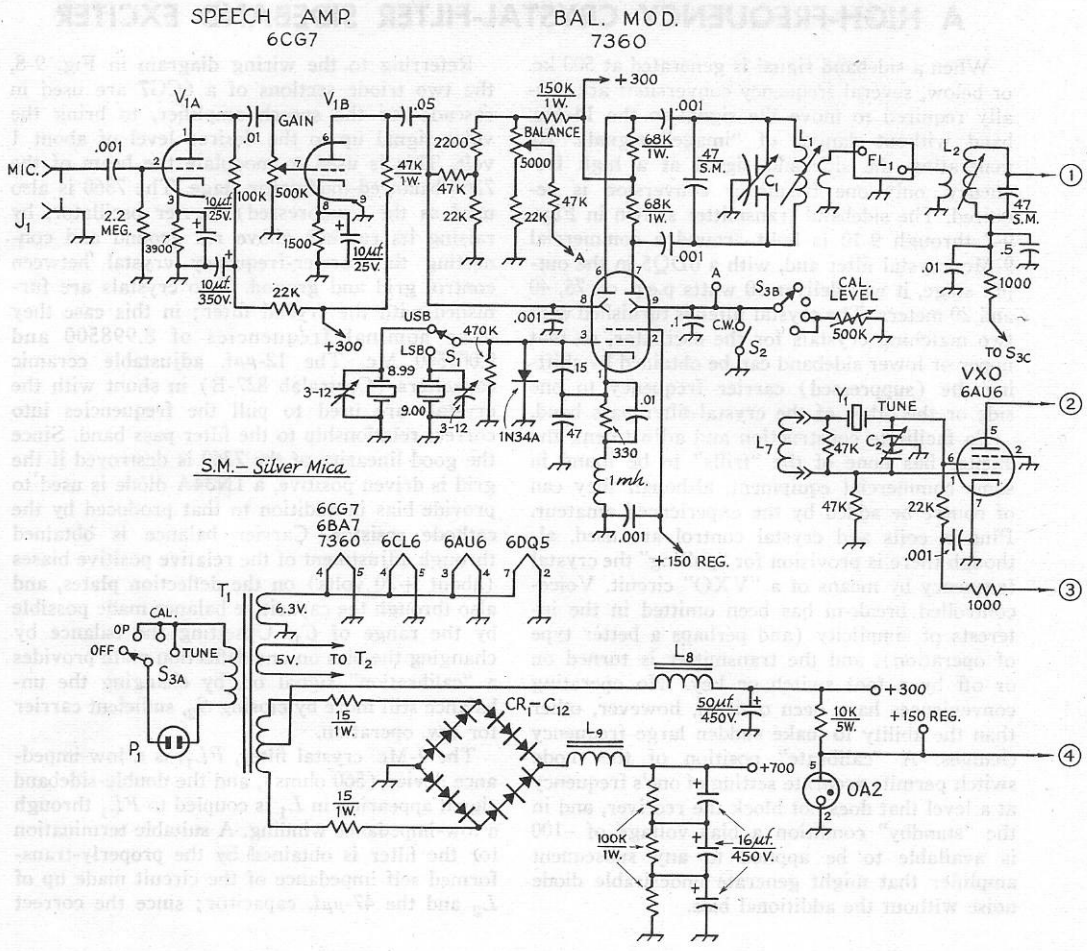

determination of the coupling is a job for an impedance bridge, it is suggested that the builder use the coil specified for L_2 unless he has facilities for designing his own.

The single-sideband signal from the filter is heterodyned to the operating frequency in a 6BA7 mixer stage operating in the normal maner. The local oscillator (heterodyning) signal is obtained from the 6AU6 VXO* stage in which a variable capacitor is used to pull the crystal frequency lower with an increase in capacitance. Since the value of inductance has some effect on the degree of effectiveness of the pulling, L_7 is made plug-in and is changed with (wide) changes in crystal frequencies. If v.f.o. operation is desired, the circuit can be modified to accept a v.f.o. signal by eliminating C_2, L_7, Y_1 and the 47,000-ohm resistor across L_7, and moving the 0.001-μf. capacitor to Pin 6. A 100-ohm cathode resistor would be required, and the v.f.o. signal would be introduced between grid and ground.

The output from the 6BA7 mixer is coupled to the 6CL6 driver through one or two tuned circuits, depending upon the band. On 3.9 and 7.2 Mc. only one tuned circuit is necessary, and a jumper in the plug-in coil form connects the plate lead of L_3 to the pin connected to the 0.001-μf. coupling capacitor. On 14 Mc., where the 3rd harmonic from the VXO is fairly close in frequency to the desired signal frequency, two tuned circuits are used, connected as shown in Fig. 9-8. The plate circuit of the 6CL6 driver stage is tuned by C_4, which is ganged to C_3 to facilitate adjustment and to reduce clutter on the front panel.

The output stage is a 6DQ5 operated in Class AB_1. The stage is neutralized to obtain good stability with high gain, and a pi circuit is used to couple to any low-impedance load. Since the loading capacitor, C_8, does not have sufficient capacitance for correct loading on some bands, the additional capacitance is mounted in the L_8 plug-in form. As a measure of the output, an r.f. voltmeter is connected across the output, deriving its signal from the 10–10-μμf. capacitance divider.

Metering is provided for in the output stage grid and cathode, and the r.f. voltmeter just mentioned.

In the power supply, an 800-v. c.t. transformer

*Shall, "VXO—A Variable Crystal Oscillator," *QST*, Jan., 1958.