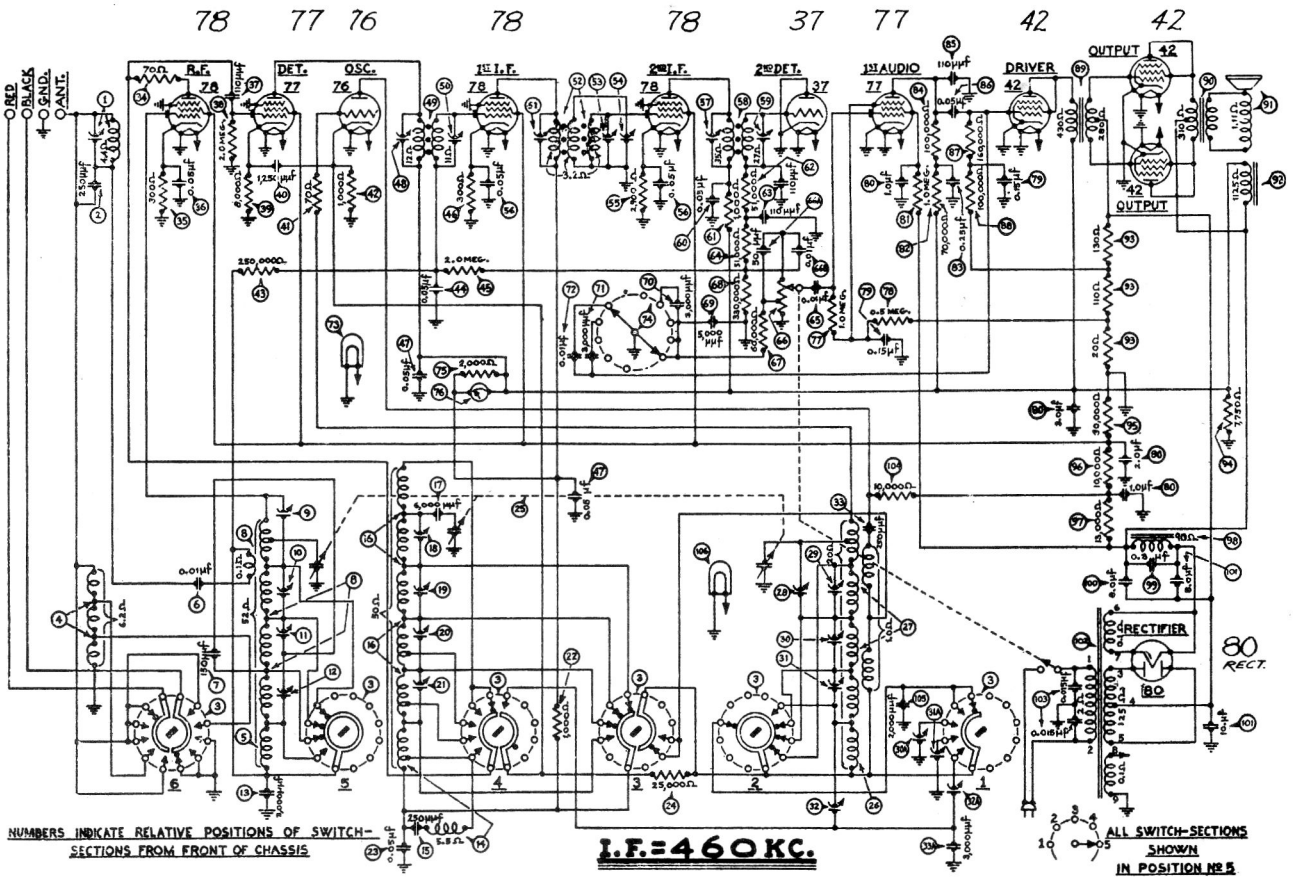

MODEL 3116B
1935-36

Adjusting Compensating Condensers

MODELS 3116B AND 3116X

Adjustment of compensating condensers in Model 3116 requires an accurate signal generator covering long-wave, standard wave, police, and short-wave frequencies. The PHILCO Model 088 All-Wave Signal Generator, having a continuous range of from 100 to 20000 K.C. will be ideal for this purpose.

An output meter is also needed. PHILCO Model 025 Circuit Tester includes a high-grade output meter.

Philco No. 3164 fibre wrench and No. 27-7059 fibre handled screwdriver complete the equipment needed for making these adjustments. The locations of the various compensating condensers is shown in Fig. 2. Connect the output meter to the plate contacts of the output tubes (using the adapters provided with the "025") and set it at the 0-30 volt range.

