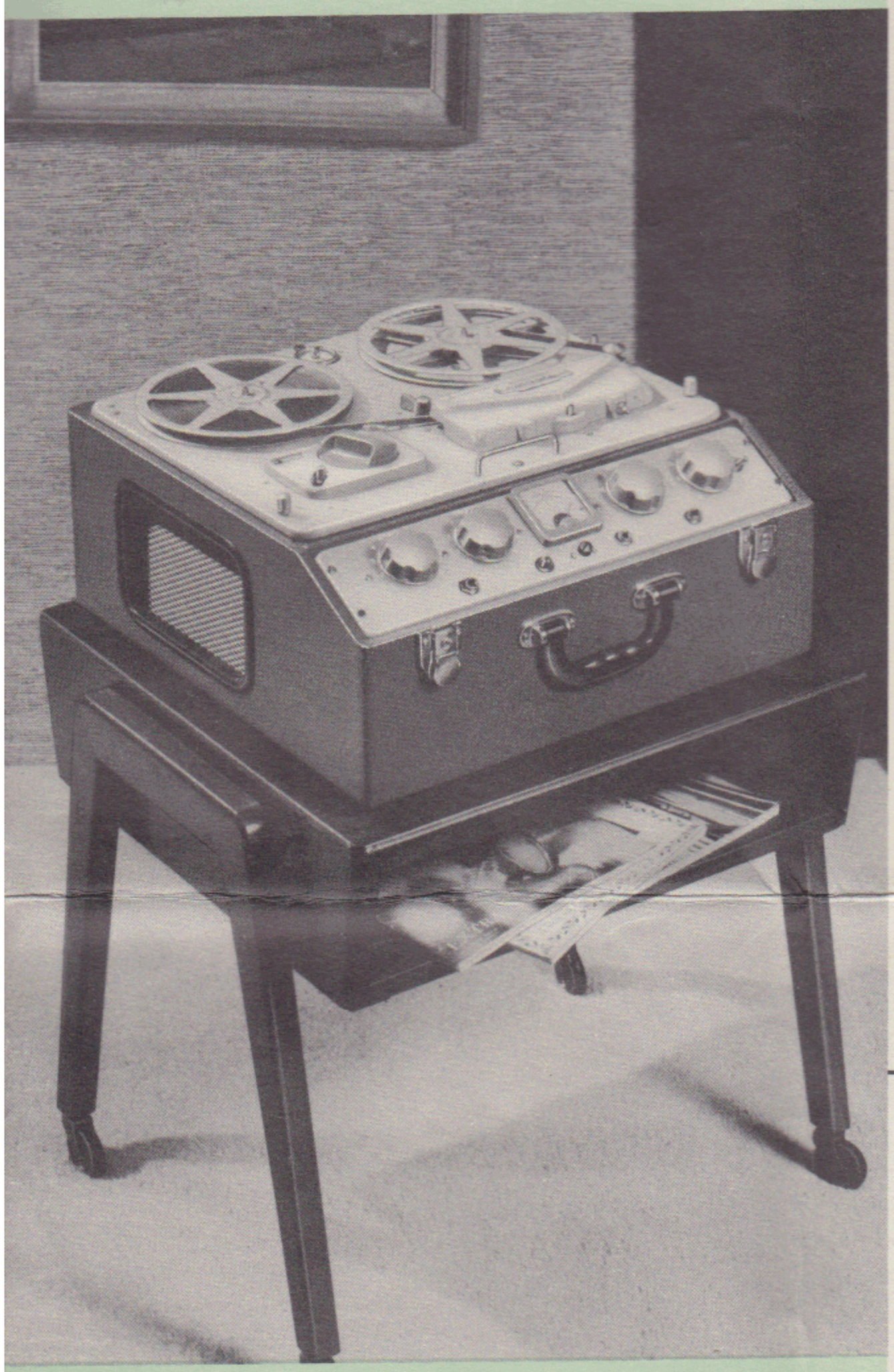
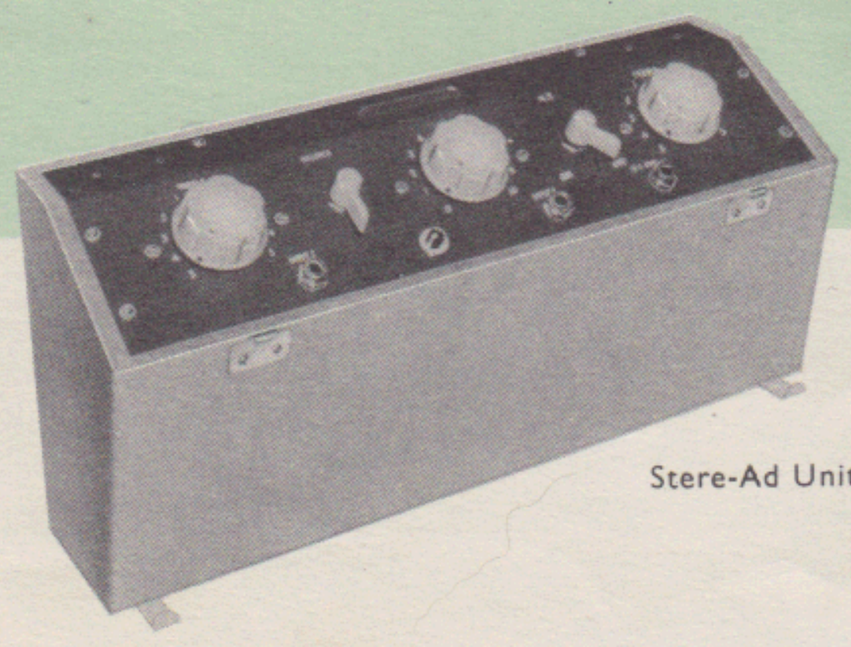
The Incomparable **Ferrograph**



