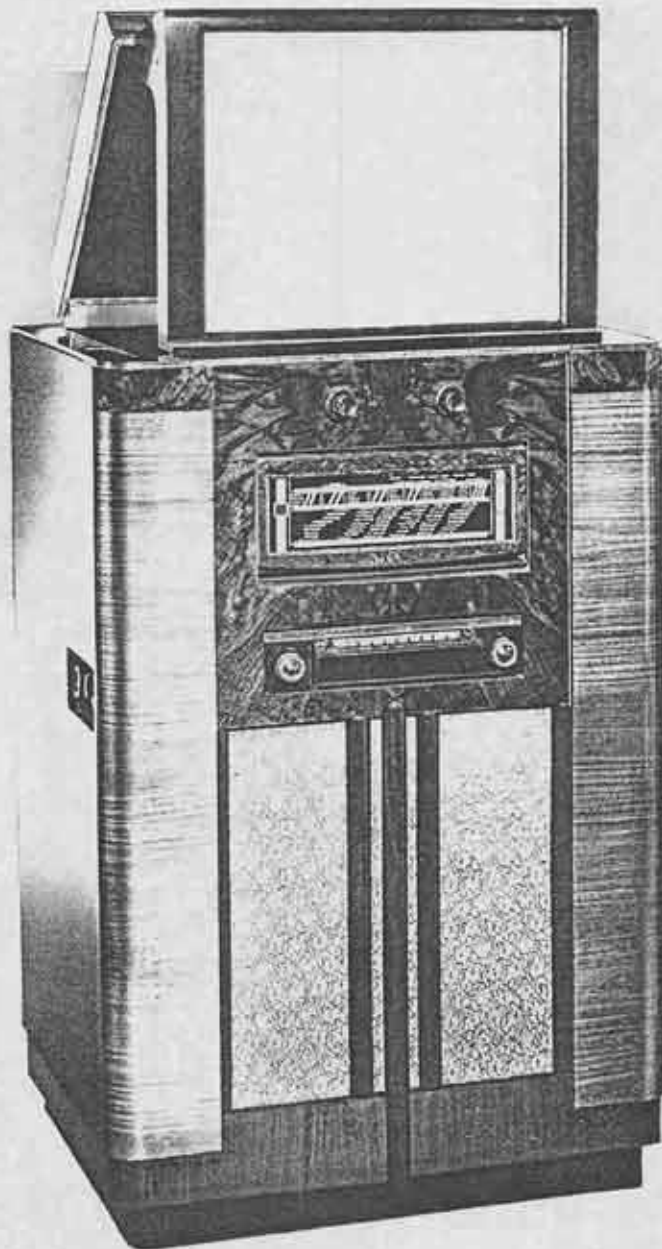


PHILIPS

TELEVISION RECEIVER

TYPE TEL 61



PHILIPS

IN the field of television Philips have made a further notable advance in their policy of developing an equipment built to the highest technical standards and giving the maximum entertainment value.

Important improvements in the technique of television picture projection so successfully introduced by Philips last year have now resulted in a large projected picture (size 18" x 14½") of such brilliance and definition that it can be viewed in comfort and under normal conditions in the lounge or drawing room of the average home. Further, the accuracy of the projection system and the simplicity of the controls make it as easy to use as an ordinary radio receiver.

In addition to reception of the television programmes, normal broadcast reception of a very high order is afforded by a high-fidelity all-wave receiving unit. This incorporates the new Philips motor-driven press-button system, giving fully automatic tuning for the user's own choice of any combination of

eight medium and long wave stations. The choice can be varied at will and the settings altered in a few minutes by a simple manipulation of the manual tuning control.

The new R.F. circuit with the Silentron valve gives a very high overall radio performance, with the conspicuous advantage on short waves of greatly reduced background noise, thus giving real entertainment value to the reception of world-wide short wave programmes.

Many original features developed by Philips to enhance the quality of reproduction are also incorporated in the receiving unit, and the use of twin 10" super-sensitive moving coil speakers ensures a degree of fidelity in the resulting sound output which matches the realism of the television picture.

