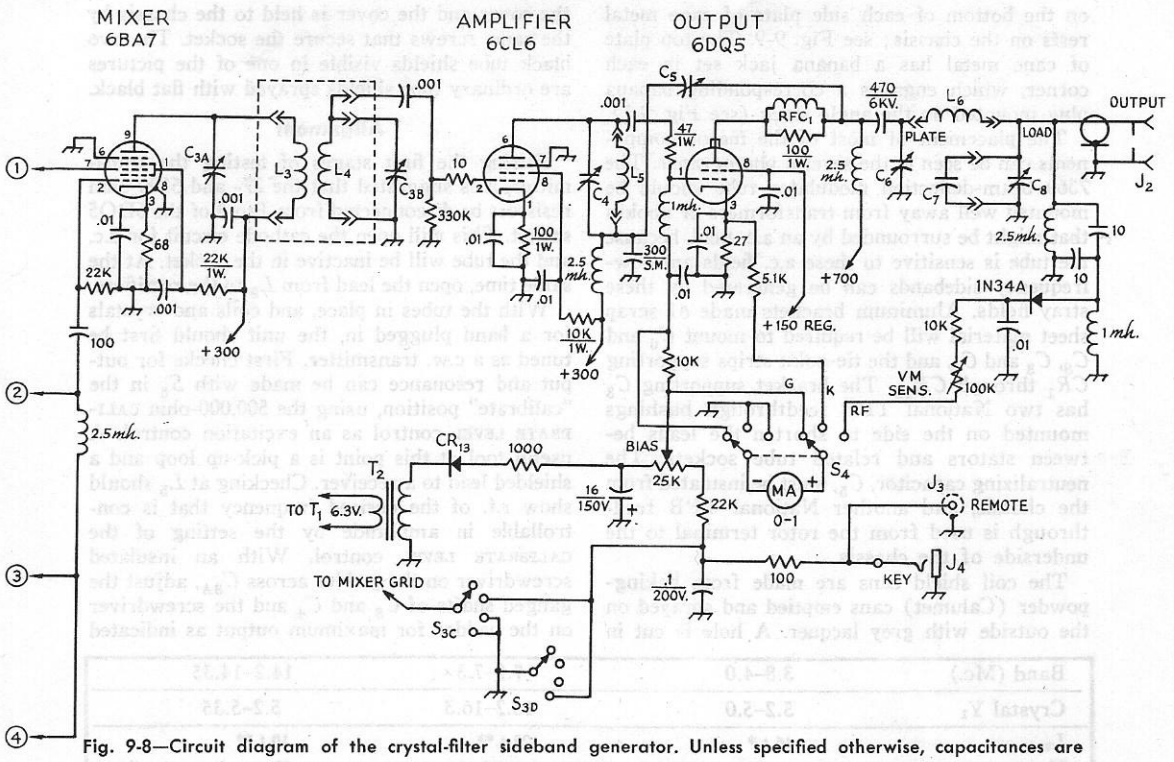

Fig. 9-8—Circuit diagram of the crystal-filter sideband generator. Unless specified otherwise, capacitances are in $\mu\mu$f., decimal capacitances are in μf., resistors are ½ watt, resistances are in ohms. Capacitors marked with polarity are electrolytic.

C_1—15-$\mu\mu$f. differential capacitor (Johnson 160-308).
C_2—Dual 50-$\mu\mu$f. variable (Johnson 167-52).
C_3—Dual 50-$\mu\mu$f. variable (Hammarlund HFD-50). Each section has 30-$\mu\mu$f. mica compression trimmer in parallel.
C_4—50-$\mu\mu$f. miniature variable (Hammarlund APC-50B).
C_5—11-$\mu\mu$f. variable (Johnson 167-1).
C_6—100-$\mu\mu$f. variable (Hammarlund HFA-100A).
C_7—Mounted in L_6 form. See coil table.
C_8—365-$\mu\mu$f. midget variable (Allied Radio 61 H 009 or Lafayette Radio MS-214).
CR_1-CR_{13}—400 p.i.v. 500-ma. silicon (Lafayette Radio SP-196).
FL_1—9.0-Mc. crystal filter (McCoy Electronics 32 B1).
J_1—Microphone jack (Amphenol 75 PC-1M).
J_2—Coaxial receptacle (SO-239).
J_3—Phono jack.
J_4—Open-circuit phone jack.
L_1, L_2—3.1-6.8-μh. variable inductor (Miller M-4405). Coupling coils are 4 t. No. 22 enam. close-wound over center of L_1 and "cold" end of L_2.
L_3-L_7—See coil table, next page.
L_8—5-henry 100-ma. choke (Stancor C-2305).
L_9—2-henry 200-ma. choke (Stancor C-2325).
P_1—Line plug, preferably fused, 1½ amp.
RFC_1—5 t. No. 22 spacewound on 100-ohm 1-watt resistor.
S_1—2-pole 6-pos. (2 used) rotary (Centralab PA-2003).
S_2—S.p.s.t. toggle.
S_3—4-pole 5-position (4 used) 2-section rotary switch (Centralab PA-1013).
T_1—800 v.c.t. 200-ma. power transformer with 6.3- and 5-v. filament windings (Knight 61 G 414).
T_2—6.3-v.0.6-amp. fil. transformer (Knight 61 G 416).
Y_1—See coil table, next page.

provides 700 volts for the output stage, 300 volts for the low-level stages, and regulated 150 volts for the oscillators. Inexpensive silicon rectifiers are used in a combination circuit that provides a basic 700 and 300 volts under load. A small filament transformer, T_2, is connected to the (otherwise) unused 5-volt winding of the power tranformer, and the resulting 90 volts at the secondary is rectified to furnish the bias voltage for the output stage.

The mode switch, S_3, turns on the power supply, and places the transmitter in readiness to be controlled at J_4. In its third position, S_3 unbalances the balanced modulator but keeps the output stage biased off, for calibration purposes, and in the fourth position it unbalances the modulator and turns on the final, for tune-up purposes.

Construction

The transmitter is built on a 10 × 14 × 3-inch aluminum chassis, with front and rear panels made of sturdy sheet aluminum 9 inches high. The cane-metal sides are bolted to aluminum angle stock that is bolted to the panels; this can be seen in Figs. 9-7 and 9-9. A lip bent inward