

TAPE, RECORDERS & ACCESSORIES

FIRST DETAILS OF NEW PRODUCTS

● We remind our readers that notices of equipment listed and illustrated in this monthly feature are in no sense reviews. When figures, specifications and diagrams are published, these data are extractions from manufacturers' lists. When samples of this equipment are submitted for test, they are passed to our technical contributors, whose reports are published in a separate section.

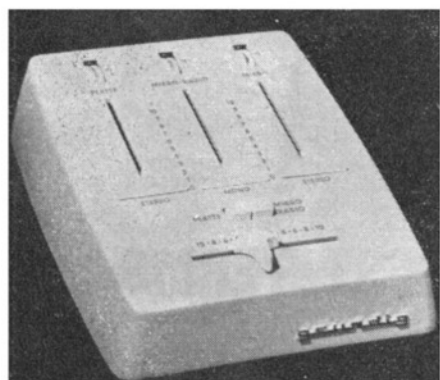


★
GRUNDIG TK18
TWO-TRACK
RECORDER
★

THE TK18 recorder is a fully automatic machine which does not require manual recording level adjustment. Fitted with the "Magic Ear" which contains a unique memory system, this machine retains the correct recording level so that the full dynamic range of music or speech is reproduced without distortion. The memory system provides different storage durations for radio and microphone recording to meet the requirements of speech recordings in rooms which are not acoustically prepared.

The recording signal after the frequency correction network is sampled, is fed to a two stage control amplifier, rectified and fed as a control signal into the first two stages of the recording amplifier. This ensures that the correct frequency response is maintained at all times with no increase in harmonic distortion whatsoever. To prevent an increase in background noise and hum under no signal conditions, the "Magic Ear" will operate only after a very low signal input level has been exceeded.

The specification quotes a frequency response: 40-12,000 c/s $\pm 3 - 5$ dB. Tape Speed $3\frac{1}{2}$ i/s. The maximum spool size is $5\frac{1}{2}$ in. providing a playing time of 1 hour per track using long play tape. Other details are signal to noise ratio: Better than 50 dB. Wow or flutter: Less than ± 0.2 per cent. Inputs: Microphone Radio/Gram P.U. Outputs: High Impedance Low Impedance. Output Power: 2.5 watts. Dimensions: $14\frac{1}{2} \times 11\frac{1}{2} \times 6\frac{1}{2}$ ins. Weight: Approximately 20 lb. Price £40 19s. complete with microphone and tape. **Manufacturers: Grundig (Great Britain) Ltd., Newlands Park, Sydenham, London, S.E.26.**



★
GRUNDIG
STEREO
MIXER
★

ALTHOUGH the description of this accessory indicates that it is intended for stereophonic operation, the Mixer type 608 is in fact an instrument that can be used for monophonic working. It is now the only mixer unit offered for sale by Grundig (Great Britain) Ltd.,

Fully transistorised and fed from two batteries type PP3 (or

equivalent), the Stereo Mixer 608 is immediately ready for use after switching on. It is fitted with connecting sockets for two microphones (left-hand channel and right-hand channel), a further monophonic microphone, for the connection of a radio receiver and a stereophonic gramophone pickup. A monophonic/stereophonic output socket is also provided.

Studio type linear fading controls are fitted, permitting exact adjustments of levels and fading operations. Inputs from a monophonic microphone or a radio receiver connected to the appropriate socket can be mixed with a stereo programme and with the aid of a "Directional Control" these monophonic inputs may be mixed with either the left or right-hand channels, or combined with both channels.

The frequency response of the mixer unit is substantially flat between 30 and 20,000 c/s. The unit weighs 3 pounds 12 ounces and measures $9\frac{1}{2} \times 8 \times 3$ in. The price is £18 18s. **Manufacturers: Grundig (Great Britain) Ltd., Newlands Park, Sydenham, London, S.E.26.**



★
COSSOR
CR 1605
FOUR-TRACK
FOUR-SPEED
RECORDER
★

A NEW four-track, four-speed tape recorder has been introduced by Cossor to replace the successful model CR1601. Designated model CR1605, the new machine has many advances over its predecessor, notably the all-transistor amplifier and the fourth speed. A newly designed deck-layout has also been used for this machine with clear labelling of all the controls.

