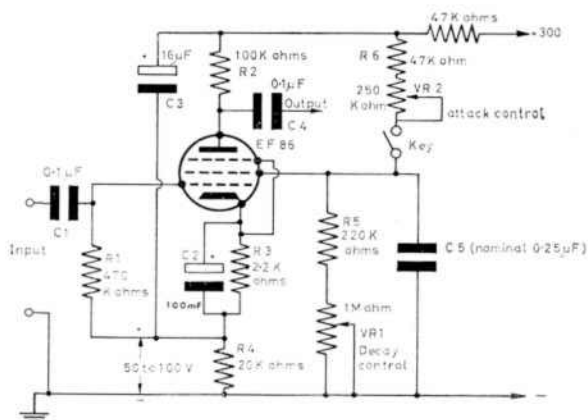


FIG. 8. ATTACK AND DECAY CONTROL

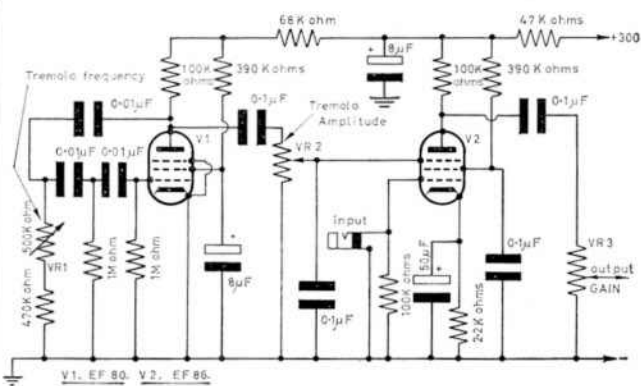


FIG. 9. VIBRATTO OR TREMOLO OSCILLATOR AND AMPLIFIER.

Russ Allen on his Record Review

The BIG BAND is Coming Back

Way back, in what is oft referred to wistfully, as the "good old days", large orchestras abounded and turned out "jazz" arrangements that allowed soloists to stand up and blow eight bars of improvisation, or maybe more if he was lucky or the leader. So important was size, that the John Kirby Sextet were billed as "the biggest little band" etc. However, the post-war slump brought about curtailed budgets for promoters and bandleaders had to either cut down their groups or go. Many went, never to return, others have struggled on with inferior musicians, doing the one nighter circuits. A scramble. Now, so the musical press tells us, the big band is to return.

We shall see.

ONE man who has continued the battle is **Stan Kenton**. He is visiting Britain about the time you read this. On Capitol T 1844 it says, "From the creative world of Stan Kenton comes ... **"Adventures in Time"**. A challenging exploration of unusual time signatures ... here are massive orchestral sounds and richly inventive solos in a new Johnny Richard's Concerto for the Kenton Orchestra, inspired by age-old legends of time and space and the Gods of the Universe." Mr. Kenton and twenty-two musicians participate. Hi-Fi-ly interesting equipment testing, big, bold, brassy ... **BRAVO!**

* * *

Another BIG band ... **"Bill's Bag — Billy May"**. Capitol T 1888. Rec. Jan., Feb., Mar. '63. Studding his big studio group with top jazz men Mr. May has chosen twelve of what he calls, "Jazz standards of to-morrow that are happening to-day" and arranged and conducted them to produce a masterly sound. Most enjoyable to hear some of my favourite small band themes "blown-up". Superbly recorded.

* * *

Miles Davis who has indulged in numerous big group experiments in the past, is back to rhythm section and one other horn, on **"Seven Steps to Heaven"** CBS BPG 62170. George Coleman's tenor is the other horn and if memory serves me right he was on some of the early Parker sides. Miles is in a ruminative mood and the music is far from jolly but good, very, very good. Leagues ahead!

* * *

Realms are continuing to issue more of their fabulous Classics of Modern Jazz. **"The Charlie Parker Memorial"** of which **Volume 5** has just appeared is a must. Ardent historians who buy the lot will be well rewarded.

Realms give us not just a re-issue, they give us a selection of other takes from

the same session, with the goofs, squeaks, noises off and even Bird's laughter. Some of the jazz on the goofed tracks is better than on the issued version. Miles Davis is on this as are John Lewis, and Max Roach.

* * *

Another legend is, **"The Legend of Sleepy John Estes"** Esq., 32-195. Rec. March and June '62.

Estes first recorded about 1929 and has been a favourite of folk and blues fans since before. Rumour sets his age at over ninety but he himself claims a modest fifty-eight. Recording is very good and the harmonica, bass and sometimes piano, backing is very fine. Estes's guitar has the ring of authenticity and his voice has great charm.

A living folky legend.

* * *

Quite another type of album is **"Anita O'Day and the Three Sounds"**. Verve VLP. 9040. Miss O'Day when she visited these shores in, (was it?) '62 impressed me with her superb musicianship, her ability to bend and twist words and music and never miss a beat. Her voice has that husky throb that fits so well the idiom. Here, backed by the Three Sounds, she is in a much less rumbustious mood than usual, while the trio are better than I've ever heard them.

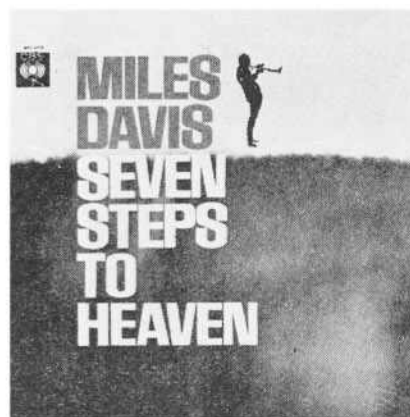
A pleasant, but not madly exciting album.

* * *

"Brasamba!" Fontana 688 131 ZL. Featuring Bud Shank, alto and flute, Carl Fischer, piano, Joe Pass, guitar.

Frankly I had my fill of Bossa Nova in the first flush of its arrival, and apart from a couple of Charlie Byrd's, have thumbed down all the rest till now. I dig Shank and rave over Fischer. Team these with Pass's great guitar, plus Larry Bunker's vibes and some superb drumming from the team, makes it a mostest set. Brava Brasamba!

● All fans of Miles Davis take a step forward. This latest LP is one of his best!



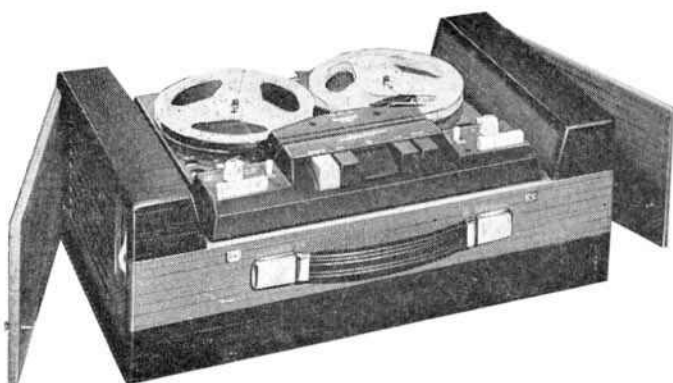
● The Hi-Fi disc that tells a story — the story of the legend of Sleepy John Estes. Enthralling!



32-195

Pick of the **WORLD'S** best!..

a new-class **SIEMENS TAPE RECORDER** for the connoisseur



SIEMENS NORGE Model 12 **4 TRACK STEREO/ALL TRANSISTOR** **HIGH FIDELITY TAPE RECORDER**

The world's most experienced professionals have made this brilliant newcomer for you. You will immediately appreciate the technical perfection and ingenuity of this incomparable tape recorder. There are 3 Tape Speeds, 3 Heads-Record, Playback and Erase—With Sound-on-Sound trick recording and many other facilities. The Model 12 has two Hi-Fi speakers built in. Rewind time is 2 mins. for 1,200 ft. of tape. Weight 35 lbs. Strongly made and finished. Beautiful to hear and see.

The SEIMENS Range comprises

Model 10, 89 gns. Model 12, 93 gns. Model 14, 87 gns.
12 months guarantee.



Post coupon for details to:
DENHAM & MORLEY LTD.
DENMORE HOUSE
173-175 Cleveland Street, London, W.1.
Telephone: EUSon 3656-7

The leading portable **TAPE RECORDERS**



BUTOBA MT7 & MT7R

Battery operated with Mains performance

If you're looking for a multi-purpose tape recorder buy a 'Butoba'. This range of battery operated machines is outstanding for purity of reproduction and is ideal for recording music, speech and bird-song. Easily transportable, 'Butoba' will help to make your holiday memorable. You can have the music of your choice wherever you go and, together with your camera, you can bring home tapes which have captured forever the sounds and scenes you have selected to record.

The 'Butoba' is truly economical on batteries and there is a mains converter available for home use. High Fidelity range. 6" oval speaker. Good output. (1 watt). The MT7R is available with remote control facilities, ideal for dictation in office or car.

THE PRICES OF THE RANGE ARE ATTRACTIVE
Model MT7 38gns. MT7R 43gns. MT5 66gns.

Please send me details of the SIEMENS and/or
BUTOBA Tape Recorders.

Name

Address

LEARN WHILE YOU SLEEP!

A look at the revolutionary 'sleep-learning' idea from America!

by David Gunston

LEARNING WHILE YOU SLEEP

THE latest pseudo-scientific craze to originate from America seems almost too good to be true: you learn permanently, simply and without any difficulty, all the things there are never enough time for in one's daily life — while you are in bed asleep!

By means of a tape-recorder on the bedside table and a small speaker under the pillow, foreign languages, plays and poetry, speeches, the Morse code and technical data of every kind is fed permanently into the subconscious by continually-repeated messages during the hours spent asleep. By quietly repeating words, facts and figures into the never-sleeping brain, it is claimed, anyone of normal intelligence can learn anything in the minimum of time. Studies that take years, a lifetime even, may be mastered in a few days or weeks — at a very low

three weeks, while secret agents of the Office of Strategic Services (OSS) were imbued with the accents, habits, customs, slang, etc., of the countries they were to enter to do espionage work, entirely by this method.

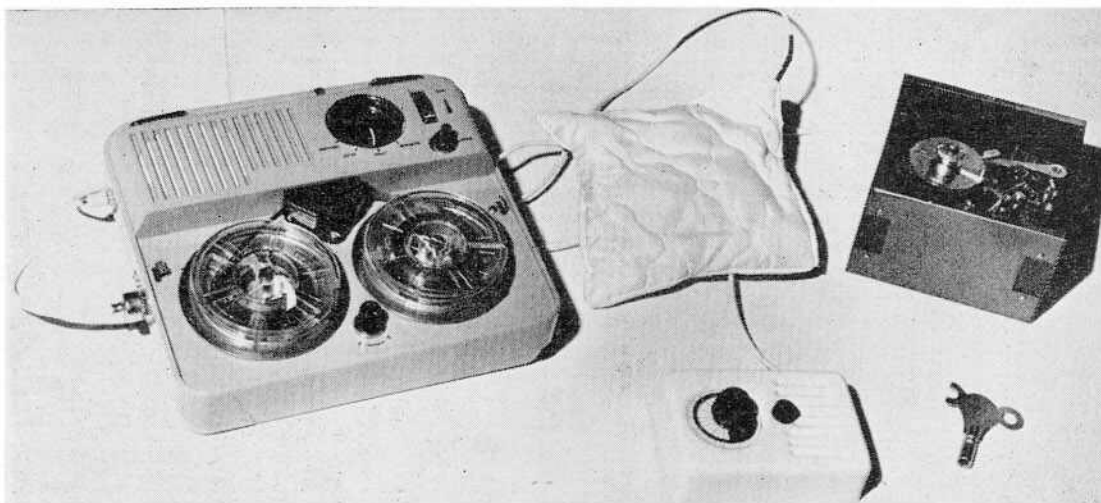
More recently, famous Chilean singer Ramon Vinay, booked to sing "Carmen" at La Scala, Milan, sleep-learned the Italian version in a week, and sang it in perfect Italian, his thick Spanish accent entirely gone. The noted aircraft designer Alexander de Siversky claims to have lost his native Russian accent and mastered "pure English" in this way, and it has been reported that singers Rudy Vallee and Bing Crosby and actress Gloria Swanson have used it to learn lines and lyrics in a very short time. In America, we are told, professional singers and actors are turning increasingly to the "still small voice" beneath their pillows to memorize their parts, especially in

selective sounds (the baby coughing, for example). In this way the subconscious mind is thus receptive to new knowledge, indeed to almost any ideas of persuasion. The system apparently has a therapeutic value too, inducing people to stop smoking, drinking or drug addiction, or ironing out psychological difficulties of many kinds.

