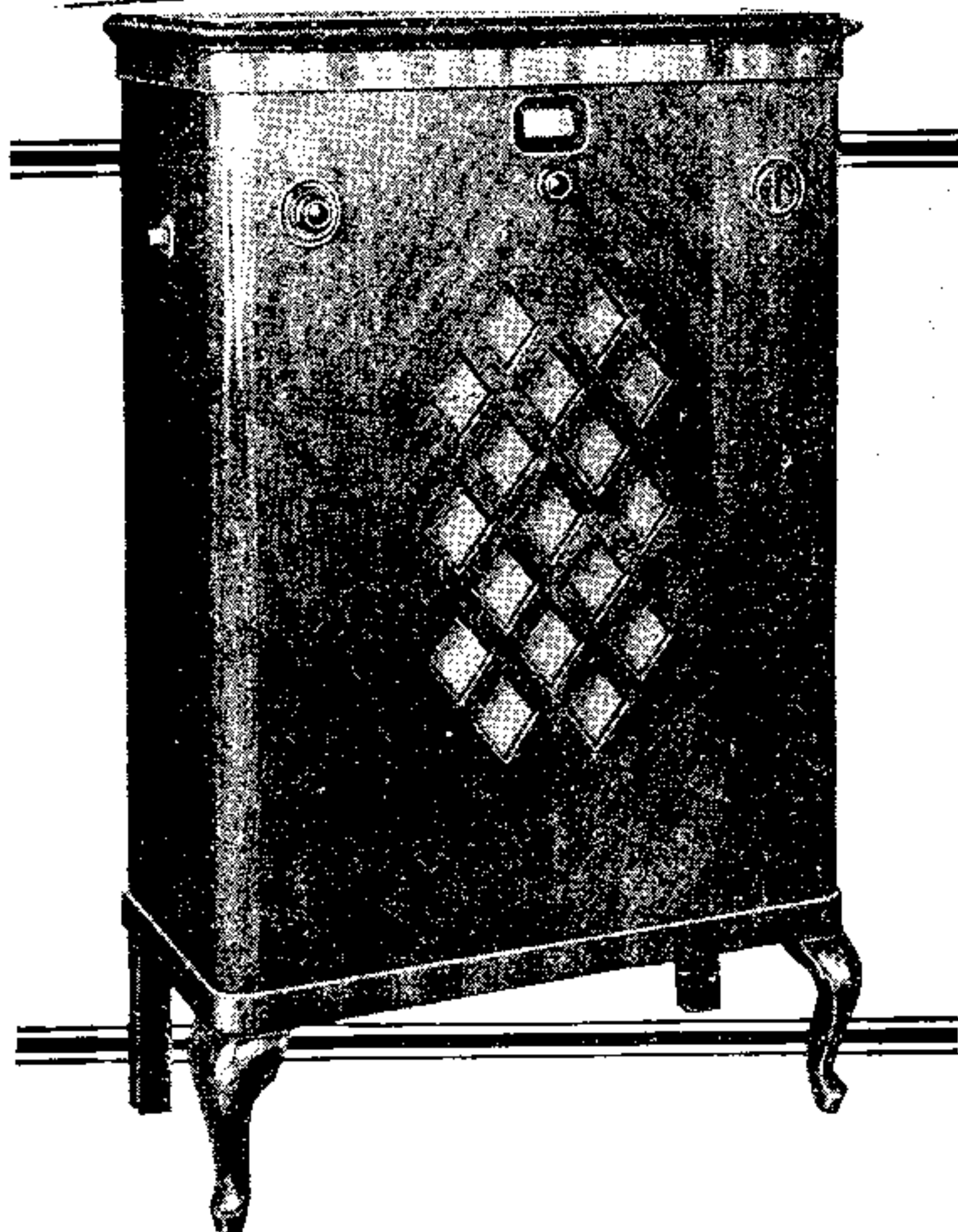


Met dank aan Ted Mooren

PHILIPS

*All-Electric D.C.
Receiver Model 2653*



Technical Details and Performance
of a New Season's Model.

screen-grid valves are used, the first valve having a variable shunt resistance across the filament for the purpose of volume control.

The input circuit is adapted for either frame or outdoor aerials, and a local distance switch is provided for reducing the input from the local station. The switch brings into circuit an additional condenser C_2 , which forms, in conjunction with C_1 , a capacity potential divider in parallel with the input circuit.