Series 4



Stere-Ad Unit

Ferrograph Series 4

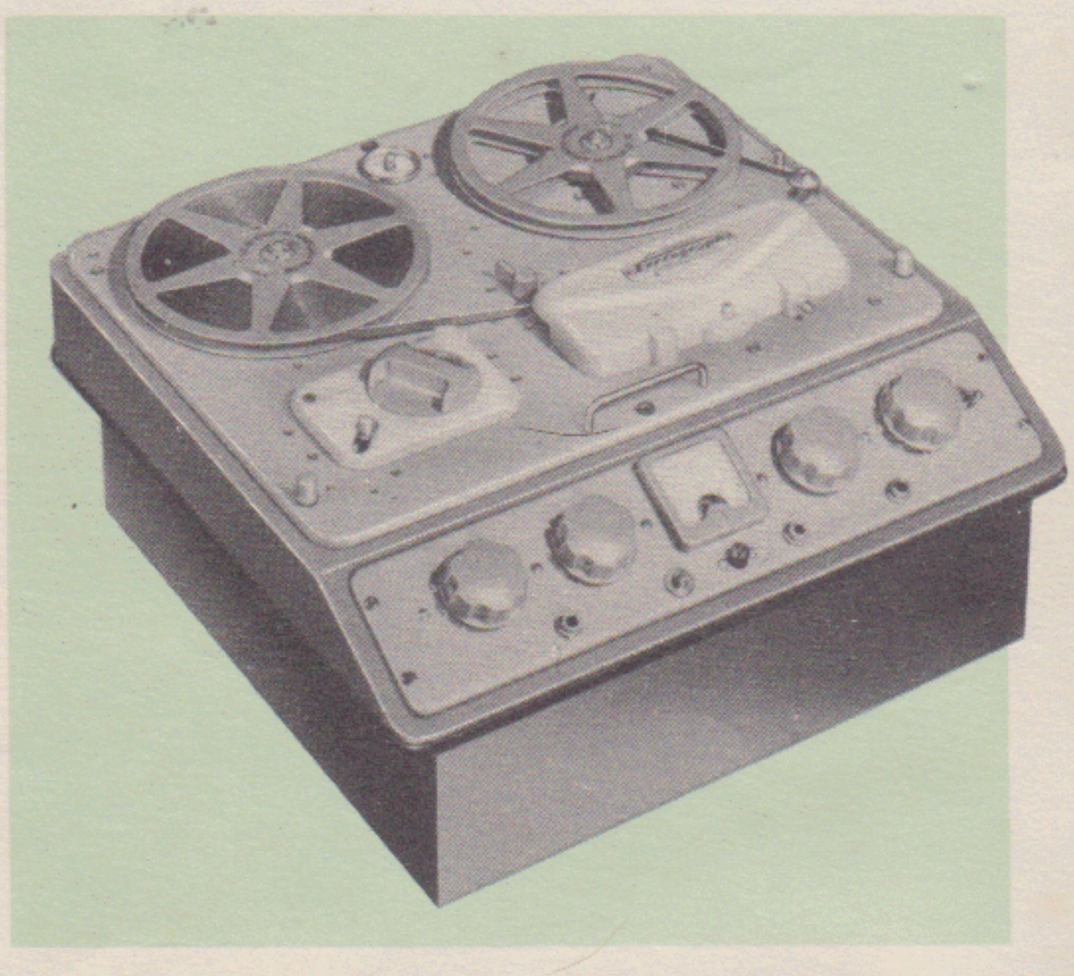
THE PRACTICE of making frequent Model changes has not at any time been a Ferrograph policy, but with the advent of stereophonic sound and the quickening of interest in Tape Recording in so many different fields, it is wise to look ahead. Important modifications, therefore, have been introduced by Ferrograph engineers whereby, no matter how Tape Recording develops or for what purpose it is used, no Ferrograph Series 4 need ever become out-dated or obsolete.