SLEEP-LEARNING EQUIPMENT

On the bedside table stands the compact little tape recorder, previously loaded up with specially-prepared LP tapes of the subject under study, graded according to level and usually recorded to give perhaps fifty or more repeats. Alternatively, a small multi-speed gramophone may be used, playing LP discs of similar content. There is also a built-in electric time-switch, so that the "lessons" may run for fixed periods, if not all night. With the tape-recorder, the student can make

It's the idea
that's the rage
in America.
And right now
'Sleep-learning'
is being
acclaimed in
Britain. For
a review of this
'sleep-learning'
machine
turn to page 38.



financial cost and none at all in health and mental vigour.

This "revolutionary new concept of learning", as its sponsors call it, has apparently been known to science as a definite possibility for some time, but until recently has been taboo to the innocent layman, who was held by the experts to be "not yet ready for so new and so startling an approach to learning."

Many sleep-learning experiments were conducted under top secret conditions in World War II, and it is said that numbers of U.S. service officers were taught foreign languages thus in only two or

musicals, while TV actors, with only a week between shows, are finding it indispensable.

THE RECEPTIVE MIND

How exactly does one sleep-learn? There is really nothing mystical or magical about the system, which is based on the firmly-established fact that during sleep, the human brain is never entirely switched off. The conscious mind closes down, but the subconscious remains active, conjuring up dreams, maybe, juggling with (and often solving) harassing daytime problems, keeping alert perhaps for small

his own tapes, recording anything he may want to learn or memorize: speeches, sermons, equations, facts, improvements to his vocabulary, lines, poetry, anything in fact.

From this apparatus a short flex runs to the flat underpillow speaker so designed that it won't be uncomfortable to lay the head on, and will produce only sufficient volume for the subject to hear, yet clearly enough through the inevitable muffling of the pillow.

Then, once he is soundly asleep, the
continued over page

Learn While You Sleep—continued

insidious pre-recorded voice begins its series of whispered messages. Usually these repeat the main facts or themes with timed regularity, so that the subconscious has no excuse for not thoroughly absorbing them. On waking, the normally refreshed subject finds to his natural astonishment that lists of French verbs, lines of poetry, sales figures and chemical formulae formerly unknown are clearly implanted in the memory. With a few weeks of unbroken "treatment", it is claimed, such difficult subjects as Mandarin Chinese or differential calculus become child's play to all but the few morons who will never learn anything, anyway!

According to the "Wall Street Journal", upwards of 100,000 people are currently sleep-learning in the U.S.A. Mushroom manufacturers of special discs and tapes are springing up, and the tape recording side of the subject is being closely allied to the general recording, Hi-Fi and sound reproduction industry.

Besides languages of all kinds, people are greatly increasing their vocabularies, putting right speech defects, memorizing sales patter and the like. Others are listening subconsciously (?) to gramophone records designed to cure claustrophobia, shyness and similar personal problems.

INSTANT LEARNING ?

One firm's catalogue, as well as listing academic discs, offers records with such alluring titles as "Magnetic Personality", "Financial Success", "Affirm That You Can Speak! Sing! Sell!" "How To Be a Potent Male", "Creative Inspiration and Peace of Mind", as well as courses designed to cure children of such defects as stuttering, nail-biting and other bad habits. There are even what are called "Scientific Prayers" on tape for the sleeping devout!

All these subjects, it is averred by the increasingly successful commercial sponsors, might as well be crammed into our long-suffering brains so that the time we spend asleep is not wasted. After all, they say, we have to sleep, so why not use the time to amass more knowledge, more information, more skills?

Although quite striking public proofs of sleep-learning efficiency have already been given, notably on TV, medical science generally is sceptical of both the possibility of sleep-learning and its harmlessness. A number of psychiatrists do however, welcome it for its therapeutic value, not least in ridding children of ingrained bad habits. The educational world, seeing its whole structure threatened, is naturally aghast.

Doubtless it will not be long before the craze catches on in other parts of the world and it seems sufficiently serious to demand the closest enquiry, though only by trial and experience can its long-term effects be judged.

Meanwhile one's natural fears of a seemingly unnatural, certainly insidious and easily abused method of getting at people's minds are tempered by the thought that with increasing leisure, man's greatest need will be just more knowledge, information and skills.

SOUND EFFECTS DISC No. 7

NOW—HAVE YOUR OWN GHOSTS AND SPOOKY NOISES!

All you have to do to obtain this wonderfully recorded E.P. disc is to send a 5/- postal order or cheque, made payable to Amateur Tape Recording, together with an unaffixed 6d. stamp (for postage) and the coupon on Page 46 to: A.T.R. (Dept. D.7), 174 MAYBANK ROAD, SOUTH WOODFORD, E.18.

DON'T FORGET TO INCLUDE YOUR NAME AND ADDRESS!

LUSTRAPHONE

the foremost name in microphones



RIBBONETTE MICROPHONE

A pencil ribbon microphone giving the highest standard of monaural or stereophonic reproduction, the Ribbonette by Lustraphone is a really high quality product.



LAVALIER MICROPHONE

With an adjustable halter neck to leave the hands free, the Lavalier by Lustraphone is a most efficient dynamic microphone, equally effective indoors or outdoors.

Send for fully illustrated literature
LUSTRAPHONE LIMITED
(Dept. A.T.1), St. George's Works,
Regents Park Road, London, N.W.1.
PRImrose 8844/5/6

NUSOUND RECORDING Co.

93 MORTIMER ST. (Oxford Circus), W.1. Tel. MUS. 1219

Ferrograph

(Appointed Dealer)

NEW SERIES 5

now on demonstration
"AMPEX" and "TANDBERG"

REVEX VORTEXION AKAI etc. Tannoy, Lockwood,
Goodman, etc. Quad, Leak, Rogers, Kerr, etc.
IT PAYS TO DEAL WITH A SPECIALIST

COMPLETE "SLEEPOMATIC" UNIT FOR ONLY £20

Comprising transistorised tape machine, auto time-switch, microphone, batteries, and under-pillow speaker.

INTERESTING FREE BOOKLET

and details of our range of tapes, discs, and equipment gladly sent on receipt of postcard. (We are the pioneers of Automated Sleep-learning in Great Britain.)

EDUCATIONAL RECORDINGS LTD. (Dept. A.T.)
21 Bishops Close, Church Lane, London, E.17

You're guaranteed
a better deal
when you

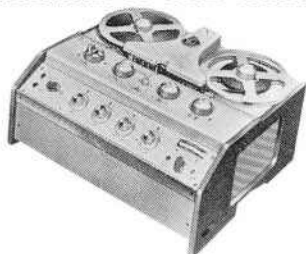
PART EXCHANGE

your
TAPE RECORDER or
HI-FI EQUIPMENT

with **R·E·W**

A friendly welcome awaits you at our new, recently extended showrooms where you will find a large array of fine equipment at all price levels. With a comprehensive service geared to your personal satisfaction we can provide generous part exchange facilities, immediate delivery and — if you cannot visit us — a fast and friendly Mail Order Service. Remember, your guarantee of a better deal is in the name and reputation of R.E.W. (Earlsfield) Ltd.

MACHINE OF THE MONTH



PAMPHONIC REFLECTOGRAPH Type A — 105 gns.

A new machine with a redesigned amplifier giving improved frequency response at all speeds on both record and playback.

2 Speeds: $3\frac{1}{2}$, $7\frac{1}{2}$ i.p.s. Separate playback amplifier.
V.U.M. Meter. Semi-prof.

No Interest Terms: £11-5-0 deposit and 12 monthly payments of £8-5. Also available on H.P. Terms — 18-24 months to pay.

★ CASH FOR YOUR TAPE
RECORDER or HI-FI

Highest cash offers for good equipment... get in touch today!

You're guaranteed
maximum satisfaction
with the

R.E.W.
"PLUS FIVE"
SERVICE

- Generous part exchange allowances.
- No interest terms — lowest deposits.
- Off-the-shelf delivery from the biggest range under one roof.
- Free servicing and free delivery.
- Optional personal insurance.

▶ **NO
INTEREST
TERMS**
(over 9 months)

▶ **LOWEST
DEPOSITS**

Hi-Fi
Centre
Tape recorders

R·E·W
(EARLSFIELD) LTD.
Mail Order Department
266/268 (ATR) Upper Tooting
Road, London, S.W.17.
Telephone: BALham 9174-5



Mark 5, Series 2

Spotlight on quality...

The Mark 5 Series 2 tape recorder is a high quality machine capable of making outstanding recordings.

It is tastefully finished in medium grey with chromed fittings, and designed not only for use as a complete portable recorder but for incorporation into a Hi-Fi installation. (Deck, amplifier and power unit are available as separate items). A low level compensated output socket is provided for driving an external Hi-Fi amplifier.

Specification:

4 speeds $1\frac{1}{8}$, $3\frac{3}{8}$, $7\frac{1}{2}$ and 15 ips • frequency correction at all 4 speeds • 3 independent motors • exceptionally low wow and flutter content • double-gapped ferrite erase head to minimise erase noise • narrow-gapped record/playback head to give extended frequency response • pause control • superimpose control • recording level indicator (meter extra) • takes $8\frac{1}{2}$ in. dia. reels • fast rewind (1200 ft. in 45 seconds) • digital rev. counter.

Brenell

BRENELL ENGINEERING CO., LTD
1a DOUGHTY STREET, LONDON W.C.1.
Telephone: HOLborn 7356/8

GREAT NEW SONY SOUND!



SONY TC. 500

TO THE SERIOUS AMATEUR COME THE LATEST, THE FINEST TECHNICAL ADVANCEMENTS IN STEREOPHONIC TAPE RECORDING AND PLAYBACK. THE SOUND IS SONY, THE VERSATILITY IS SONY, THE QUALITY IS SONY. THIS IS FOR THE CONNOISSEUR—THE **SONY TC. 500**

106 GNS with 2 Sony F87 Cardoid Dynamic microphones and all accessories.

SONY®
RESEARCH MAKES THE DIFFERENCE

Detailed specification of this tremendous Sony tape recorder freely available from the Sole U.K. distributors:



EXTRACTS FROM SPECIFICATION:

Full stereo facilities with independent recording and playback amplifiers, providing professional mixing facilities. Manual cueing, digital tape counter, instant stop, automatic tape lifter. Instantaneous selection of $7\frac{1}{2}/3\frac{3}{4}$ ips. Response—30-18000 cps at $7\frac{1}{2}$ ips. Harmonic distortion—less than 2% at 3 db below rated output. Detachable speakers for stereo separation.

TELLUX LIMITED
High Fidelity Division GALLOW'S CORNER,
ROMFORD, ESSEX. Ingrebourne 43971

STUDIO 10

A workroom that became a centre of world tape exchanges

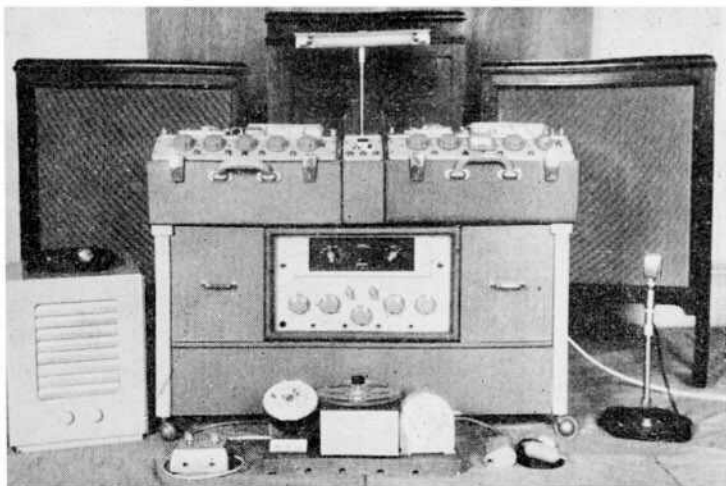
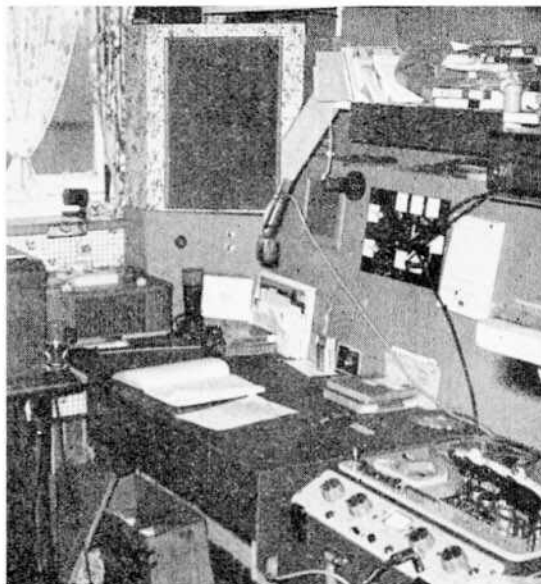
Another in our series of Recording Dens

Regularly twenty-three tapes from all over the world find their way into a 7' 6" x 6' 6" workroom at 10 Cranbourne Road, Dudley Wood, Cradley Heath, Staffs. This is Studio 10 (right), the recording den of **Barry Scrivin**, and houses three recorders (Ferrograph 5 AN, Philips 2-track single speed and a Philips 2-track portable), a Leak Point-One-Plus pre-amp, and TL 12 Plus amp. Barry also has an H.M.V. AM/FM radio tuner, and for playback uses Wharfedale and Stentorian speakers. The Reslo ribbon mic. Barry uses is suspended above the table at which he prepares all his work. Outside the studio he likes location recording, besides running the competitions for the Halesowen and District Tape and Hi-Fi Club and recording sound tracks for his 8 mm. and 35 mm. cine films.