The grid circuit of the detector is provided with two grid condensers and leaks. One pair is adjusted for H.F. coupling and the other for rectification. Connections for an external pick-up are introduced at this point and the grid lead is screened to prevent undesirable pick-up when using the radio side. It will be noticed that blocking condensers are inserted in both leads to protect the circuit from accidentally earthing of the pick-up.

The connections of the parallel output valves appear at first sight to be complicated. The decoupling of the input grid circuits is necessitated by the fact that the filaments are in series and that a higher value of bias must be found for the first than for the second valve to compensate for the volt drop in the filaments. The valves are transformer coupled to the moving-coil loud speaker, and terminal sockets L_1 and L_2 , connected to tappings on the secondary, are provided for external loud speakers of either low or high impedance.

In D.C. mains receivers the maintenance of a steady filament current is important. This is ensured by the inclusion of a hydrogen-filled regulator lamp which automatically adjusts its resistance to compensate for fluctuations in the mains voltage. The pilot lamp illuminating the tuning scale serves as a fuse to protect the circuit. Safety contacts are also fitted to the back panel to isolate the receiver when the back is opened for inspection.

Before testing the set the total current consumption was tested and found to be just over 0.3 amp. This includes the current for the loud speaker field winding.

SPECIFICATION.

CIRCUIT: Two screen grid H.F., grid detector, two pentode output valves in parallel. Ganged tuning.

CONTROLS: (1) tuning, (2) volume, (3) tone, (4) local distance switch, (5) mains on-off switch.

GENERAL: Moving coil loud speaker. Automatic current regulation. Provision for pick-up and external loud speakers. Alternative frame or outside aerial.

PRICE: £39 10s.

MAKERS: Philips Lamps Ltd., 145, Charing Cross Road, London, W.C.2.

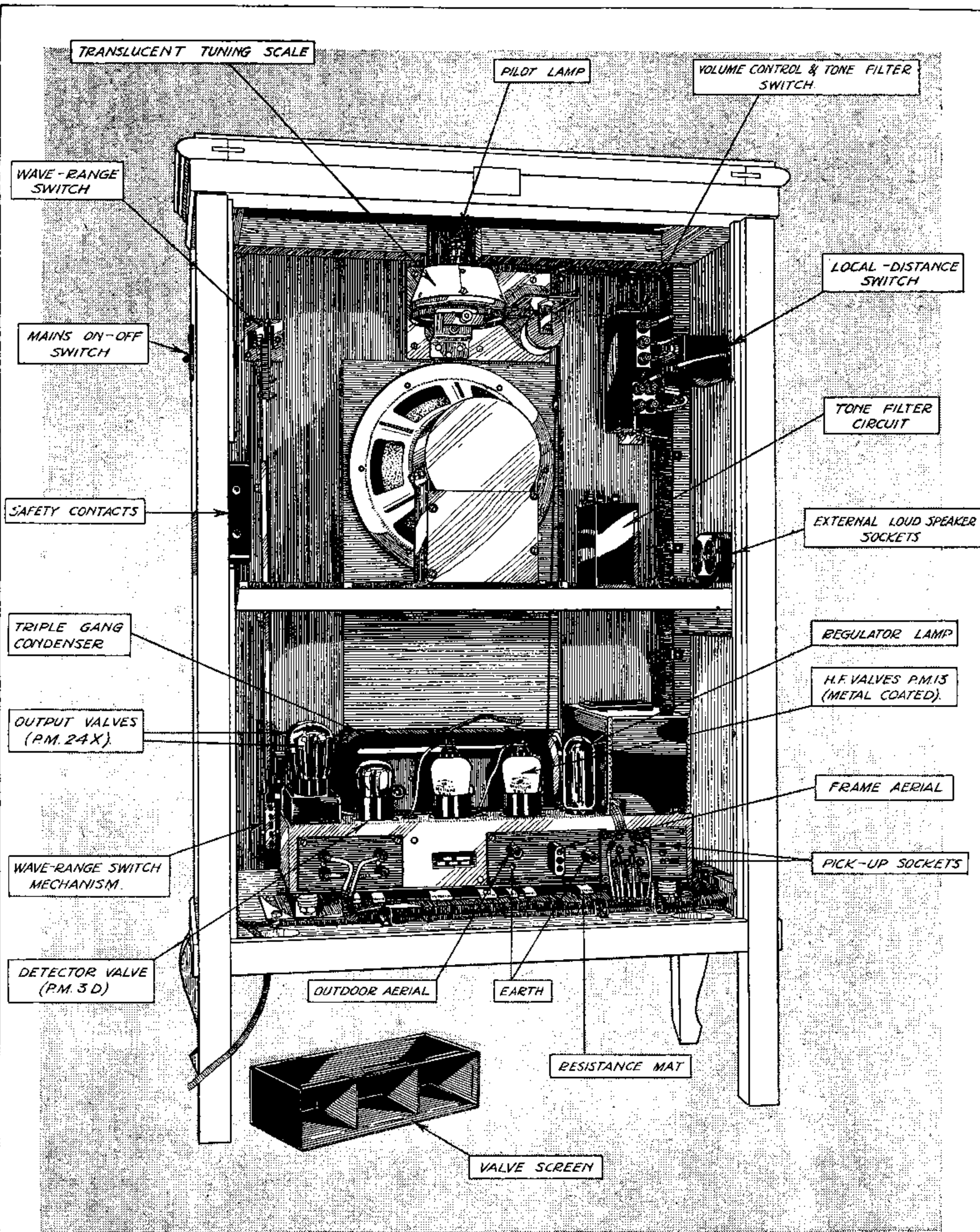
THIS D.C. console model forms part of the Philips programme for the coming season. It is an imposing instrument and is built into a cabinet of unusually massive construction. For instance, the quartering of the front panel is not a veneer finish, but is carried through the full thickness of the wood, the crossing of the grain thus forming a loud-speaker baffle which is acoustically dead and free from resonances.

