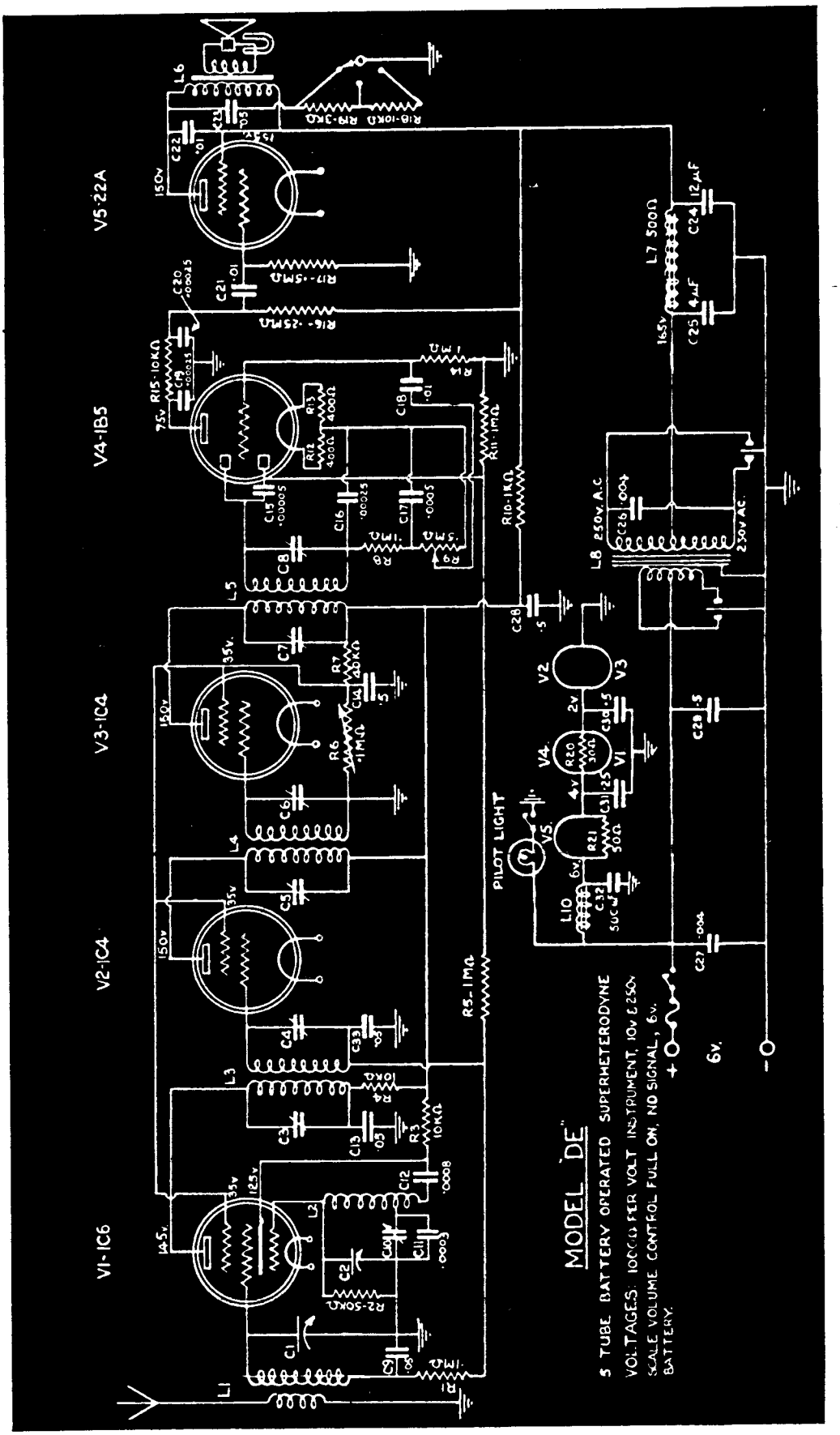
"Astor" Battery Model 77—Chassis type DE



Astor model "77," chassis type "DE," is a five-valve receiver designed for broadcast coverage and operation from a 6 volt accumulator — conversion of the low-tension supply to high-tension being effected by means of a synchronous vibrator system. This receiver is of the console type and has three controls—volume (with battery switch), tuning (with combined dial-lamp switch) and tone (3 positions). The loudspeaker is an 8-inch permanent magnet type. The I.F. used in this receiver is exactly 456 K.C.