In very different style is the recording "den" of **Mr. C. V. H. Garnett**, who lives in the 350-year-old **Grange**, at **Speen, Newbury, Berks.** Mr. Garnett shares the dining-room (16' x 17') and the lounge (16' x 22') with his family, and through the 27" wall between the rooms has fitted a one-inch diameter fibre tube through which leads may be passed as and when required. The main equipment consists of a Ferrograph with second U.T. head in third position for monitoring, also fitted with relays and an extra small panel at the back for auto-recording. With the help and advice of Ferrograph, who supplied all the components and parts, Mr. Garnett constructed the matching play-back unit, with mono and stereo head, matching pre-amplifier, erase, fade and attenuation facilities, as well as the matching tuner/amplifier unit comprising VHF/TV sound tuner, pre-amplifier and matched pair of 7-watt power amplifiers. An auxiliary unit houses a Walgain pre-amplifier; remote control facilities for "studio on the air" red light, and removable plug-in strip-light for tape decks. Everything is arranged, as shown below, on a collapsible trolley to form a mobile console, alongside innumerable other equipment.

Another home-constructed unit is that of **Gordon Melville**, of 33 Nuttings Road, Cambridge. Everything, barring the two tape decks and turntable (Collaro Studio, Truvox Mk. III and Garrard TA Mk. II respectively), has been built by Gordon himself and installed into a home-made, veneered, chip-board cabinet. The cabinet also houses a Mullard Type C amplifier and record and playback amplifiers of Melville construction! The VHF

tuner was made up from a kit, and the mixer/control unit consists of stereo pre-amp with tone controls, tape outputs and mixer. The two main amplifiers are built to the Mullard 5-10 designs, and the whole can be used for mono or stereo reproduction. Also a keen tapespondent, Gordon finds that having his den in the living-room gives a natural family background to his correspondence tapes.



Left :
The unit
built
by Mr.
Garnett
at Speen
Grange.

Right :
The
living-
room den
made by
Gordon
Melville.





MONEY TO BURN? . . .

then you won't want to know about us. Go somewhere else, where they charge you high H.P. rates, charge for delivery, charge for servicing, have little stock and even less knowledge and experience of Tape Recorders. *And the best of luck!*

On the other hand, if you want to save money (or are even downright mean and stingy), HOWARD is for you. Free H.P. ★ Free Delivery anywhere ★ Free servicing ★ Special Cash Terms ★ Special H.P. Insurance ★ 500 machines in stock, 80 different models on show ★ 10 years experience as the biggest Tape Recorder Specialists in the Country ★ In short — *our terms are the best you can get anywhere.*

Cameras, Hi-Fi equipment and Dictating Machines, too!

Write, phone or call in for catalogue, explaining the full mystery of our business (Free, but of course!).

218 HIGH ST.,
BROMLEY,
KENT
RAVensbourne
4000

HOWARD
TAPE RECORDERS • CAMERAS • HI - FI



When you
hear it
replayed

you'll know
why they call it
The Incomparable
Ferrograph

Post this coupon today for full details

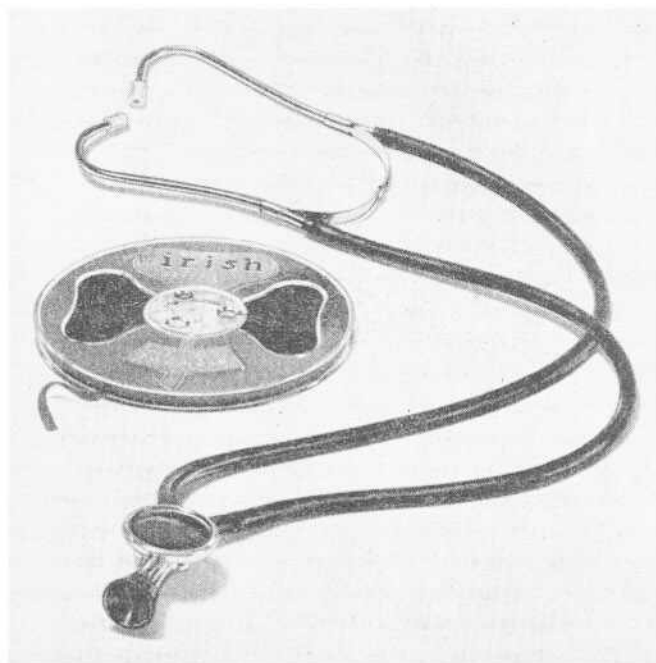
NAME

ADDRESS

To: **THE FERROGRAPH COMPANY LTD**

84, BLACKFRIARS ROAD LONDON S.E.1 Tel: WATerloo 1981

AT6



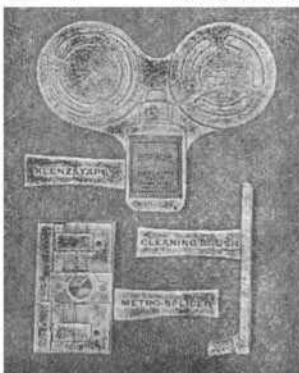
for the professional

IRISH

—the recording tape that gives the finest fidelity possible. How? Through the unique Ferrosheen process. Exclusive to Irish tape, this process produces a mirror-smooth surface to a magnetic tape with distinct technical advantages to satisfy even the most meticulous professional. The Ferrosheen process makes for exceptional high frequency response (due to precise perfection of tape/head contact) . . . head wear is minimal . . . external lubrication unnecessary — less oxide abrasion, no lubricant build-up on recorder head . . . minimum drop out . . . maximum reduction of background noise. Your Irish Tape stockist, and other details including technical data, from A. C. Farnell Ltd. Hereford House, Vicar Lane, Leeds 2 Tel: 35111.

'IRISH', 'FERROSHEEN' and 'Signature Binding' are registered trade marks of Orradio Industries Inc., Opelika, Alabama.

TAPE RECORDER ACCESSORIES



tape accessories set

Tape Accessory sets carded as shown and containing Klenzatape, Metro-Splicer, Metro-Brush, 27/6 each

- KLENZATAPE** Price per Kit 12/6. Refill fluids 3/11 per bottle.
- METRO-SPLICER** Splicer Kit complete with Film Emulsion Scraper and Spare Cutting Unit — 12/6d. Spare Scrapers 1/3 each. Spare Cutting Units 2/6 each.
- METRO-TABS** 3/11 per set complete with Index.
- METRO-BRUSH** 2/6 each.
- METRO-STOP** 17/6 per set.



METRO-SOUND MFG. CO. LTD.,
19a Buckingham Road, London, N.1.
Telephone CLIssold 8506.

The One and Only

FRANCIS OF STREATHAM

Your dependable suppliers for all that's good in

TAPE RECORDERS

including
BRENELL • Truvox • Elizabethan • FERROGRAPH
Fidelity • GRUNDIG • Cossor • Philips
Robuk • LOEWE OPTA • Stella • TELE-
FUNKEN • Uher • VORTEXION • Wyndor •
Minivox • Butoba • Stuzzi • Sony • Akia
• TANDBERG.

Microphones, Tapes, Accessories. ALL AT
ADVERTISED PRICES

HI-FI TOO, BY LEADING MAKERS

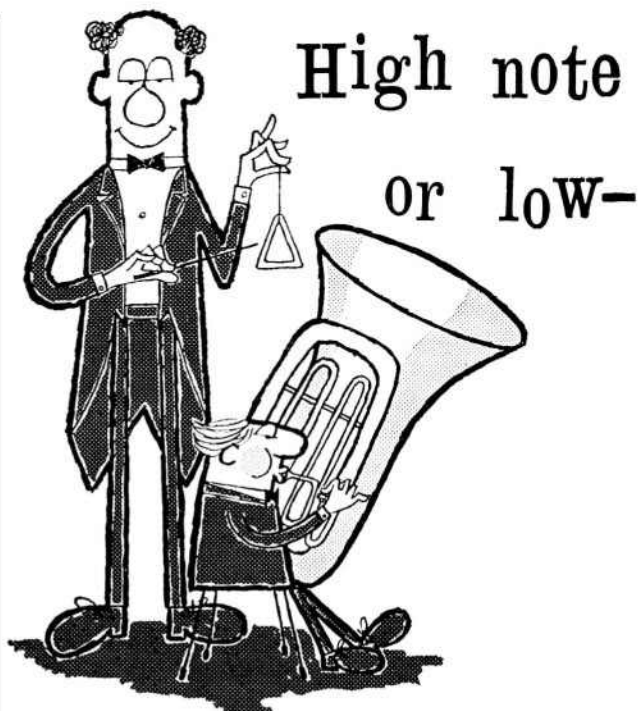
*** No Extra For Credit * GOOD STOCKS AND SERVICE**

Please note our only address

169-173, STREATHAM HIGH RD., LONDON, S.W.16
Between Streatham Stn. and St. Leonard's Church

STReatham 0466/0192

OPEN ALL DAY SATURDAYS



Grampian DP4

is equally sensitive to both

Here's a microphone that responds accurately to the tinkle of the triangle, the boom of the tuba and every other sound between 50 and 15,000 c/s. Uniform frequency response over such a wide range means that the reliable, medium-priced DP4 makes an essential contribution to high quality recordings.

Also for broadcasting, public address and call systems.

Low impedance microphone, complete with connector and 18 ft. screened lead £8.0.0
Medium and high impedance models £9.0.0

A complete range of stands, swivel holders, reflectors and other accessories is available.

Write or 'phone for illustrated literature:

GRAMPIAN REPRODUCERS LTD

Hanworth Trading Estate, Feltham, Middlesex. Feltham 2657



ELECTRONICS WITHOUT TEARS

by A. Lester Rands

THE circuit combination of resistance and capacity is used to a very considerable degree in electronics, particularly in amplifiers, where these two elements will be found in most tone control and frequency response correction networks. I should mention that **inductance**, too, is employed for the same reason, and that when used with resistance can be made to produce a 'time constant' in the same way as resistance and capacity, except that in this case we consider the 'current' flowing in the circuit and not the voltage.

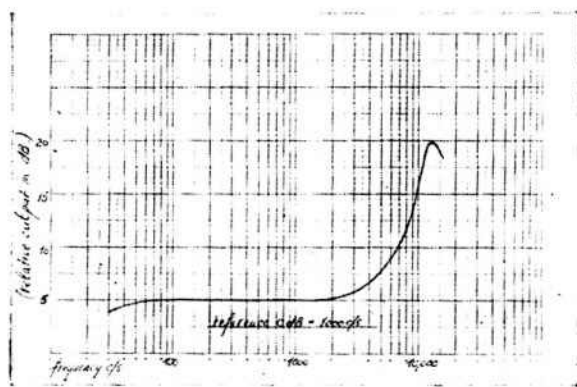


FIG. 1.—Typical recording amplifier response for a recording speed of 7 1/2 i.p.s.