To preserve as far as possible the lines of the cabinet, the controls, instead of being assembled on a tuning panel, are spaced apart at intervals round the front and sides. The illuminated bevel tuning scale is viewed through a window in the centre near the top of the front panel. On the right of this is the wave-range switch and on the left a dual volume and tone control. The mains on-off switch is mounted on the right-hand side panel and the local distance switch on the left. The receiver is of Dutch origin, and the mains switch operates in the opposite direction to that usually adopted in this country.

Metal-coated H.F. Valves.

The circuit and chassis layout, while showing numerous advances in design, give ample indications of their relationship to the well-known Philips type 2511 receiver. There are two H.F. stages with tuned anode coupling and ganged tuning, grid detection, and a transformer-coupled L.F. stage.

In the H.F. stages the new metal-coated P.M.13



Philips type 2653 D.C. mains receiver with back panel removed.

Philips All-Electric D.C. Receiver Model 2653.—

The sensitivity on all three wave ranges is of a high order and should be capable, with a good outdoor aerial, of bringing in all Continental programmes that are worth listening to from a programme point of view. The local distance switch may be brought into use with advantage when receiving the new B.B.C. National and Regional transmitters within a radius of 15 miles, as adequate volume is obtained under these conditions with a reduction in background noises. The sensitivity is noticeably higher at the lower end of each wave range, but as the two medium wavebands overlap considerably the choice of two alternative settings is available for most stations below 500 metres. In general, the highest sensitivity will be found on the higher of the two wavebands where the ratio of inductance to capacity, for a given station, is greatest.

