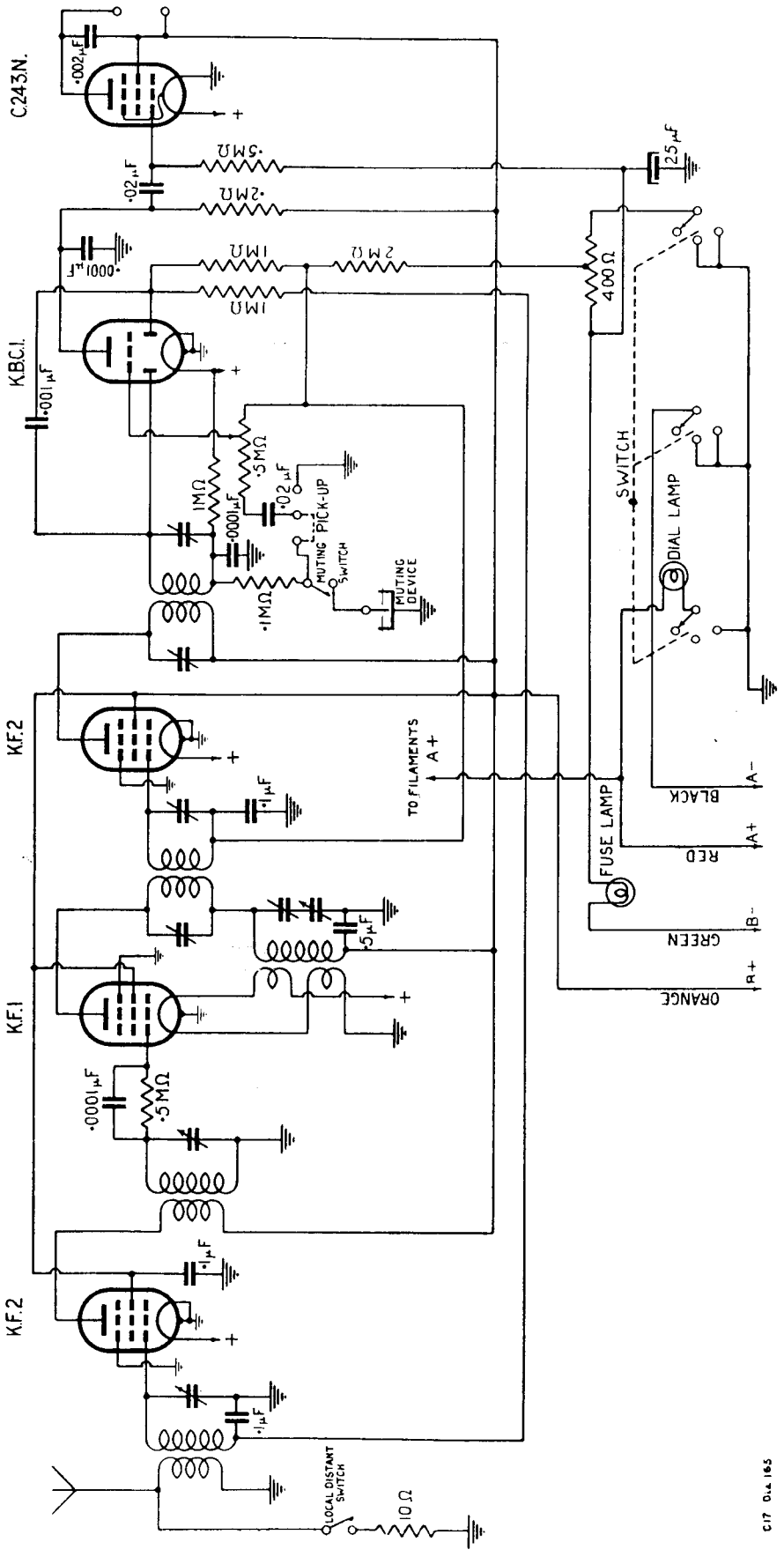
Philips' "Radioplayer" Battery Broadcast Model 5511



Philips' Radioplayer model 5511 is a five-valve receiver designed for broadcast coverage and operation from battery power supplies. The receiver is fitted to a console type cabinet and uses an 8 inch permanent magnet type loudspeaker. Four controls are fitted to the front of this receiver (one of which is concentric to the tuning knob), and one to the back of the chassis. These controls are for volume, tuning, local/distance switching (concentric), battery control (with dial lamp switching), and muting control (this last is on the back of the chassis).