Instead, at any convenient time, it can be adapted for a wide range of applications including stereo recording, stereo playback, dual track stereo to the new U.S. standards, monitoring and lower track uses. To permit this, a socket is provided under the hinged Head Cover for additional, interchangeable Heads. Such Heads are designed to plug in and rocking facilities are provided to permit azimuth correction.

As an example of this versatility, any Ferrograph Series 4A can at any future time be converted to a Series 4S by plugging in and connecting the additional

Ferrograph Stereo 88

WITH THE increasing popularity of stereophonic sound a demand has arisen for a transportable Tape Recorder having full stereo recording and playback facilities with a high level of performance. To achieve this in small compass it has been necessary to omit the two power amplifier stages—thus saving weight and space. To high fidelity enthusiasts, however, the omission of the twin output channels will present no problem since most will already possess high fidelity amplifiers and loud speakers of their own choice. In the Ferrograph 88,



Models 4AN/CON ; 4AH/CON
4SN/CON ; 4SH/CON

Stereo (or stacked) Head at a cost of 7 gns. By connecting a Stere-Ad Unit, the user can then enjoy the thrilling realism of stereophonic sound from the library of excellent pre-recorded Tapes now available, in addition to the normal monaural recording and playback facilities.

The Stere-Ad Unit incorporates two matched pre-amplifiers (one for each track) together with one additional power amplifier. When the Stere-Ad and the Series 4S are connected together the two power amplifiers (one in the 4S and the other in the Stere-Ad) provide a 2 × 2 watts matched output for feeding into any appropriate external dual speaker system.

The Ferrograph Series 4 is supplied in one standard colour finish only—two-tone grey—and in two forms at similar prices : i.e. either as a self-contained trans-portable with in-built speaker and detachable lid or as a chassis mounting unit (without speaker) for easy installation into any suitable cabinet.

SERIES 4A *(with standard monaural recording/playback facilities)*

Model 4A/N (3¾/7½ i.p.s.) ...	81 gns.
Model 4A/H (7½/15 i.p.s.) ...	86 gns.
*Model 4AN/CON (3¾/7½ i.p.s.)	81 gns.
*Model 4AH/CON (7½/15 i.p.s.)	86 gns.

SERIES 4S *(with additional stacked stereo head for playback of pre-recorded* ***stereo*** *tapes, when used with a Stere-Ad Unit or other external Hi-Fi amplifiers).*