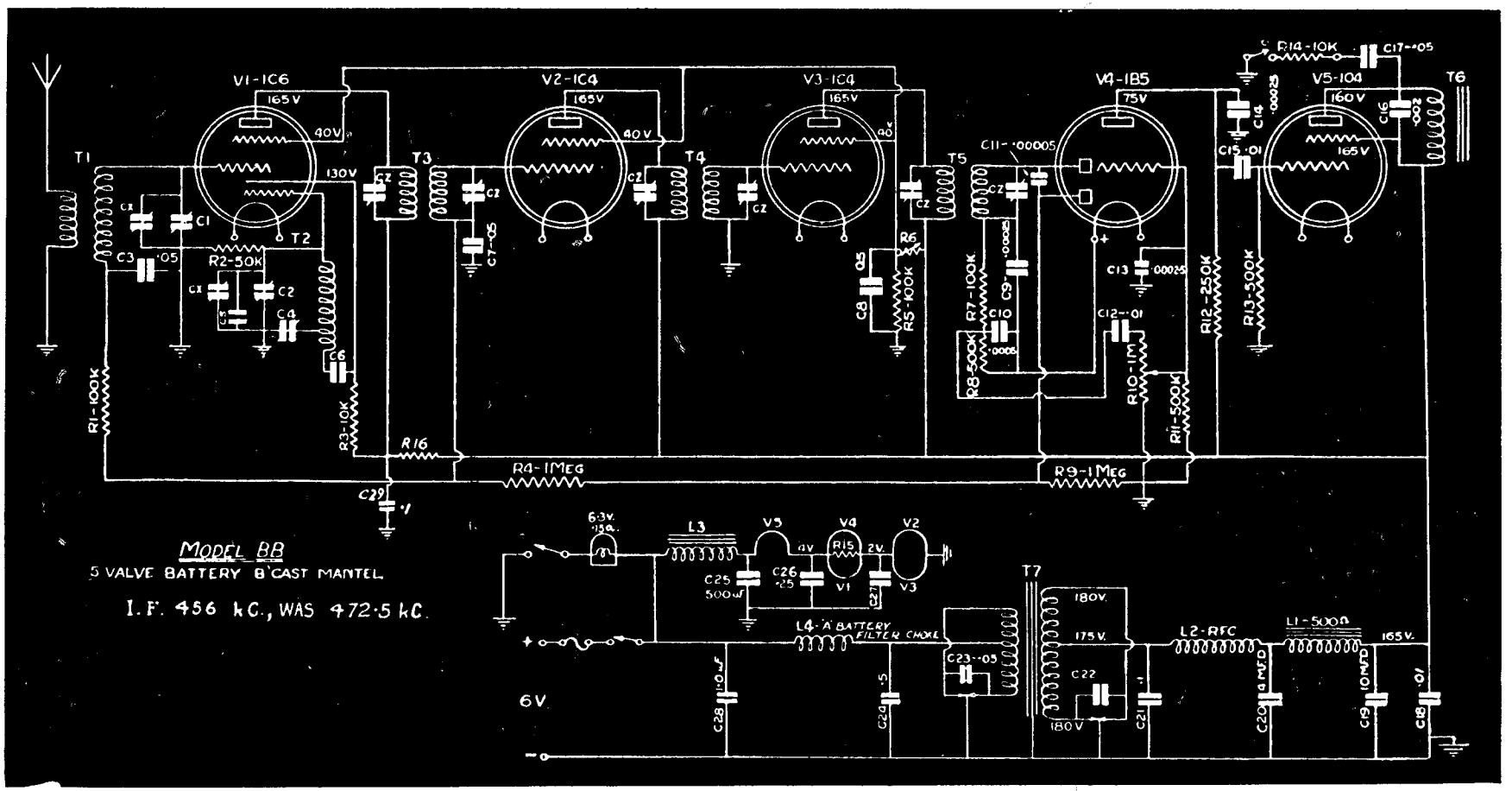
The circuit arrangement of this receiver follows standard "Astor" practice, and is self-explanatory as far as component values and operating voltages are concerned. However, the component values shown are those originally employed and as several changes were made from time to time, it will be of interest to list these in the order of their appearance.

COMPONENT CHANGES.

