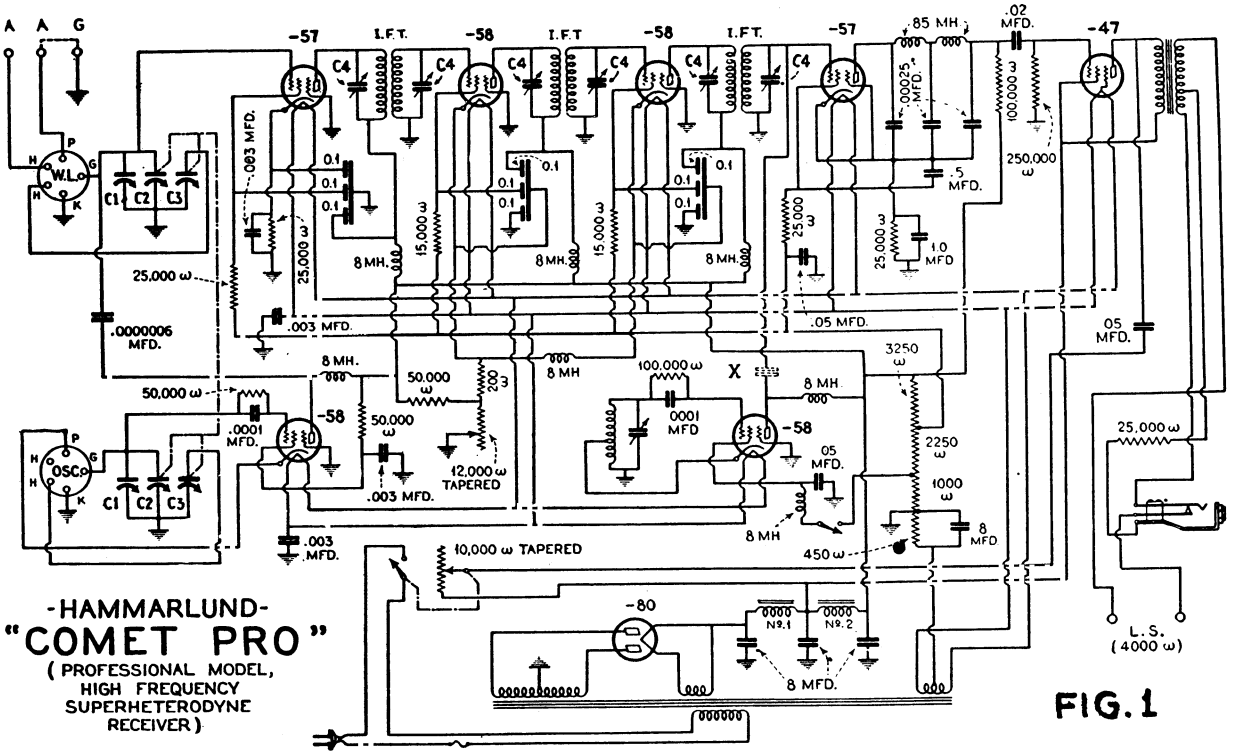
HAMMARLUND MFG. CO.

"COMET PRO"



-HAMMARLUND-
"COMET PRO"
(PROFESSIONAL MODEL, HIGH FREQUENCY SUPERHETERODYNE RECEIVER)

FIG. 1

An intermediate frequency of 465 kc was chosen as a compromise. It is below the broadcast band, and at the same time is high enough to provide a large spread between a desired signal and its "image" interference. By using Litz wound intermediate coils the selectivity and sensitivity are kept high.

"Band-Spread" Feature

The arrangement of the tuning condensers is interesting and unique. The fundamental circuit is shown in Fig. 1, and although designed primarily to give a band-spreading action on the four amateur bands of 20, 40, 80, and 160 meters, the same effect is obtainable throughout the entire range from 15-250 meters (20,000 to 1200 kc). Condensers C1, of 138 mmf. each, constitute *tank* condensers and are individually controlled by separate vernier dials, one at left center and one at right center of the panel. By means of these two condensers, together with the appropriate set of coils, the receiver may be tuned to any frequency within its range. After this has been done, the main tuning dial, which controls condensers C2 and C3, will provide substantially true *single control* over a relatively narrow band of frequencies. If the main dial is set at 50 when the adjustment of the two tank condensers is made, approximately half of the spread band will be above and the other half below the mean frequency determined by the choice of coils and the setting of the two tank condensers. If the main dial is at zero when the tank condensers are adjusted the entire spread band will be above that frequency. Conversely, setting the band with the main dial at 100 will throw the spread band on the lower frequency side. The dials on the two tank condensers are finely and accurately calibrated to facilitate precise logging. While calibration curves are furnished with each receiver, the operator should make an accurate calibration of his own receiver by means of standard frequency signals, certain stations known to be well controlled, etc.

This type of band spreading circuit necessarily results in a non-uniform band width at various frequencies, and this fact should be taken into consideration by the operator. At 20 megacycles the band is approximately 1500 kc wide and narrows to 300 kc wide at 10 mega-cycles (using the "AA" coils). With the "BB" coils the band width is 1000 kc at 10 mc. and 150 kc wide at 5 mc. The band spreading on these two ranges is accomplished by the 15 mmf. condensers C2 and C2, Fig. 1, on the main tuning dial. These condensers alone are inadequate for proper band width in the 5 mc. to 1.5 mc. range covered by the "CC" and "DD" coils. In this range, the 26 mmf. condensers E and F (Fig. 1) are connected into the circuit also. However, no switch is necessary, as this additional connection is automatically made when the "CC" and "DD" coils are inserted in their sockets. The fifth coil prong (which is not used in Coils "AA" and "BB") is used for this purpose in Coils "CC" and "DD." In this frequency range the band width varies from approximately 1200 kc. at 4.5 mc. to 225 kc. at 1.5 mc.

WINDING DATA ON COILS FOR NEW COMET "PRO"

W.L. Coils (to be wound on standard forms)

Coil No.	Wavelength Range	Primary Turns	Primary Wire Size	Secondary Turns	Secondary Wire Size	T.P.I
AA W.L.	15-31	3	No. 30 DSC	7	No. 20 DSC	6
BB W.L.	28-61	3	" "	16	" "	12
CC W.L.	56-120	4	" "	29	" "	24
DD W.L.	115-250	5	" "	55	10/41 Silk Litz	56
EE W.L.	250-550	8	" "	136*	10/41-two bank, Silk Litz	

TPI equals Turns per Incn.
*The turns given are a guide only—the inductance should be 1½ or 2% greater than our present No. 5-W.L. coil.

OSC Coils (to be wound on new forms with holes for tap—these coils have no primaries).

Coil No.	Wavelength Range	Turns	Wire Size	T.P.I	
AA—OSC	15-31	7	No. 20-DSC	6	Tap at 1 2/3 turns from bottom
BB—OSC	28-61	14	" "	12	Tap at 2 2/3 turns from bottom
CC—OSC	56-120	23	" "	24	Tap at 4 2/3 turns from bottom
DD—OSC	115-250	39	28-SSC	56	Tap at 9 2/3 turns from bottom
EE—OSC	250-550	80	28-SSC	60	Tap at 16 2/3 turns from bottom

All taps to be soldered to the "P" terminal of coils CC-W.L., DD-W.L., CC-OSC and DD-OSC; coils also to have jumpers between the "G" terminal and the "H" terminal next to the "K" terminal.

Forms 1 and 7 sixteenths inch diameter