

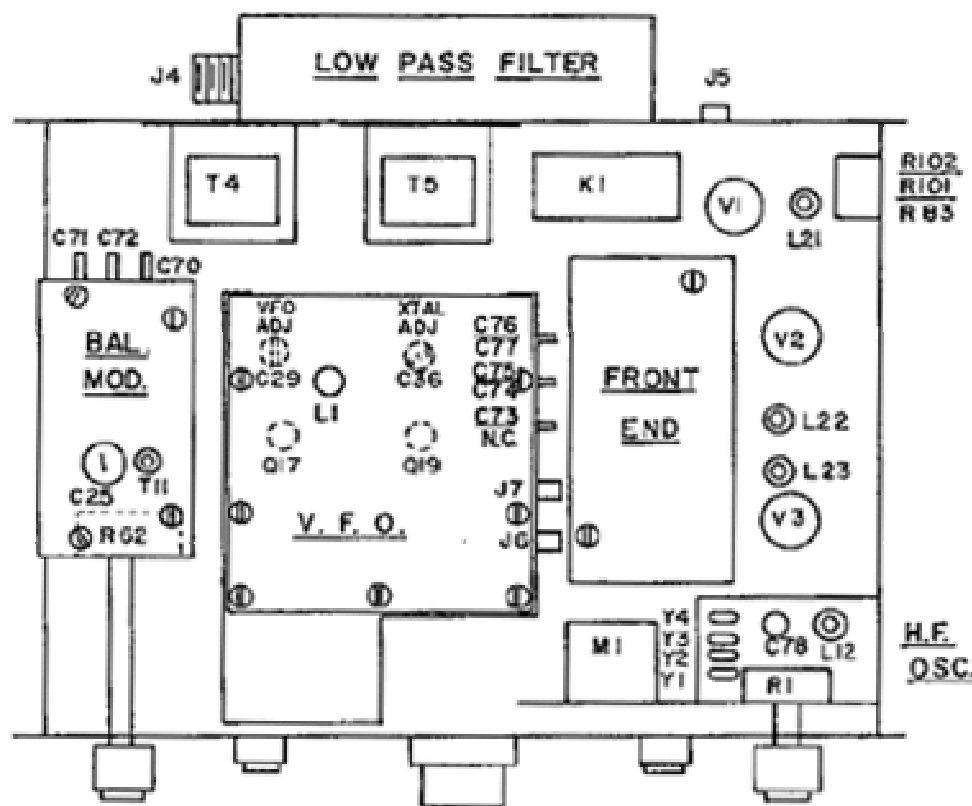


Figure 10

E. HF Crystal Oscillator Adjustment

Remove, from J8, the RCA plug coming from the HF oscillator, and connect this plug to the input of a Frequency Counter capable of operating to at least 40 megacycles. Turn on the Sidewinder and set the Sector switch to "50". Adjust L12 until the Frequency Counter reads 35.50 mc, ± 3 kc. Then switch to S1, S2, and S3 with the Sector switch. The Frequency Counter should read 36.5 mc, 37.5 mc, and 38.5 mc, respectively, all ± 3 kc. It should be possible to find a compromise adjustment of L12 where all four crystals are within tolerance.

If a Frequency Counter is unavailable, a heterodyne-type frequency meter may also be used. Connect an RCA jack, having a 3 or 4 turn loop approximately an inch in diameter, to the output plug of the oscillator, to radiate the signal into the frequency meter.

The open circuit voltage of this stage is approximately 1 volt rms.

F. Front End and First Receive Mixer Alignment

Connect an oscilloscope by means of a demodulator probe, such as a RCA WG-291, directly across a 0.2 mhf RF choke which has been connected from J10 to ground. See Figure 8. Inject a low level signal, swept at 50 mc, into the antenna jack from a

generator of known accuracy. Use an external signal generator to supply markers at 50, 52, and 54 mc. This generator may be adjusted to each frequency as required.

Adjust L15 and L16 to obtain a response from 50 to 54 mc that is flat within 3 to 4 db. L17 and L14 should also be adjusted at this time, but these slugs will primarily affect the amplitude of the response with only a secondary effect on the bandpass. A slight readjustment of L17 and L14 is sometimes necessary to 'smooth-out' a rough response.

G. Balanced Modulator Adjustment

Switch the Sidewinder to "CW", transmit mode. Disconnect the plug from J15 on the main printed circuit card. See Figure 9. Connect an RF VTVM across the plug and then tune T11 for a maximum output.

Switch the Sidewinder to "USB" and adjust the CARRIER BALANCE control, R62, and the trimmer capacitor, C25, for a minimum. Use a fiber screwdriver when adjusting the trimmer capacitor. It is best to adjust the trimmer in small steps, and then rotate the CARRIER BALANCE control through the null. A trimmer position should be found at which the CARRIER BALANCE control will tune through a null of less than 1 millivolt of RF.