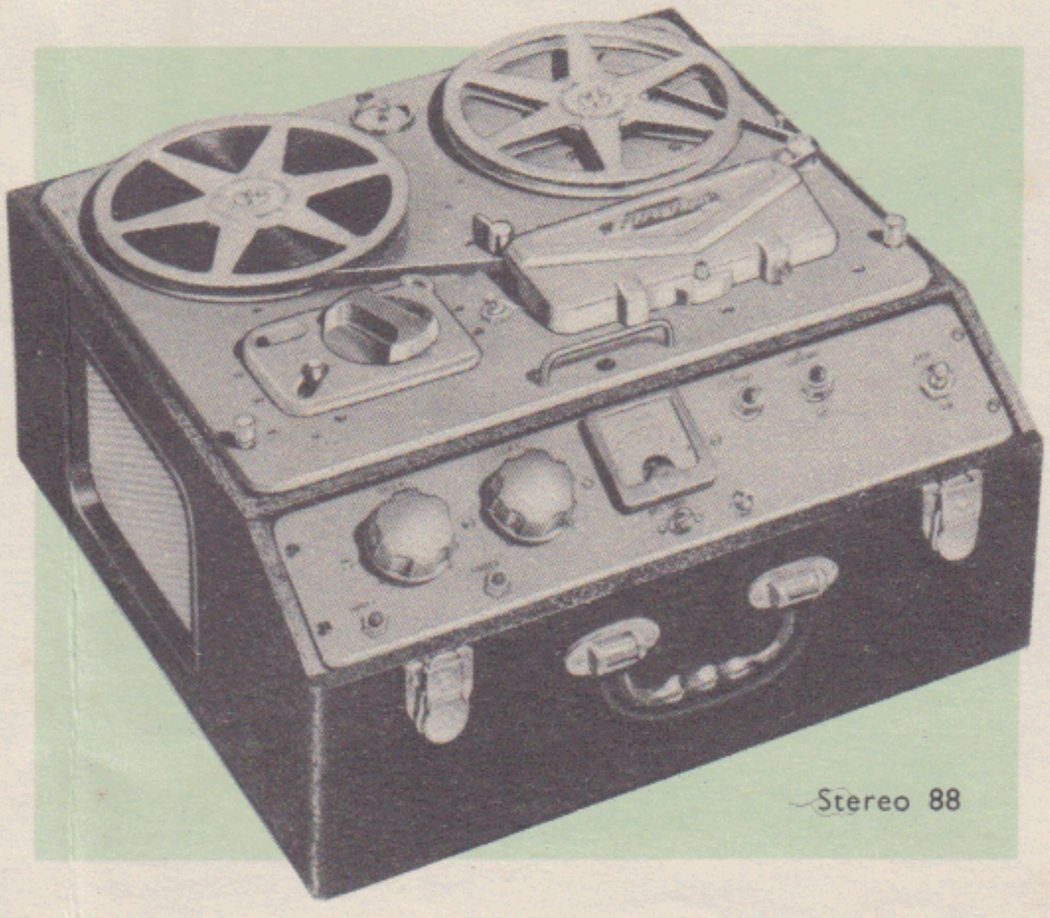
Model 4S/N (3¾/7½ i.p.s.) ...	88 gns.
Model 4S/H (7½/15 i.p.s.) ...	93 gns.
*Model 4SN/CON (3¾/7½ i.p.s.)	88 gns.
*Model 4SH/CON (7½/15 i.p.s.)	93 gns.
Stere-Ad Unit (when required).	30 gns.

* Suffix CON indicates chassis mounting form for building into own cabinet.

therefore, the balanced output of both channels ends at low level, namely 2 milliwatts across 600 ohms, and tone control circuitry is not incorporated. As a simultaneous dual channel instrument the Ferrograph Stereo 88, when used at 15 i.p.s. will produce recordings of a most satisfying quality, fully equal to those made with much more expensive equipment, always provided of course that the associated microphones are equal to their task.

Due to cross-talk, Stereo 88 should not be used for half track monaural recording. Instead the signal can be fed simultaneously into both tracks—thus giving the advantage of virtually full track monaural recording.

STEREO 88 (7½/15 i.p.s.) 105 gns.
(with stereophonic recording and playback facilities).



Stereo 88

Ferrograph DESIGN FEATURES

Three Independent Motors—two to operate the Tape reels and the third to drive the Capstan—the latter being resiliently mounted for quiet operation.

Main Drive Motor of special construction using the "Octaquad" synchronous principle developed by Ferrograph engineers.

Recording Level Meter using circuit of unique design to bring transients into proper relativity.

Interchangeable Heads. A socket has been provided for plug-in heads for Stereo, Monitoring or other functions. An inbuilt rocking device provides for subsequent azimuth correction.

Speed Change effected by switch which automatically changes compensating correction network in playback amplifier circuits.

Function Switch Knob now refashioned for greater ease of operation.

Head Cover—now a one-piece moulding—is hinged for easy tape loading.

Single Knob Function Control ensures maximum simplicity of operation.

Separate Tone Controls for bass and treble cuts and combined record gain/playback volume control.

Tropical Treatment given to all windings, motors and components to withstand abnormal operating conditions of excessive heat and humidity.

Large Spools, 8¼″ diameter, permit the use of 2,600 feet of "long play" tape equivalent to 68 minutes playing time per track at 7½″ per second.

Brief Stop (or pause control) is now a standard fitting on all Ferrographs.

Endless Loop Cassette permits the continuous replay of up to 4 minutes of recording (7½ i.p.s.), (optional extra).

Turns Counter is gear-driven and accurate to a single turn.

Output Stage provides genuine 2½ watts of distortionless output through internal elliptical speaker of high quality. (Internal loudspeaker not incorporated in Chassis Models or Stereo 88).