The first change made was in the resistance of the volume control (R9). This was changed to a 1 megohm tapped unit which has a 250,000 resistor connected between the tap and the low-volume end. Next R7 (40,000 ohms, 0.5 W. fixed) was changed to 100,000 ohms, 1 W., adjustable, in order to provide greater control over the screen voltage. At the same time, the primary of the vibrator transformer (L8) was shunted by an 0.05 mfd., 200 v., paper condenser (now known as "C33"); the secondary buffer system was changed to two 0.004 mfd., 1,000 v., mica condensers (one across each half of the winding) instead of the one (C26) originally used; and C29 (the second primary filter condenser) was changed to 1 mfd., instead of 0.5 mfd.

Finally, in a later batch, the two 0.004 mfd. mica buffers were replaced by two 0.008 mfd., 1,000 v., units and, at the same time, the 0.05 mfd. vibrator primary shunt (referred to above as C33) was deleted and replaced by a 10 mfd., 75 v., W., electrolytic condenser connected from the outside turn of the L8 primary to earth.

"Astor" Vibrator Powered Broadcast Mantel Model 77



MODEL BB

5 VALVE BATTERY 8" CAST MANTEL.

I.F. 456 kC., WAS 472·5 kC.

ASTOR "77"

Chassis "BB"

Veneered Mantel, uses 6-inch, permag. loudspeaker.

COMPONENT VALUES.

RESISTORS.

R1, R5, R7—100,000 ohms, ½ W.; **R2**—50,000 ohms, ½ W.; **R3, R14**—10,000 ohms, ½ W.; **R4, R9**—1 megohm, ½ W.; **R6** (PR102)—100,000 ohms, adj.; **R8, R11, R13**—500,000 ohms, ½ W.; **R10**(PR126)—1 megohm, volume control; **R12**—250,000 ohms, ½ W.; **R15** (PR160)—30 ohms, w.w., 5%; **R16**—2,000 ohms.

COILS, ETC.

T1(PT102)—aer. coil; **T2** (PT104)—osc. coil; **T3**(PT105)—1st I.F. trans., 456 kC.; **T4**(PT106)—2nd I.F. trans., 456 kC.; **T5** (PT107)—3rd I.F. trans., 456 kC.; **T6**—15,000 ohms, loudspeaker trans.; **T7**(PT115)—power trans.; **L1**(PT108)—500 ohms, filter choke; **L2**(PT109)—R.F. choke; **L3**(PT112)—low resistance filament choke; **L4**(PT111)—special air-core filter choke.

CONDENSERS.

C1, C2(PC167)—sections of 2-gang variable; **C3, C7, C23**—0.05 mfd., 400 v., paper; **C4**(PC148)—150/500 mmfd., padder; **C5** (PC166)—20 mmfd., fixed osc. gang shunt; **C6**—800 mmfd., mica; **C8**—0.5 mfd., 400 v., paper; **C9, C14**—250 mmfd., mica; **C10**—500 mmfd., mica; **C11**—50 mmfd., mica; **C15, C18**—0.01 mfd., 400 v., paper; **C16**—0.002 mfd., 400 v., paper; **C17**—0.05 mfd., 600 v., paper; **C19**—10 mfd., 200 v., W., electro.; **C20** (PC116)—4 mfd., 300 v., W., electro.; **C21, C29**—0.1 mfd., 400 v., paper; **C22**—0.003 mfd., 2,000 v., mica; **C24**(PC118)—0.5 mfd., 200 v., metal clad; **C25**(PC120)—500 mfd., 6 v., W., electro.; **C26**—0.25 mfd., 200 v., paper; **C27**—0.5 mfd., 200 v., paper; **C28**—1 mfd., 200 v., **Cz**—I.F.T. trimmers; **Cx**—condenser trimmers.

SUNDRIES.

Dial Lamp—PM127, 6.3 v., 0.15A.; **Fuse**—PM111, 10A.; **Single Contact 3-Position Tone Control Switch**—PM120; **5-Pin 6 v., Synchronous Vibrator**—PM104.

ALTERATIONS.

In earlier models of this series it will be found that R16 (2,000 ohms) and C29 (0.1 mfd.) are not present. These were added as from 18/1/'38 in order to stabilise the receiver. It will also be noted that the intermediate frequency has been changed from 472.5 kC. to 456 kC. This change was made on 3/3/'38, and if any doubt exists as to the date of a particular receiver in hand, a preliminary check on the I.F. should be made and alignment effected at whichever of the two frequencies given is nearest to the point found by this test.