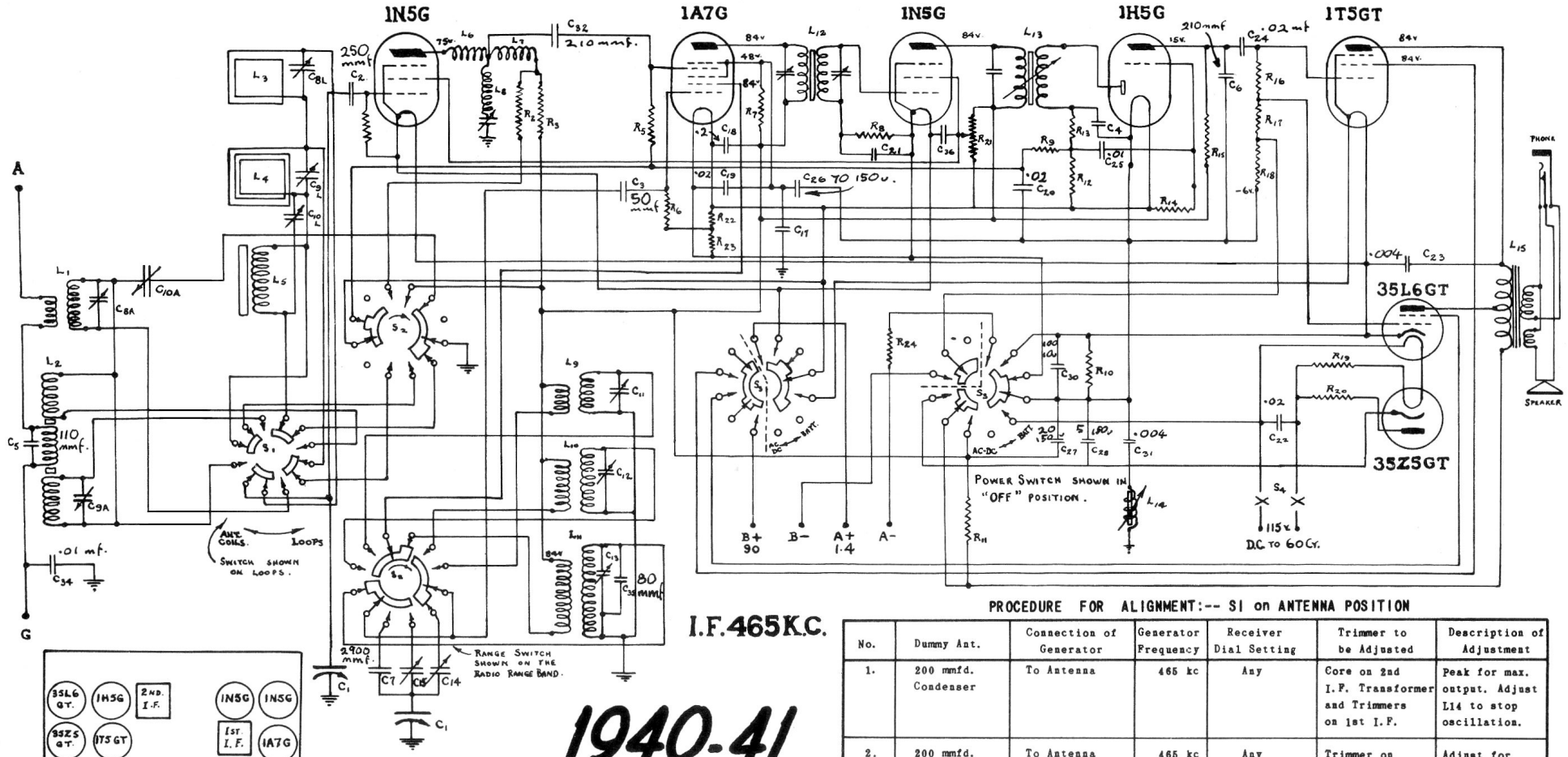

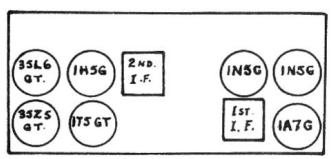

FRONT OF CHASSIS.