The muting device on this receiver is of the type which operates on the tuning knob spindle and consists of a contact which shorts the audio input as soon as the tuning knob is turned more than two or three degrees in either direction. The correct procedure for handling this receiver is to tune slightly past the wanted station and then tune back; reversal of the tuning direction opens the contacts for a few degrees and so permits the station to be heard. A switch is provided on the back of the chassis in order to cut the muting device out of circuit when it is not required.

A further point of interest concerns the dial assembly. This is of the Philips' "interchangeable scale" type which was introduced during 1935 to take care of the variation in station allocations which took place during that year. Should it become necessary to remove the chassis from its cabinet, the dial scale must first be removed; otherwise both scale and dial pointer will be damaged if an attempt is made to remove the chassis. The dial scale slips out quite easily from its slot in the top of the moulded escutcheon. Care should be taken to see that the dial pointer is turned so that it is vertical when the dial scale is being replaced; otherwise there is a risk of bending it when pushing the scale into position.

The battery equipment for this receiver consists of a 2 volt accumulator and three series-connected 45 volt dry batteries. Only four connections are required, and these are colour-coded as shown in the diagram. Bias voltages for the receiver are obtained from the drop across a tapped 400 ohms resistor which is wired in series between earth and high-tension negative. The total drop across this resistor is 4.5 volts, and the tapping clip is at a point 2 volts negative with relation to earth. It should be noted that a miniature-screw base lamp is wired in series with the negative high-tension lead to serve as fuse and in cases of sudden cessation of operation this lamp should be inspected before looking elsewhere. The dial lamps fitted to this receiver are of the miniature-screw type and are rated at 2 v., 0.1A.

The circuit arrangement of this receiver is fairly well in line with modern practice, except for the fact that an autodyne frequency converter, using a type KF1 sharp cut-off pentode, is employed. As can be seen, the feed-back system for the autodyne oscillator consists of two coils—one in each leg of the filament—and care should be taken to see that the connections to these windings are carefully observed should it be necessary to remove the oscillator coil for any reason. In addition, it will be found impossible to accurately align the I.F. channel unless a non-metallic tool is used for the first I.F.T. primary trimmer. The correct I.F., incidentally, is exactly 175 KC.

For convenience of assembly, a number of the components in this receiver are mounted on a single strip underneath the chassis, and to facilitate identification the component positions on this strip are numbered. The numbers, and their corresponding components, are as follow:—

1—0.0001 mfd.; 2—1 megohm; 3—0.1 megohm; 4—0.02 mfd.; 5—0.0001 mfd.; 6—0.2 megohm; 7—0.02 mfd.; 8—0.5 megohm; 9—25 mfd.

OPERATING VOLTAGES.

The following measurements were made between chassis and the socket contact indicated with a "1,000 ohms per volt" meter. The receiver was detuned from any signal and the grid voltages were measured directly across the bias resistor.

KF2, R.F. Amplifier. Plate, 130 v.; screen, 130 v.; grid, —2 v. Plate current, 0.3 mA.

KF1, Autodyne Frequency Converter. Plate, 130 v.; screen, 130 v. Plate current, 1.4 mA. (measured on "B" side of oscillator coil).

KF2, 175 KC. I.F. Amplifier. Plate, 130 v.; screen, 130 v.; grid, —2 v. Plate current, 0.3 mA.

KBC1, Detector, A.V.C. Rectifier and Audio Amplifier. Plate, 60 v.; grid, —2 v. Plate current, 0.2 mA.

C243N, Output Pentode. Plate, 125 v.; screen, 130 v.; grid, —4.5 v. Plate current, 7 mA.

The total "B" drain of this receiver under "no signal" conditions is approximately 11 mA.