The newly introduced speed of 15/16 i/s is particularly suitable for speech recording, over four hours' recording can be made on a 3 in. reel of D.P. tape.

Housed in a wooden cabinet covered in washable two-tone brown and beige P.V.C., the new machine, by using transistors instead of valves, weighs only 26 lb. The use of transistors also ends warm-up time and gives the instrument long-term reliability.

A parallel track facility has been incorporated for simultaneous playback of two separately recorded tracks. In addition there are facilities for mixing microphone with radio or gramophone inputs, and for monitoring through headphones and internal loudspeaker while recording.

Rotary controls are provided for volume, tone and microphone and radio input levels, with push-buttons for record, pause, play, stop and fast wind and rewind. Inset symmetrically placed switches operate track and speed selection. The modulation level indicator is of the moving coil meter type.

The price of this new machine, together with a moving coil microphone, screened connection lead, 7 in. reel of long play tape and empty take-up spool, is £65 2s. **Manufacturers: Cossor Radio and Television Ltd., 233 Tottenham Court Road, London, W.1.**

Two Years Guarantee

NOT MASS PRODUCED BUT VIRTUALLY HAND-MADE FOR RELIABILITY
AND CONSISTENTLY HIGH STANDARD OF PERFORMANCE

R10 SPECIFICATION: 2 or 4 track version. 10 watts push/pull output.

Record Replay Responses—

7½ ips. 40–16,000 C.P.S. } ± 3 dBs.
3¾ ips. 40–10,000 C.P.S. } At optimum
1⅞ ips. 50– 6,000 C.P.S. } bias setting.

Signal/Noise ratio—

half track 50 dBs at 3¾ ips.
quarter track 45 dBs at 3¾ ips.

Modified Collaro Studio Deck. Microphone and Radio/Gram inputs each with separate gain controls for mixing. Separate bass and treble controls. ± 12 dBs at 50 cycles and 12 k/cs. Adjustable monitor volume control independent of record level. Peak signal lever meter 2¼ in. square. Bogen heads. Record safety device. 600 ohms Cathode follower output. Two per cent total harmonic distortion on peaks. 200/250 volts 50 cycles or 100/120 volts 60 cycles. Valve line up: 3 EF86, 2 ECC83, 1 ECC82, 2 ECL86. Metal rectifier, contact cooled.

Prices: 2 Track 7" spools ... 59 gns.
4 Track 7" spools ... 69 gns.



Fully illustrated literature available on request to—

REPS (TAPE RECORDERS) LTD.

118 Park Road North, South Acton,
London, W.3 Phone: Acorn 4141

BRITAIN'S LARGEST PART EXCHANGE SPECIALISTS

AND APPOINTED AGENTS FOR

Ferrograph 5AN ... 85 gns.
Wyndor International 75 gns.
Ferrograph 422/4 ... 110 gns.
Reflectograph 'A' ... 105 gns.
Tandberg 6 Stereo ... 110 gns.
Vortexion WVA ... £93.13.0
Brenell Mk. 5 'M' ... 88 gns.
Simon SP.5 ... 93 gns.
Brenell Mk. 5 ... 64 gns.
Akai M6 Stereo ... 130 gns.
Philips Stereo ... 92 gns.
Sony 521 Stereo ... 124 gns.
Reps R10 ... 59 gns.
Ampex Stereo 971 ... 225 gns.
Revox Stereo ... 110 gns.

ALL ABOVE RECORDERS
AVAILABLE FROM STOCK

WE HAVE THOUSANDS OF SATISFIED CUSTOMERS
THROUGHOUT THE BRITISH ISLES

TRANSISTOR-BATTERY

Grundig TK1 ... 29 gns.
Optacord 412 ... 45 gns.
Butoba MT5 ... 69 gns.
Fi-Cord 202 ... 69 gns.
Philips EL3585 ... 24 gns.
Stuzzi Magnette ... 59 gns.
Uher 4000 ... 93 gns.

Large stocks of new and
used tape recorders at bar-
gain prices. Ask for list.
30% to 60% reductions
on original price.