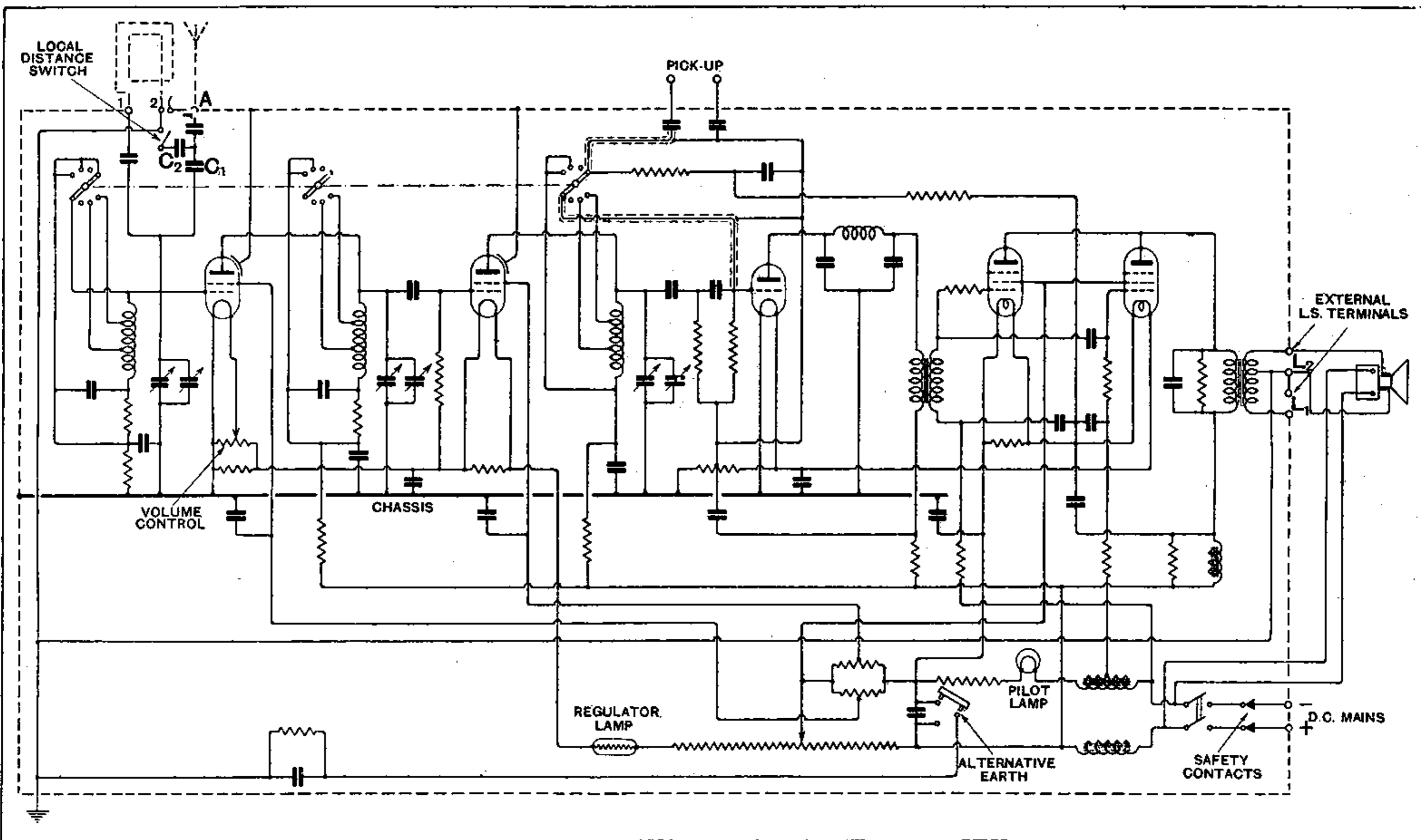
The volume control is smooth in action and is com-

the greater degree of selectivity will be obtained on the lower waveband, since the ratio of capacity to inductance will be higher.

The quality of reproduction provided by the type 2064 is notably rich in the bass. The higher frequencies are present up to at least 6,000 cycles, but are not sufficiently obtrusive to cause harshness. The tone filter, however, clearly shows their importance, for the quality becomes soft and round when it is brought into operation. At the same time, the reproduction is definitely more pleasing with the filter in action during periods of interference from heterodyne whistles or atmospherics. Actually the filter cuts off sharply above 3,500 cycles without affecting the reproduction below that frequency.

Ample Volume.

The undistorted volume provided by the two parallel pentode valves is sufficient for the largest rooms likely



Complete circuit diagram of Philips type 2653 receiver.

mendably free from the time lag often associated with filament current volume controls. It gives a satisfactory low minimum and does not provoke oscillation in the H.F. stages when at maximum.

Selectivity.

The selectivity is adequate for modern conditions in the ether, and at a distance of 15 miles from Brookmans Park interference was not experienced from either station outside a zone of two degrees on either side of the true settings on the tuning scale. When a station can be tuned in on both the middle (300-800 metres) and lower (200-500 metres) wavebands it will be found that

to be found in any private house. It is possible to overload the valves, however, but when this happens visual warning is given by the flickering of the pilot light due to fluctuations in the mean anode current taken by the valves.

Constructionally, the receiver is exceptionally well turned out. The mechanical parts, such as the switch gear and condenser drive, are both ingenious and reliable, and the wiring between units is neat and substantial.

In conclusion, no trace of mains hum could be detected, even with the receiver detuned and the volume control at maximum.