The equipment is housed in a handsome cabinet of richly polished walnut, mounted on easy running rubber tyred castors, and owing to its well-balanced proportions, it can be comfortably accommodated in any average living room.

PROJECTION SYSTEM

The television image is produced on the end of a small cathode ray tube, and is sufficiently brilliant to be enlarged from 2" to 18" wide by means of a high quality anastigmatic f 1.9 lens.

The projected picture is reflected from a mirror in the lid of the cabinet on to a flat etched glass screen, the etched surface being protected from dust and dirt by enclosure between two sheets of glass.

The projection screen automatically rises into its correct position when the lid of the cabinet is lifted. A slow motion device prevents damage to the glass screen and mirror by too rapid closing of the lid.

CATHODE RAY TUBE

The Mullard 4" diameter projection type cathode ray tube operates from a 25,000 volt supply and produces a brilliant picture, the size of the scanning spot being less than half of 1/1000".

Focussing and deflection in line and frame directions are entirely magnetic.

The tube is completely screened magnetically and is mounted, with the projection lens, in gimbals to facilitate optical centering of the picture on the projection screen.

EXTRA HIGH TENSION EQUIPMENT

The 25,000 volt supply for the operation of the cathode ray tube is

TYPE TEL 61

obtained from a voltage doubling rectifier unit using two Mullard 1878 H.T. rectifiers. A rare gas discharge tube connected across the supply to the first anode of the cathode ray tube prevents excessive voltage developing and damaging the cathode ray tube.

The whole E.H.T. equipment is contained in an earthed steel case with interlocked switches and an earthing device on the door. Opening the door breaks the supply to the rectifier and automatically earths the E.H.T. terminals, thus making the equipment completely shock proof.

MECHANICAL ASSEMBLY

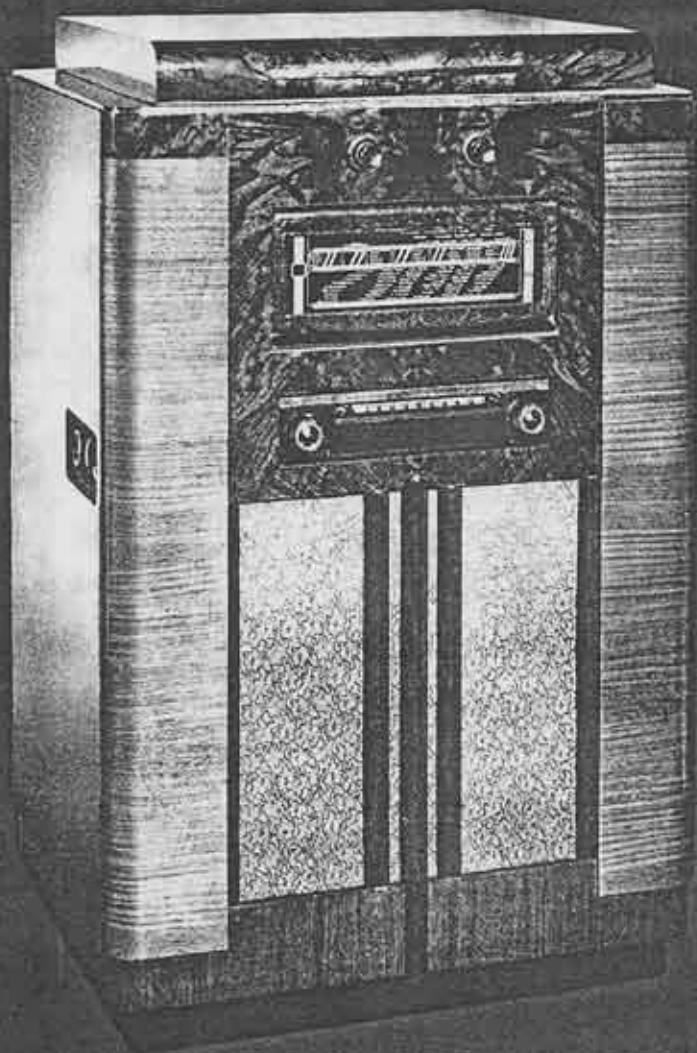
The television and broadcast equipment consists of 5 units :-

1. Vision and sound receiver with synchronising separator.
2. Frame and line time bases and H.T. supply.
3. E.H.T. equipment.
4. Projection assembly containing the cathode ray tube.
5. Broadcast chassis type 753A.