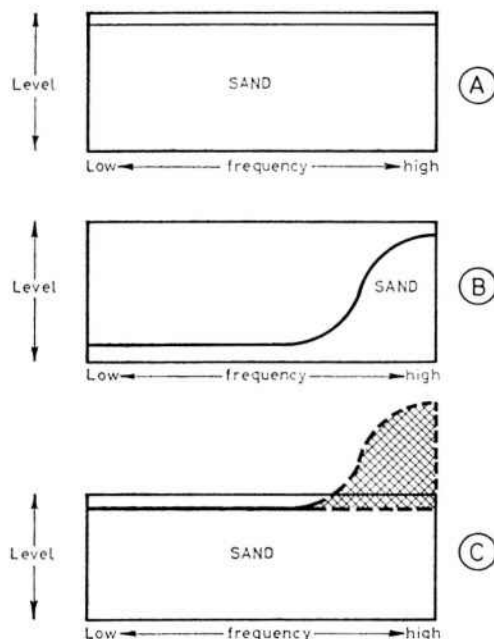
● Frequency response correction

Amplifiers used for tape recording and playback require a considerable amount of frequency response correction to offset the peculiar response of the tape head. During recording, the **higher frequencies** have to be emphasised, and during replay the **lower frequencies** must be emphasised. This is usually done in a rather ingenious way and not quite as one might suppose. For example, we do not provide more amplification at the higher frequencies during recording, but instead reduce the amplification at the lower frequencies.

The graph of **Fig. 1** shows a typical recording amplifier response, and it would appear from this that the gain of the amplifier is actually greater at the peak around 10,000 c/s. This is true, of course, but the gain is only greater at the higher frequencies with reference to the gain at 1,000 c/s. This can be illustrated by taking an oblong box filled to the top with wet sand, as in **Fig. 2A**. The box represents the amplifier, and the level of the sand the gain. The full box is therefore an amplifier operating at full gain over the whole frequency range.

Now supposing we start at the left-hand side of the box (low frequency end) and remove some of the sand, leaving the remainder banked up as shown in **Fig. 2B**. The box is still full at the right-hand side (high frequency end), which still represents full gain, but which is greater by a certain amount only with reference to that at the other end. Had we tried to emphasise the amount of sand at the right-hand, or high frequency side, by increasing the amount of sand, the box would have overflowed as in **Fig. 2C**. So it is with a recording amplifier. We cannot provide more gain than the amplifier already has, so in order to emphasise the higher frequencies we actually reduce the gain at the lower frequencies.

FIG. 2.—Analogy to frequency response correction in a recording amplifier. (See text).



● R/C Networks

A simple, but not very practical, way to reduce the gain below about 1,000 c/s. would be to use very small coupling capacitors between the amplifier stages, and rely on the time constants formed by these and the appropriate anode and grid resistors to reduce the bass response accordingly. A much more satisfactory method is to employ a number of resistors and capacitors in what is called a 'twin-T network' and use this in negative feedback between the input and output circuits of an amplifier, as in **Fig. 3**. Here the higher frequencies are prevented from being returned to the grid circuit of the amplifier and are therefore not attenuated by negative feedback.

At the lower frequencies, the reverse effect occurs, for they are not 'trapped' by the network, and since they arrive at the grid of V1 out of phase, will tend to cancel those already present at the input. Hence the valve will amplify to only a small extent at the lower frequencies but will continue to operate at full gain at the higher frequencies.

During playback we must emphasise the **lower frequencies** to make up for the losses in the playback head, and in this case the playback amplifier usually operates at full gain at around 40 c/s. By means of a suitable R/C network in negative feedback, as shown in **Fig. 4**, the gain at around 1,000 c/s. and above is reduced to a more or less common level. The graph of **Fig. 5** shows the effect of such an arrangement, which can be designed to provide the required increase in gain at the rate of 6 dB per octave from around 1,000 c/s. downwards. The '6 dB per octave' simply means that if

continued on page 32

Electronics Without Tears

—continued from page 31

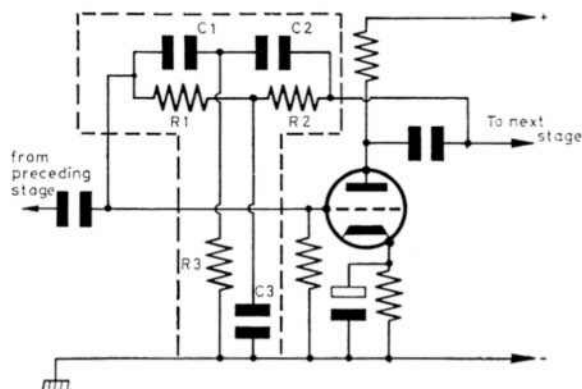
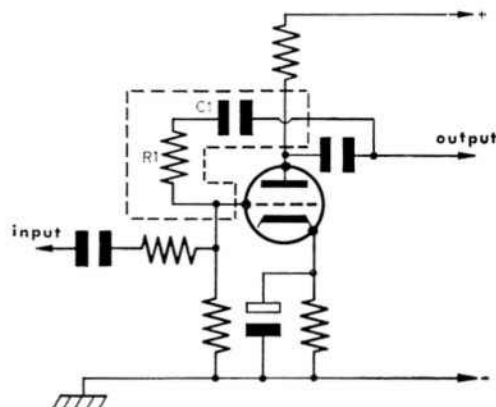


FIG. 3.—A twin-T network in negative feedback (recording amplifier frequency response correction). The network comprises R1, R2, R3, C1, C2 and C3.

0 dB=1,000 c/s., the gain at 500 c/s. will be +6 dB, at 250 c/s. +12 dB, and so on.

In practice, various adjustments are made to this rule, as shown by the B.S. 1568:1960 curve of Fig. 5 for a replay speed of 7½ i.p.s. I should also mention that the modern fine-gap record/playback head invariably requires still further adjustment of the B.S. 1568:1960 standard but, by and large, the response of the replay amplifier will be modified so as to produce a gradual decrease in gain between about 40 c/s. and

FIG. 4.—R/C network in negative feedback (replay amplifier response correction). The network comprises R1 and C1.



1,000 c/s. or, if you like, a gradual increase between 1,000 c/s. and 40 c/s.

The frequency response correction for tape speeds of 15 i.p.s., 3½ i.p.s., and 1½ i.p.s., for both recording and replay, follow the same general pattern as outlined in this article. The only differences are the rate at which the pre-emphasis is carried out and the frequencies at which the peak of the pre-emphasis occurs; depending also on the kind of recording, record/playback, or playback head being used.

FIG. 5.—Frequency response correction for a replay speed of 7½ i.p.s.



★ LEARN ★

RADIO & T/V SERVICING

for your OWN BUSINESS/HOBBY

by a new exciting no-maths-system, using practical equipment recently introduced to this country.

FREE Brochure from:—
RADIOSTRUCTOR

DEPT. G85, READING, BERKS.
(8-63)

SHEEN

TAPE RECORDER AND HI-FI CENTRE

Specialists in Tape Recorders—Accessories—Hi-Fi—Stereo

Your Centre for Friendly Help—Sales—Service

B.R.C. Approved Dealer for all Models and Repairs

Pre-recorded Tapes, Mics., Tuners, Amplifiers, Speakers Etc.

Details—With Pleasure—Call—Phone—Write

8 Station Parade

Sheen Lane

Sheen, London, S.W.14 Showrooms: PROspect 0985

(Opposite Mortlake Station S.R.)

Open 10 a.m. until 7 p.m.

Early Closing, Wed., 1 p.m.

THE HI-FI & TAPE RECORDER SPECIALISTS

MASSEYS CENTRE OF SOUND

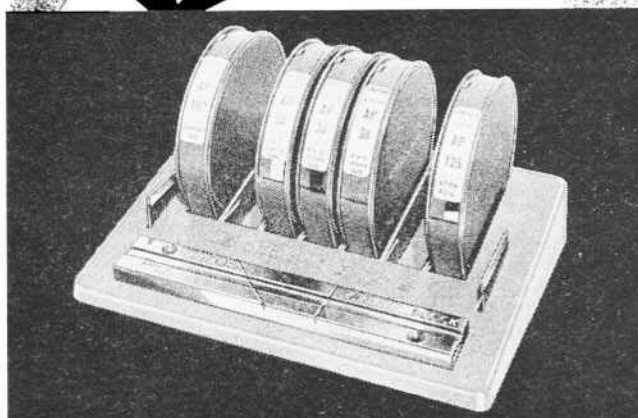
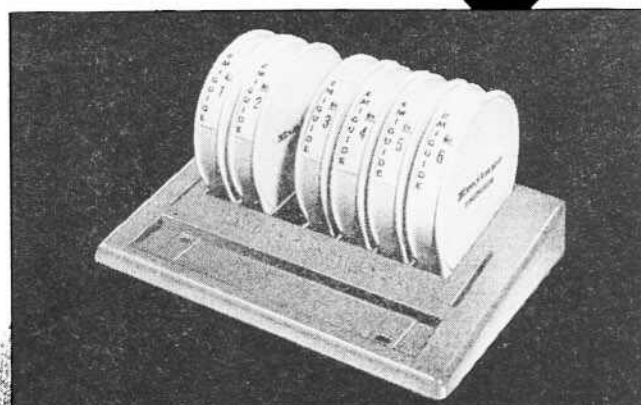
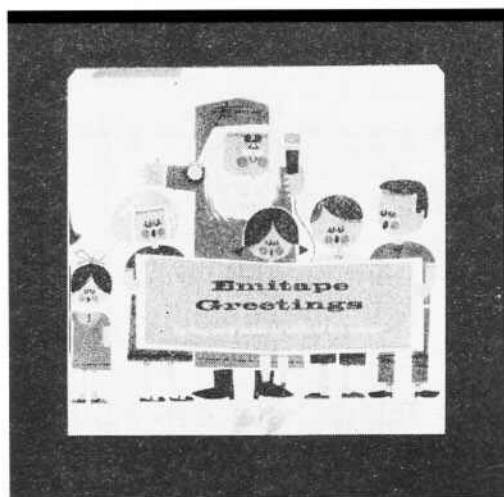
Ferrograph Appointed Dealer
SALES AND SERVICE

Equipment to suit All Tastes—Accessories—Repairs
Discs—Pre-Recorded Tapes Mono/Stereo

CHISWICK 121—123 HIGH RD.
W.4. Tel. CHL 2082.

Daily 9-30 a.m.—6-30 p.m. Early Closing Thursday.
(Not closed for lunch)

What gives this Christmas?



Emitape make merry with four seasonal suggestions

Give an Emi-present this Christmas. They're gift-wrapped, ready to give. Stacks to choose from—how about one of these?

Christmas Emitape It's got a surprise up its sleeve—instructions for six tape and recorder games to get the party going. Just the right note for Christmas.

Emiguides All the tricks of the tape taught on a tape—from outdoor recording to sound effects. 8/6 each or 51/- the set.

Going by the book *The Emitape Guide to Better Recording* by John Borwick is really good practical value—56 pages for only 2/6.

Emitape Accessory Kit Complete set to deal with all the mechanics of tape editing and the like—37/6. Or separately. Either way it's a gift!

Emitape

E.M.I. TAPE LTD., HAYES, MIDDLESEX



CLUB NEWS

NEW CLUBS THRIVE



ABOVE LEFT: Judges (left to right) John Ratcliffe, Daphne Oram and John Borwick listen attentively to entries in the ATR Recording Contest.



ABOVE RIGHT: Daphne Oram and John Borwick discuss with ATR Editor Fred Judd the merits of one of the stereo recordings.

CLUB RECORDING CONTEST

After gathering together a distinguished panel of judges, we were a little disappointed with entries for the ATR club recording competition. Perhaps it was the very eminence of the judges that over-awed the smaller and perhaps less well-equipped clubs into uncomfortable silence. However, judges John Borwick, Daphne Oram, John Ratcliffe and ATR Editor Fred Judd gave only constructive criticism and a very fair appraisal.

The main difficulty seemed to be lack of inspiration and consequent lack of life in the recordings. Notable exceptions in this respect were Thornton Heath with their Section 1 winner 'Missed Opportunities' and I.V.A.S. with their stereo entry 'Tribute'.

Full results are as follows:

Section 1 (Fi-Cord Trophy)—Thornton Heath.

Section 2 (Philips Trophy)—Plymouth.

Sections 3 and 4—No awards at present.

Section 5 (Simon Trophy)—North London.

Section 6 (Lustraphone Trophy)—International Voice and Sound.

It would be impossible to comment fully on all the entries, but I feel all the winners deserve a mention. Thornton

Heath taped an amusing saga of what might have been—the employee dreaming of what the boss will say when he asks for a rise, followed by the harsh reality of what he in fact does say, (no!), and the young admirer imagining that the loveliest girl in town will be only too eager to go out with him, followed by the rude awakening that she isn't a bit interested. A well thought out, well scripted piece of work. Plymouth, and the co-operative youngsters of a nearby school, managed after a number of attempts to get a very tuneful recorder performance and had obviously put much thought into the work, especially with regard to tone. North London had two very pleasant entries of folk songs, and although slightly out of focus at one point, the recording overall more than cancelled out the one dodgy spot. Finally I.V.A.S. chose a unique and moving drum solo for their stereo winner 'Tribute' and the impression of the movement and solemnity came over very well.