Auto-Stop Switch instantly cuts off motor drive when spool is empty or if tape breaks.

Editing Facilities. Every Ferrograph Deck is drilled to receive the "Bib" splicer.

Input and Output arrangements include socket for external 15 ohms loudspeaker and alternative high impedance output for feeding into other high-fidelity amplifiers.

Ferrograph Amplifier, when not needed for its recording function, can be employed for gramophone record reproduction or in conjunction with F.M. and other tuners.

Ferrograph GENERAL SPECIFICATION

Recording Medium.
Standard ¼″ plastic tape with coating inside.
Track width : 0·1″—displaced to one edge. Two tracks.

Nominal Tape Speeds.
3¾, 7½, 15 i.p.s. (according to Model) ±2%.

Long Term Speed Stability.
(For 50-cycle mains input. Better than 0·5%.

"Wow" and Flutter (as change in tape velocity).
Less than 0·2% at 7½″ per sec.

Playing Time per Track.
1,750 ft. tape (8¼″ dia. reel) : 90 mins. at 3¾″ per sec. ;
45 mins. at 7½″ per sec. ; 22½ mins. at 15″ per sec.

Rewind Time (and wind on).
Approximately 1 minute for full 8¼″ dia. reel.

Frequency Response.
(Tape to Spec. WW372/49 with amendments).
3¾″ per sec. : 50 — 6,000 c.p.s. ± 3 db.
7½″ per sec. : 50 — 10,000 c.p.s. ± 2 db.
40 — 12,000 c.p.s. ± 3 db.
15″ per sec. : 40 — 15,000 c.p.s. ± 2 db.

Input Levels for Full Depth Recording.
Input 1 : Min. signal 0·003 v. peak.
Input 2 : Min. signal 0·1 v. peak.
Impedances 1 megohm and 0·1 megohm, respectively.

Output Socket.
Series 4. (All Models).
2½ watts into 15 ohms.
(Alternative high impedance output : 0·1 megohm, 0·75 v.).
Stereo 88.
2 milliwatts across 600 ohms each channel.

Signal to Noise Ratio.
(Tape to Spec. WW372/49 with amendments).
In the range 200 c.p.s. to 12 Kc/s, better than 50 db.
Unweighted, including hum, 45 db.

Working Voltages.
Series 4. (All Models).
200/250 v. A.C., 50 c.p.s.
or 110/130 v. A.C., 60 c.p.s. (50 c.p.s. to order).
Stereo 88.
100/250 v. A.C., 50 c.p.s. (60 c.p.s. to order).

Power Consumption : 110 watts.

Overall Dimensions.
Models designated CON: Motor board area, 17⅛″ × 17⅛″.
Max. height above motor board, 4¼″.
Max. depth below motor board, 4¾″.
Transportable Models: (Closed) 18½″ × 17½″ × 9¾″.

Nett Weight.
Transportable Models: 50 lbs.
Models designated CON: 45 lbs.

OF ALL electronic devices developed during the past few years, none has achieved a greater spectacular success than the ubiquitous Tape Recorder. As manufacturers of the first Tape Recorder ever to be wholly designed and made in Britain, we are proud to recall that many of the features of that first Ferrograph have today been accepted as standard practice throughout the world and embodied in the designs of other manufacturers.

The unique reputation enjoyed by the Ferrograph, however, does not depend upon the simple historical fact that it was first in the field. It rests upon a much more solid foundation—on the decision to make quality of recording and reproduction the objective in the years that lay ahead. The decision, in fact, to resist the temptation to build down to a price—or to produce a range of Tape Recorders to suit all pockets—or to become the largest manufacturer by the lavish use of mass production methods.

The Incomparable

Ferrograph

Ten years of unswerving adherence to this policy has brought its reward by creating the Ferrograph tradition. Today all who are seriously interested in the art of Tape Recording—and this includes those who use the Ferrograph professionally in scientific and industrial research, in the teaching of music, drama and foreign languages, in the manufacture of gramophone records, in the exploration of far-away places and the study of primitive peoples, in broadcasting and television, in the field of home entertainment—know that Ferrograph equipment is the best that money can buy.

We say this in no spirit of boastfulness but as a statement of sober fact. For it is our declared policy of limited production implemented by a decision that all essential components be made in our own factory under the most rigorous safeguards that alone make it possible for such high standards of performance to be attained. We know of no other Tape Recorder built under such exacting conditions or subjected to such unremitting attention during all its stages of manufacture.