The four television units are bolted to a steel framework which can be removed bodily for inspection and worked in complete safety outside the cabinet. For inspection

PRICE 120 gns.

Including twelve months' guarantee and service on the receiver and cathode ray tube.



purposes the controls, which are extended by Bowden cables to the control positions on the cabinet, can be removed and clipped to the frame, work for external operation.

AERIAL

The standard Philips television aerial consists of a centre-fed half-wave dipole connected to a balanced and shielded twin transmission line having a surge impedance of 75 ohms with an attenuation of 3.3 dB per 100 ft.

CIRCUIT

The aerial feeds into a tuned aerial transformer connected to the grid of a radio frequency amplifier using a TSP4 valve.

Separate frequency changers for sound and vision are employed with a push-pull oscillator section using an oscillator frequency of 31.8 MC/s.

The vision I.F. at 13.2 MC/s is amplified by four TSP4 stages using single side band working; it is then passed to a small television diode type T4D and an R.C. coupled video frequency output stage using a Pen A4 valve. The D.C. component is replaced by passing the output to a further T4D diode before the cathode ray tube.

The sound I.F. at 9.7 MC/s is amplified by a TSP4 stage and passed to a T4D diode, which also applies A.V.C. to the I.F. stage. The audio frequency is then connected to the pick-up sockets of the broadcast receiver type 753A.

HIGH FIDELITY SOUND REPRODUCTION

Due to the extremely wide frequency band available for the sound

channel on 7.2 metres, the quality of the sound transmission is amazingly good. In the receiver this high quality is retained by using the very high I.F. of 9,700 KC/s and an exceptionally wide bandspread. The I.F. circuit of the 753A receiver, with its improved back coupling circuit, maintains the very high fidelity and the twin super-sensitive speakers give a resulting sound reproduction practically indistinguishable from the original performance.

SCANNING AND TIME BASES

The frame scan is obtained from a 2-valve circuit using a gas triode and pentode output.

The line scan uses a 3-valve circuit with a gas triode and two power pentodes in parallel in the output stage. In addition, a rectifier is used in conjunction with the line frequency output transformer to obtain a rapid return trace.

SAFETY RELAYS

Safety relay circuits are connected across the line and frame deflection coils of the cathode ray tube. Should either of the scans fail from any cause, the voltage on the grid of the appropriate gas triode will fall and the relay in its anode circuit will open the supply to the E.H.T. transformer, thus cutting off the E.H.T. to the cathode ray tube and preventing damage to the fluorescent screen.

OPERATION

The television controls are grouped in concentric pairs, 2 pairs being placed on the front of the cabinet and a further 3 pairs of pre-set controls behind the screen.

The controls are as follows:

- Television with sound tuning.
- Electrical focus.
- Picture contrast.
- Picture brightness.

Pre-set Controls:

- Line hold and frame hold.
- Vertical and horizontal picture size.
- Vertical and horizontal centering.

The on off switch for television is combined with the broadcast on off switch and the sound is controlled by the normal broadcast controls for volume and tone.

Once the receiver has been installed, the operation of the set is very simple. The brightness and contrast controls can be set to individual preference but need no adjustment during a normal programme. The tuning control needs only occasional adjustment over long periods and once the focus control is set, it needs only very slight variation over many hours of operation.

Thus in ordinary use it is generally sufficient to switch television on and off without any further adjustments.

BROADCAST RECEIVER

The chassis of the 7-valve superhet receiver type 753A is incorporated in this instrument. It provides motor driven automatic press-button tuning for any choice of eight stations on long and medium waves, and the special H.F. circuit with the Silentron valve gives exceptionally good performance, particularly on short-wave reception.

PHILIPS RADIO

PHILIPS LAMPS LIMITED, 145 CHARING CROSS ROAD, LONDON, W.C.2