I.F.—Set the Signal Generator at 460 K.C., and attach its antenna lead to the grid cap of the 77 1st detector tube (having removed the grid clip from the tube). Connect the ground terminal of the Signal Generator to the ground terminal of the set. Turn on the set, turn the waveband switch to standard broadcast (second position from left) and set dial at 55. Turn condenser ⑭ (2nd I.F. tertiary) all the way down before adjusting the other I.F. Compensators. Now with the fibre screwdriver, adjust condensers ⑯ and ⑰ (3rd I.F.), ⑬ and ⑪ (2nd I.F.), and then ⑩ and ⑧ (1st I.F.) until maximum reading is obtained in the output meter. Turn down the "attenuator" on the signal generator if the output meter needle goes off the scale. Now adjust condenser ⑭ (2nd I.F. tertiary for maximum reading).

WAVE TRAP—Connect the Signal Generator antenna and ground leads to the antenna and ground posts of the set. Replace the grid clip on the 77 tube cap. With the signal generator operating at 460 K.C. and the set controls adjusted as for I.F., adjust wavetrap ① until the minimum reading is obtained in the output meter.

SHORTWAVE (DAYTIME BAND)—Turn wave band switch to the shortwave (daytime) position (extreme right). Set signal generator at 18 megacycles and dial of set at 18.0 (top scale). Now adjust the oscillator, Antenna, and R.F. shortwave compensators in turn, for maximum reading. These are ㉘, ⑨ and ⑱ respectively.

SHORTWAVE (NIGHT TIME BAND)—Turn the waveband switch to position 4 (counting from the left). Set the signal generator and receiver at 9.5 megacycles and adjust the oscillator, antenna and R.F. compensators respectively, in this band for maximum reading. These are ㉙, ⑩ and ⑲.

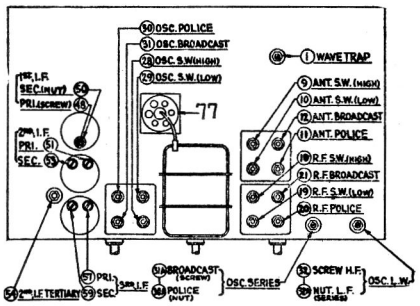

Fig. 2. Locations of Compensating Condensers

POLICE AND AMATEUR BAND—Turn the waveband switch to position 3. Set the dial and signal generator at 4.0 megacycles and adjust condensers ㉚, ⑪ and ⑳ respectively for maximum reading.

Set the signal generator at 1600 K.C. and turn the dial to 1.6. Adjust condenser ㊿a (nut), oscillator police series, to maximum reading.

STANDARD BROADCAST BAND—Turn the waveband switch to position 2 (from left). Set the dial and signal generator at 1500 K.C. and adjust condensers ㉑, ⑬ and ㉑ for maximum reading.

Set the dial and signal generator at 600 K.C. and adjust condenser ㉛a (screw), broadcast series, for maximum reading.

LONGWAVE BAND—Turn waveband switch to position 1 (left). Set the dial and signal generator at 340 K.C. and adjust condenser ㉒ (screw) to maximum. This is the upper end of the longwave (low frequency) band. Finally, set the dial and signal generator at 175 K.C. and adjust condenser ㉒a (nut) for maximum reading. This is the lower end of the longwave band.

Tube Socket Voltages

Measured to Ground—Line Voltage 115

Tube Point	78 R.F.	77 1st Det.	76 Osc.	78 1st I.F.	78 2d I.F.	37 2d Det.	77 1st A.F.	42 Driver	42 Output
P	187	202	75	193	199	0	67	192	279
SG	74	74	...	74	74	.	52	192	279
K	1.8	5.4	5.0	1.8	5.1	..	..	...	...
	80 Rect. Cathode—290V.								

Above voltages were obtained by using a PHILCO type 025 Circuit Tester (or 048A All-purpose Tester), using test prods applied to underside of chassis. Volume control at minimum; dial at 55; waveband switch standard broadcast (band 4). Use Fig. 1 for test points. H-13 Speaker used.

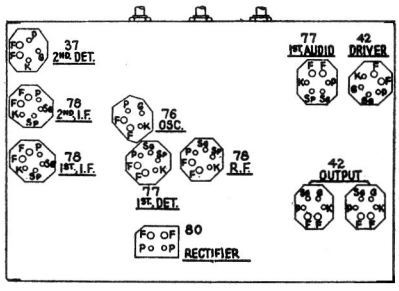

Fig. 1. Tube Sockets as viewed from bottom

Power Transformer Data

Terminals	A.C. Volts	Current	Circuit	Color
1–2	120	.....	Primary	White
3–5	720	123 M.A.	Secondary	Yellow
6–7	5.0	2.0 A.	Fil. Rect.	Blue
8–9	6.3	5.0 A.	Filaments	Black
4	..	.....	Center Tap of 3–5	Yellow, Green Tracer

DATA SHEET

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