If you have outgrown your
present tape recorder or hi-fi
equipment and would like to
own a more advanced
machine, as used by profes-
sional and serious tape
recorder enthusiasts. **Contact
us today !!!**

MAIL ORDER EXPERTS



Ferrograph Series 5

ALL GOODS AVAILABLE ON OUR FAMOUS

NO INTEREST TERMS

10% deposit, balance 12 months. 18 to 24 months terms available

FREE SERVICING—FREE DELIVERY—300 MACHINES ON DISPLAY—OUR MAIL ORDER
DEPARTMENT WILL DEAL WITH YOUR ENQUIRY BY RETURN. WRITE—PHONE—CALL FOR
A QUOTATION ON YOUR MACHINE. A LARGE SELECTION OF USED TAPE RECORDERS.
HOME DEMONSTRATIONS IN THE LONDON AREA.

REW

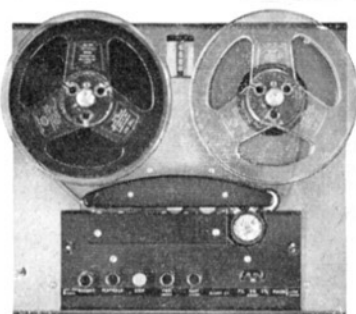
EARLSFIELD LTD., 266 UPPER TOOTING ROAD, LONDON, S.W.17

Telephone: BALHAM 7710

100 yards from Tooting Broadway underground station: opposite Tooting Market



EQUIPMENT REVIEWED



★
**PLANET
UI/15
THREE SPEED
TAPE DECK**
★

Manufacturer's Specification: **Heads:** Three-head two-track system fitted to standard deck. High impedance record and playback coupled with special triple-field erase head all of Miniflux type. Any other combination of heads can be fitted upon request. **Tape speeds:** 15 i/s, $7\frac{1}{2}$ i/s and $3\frac{1}{4}$ i/s. **Reels:** 7 in. max. **Rewind:** Tight even stacking. 90 secs. 1,200 ft. **Tape position:** Four digit counter. **Obtainable frequency response:** 15 i/s 30-22,000 c/s, $7\frac{1}{2}$ i/s 30-18,000 c/s, $3\frac{1}{4}$ i/s 30-15,000 c/s. **Wow and Flutter:** 0.06% R.M.S. at 15 i/s, 0.08% R.M.S. at $7\frac{1}{2}$ i/s and 0.12% R.M.S. at $3\frac{1}{4}$ i/s. **Speed:** plus or minus 0.2%. **Motor:** Papst Hysteresis Synchronous. **Auto Stop:** By Solenoid (6-12 V. A.C. or D.C.) operates by metal foil on tape and removes all idler and pinch reel pressures. **Power:** 200-250 volts A.C. 50 c/s. 32 Watts. 100-145 volts A.C., 50 or 60 c/s to order. **Tape pressure system:** Stainless steel pins wrap tape across face of head (reduces wear to minimum). **Balanced drag:** Wow and flutter same at beginning and end of tape. **Clutch:** Variable speed magnetic. Smooth take up. No uncontrolled spinning of free spool. **Extra heads:** Space for fourth head. Can be supplied complete with mounting plate and tape pin plate at small extra cost. **Head to amp. connections:** Via co-axial sockets below deck. **Controls:** Press button. Record with interlock to prevent accidental erasure, Playback, Stop, Fast Rewind, Fast Forward, all with interlock. Pause control with lock. **Dimensions:** Top mask 14 in. x 12½ in. Bottom plate 11½ in. x 10½ in. Depth between mask and bottom plate 2 in.; motor protrudes a further 2½ in. **Weight:** 12½ lb. **Price:** £44 10s. **Manufactured by Planet Projects Ltd., Goodman Works, Belvue Road, Northolt, Middlesex.**

THIS is not so much a review as a report on the testing of one of the new Planet UI 15 tape decks with the Stern STP-1 stereophonic tape pre-amplifier. The Planet deck was fitted with Miniflux heads: a VLF4 double quarter track ferrite erase head and a VKH4 quarter track R/P head. The pre-amplifier was built by News Editor Alan Lovell to the exact assembly data and diagrams given in the Stern Kit book. All the suggested modifications for Miniflux heads were incorporated. A quick listening test confirmed that no major errors had been made in the wiring, and the complete outfit was packed and sent to me for detailed technical tests.