It is hoped to stage a further contest in which clubs, and possibly individuals, could compete for the remaining trophies in the fairly near future. Announcements concerning the presentation of awards will be made in next month's issue.

AS THE TAPE RECORDING MOVEMENT GOES FROM STRENGTH TO STRENGTH

SINCE the last ATR Club News, no fewer than ten new clubs have joined the ranks of ATR groups. The past month has also brought dozens of enquiries from all over the country — Kent, Yorkshire, Surrey, Lincolnshire, and Staffordshire, to name but a few — on how to start a new club or join an existing one.

Next month sees the end of the year for the League competition, which means that new clubs now have a chance to start the new recording year on an equal footing with the old stagers. And even the old stagers are being rejuvenated by an influx of new members.

Seven Newcomers

One of these old stagers, **Leicester Tape Recording Club**, enrolled seven new members during one of their local Audio Shows recently. Besides giving their services at these shows, the club has helped the local W.I. in its search for May Day folk songs, assisted a local charity collecting for the Guide Dogs for the Blind Association, and recorded the presentation of a trained guide dog by Angela Bracewell (of Beat the Clock fame) to Lord Lanesborough. Leicester have also found time to squeeze in two live recording sessions, a demonstration, and a session acting as hosts to the Association of Midland Tape Recording Clubs. Future activities? Plans are under way for the production of a tape on the City of Leicester, past, present and future.

Livening Up

Catford Tape Recording Club have been very active in recent weeks, and the interesting programmes have stepped up attendance on club nights. An explanation to members in general of the step

by step making of the old folks' tape programme stimulated interest in the production which is played in an old folks' home once every eight weeks. Music for loudspeakers and demonstrations and experiments in electronic music took up two more club nights, while yet another was occupied by taping with an imaginary character to show up the pleasures and pitfalls of this hobby. A live recording session of jazz and pop music, and the acquiring of a taped message from Australia for one of the older members in the Old Folk's home filled up the rest of the club's time. A tapesponding contest has been arranged and other plans are afoot for more lively evenings.

Contest Winners

As the club recording contest results on this page show, **North London** had a grand time recording the Folklanders for the competition—and benefited to the tune of the Simon Trophy as a result. We are however disappointed to hear from them that the group is breaking up as they made very enjoyable listening. The North London club's well presented newsletter proved a mine of information about the club's recent activities, which included a contest for an advert for an imaginary tape recorder, lectures on hi-fi and the uses of tape, a sound hunt, and a meeting with Mr. Timothy Eckersley, Assistant Head of Central Programme Operations (Recording) for the BBC. The Enfield Mic—a one-hour taped programme is still thriving and has now reached its first anniversary.

New Look

After months of being housed in a most impressive building complete with everything including echoes, **Bethnal Green Tape Recording Club** have now acquired new club rooms with central heating, armchairs and all amenities, all for the

is no change of address as the new premises are still at the Town Hall, Bethnal Green, with meetings every Wednesday at 7.30 p.m.

More New Look

Another club moving to new premises is the **Brixton Tape Recording Club**, who move about now to the Jeffries Library, Stockwell. Before the move however, they have managed to enjoy an all night barbecue on the Sussex Downs, but the traitors had nary a tape recorder in sight. Shame on you! However mics were to the fore in a club discussion on mic performance, and two live wires in the club recorded the famous voices in the Whispering Gallery of St. Paul's Cathedral with astounding results. Although the lads stood as far as they could from the signal source (the voice of the guide), playback would lead one to believe that the mic had been held under the speaker's nose. I must admit I'm most intrigued, and will have to get around to trying it myself one day.

New Look No. 3

You wouldn't believe it, but there is yet another club giving themselves a new look. This time it's the **North Manchester Soundtrackers**, who since they moved to their new H.Q. in Hollinwood have been busy soundproofing a studio, organising a workroom and control room and redecorating the club social room. Although thus occupied, members have still found time to obtain some interesting recordings including the Oldham Carnival and the Jazz Festival at Belle Vue, Manchester. The society's sound journal 'Concord' appears regularly every month, and winner of the latest of the regular contests was the club Chairman, J. B. Cartmell with his interview of the owner of a haunted house. Two of the

mend that all the women be given a chance in the clubs. How about it girls! A visit to the Slimbridge Wildfowl Trust, with members of the Association of Midland Tape Recording Clubs for some live recording and a talk by a past vice-president of the club about his life in the West Indies kept the male members out of mischief.

Publicity

Whitstable & District Tape Recording Club managed to get some useful publicity, but alas no new members, when they took a stand at the local Hobbies and Handicrafts Exhibition. With almost a whole room to itself, the club put up an impressive display of equipment with continuously running tapes in the background, demonstrations and facilities for the sending of message tapes to friends overseas.

Taping Beer!

Loughton Tape Recording Club had a very interesting—and enjoyable! evening when they visited Philips Record Factory at Walthamstow, followed by a visit to Ind Coope's brewery at Romford! The club made recordings of the various brewing processes, and of course sampled the finished product. Needless to say the club firmly maintains that the visit helped to foster good relations between club and consumer—consumer being the operative word!

Happy Birthday

Congratulations to **International Tape and Cine** on its first birthday. After that comparatively short time the club is truly international, with members in Australia, Canada, New Zealand, South Africa and the U.S.A., as well as all parts of the U.K. The club has a good library of films, sound effects and technical books, and new secretary Roger Pirie (83 Warren's Hall Road, Dudley, Worcs.) is fairly humming with ideas for the new years.

Helping Youngsters

Although **Thornton Heath** are still unable to admit 14-year-old R. J. Ward (see 'The Things You Say,' November), they are going out of their way to encourage him in forming the Norbury Manor School Sound Club, and it is hoped to arrange lectures and demonstrations for the young enthusiasts.

Merry Christmas

Finally a last word from me to you. Christmas is usually a pretty busy time for clubs, with extra duties in the form of Christmas programmes for homes and hospitals, recordings of carols and choirs, tapes of families and friends, as well as all the usual seasonal hustle and bustle. Whatever you're doing, enjoy yourselves and have a very happy Christmas.

TOP TEN CLUBS FOR DECEMBER

- | | |
|------------------|---------------|
| 1. LEICESTER | 6. BRIXTON |
| 2. CATFORD | 7. RUGBY |
| 3. N. LONDON | 8. WHITSTABLE |
| 4. BETHNAL GREEN | 9. LOUGHTON |
| 5. N. MANCHESTER | 10. I.T.A.C. |

cost of nothing! With a great deal of professional equipment, the most comfortable of clubrooms, keen members who are allowed to bring along wives and girl friends, and the resultant boost in morale, the club is confident of a new year of flourishing activity. The new programme will include at least four open nights a year when about half a dozen other clubs will be invited to join in for a bumper taping evening. However there

members, B. Peet and Secretary A. Lomas have also been featured on ITV in connection with the A.A.s Emergency Service in Manchester.

Ladies to the Fore

The recent Ladies Night organised by **Rugby Amateur Tape Recording Club** was such a success that the club is actually considering holding another in the near future, and furthermore recom-



What I'd like
for Christmas
is some lovely



PHILIPS
TAPE



Can't blame a man for trying. Who doesn't want more Philips Tape for his tape recorder? Wonderfully sensitive, long-lasting, packed in coloured-coded boxes for easy identification, Philips Tape makes every recorder sound better than ever. It's a great gift! What's more, the 3", 5", 5 $\frac{3}{4}$ " and 7" reels are each ready-packed in colourful Christmas wrappers. Just add your greeting and send the tape on its way to a warm welcome. Give Philips Tape to everyone you know with a tape recorder: buy it now and reduce your Christmas shopping problem.

* *Note to Tape Recorder Owners*

If you don't want to leave recorded messages about, just put this page in a conspicuous place and wait for that happy December 25th!



PHILIPS TAPE
makes a wonderful gift
**-it's ready packed
in colourful
Christmas wrappers**

Another wonderful product from PHILIPS - the friend of the family

PHILIPS ELECTRICAL LIMITED • ELECTRO ACOUSTICS DIVISION • CENTURY HOUSE • SHAFTESBURY AVENUE • LONDON W.C.2

(PTA4336)



A PROFESSIONAL MICROPHONE AT A POPULAR PRICE

The STC 4118 microphone is a light-weight, tubular, omni-directional, moving coil microphone offering high performance at a very moderate price. It is eminently suitable for use with loudspeaker amplifying equipment and for recording speech and music. The microphone is designed for amateur and professional use. The 4118 can be fitted to desk or table stands, held in the hand, or worn as a neck microphone, either with a neck halter or a clothing clip. A length of thin, flexible PVC insulated, screened cable is provided. Abbreviated Technical Data—Frequency range: 100c/s to 15kc/s. Impedance: 200 ohms (50,000 ohms to order). Sensitivity: -65dB ref. 1 volt/dyne/cm² (50,000 ohms type). -80dB ref. 1 volt/dyne/cm² (200 ohms type). Polar response: Omni-directional. STC are suppliers of studio microphones to the BBC, ITA contractors and overseas broadcasting administrations. At a cost of £4.19.6d. (plus 3/6d. p. & p.) this microphone is available only from: Standard Telephones and Cables Limited, Electro-Mechanical Division, West Road, Harlow, Essex. Telephone Harlow 21341. Telex 81184

world-wide telecommunications and electronics

STC

XMAS

SOUND

SCENE

As Christmas rapidly approaches here are some useful accessories and ideas for gifts for your friends . . . or even for yourself!

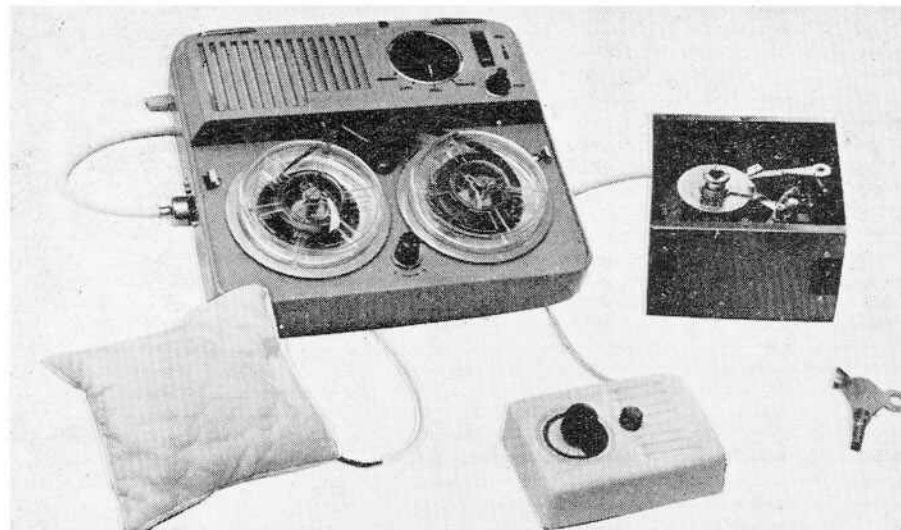
The Sleep-o-Matic

The equipment of this sleep-learning machine comprises a neat little battery operated tape recorder for twin track record playback at a nominal, but not linear, speed of $3\frac{1}{2}$ i.p.s. Some adjustment of the speed is provided for by a built-in control. Accessories with the recorder include a microphone and a monitoring or listening earphone so that one can record speeches, scripts, instructions, etc., that are difficult to memorize by normal reading. There is also an 'under pillow' loudspeaker for intimate listening; and last, but not least, a time switch which is a complete clock and enables the user to switch the recorder on and off at pre-determined times.

In addition to these accessories the makers can also supply a transistorized radio tuner for an extra 45s., from which direct recordings can be made.

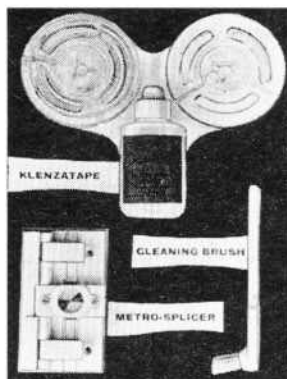
The Sleep-o-Matic is a fully operational machine for normal recording and replay with monitoring or 'playthrough' (with the radio tuner for example) but, as I said, the speed is 'non linear'. This means that only the special recordings supplied by the manufacturers or recordings made on the Sleep-o-Matic can be used. I should add that a loudspeaker is incorporated for normal replay purposes and can automatically be cut off when the pillow speaker or earphone is used.