ACCESSORIES FOR

Ferrograph

TAPE RECORDERS

FERROTAPE

Conforming to the requirements of Specification WW372/49 (with amendments), Ferrotape is supplied on Hublok anodised spools as follows:

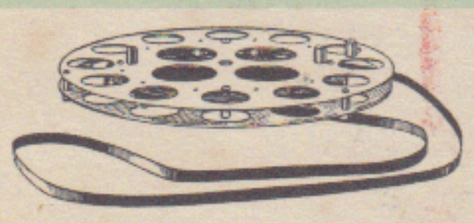
200 ft. on 3¾″ reel, **12/6**
600 ft. on 5″ reel, **26/9**
1,200 ft. on 7″ reel, **45/-**
1,750 ft. on 8¼″ reel, **63/-**

SPARE TAPE SPOOLS

Aluminium, anodised in grey, unaffected by temperature or humidity. Designed to run true without risk of warping. Special Hublok feature gives instant tape attachment and locks reel on spindle to prevent chatter.

3¾″ dia. (200 ft.) ...	**6/–**	7″ dia. (1,200 ft.) ...	**7/6**
5″ dia. (600 ft.) ...	**7/6**	8¼″ dia. (1,750 ft.) ...	**9/6**

ENDLESS LOOP CASSETTE



Permits a Ferrograph being operated continuously on an endless loop of 4 mins. duration (7½ i.p.s.). As every Ferrograph motor board is drilled at the factory to receive this accessory, it can be fitted at any time without difficulty by the user. **Price £7**

CARRYING CASE (for Transportable Models)

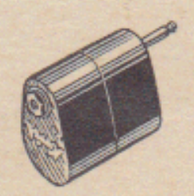
Best quality waterproof canvas, with zip fastener. Gives full protection against rain and dust. **63/–**

LOW IMPEDANCE MICROPHONES

Type RBL/TM, high fidelity, low impedance (30 ohms) fitted with 3 pin plug/socket mount for attachment to floor, table or desk stand with 18 ft. screened lead and plug and incorporating matching unit in lead. **11 gns.**

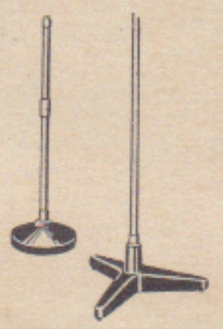
Alternatively :

Type RBL/T, high fidelity, low impedance (30 ohms) microphone with 3 pin plug/socket mount as illustrated and fitted with 18 ft. screened lead and plug. **9 gns.**



Matching unit (Type T.U./30G) incorporating transformer for use with Microphone Type RBL/T above. **£2 6s. 0d.**

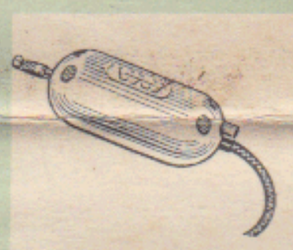
MICROPHONE STANDS



Superior construction; heavy bases finished grey with chromium pillars.

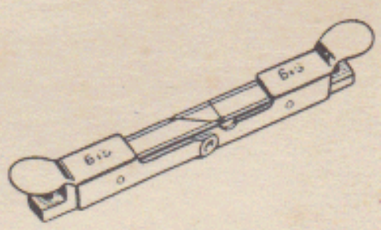
Desk Model, height 8 inches **25/–**
Table Model, adjustable 16/24 inches... **55/–**
Floor Model, adjustable 3 ft./5 ft. 9 ins. **£5**

WEARITE DE-FLUXER



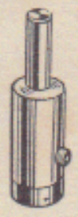
For depolarising heads of all makes of tape recorders. Prevents hiss and protects tapes from cumulative background noise. A necessity for all who use tape recorders. **50/–**

BIB SPLICER



An ingenious accessory which automatically creates a diagonal silent joint. In plated finish with cutter blade. **18/6**

PULLEY (60 c.p.s.)

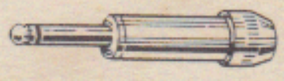


Converts any Ferrograph to work on a periodicity of 60 c.p.s. **12/6**

Note : If mains supply is 110/130 volts, the starter condenser also should be replaced by one of 2·5 mfds. capacity at a cost of 8/6d.

SPARE PLUGS

Type SP7.
Screened, with aluminium body and patented cable clamp. **7/6**



Type UP7.
Unscreened, with insulated body **3/6**

BRITISH FERROGRAPH RECORDER COMPANY LIMITED

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131 Sloane Street, London, S.W.1 · Works : South Shields

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