

Pilot Radio Corp.

Model: 8

Chassis:

Year: Pre October 1934

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

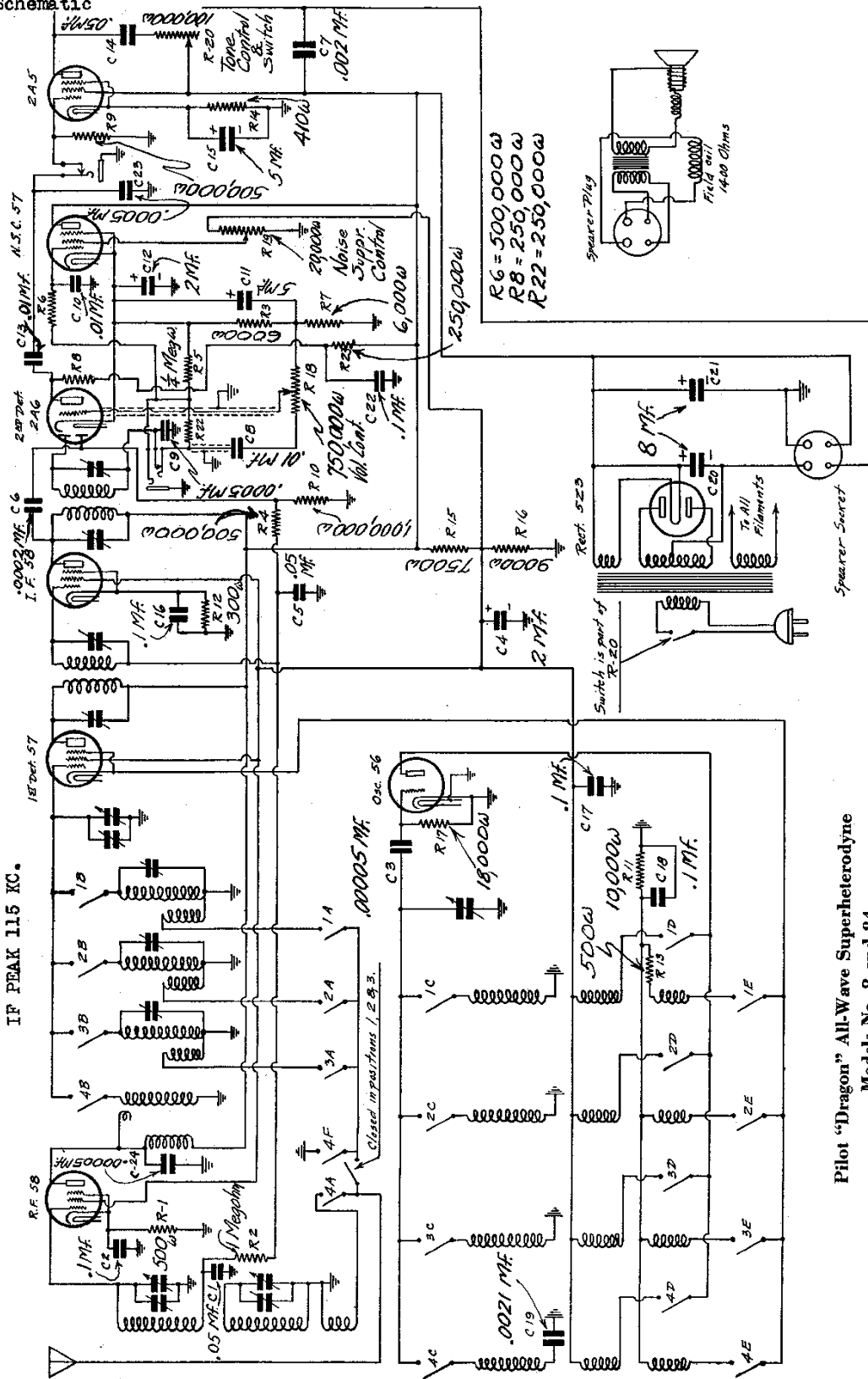
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[Riders Volume 5 - PILOT 5-3](#)

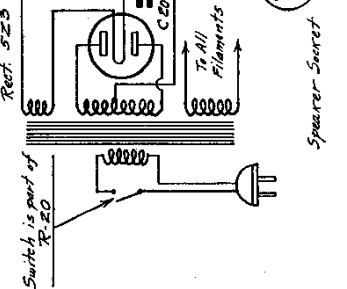
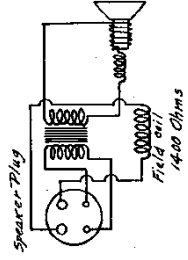
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MODEL 8,84,7,81
(Dragon A-W. Super)
Schematic

PILOT RADIO CO. (New Co.)



R6 = 500,000 W
R8 = 250,000 W
R22 = 250,000 W



Operating voltages 115, 125, 150, 230, 240, volts.
Frequency rating 45 to 60 cycles.
Power consumption 75 watts.

Pilot "Dragon" All-Wave Superheterodyne
Models No. 8 and 84

NOTE: In Models No. 7 and No. 81 the schematic diagram is identical except for the short-wave coil circuit.