The complete Sleep-o-Matic equipment including time switch mechanism, special introductory tape, etc., sells at £20 and is manufactured and distributed by Educational Recordings Limited, 21 Bishops Close, Walthamstow, London, E.17, to where all further enquiries should be directed.



Tape Accessory Kit

A new tape head cleaning and tape splicer outfit by Metrosound Limited, which contains a specially impregnated tape for cleaning heads and guides, a bottle of 'Klenzatape' fluid for re-treating the cleaning tape, cleaning brush, and a Metrosound tape splicer. Price 27s. 6d. each from Metrosound Ltd., 19a Buckingham Road, London, N.1.



The Grundig Book No. 9

The Grundig Book, first introduced at the Grundig Festival in 1958, has now gone into its ninth edition. Written by Frederick Purves and published by Focal Press, the Grundig Book gives full information on all Grundig tape recorders from the 500L introduced in 1952 to the newest addition to the Grundig range, the portable mains/battery TK.6. In addition it contains a wealth of information on the many useful applications and technique of tape recording.

The book is obtainable from the Book Centre Limited, North Circular Road, Neasden, N.W.10., usual sources and Grundig Approved Dealers throughout the country. The price is 13s. 6d.

New Mike

Standard Telephones & Cables Ltd., have just introduced a new high quality microphone aimed at the popular market in sound reproduction; for 'pop' groups and tape recording enthusiasts of limited means who nevertheless want to improve the performance of their equipment.

The new microphone, the STC 4118, is a high grade moving coil unit retailing at £4 19s. 6d. and weighing only $2\frac{1}{2}$ ounces.

There are two versions: one of 200 ohms and the other of 50,000 ohms impedance. The frequency response is 100 c/s. \pm 4dB.

Further details from: STC Electro-mechanical Division, Temple Fields, Harlow, Essex.

The Brenell Mixer Unit

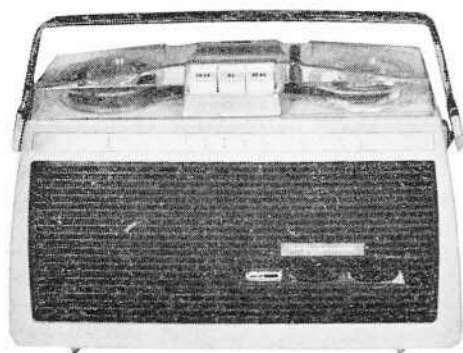
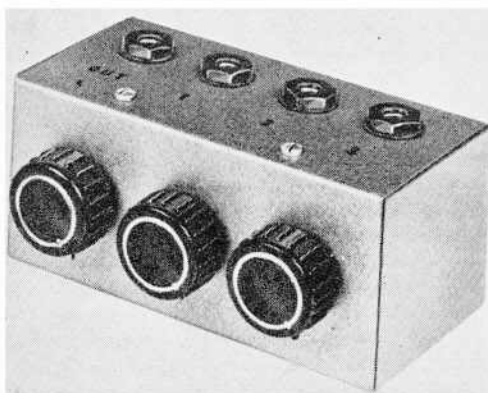
This unit has been developed to meet the growing demand for an inexpensive and easy method of mixing the signals from microphones, radios and pick-ups.

Three input sockets are provided for the signals to be mixed and each input has its associated volume control.

The output socket is the take-off point for the mixed signal and this should be connected via screened plugs and co-axial cable to the microphone socket of the tape recorder.

Best results will be achieved with high impedance input signals. Some form of monitoring—such as by headphones—will enable the various signals' strength to be accurately ascertained.

Manufactured by the Brenell Engineering Company Limited, 1a Doughty Street, London, W.C.1., it costs £2 18s. 0d.



STELLA ST.471 TAPE RECORDER

Stella recently introduced a new version of their battery portable tape recorder. It is styled similarly to its successful predecessor but has a number of innovations for the extra one guinea now to sell at 26 guineas. A playback tone control has been added and higher output power provided. A new record/playback head design has been incorporated, improving the frequency response.

The twin track recording system at a speed of $1\frac{1}{2}$ i.p.s. gives a possible 64 minutes' playing time with the lid on, using 300ft. on D.P. tape and more than 3 hours' playing time with a 4" reel of D.P. tape. The mains supply unit for the machine can be plugged into a socket at the side of the machine; it is not necessary to remove the batteries.

Further details—Stella Radio & T.V. Limited, Astra House, 121/3 Shaftesbury Avenue, London, W.C.2.

RECORDS

Outstanding offer of 'Crown' tapes from U.S.A. at a most attractive price. The tapes are strongly recommended and attractively boxed, with illustrated full colour boxes. Price 55s. each.

ST.102: The Era of Glenn Miller. With members of the Miller Orchestra. Anvil Chorus, Kalamazoo, Song of the Vulga Boatman, Sunrise Ser-

enade, Londonderry Air, Chattanooga Choo Choo, Under the Double Eagle, Serenade in Blue, Little Brown Jug, Moonlight Cocktails.

ST.115. Exotic Percussion. Milt Raskin. Koko Head, Lanikai, Maika, Telani, Leahi Moon Festival, Kapu, Lehua, Iolana, Mileka.

ST.123. Cha Cha Cha. Dance Tempo. Manuel Rivera and his Orchestra. Esperanza, Marcheta, Shine on Harvest Moon, Ida, Chop Sticks, You Know I Love You, The Girl in my Dreams, Woke Up This Morning, Cherry Pie, Eddie My Love.

ST.131. Warsaw Concerto and 1812 Overture. The Hamburg Philharmonic Orchestra.

ST.133. Beautiful Viennese Waltzes. Blue Danube, Emperor, Eat, Drink and Be Merry, Voices of Spring, Acceleration, Tales from the Vienna Woods, Wine, Women and Song, Artist Life, Die Fledermaus, Morning Journals.

ST.138. Organ Gems. El Relicario, Malaguena, The Breeze and I, La Paloma, La Cumparsita, Dengozo, Chiapanacas, La Golondrina.

ST.110. Compositions of Duke Ellington, with members of the Duke Ellington Orchestra.

ST.146. Bizet: Carmen Suite and Ravel's Bolero. Hamburg Philharmonic Orchestra.

Now available from Teletape Ltd., 33 and 59a Edgware Road, London, W.2. **Note—A selection of these tapes have been tested and approved by ATR.**

NEW ACCESSORY CABINETS

For those Hi-Fi enthusiasts who wish to accommodate Tape Decks complete, or alternatively, store tapes, records, etc., GKD have introduced their new range of Accessory Cabinets.

The design follows the lines of other GKD cabinets in that they have been styled to be the perfect companions to the well-known "Southdown" and "Huntingdon" cabinets, and are available in a choice of finishes to match.

Southdown Accessory Cabinet: internal dimensions: 20 $\frac{1}{2}$ " wide. 19 $\frac{1}{2}$ " deep. 13 $\frac{1}{2}$ " high. Retail price 15 guineas.

Huntingdon Accessory Cabinet: internal dimensions: 20 $\frac{1}{2}$ " wide. 19 $\frac{1}{2}$ " deep. 13 $\frac{1}{2}$ " high. Retail price 15 guineas.



*600 feet of Standard **ORIGINALLY 20/-** **NOW 15/-**

*1200 feet of Long Play **ORIGINALLY 35/-** **NOW 25/-**

*2400 feet of Double Play **ORIGINALLY 80/-** **NOW 55/-**

You've never heard it so good!

**These are just three examples
of the Mastertape range now
available at greatly reduced prices*

M.S.S. RECORDING CO. LTD. ARE
PLEASED TO ANNOUNCE THAT
THE FULL RANGE OF
MASTERTAPE HAS BEEN REDUCED
WITH EFFECT FROM THE 1ST OCTOBER, 1963

STANDARD			LONG PLAY			DOUBLE PLAY		
Spool	Length	New Price	Spool	Length	New Price	Spool	Length	New Price
3"	150'	4/6	3"	225'	6/-	3"	300'	9/-
4"	300'	8/-	4"	450'	11/-	4"	600'	17/-
5"	600'	15/-	5"	900'	20/-	5"	1200'	33/-
5 $\frac{3}{4}$ "	900'	20/-	5 $\frac{3}{4}$ "	1200'	25/-	5 $\frac{3}{4}$ "	1800'	44/-
7"	1200'	25/-	7"	1800'	35/-	7"	2400'	55/-
			8 $\frac{1}{4}$ "	2400'	48/-			
EMPTY SPOOLS IN BOXES			3"	4"	5"	5 $\frac{3}{4}$ "	7"	8 $\frac{1}{4}$ "
			2/3d	3/-d	3/6d	3/9d	4/4d	5/6d
			SPLICING KIT					
			25/-					

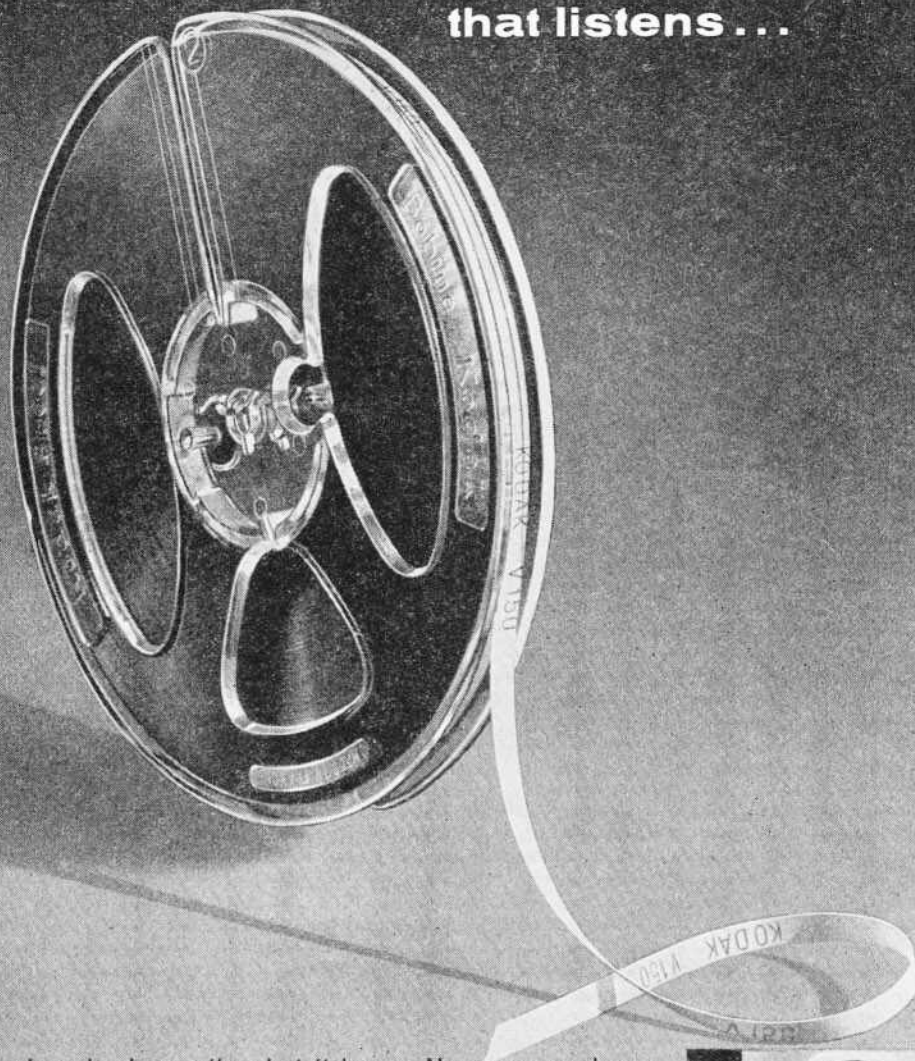
Send for free full colour brochure of tape prices and tape recording accessories.

Mastertape

M.S.S. RECORDING CO. LIMITED

COLNBROOK, BUCKS. Tel. Colnbrook 2431

this is
the 'Kodak film'
that listens...



... and it plays back exactly what it hears. No more, no less. The uncanny trueness of Kodak Sound Recording Tape comes primarily from an oxide layer of consistent thickness, manufactured to a tolerance of 20-millionths of an inch. The emulsion coating technique is the same as that used in producing multi-layer emulsions for Kodak colour films, world-famous for their quality, uniformity, dependability. You like Kodak colour, and you'll like Kodak sound. Kodak Sound Recording Tape is available now at leading Kodak dealers. "Expose" a roll of it soon ... and listen.