1940-41

MODEL – 453

PORTABLE MODEL 4531

SERVICE DATA

This seven tube superheterodyne receiver is of a new design which can be operated either as a portable battery set or as an AC–DC set obtaining power from an outlet of 105–125 volts 25, 60 cycle or direct current.

On battery operation the 35 volt tubes are not used and the remaining five tubes function in the ordinary manner, the 1T5G feeding the complete primary of the output transformer.

On AC–DC operation the power switch connects the four 1.4 volt tube filaments in series between the cathode of the 35L6GT tube and "B" negative. This supplies the bias for the 35L6GT as well as the filament current for the other tubes. The switch also disconnects the 1T5G filament, rendering it inoperative and the output transformer is fed at the low impedance tap from the plate of the 35L6GT. The circuit is otherwise the same as on battery operation.

In order to make the chassis "dead" from a shock-proof standpoint, the circuits are all returned to a "B" negative line which is by-passed to the chassis through C17 and C26 in series and also through the tuned filter circuit L14 and C31. This filter has a very low impedance at the I.F. frequency and renders the complete circuit quite stable during operation.

The "adjustment of this filter circuit" is quite simple. First unscrew the core of the filter coil a few turns to the left. Then after aligning the second I.F. transformer and in that order screw in the filter coil core until oscillation or severe swish ceases. Then readjust the first I.F. transformer again for maximum output (do not touch second stage transformer). If the receiver becomes unstable again, screw in the filter core a little further. These operations should be repeated until maximum sensitivity with good stability is obtained. The same adjustments should hold for battery operation. The chassis must be removed from the case for I.F. alignment but not for R.F. and Oscillator alignment. This may be done by removing the knobs and four mounting screws. It is not necessary to disconnect the loops and antenna coils from the chassis.

ALIGNMENT: A well shielded oscillator and suitable output meter are required. The output meter may be connected across the speaker voice coil terminals. Proceed with alignment as follows using the weakest possible signal that will give readable output and having the volume control full on. It is preferable to align the chassis on AC–DC because under these conditions the tuned filter (L14) adjustment will be proper for battery operation also.

PROCEDURE FOR ALIGNMENT:-- S1 on ANTENNA POSITION

No.	Dummy Ant.	Connection of Generator	Generator Frequency	Receiver Dial Setting	Trimmer to be Adjusted	Description of Adjustment
1.	200 mmfd. Condenser	To Antenna	465 kc	Any	Core on 2nd I.F. Transformer and Trimmers on 1st I.F.	Peak for max. output. Adjust L14 to stop oscillation.
2.	200 mmfd. Condenser	To Antenna	465 kc	Any	Trimmer on L8	Adjust for minimum output
3.	200 mmfd. Condenser	To Antenna	250 kc	250 kc on range band	Osc. Series Pad C14	Adjust to bring in signal.
4.	200 mmfd.	Antenna	350 kc	350 kc	C13	Bring in signal
5.						Repeat 3 & 4
6.	200 mmfd.	Antenna	350 kc	350 kc	C10A	Adjust for max.
7.	200 mmfd.	Antenna	600 kc	600 kc on B.C.	C15	Bring in signal
8.	200 mmfd.	Antenna	1500 kc	1500 kc	C12	Bring in signal
9.						Repeat 7 & 8
10.	200 mmfd.	Antenna	1500 kc	1500 kc	C9A	Adjust for max.
11.	200 mmfd.	Antenna	6000 kc	6000 kc on S.W.	C11	Bring in signal
12	200 mmfd.	Antenna	6000 kc	6000 kc	C8A	Adjust for max.
13.	SWITCH TO "LOOPS". ADJUST C10L for maximum output when tuned to a station near 400 kc					
14.	ADJUST C9L for maximum output when tuned to a station near 1500 kc. on BROADCAST.					
15.	ADJUST C8L for maximum output when tuned to a station near 6000 kc. on SHORT WAVE.					

NOTE 1: These last operations should be performed with the chassis replaced in the case in its normal operating location.

NOTE 2: When replacing the chassis make sure that the speaker leads are kept clear of the speaker cone but at the same time well toward the front of the case and away from the 1H5G grid lead.

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