The one hundred mile journey from Waterloo to Christchurch proved a very effective vibration and bump test. The wiring and assembly had passed the test very well, the pre-amplifier worked perfectly.

Wow and Flutter

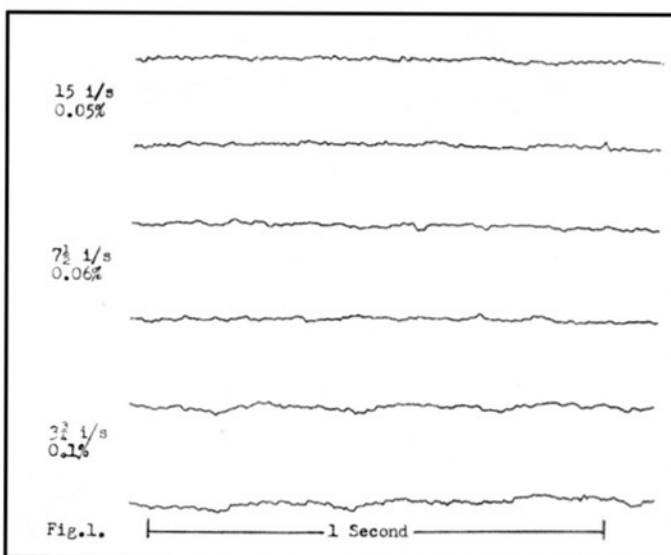
A 3 Kc/s tone was recorded at the three speeds of 15 i/s., $7\frac{1}{2}$ i/s and $3\frac{1}{4}$ i/s and the rock-steady flutter bridge meter readings proved that the tape deck had not suffered any damage.

The fluttergram pen recordings of fig. 1 show that short term speed variations are very small indeed, with total rms wow and

flutter readings of 0.05 per cent. at 15 i/s, 0.06 per cent. at $7\frac{1}{2}$ i/s. and 0.1 per cent. at $3\frac{1}{4}$ i/s. At the lowest speed a slight capstan wow can be seen on the pen traces; it could just be heard on a steady tone but could not be detected on music recordings at all.

It is interesting to compare the fluttergrams with those of the UI deck reviewed in June 1962. The total integrated rms readings are almost identical, but the traces look appreciably smoother. This indicates that cyclical speed variations due to the motor, stepped pulley and idler wheel have been reduced to vanishing point; the very slight capstan effect can be picked out more clearly as the rotation frequency has been halved for any given speed by doubling the diameter of the capstan.

Let me emphasise once again that this detailed analysis of the last remaining trace of wow is of academic interest only



and is in the nature of a progress report on the continued development and detail improvement forecast in my review of the original UI deck.

Play Only Responses

The deck was next loaded with pure tone test tapes recorded with surface induction characteristics of 35, 100 and 200 micro-seconds to check the combined head and pre-amplifier responses at the three speeds of 15, $7\frac{1}{2}$ and $3\frac{1}{4}$ i/s. The pre-amplifier output on each tape was in the order of 0.15 V. and the responses are shown in fig. 2.

There is a small wavelength head contour effect (see my article in April 1962 issue) which causes a series of small bumps and dips which move down in frequency as the tape speed is reduced, but the playback responses are within plus or minus 2 dB over most of the frequency range at each speed.

Noise and hum could be reduced to 40 dB below test tape level (1.5 millivolts at pre-amplifier output) by very careful orientation of the power unit with respect to the pre-amp and deck; but such critical placement indicated that there was a certain amount of hum cancellation taking place between valve hum and hum picked up on the heads from the power transformer. Such cancellation could change markedly with small variations of mains voltage or harmonic content and should not be relied upon for serious work.

The leads to the power unit were extended so that it could be placed well "out of sight" of the deck and pre-amplifier and the hum was then 32 dB below test tape level. Later

(Continued on page 79)