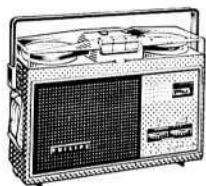
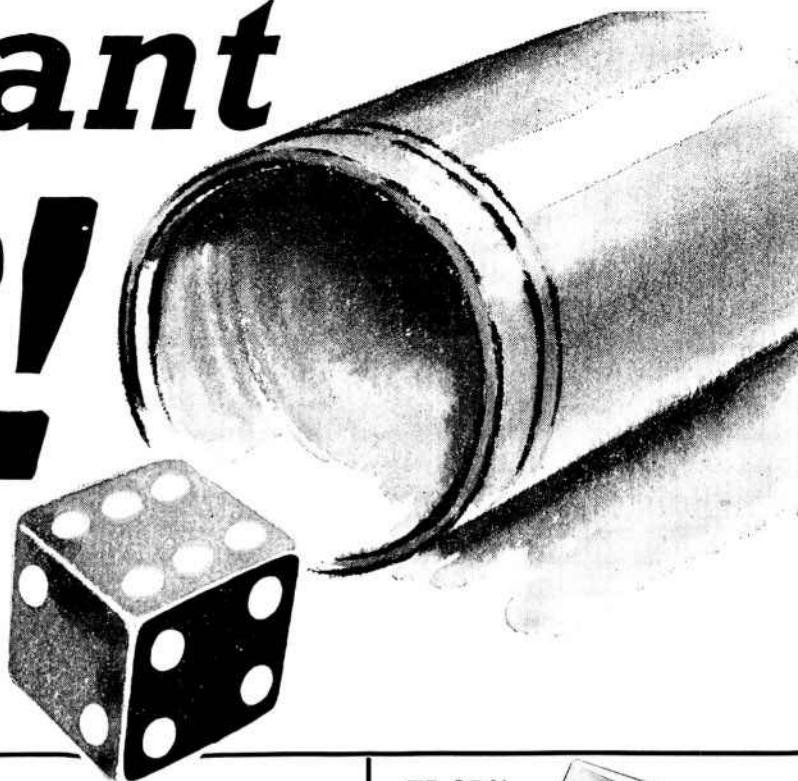
Kodak

SOUND RECORDING TAPE

Kodak Limited,
London.

Brilliant 6!

*The tape recorder
you're looking for is
in the Philips range*



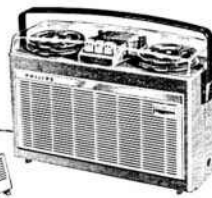
EL 3586
PHILIPS
NEW
BATTERY
TAPE RECORDER

Records and plays back anywhere, any time—even while being carried. All transistor for economical running and lightweight portability.

25 gns. Carrying case and mains unit available as optional extras

EL 3514

PHILIPS
STARMAKER
MAINS TAPE
RECORDER



The first mains tape recorder ever to feature the new, space-saving upright styling. Four-track recording and playback.

27 gns.

EL 3541



PHILIPS
FAMILY TAPE RECORDER

This truly remarkable four-track tape recorder incorporates many advanced features. The ideal instrument for the family man.

36 gns.

PHILIPS

EL 3541/H

FAMILY DE-LUXE TAPE RECORDER

Has all the features of the EL3541 plus the important added advantage of a leathercloth-covered wooden cabinet.

42 gns.



PHILIPS

EL 3549

4-SPEED HI-FI TAPE RECORDER

This all-transistor, 4-track, 4-speed tape recorder has no equal in the medium price class. Many professional features.

62 gns.



PHILIPS

EL 3534

4-SPEED HI-FI STEREO TAPE RECORDER
—WITH MULTIPLAY

Impeccable stereo and mono sound plus *multiplay*—the feature that permits the combination of many monitored recordings on one track.

92 gns.



See the complete range at your Philips dealer's

ALL BEAUTIFULLY
MADE BY

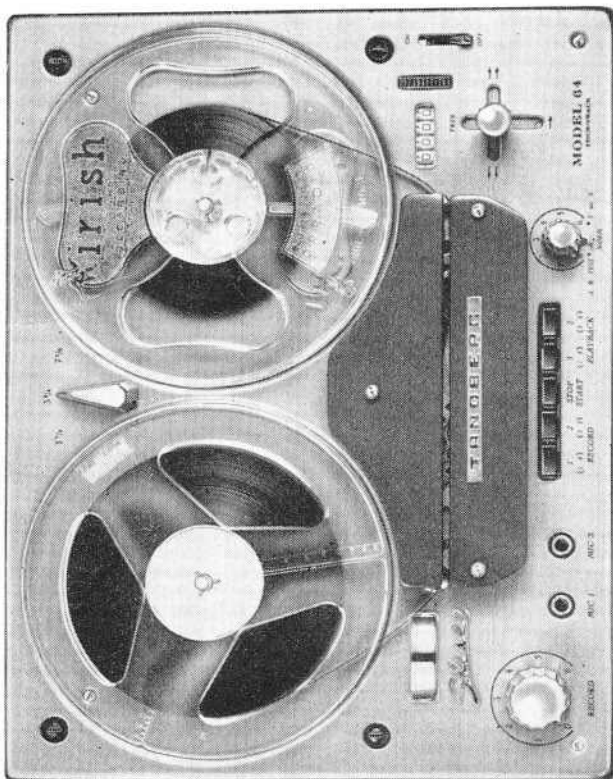


PHILIPS

—THE FRIEND OF
THE FAMILY

PHILIPS ELECTRICAL LIMITED, CENTURY HOUSE, SHAFTESBURY AVENUE, LONDON, W.C.2

(PTR 4332)



The universally acknowledged leader—that's the Tandberg Series 6 stereo tape deck. Three speeds, three heads, four amplifiers. Four-track and two-track models. High and low level mixer inputs and cathode follower outputs. 'On and off the tape' monitoring. Sound-on-sound simultaneous record and playback. Fully professional performance in every respect, beautifully made—unsurpassed precision engineering—strictly for the connoisseur.

TANDBERG SERIES 6 STEREO TAPE DECK 110 gns
Model 64 (4 track)—Model 62 (2 track) Illustrated: plan view of top plate—15 1/2" x 11 1/2"
Illustrated leaflet and Booklet of Technical Reviews on request from

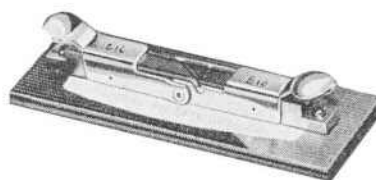
ELSTONE
ELECTRONICS
LIMITED
EDWARD STREET
TEMPLAR STREET
LEEDS 2
Tel: Leeds 35111 (7 lines)

TURN TO Tandberg

TURN

**BUY A
Bib**

**THE PROFESSIONAL
TAPE SPLICER**



—The most reliable and easy to use.

All metal—beautifully plated—compact in size—mounted on flock covered base. Easily and permanently attached to your tape recorder. Ferrograph, Vortexion, Reflectograph and Wearite decks already have fixing holes for the Bib splicer.

Clamps hold the magnetic or leader tapes in the precision cut channel—no danger of damaging the edges—most important with 4 track recordings. Right angle and oblique cutting slots are provided to facilitate editing to a syllable.

The Bib tape splicer saves tape and makes editing a fascinating hobby.

More Bib splicers have been sold in recent years than any other make. It is incorporated in the "Scotch" Tape Accessory Kit and is used by recording studios and broadcasting organisations.

MULTICORE SOLDERS LTD.

MULTICORE WORKS, HEMEL HEMPSTEAD, HERTFORDSHIRE



TAPE RECORDER COVERS

Smart, waterproof cover to give complete protection to your tape recorder. Made from rubberised canvas in navy, wine, tan, grey and bottle green with white contrasting pipings, reinforced base, handy zip microphone pocket and name panel.

GRUNDIG TK 1 with pocket	49/6
GRUNDIG TK 5 with pocket	55/-
GRUNDIG TK 8 with pocket	63/-
GRUNDIG TK 14, 23 & 18 ...	59/6
GRUNDIG TK 20 with pocket	52/6
GRUNDIG TK 24 with pocket	55/-
GRUNDIG TK 25 with pocket	55/-
GRUNDIG TK 30 with pocket	60/-
GRUNDIG TK 35 with pocket	63/-
GRUNDIG TK 40 & 41 ...	66/-
GRUNDIG TK 46 with pocket	82/-
GRUNDIG TK 60 no pocket	75/-
TELEFUNKEN 85 with pocket	65/-
TELEFUNKEN 75/15 & 76K with pocket	55/-
TELEFUNKEN 95 & 96 with pocket	69/6
PHILIPS 8108 with pocket	57/6
PHILIPS EL3534 with pocket	87/-
PHILIPS EL3549 with pocket	79/6
PHILIPS EL3538 with pocket	63/-
PHILIPS EL3542 with pocket	63/-
PHILIPS EL3536 with pocket	70/-
PHILIPS EL3515 with pocket	57/6
PHILIPS EL3541/15 with pocket	57/6
PHILIPS 3541H	...
PHILIPS STARMAKER	...
COSSOR 1605 with pocket	66/-
COSSOR 1602 with pocket	84/-
COSSOR 1601 with pocket	57/6
STELLA ST455 with pocket	63/-
STELLA ST454 with pocket	57/6
STELLA 459 with pocket	84/-

STUZZI TRICORDER with pocket	58/-
SABA with pocket	...
WYNDSOR VICTOR no pocket	63 -
ELIZABETHAN MAJOR with pocket	60/-
ELIZABETHAN FT1 with pocket	...
ELIZABETHAN TT3 with pocket	63/-
ELIZABETHAN LZ 29 ...	66/-
FI-CORD IA ...	75/-
FIDELITY ARGYLL no pocket	...
CLARION (complete with strap)	52/6
BRENELL MK. 5 with pocket	77/-
BRENELL 3 STAR with pocket	69/-
ROBUK RK3 ...	67/6
SONY 521 ...	90/-
FERROGRAPH ...	80/-
REVEX ...	84/-
OPTACORD 412 & 414

CALL, SEND MONEY OR REQUEST C.O.D.
WITH YOUR ORDER TO:—

**A. BROWN
& SONS LTD**

24-28 George St., Hull, Tel. 25412/3



It's tense in the studio before the tapes begin to roll (and Telefunken stands by to capture every sound in thrilling high-fidelity)

THERE IS A LOT of work to be done, and after the musicians and artists have left, Telefunken's work still continues. No wonder that top studio engineers like Telefunken, it's the machine the professionals trust. Precision-made, capturing every sound and nuance, they are the perfect instruments for the job. And you can't achieve that overnight. Telefunken

There is a range of 6 models from 43 gns to 95 gns. Write for free descriptive brochure and price-list to:—

WELMEC CORPORATION LIMITED

27 CHANCERY LANE • LONDON WC2
Telephone CHAncery 9944

made the world's first tape-recorders, and their long experience is built into every machine. Telefunken were first, and they still are, manufacturing tape-recorders with studio features for you to have at home. Telefunken manufacture a wide range of tape-recorders and accessories for amateur and professional use. Call in at your dealer and hear them demonstrated. Examine

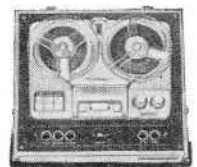
their ease of operation. See how easily they will integrate into your present sound system. Telefunken will amaze you with its sheer breadth of range, the fidelity of its reproduction.

There is a Telefunken tape-recorder for you, equal in quality to your favourite music.

Telefunken has sound quality taped.



TELEFUNKEN



A.T.R. APPROVED DEALERS

MANCHESTER'S SOUND SPECIALISTS

All makes of Tape Recorders and Accessories
Appointed Ferrograph Stockists
Gramophone Record Library—includes Stereo

LANCASHIRE HI-FI
8 DEANS GATE, MANCHESTER
(Next to Grosvenor Hotel)

* CITY & ESSEX TAPE RECORDER CENTRES

228 BISHOPSGATE, LONDON, E.C.2.
2 MARYLAND POINT STATION,
LONDON, E.15 (Head Office)
Telephone: MARYland 5879
205 HIGH STREET, EAST HAM, E.6
(Opposite East Ham Station)
Telephone: GRA 6543

G. L. MORTON & CO. LTD.
12 OXFORD STREET,
NEWCASTLE-UPON-TYNE

* NUSOUND RECORDING CO.