PILOT RADIO CO. (New Co.)

MODEL 8,84,7,81
(Dragon A-W. Super)
Alignment Data

REMOVAL OF CHASSIS FROM CABINET

To remove the chassis from the cabinet proceed as follows: Be certain that the line cord is not plugged in the power outlet socket. Dismount the Noise Suppression Control from the side of the cabinet. Remove the "slip-on" knobs and felt washers from the controls located at the front of the receiver.

Unfasten the four 10/32 mounting screws which support the chassis in the cabinet. They are located underneath the cabinet, one at each corner.

Remove the speaker plug from its socket at the rear of the chassis.

ADJUSTMENT OF ALIGNMENT CAPACITORS

At the factory the receiver is carefully adjusted and aligned, and precautions are taken to maintain the accuracy of the adjustment. However, should the receiver ever require realignment the following procedure should be observed. In Fig. 2 the location and description of the various alignment capacitors are clearly illustrated. An External modulated oscillator with a frequency range sufficient to cover the requirements of the receiver should be used for obtaining best results.

Before connecting the chassis to the power line, reconnect the loudspeaker cable in its socket at the rear of the chassis. When aligning the Intermediate Amplifier the external oscillator must be set at 115 kilocycles which is the I.F. frequency of the receiver. The Frequency Range Selector Switch should be in the position marked B.C. when aligning the I.F. amplifier and the Broadcast range. For the various short wave ranges its position should correspond with aligning frequency selected from the external oscillator. Connect the antenna lead from the external oscillator to the control grid of the No. 58 tube in the I.F. amplifier stage. The alignment capacitors for the I.F. are located at top of the shielded I.F. transformers. When adjusting these units it is advisable to insulate the metal blade of the screwdriver so that short circuiting the B plus to the chassis will be avoided. Slowly rotate the adjusting screws of each of the capacitors until maximum output is noted in the loudspeaker output circuit. Use an output meter if one is available as a visual indication is likely to be more accurate than the audible method. With the completion of this operation, remove the external oscillator leads from the No. 58 I.F. amplifier tube and connect them in the same manner to the control grid of the No. 57 1st Detector tube. In a similar manner rotate each adjuster screw for maximum audio response in the speaker circuit.

CAUTION: Do not readjust the I.F. stage employing the No. 58 tube, when the external oscillator leads are connected to the No. 57 1st Detector control grid.

After the I.F. Amplifier has been completely realigned remove the external oscillator leads from control grid of the No. 57 tube and connect them to the Antenna and the Ground leads of the receiver. The BLACK wire at the rear of the chassis is the antenna connection; the YELLOW lead is for the ground. Set the frequency of the external oscillator at 1400 kilocycles.

Rotate the "FREQUENCY SELECTOR DIAL" to a position where the "shadow line indicator" of the dial light is in a position coincident with the 1400 kilocycle calibration of the dial scale. Adjust the oscillator trimmer of the broadcast range (See Fig. 2) until resonance is indicated by maximum audio response in the speaker output circuit. Proceed next to the 1st Detector alignment capacitor which is located on the top of the gang condenser section of that circuit. The same procedure is followed in aligning the R.F. amplifier and the Pre-selector stages, the alignment capacitors of which are located also on top of their respective sections of the gang condenser. The correct positions are clearly illustrated in Fig. 2.

ALIGNMENT OF THE SHORT WAVE RANGES

Each of the Short Wave ranges has a separate aligning capacitor in its heterodyne circuit. The alignment frequencies for the various short wave ranges are:

Range No. 3..... 3700 kilocycles
Range No. 2..... 8600 kilocycles
Range No. 1..... 15,000 kilocycles

The antenna and ground leads of the external oscillator should be connected to the black and yellow wires respectively of the receiver. Adjust the external oscillator to the required frequency for the short wave range being aligned. Rotate the "frequency selector dial" until the signal is noted in the audio output. Turn the tuning condenser slowly from the left to right in the vicinity of the signal, at the same time adjusting the alignment capacitor until the maximum signal response is noted in the loudspeaker output circuit. The signal voltage of the external oscillator should always be held constant while making alignment adjustments. The same alignment procedure should be followed on all of the short wave ranges.