London Showroom: 35 Craven
Street, Trafalgar Square, London, W.C.2.
Tel. TRA 2080
3/8 Brigstock Parade, London Road,
Thornton Heath, Surrey.
Opposite T/Heath & T. Bus Depot.
THO 7609



THE SERIOUS ENTHUSIAST usually comes to us after finding technical service difficult to obtain elsewhere. WISE PURCHASERS come here first, and are assured of first class technical service at all times. WE SUPPLY All good Hi-Fi equipment and Tape Recorders, Part Exchange and H.P. welcome. LAMBDA RECORD CO., Dept. ATR, 95, Liverpool Road, Liverpool 23. Telephone GREAt Crosby 4012.

SOUTHERN RECORDER SERVICE

2 ST. GEORGE'S STREET,
WINCHESTER, HANTS

Bath Co-Operative Society Ltd.
TELEVISION CORNER,
SOUTHGATE STREET, BATH

ENGLAND'S BIGGEST SPECIALISTS:

HOWARD TAPE RECORDERS

218 HIGH ST., BROMLEY, KENT
RAV. 4000 & 4477

R.E.W. EARLSFIELD LTD.

PART EXCHANGE SPECIALISTS
266 UPPER TOOTING RD.,
LONDON, S.W.17.
Telephone: BAL 7710.

* SHEEN TAPE RECORDER CENTRE LTD.

Personal Sales and Service by
L. G. Francis

8 STATION PARADE, SHEEN LANE,
SHEEN, LONDON, S.W.14.
Showrooms: PROspect 0985
(Opposite Mortlake Station S.R.)

Extensive Tape
Recorder Show-
room. Ferro-
graph. Grundig
Philips Bren-
ell etc Full

range Mics.
Tape, Acces-
sories, Technical
Information and
Service.



KINGS SQUARE, YORK. Tel. 55666

C. SHARP & SON LTD.

4 PREBEND ROW,
DARLINGTON, CO. DURHAM

* VISITED BY "AMATEUR TAPE RECORDING & HI-FI"

Professional Performance



Head De-magnetiser

De-magnetises tape heads quickly and simply. Also for pin-point erasing on striped film and tape recordings—removes local unwanted noises

without detriment. Has nylon-cushioned twin probes with a concentrated demagnetising field in the 1/8" gap between the arms. Pistol grip. A.C. mains. Professionally designed for professional recording engineers. £2.10.0.



Tape Eraser

Erases both sides of a 7" tape reel in 30 seconds and positively removes even the very low frequency portions of

a recording. Use the WAL Tape Eraser, the only way to ensure an absolutely clean tape—quicker and better. Mains operated. Also erases sound from 16 mm. film, 10" aluminium reels. Professionally designed for professional recording engineers. £6.18.6.



Pre-amplifiers

WAL pre-amps are made for every purpose. Fully transistorised, battery-operated, give high gain, completely hum-free. Laboratory built and fully tested. Professionally designed for

professional recording engineers. Ask for details of WAL-GAIN Mono £5.10.0. STEREO WAL-GAIN £7.10.0. and the superb WAL HI-GAIN with built-in switched equalisation for monitoring, dubbing etc. etc. £7.16.0.

Free leaflets available on these professional aids to perfection . . . please write:

ELSTONE ELECTRONICS LIMITED
Edward Street, Templar Street, Leeds 2.

amateur TAPE RECORDING AND HI-FI

RAPID RECORDING SERVICE, 78s. and L.P.s. from your own tapes (48 hour service). Master Discs and Pressings. Recording Studio. Mobile Recording Van. Manufacturers of the Sleep-o-matic Unit. Foreign language courses available for sleep-learning. Brochures and price lists on request from: Dept. ATR, 21 Bishop's Close, London, E.17.

TAPE/DISC/TAPE transfer, editing, duplicating. If quality and durability matter (especially with LPs from your precious tapes), consult Britain's oldest transfer service. Join Audio Supply Association: considerable saving. 60-page photographically illustrated Hi-Fi Catalogue 4/6d. Sound News, 10 Clifford Street, London, W.1. Regent 2745.

HIGHEST CASH PRICES offered for good quality Tape Recorders and Hi-Fi. See our ad. page 17 this issue.—R.E.W., 266/8, Upper Tooting Road, London, S.W.17.

A UNIQUE BUY! Recording tape top brand, 53in. 1,200 ft. 19/6; 7in. 2,400 ft. D.P. 28/6 P. & P. 1/6 per spool. Bargains in all sizes. S.A.E. for list. E. C. Kingsley & Co., 132 Tottenham Court Road, London, W.1. Euston 6500.

Excellent Quality Discs made from your private tape recordings—Weddings/Choirs etc. LP's from 15/6. (s.a.e.)—S.S.S., Dept. 7, 28 Viewforth Terrace, Sunderland.

PRE-RECORDED TAPES. Unique complete catalogue listing all makes. Mono, Stereo. 7 $\frac{1}{2}$ and 3 $\frac{1}{2}$ i.p.s., including World Record Club tapes. Call for FREE copy or send 1/- mailing fee, Dept. TR.2, Teletape Ltd., 33 Edgware Road, W.2. PAO. 1942.

Ferrograph 5 A/N, 422 and 424, Revox E36, etc., always in stock — City and Essex Tape Recorder Centres, 2 Maryland Station, London E.15.

CLASSIFIED ADVERTISEMENTS

9d. per word, minimum 7/6. Box Nos. 1/6 extra.
Advertisements should be addressed to the Advertisement Manager 'Amateur Tape Recording & Hi-Fi', 145 Fleet Street, London, E.C.4.

Cheap Recording Tape for sale. A. Marshall & Son (Metals) Ltd., 18 Cricklewood Broadway, N.W.2.

RECORDING TAPE post free. High quality, refund guarantee. 3in 400ft 9/-; 4in 450ft 8/6; 600ft 12/-; 5in 900ft 12/6; 1200ft 20/-; 5 $\frac{1}{2}$ in 1200ft 16/-; 1800ft 28/-; 7in 1800ft 22/6; 2400ft 36/-; M.S. Recording Tapes (Dept. A.T.), 21 Hoyle Street, Radcliffe, Manchester.

Good cash prices for tape recorders.—Telephone Maryland 5879.

WE SPECIALISE in Tape Recorder and Hi-Fi repairs and offer a speedy service. Teleonic Ltd., 92 Tottenham Court Road, W.1, MUS 8177. Leading Hi-Fi Dealers.

SOUND EFFECTS RECORDS. Did you miss the ATR special offers? MFX-1 14 mixed effects. MFX-2 17 mixed effects. TFX-1 British Railway trains 11 records. AFX-1 Wild Animals. MFX-3 Horse and Domestic Animals. Available at usual retail price of 8/- each incl. p.t., post and packing from Recorded Tunes Ltd., 174, Maybank Road, South Woodford, London, E.18. List available—3d. stamp.

RETURNING TO AMERICA. Must sell Sony Stereorecorder 521, with accessories.—Ambassador 0090, £90.

DUODE SOUND UNITS delight keen ears with the most natural true to real life results from tape, disc or radio — because their famous, unique dual drive, built in crossover and feedback, linen cone with graded compliance, produce 20 to 15,000 c.p.s. with smooth non-resonant, dead-beat crystal clarity. Buy Duode for your lasting pleasure and finest long term sound investment.—T. Duode Ltd. 16 Brunswick Road, Sutton, Surrey.

Recorder Need Repairing? Then let City and Essex Tape Recorder Centre do it for you expertly and economically.—City and Essex Tape Recorder Centres, 2 Maryland Station, London E.15.

MAKE FRIENDS anywhere by tapesponding or correspondence. Interesting free details from: The Friendly Bureau (Registered), 43, Clifford Road, Wallasey, Cheshire.

Festive Greetings to Worldwide Tapetalk Stations all over the world. You too can open up a Tape Station. S.A.E. for particulars.—35 The Gardens, Harrow.

SPECIAL OFFER. First Grade Quality American Recording Tapes Brand New. Guaranteed in Attractive Boxes. 5" 600' Std. Acetate 9/-; 5" 900' LP Acetate 11/6; 5" 1200' DP Mylar 15/-; 5 $\frac{1}{2}$ " 1200' LP Acetate 15/-; 5 $\frac{1}{2}$ " 1800' DP Mylar 20/-; 7" 1200' Std. Mylar 13/6; 7" 1800' LP Acetate 16/6; 7" 1800' LP Mylar 19/6; 7" 2400' DP Mylar 24/-; Postage 1/- per spool cwo. Postage Free for orders of £3.—C. Sharples, 25 Marsh Drive, Freckleton, Lancs.

TAPE SPLICING, EASY WITH EASY-SPLICE SPlicer, guaranteed. 5/- Scotch Box Splicing Tape 3/- P & P 6d. EASY-SPLICE, 30, Lawrence, Ealing.

NEW CATALOGUE of Tape, Hi-Fi Accessories and Equipment. RECORDING TAPE, TAPESPENDENCE LABELS etc. Prepared Especially for CLUBS and ENTHUSIASTS. Send 6d. stamps to "SHIRLEY ANN'S" 7, Manor Road, Felixstowe.

AMATEUR TAPE RECORDING & HI-FI

SUBSCRIPTION FORM

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

AMATEUR TAPE RECORDING & HI-FI,
SUBSCRIPTION DEPT.,
VERNON HOLDING & PARTNERS LTD.,
43/44, SHOE LANE,
LONDON, E.C.4.

Sirs: Please send **Amateur Tape Recording & Hi-Fi** for one year, commencing with the next (.....) issue, to the address below. I enclose the annual subscription of twenty-nine shillings (29s.).

Name

Address

Date

**HMX 1
DISC No. 7**
Send this with
your order for
Sound Effects
Disc

● Tape Club members wishing to avail themselves of the special Club Subscription rate of 21s. per annum should apply to their local Club Secretary. All Club orders must bear the Club Secretary's signature and be sent to the Subscription Department.

ADVERTISERS IN THIS ISSUE

	Page
Agfa	4
B.A.S.F.	48
Brenell	17
A. Brown & Son	43
Denham & Morley	14
Educational Recordings Ltd.	16
E.M.I.	5, 33
Ferrograph	29
Fi-Cord	2
Francis	30
Gramplan	30
Howard	20
Irish Tape	29
Kodak	41
Lustraphone	16
Massey	32
Metrosound	30
M.M.M.	47
M.S.S.	40
Multicore	43
Nusound	16
Philips	36, 42
Radiotractor	32
R. E. W. Earlsfield Ltd.	17
Sheen	32
Simon Equipment	6
Sony	18
Standard Telephone	37
Tandberg	43
Telefunken	44
Truvox	8, 9
W.A.L.	45
Zonal	3

CHRISTMAS!



GIVE
Scotch
 MAGNETIC TAPE
 IN THIS **GAY** WRAPPER

Scotch Magnetic Tape is the perfect present for anyone who owns a tape recorder. And all the 5", 5 $\frac{3}{4}$ " and 7" boxes are packed in colourful seasonal wrappings. **New lower prices, too!**

**3M MINNESOTA MINING AND
 MANUFACTURING CO., LTD.**
 3M HOUSE · WIGMORE · STREET · LONDON W1

**SPOKEN CHRISTMAS "CARDS"
 FOR FARAWAY FRIENDS**

Why not send truly personal greetings to faraway friends on a Scotch 'One Five Special'? Inexpensive, at only 5/3 per reel. Runs 15 mins. at 3 $\frac{1}{2}$ i.p.s. Packed in a box designed to be sent through the post.



BASF HAS YOUR CHRISTMAS PRESENT PROBLEM TAPED



BASF LETTER TAPES

Your friends will be delighted to actually hear from you this Christmas. Use a BASF Letter Tape specially made for mailing. Only 5/6d.



BASF LIBRARY BOXES WITH 1 OR 3 TAPES

Holds three tapes in swivel open cassettes to provide a quick reference library, and to protect tapes from dust or damage. From 31/-.

TAPE CUTTER BOX

A complete kit containing everything needed for editing tape.



BASF TAPES

The Connoisseur's specification for quality recordings. There is in the range a tape for any type of recorder.



TAPE MANUAL

A complete guide to tape recording. Clear diagrams and illustrations make it an invaluable aid. 1/6d.



—SYMBOL OF
AUTHENTIC SOUND

FOR FURTHER DETAILS WRITE TO:

BASF CHEMICALS LIMITED, 5a GILLESPIE ROAD, LONDON, N.5. TEL: CANONBURY 2011