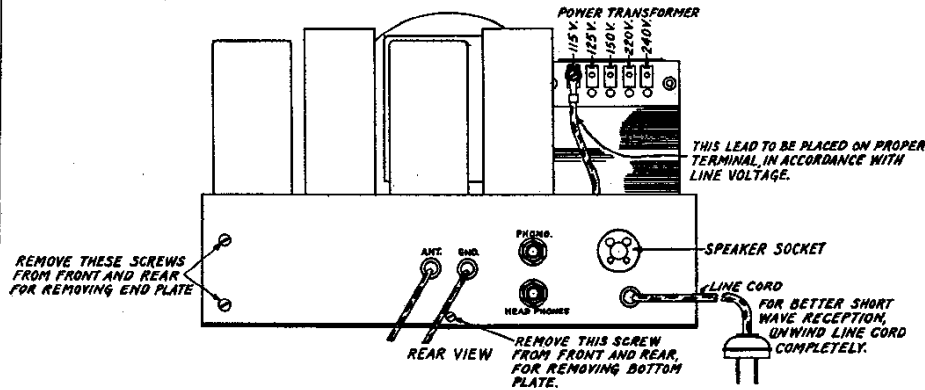
REMOVAL OF FREQUENCY RANGE SELECTOR SWITCH ASSEMBLY

When removing this assembly great care must be exercised by the operator to avoid scratching or marking the coils. Remove the bottom plate and the side plate from the chassis. It is advisable to first unsolder the leads connecting the assembly to the main chassis. Remove the four 8/32 nuts which support the assembly in the chassis. The switch assembly is then ready for removal.

In replacing the switch assembly the same precautions must be observed to avoid damage to the coils. Refasten the assembly firmly in the mounting provided for it. Resolder all connections well. Use only ROSIN CORE SOLDER. DO NOT USE SOLDERING PASTE OR ACID FLUXES OF ANY TYPE. Replace the bottom plate and the side plate. It is advisable to realign the receiver after the replacement of the assembly is completed.

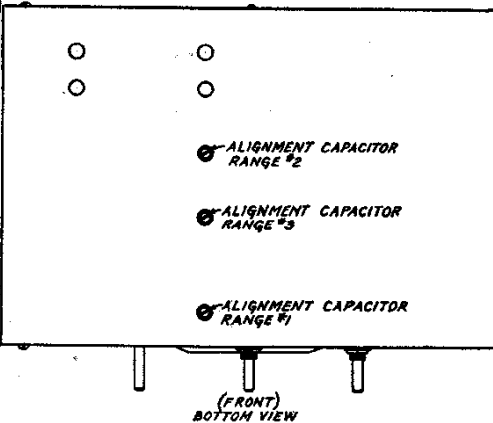
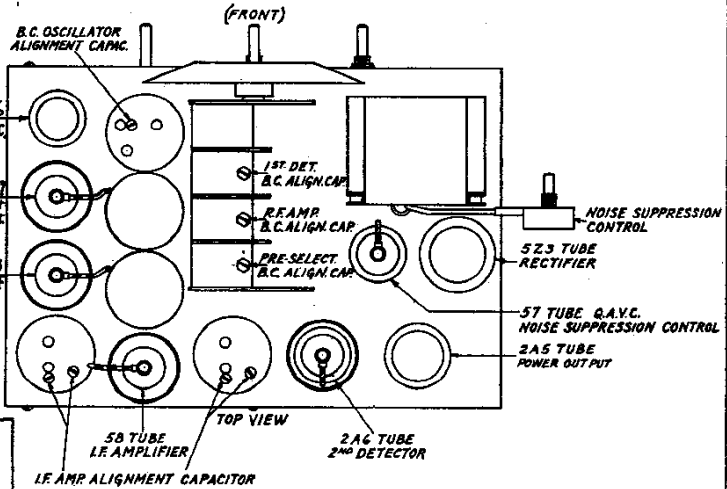
MODEL 8,84,7,81
(Dragon A-W. Super)
Socket Layout
Voltage, Trimmers

PILOT RADIO CO. (New Co.)



POWER SUPPLY

The operating voltage of the receiver is indicated on the label at the rear of the chassis. In the PILOT "DRAGON" receiver a special type of "universal" power transformer is used. Its design permits the receiver to be used on line voltages of 115, 125, 150, 220, or 240 volts ALTERNATING CURRENT from forty-five to sixty cycles. At the factory the transformer is connected for operation on voltages existing in the location where the receiver is to be used. If doubt exists regarding the voltage of the electric power in your locality consult the power company for advice. When certain that the receiver is connected for the proper operating voltage then plug in the line cord to the nearest outlet.



Frequency coverage of Range Selector Switch positions.

Position	BC	540—1500 kilocycles	555—200 metres
3	1500—3900 kilocycles	200—77. metres	
2	3900—9000 kilocycles	77.—33.4 metres	
1	9000—21,400 kilocycles	33.4—14. metres	

Intermediate Frequency 115 kc. The use of this frequency provides a very favorable degree of sensitivity and selectivity.

The D.C. voltages measured at the tube sockets of the set should be read with a high resistance voltmeter of at least 1000 Ohms per volt.

	Voltages measured at the tube socket								
	R.F.	Osc.	1st Det.	Int. Amp.	2nd Det.	Pwr Pentode	Rectifier	N.S.C.	
Plate	235	85	230	230	*88	205	335	235	
Cathode	3	—	5	2	2	14	—	2	
Screen	82	—	80	83	—	220	—	0 to 83	
Filament	2.4	2.4	2.4	2.4	2.4	2.4	2.4	4.8	

All plate voltages measured to cathode. Screen voltages measured to cathode.

All cathode voltages measured to chassis frame. Measurement at the 5Z3 tube made from filament to center tap of power transformer high voltage center tap. Speaker Field Voltage 100 V.