

on the bottom of each side plate of cane metal rests on the chassis; see Fig. 9-9. The top plate of cane metal has a banana jack set in each corner, which engages a corresponding banana plug mounted on the angle stock (see Fig. 9-7).

The placement of most of the major components can be seen in the several photographs. The 7360 beam-deflection modulator tube should be mounted well away from transformers or chokes that might be surrounded by an a.c. field, because the tube is sensitive to these a.c. fields and low-frequency sidebands can be generated by these stray fields. Aluminum brackets made of scrap sheet material will be required to mount C_6 and C_8 , C_3 and C_4 , and the tie-point strips supporting CR_1 through CR_{12} . The bracket supporting C_3 has two National TPB feedthrough bushings mounted on the side to shorten the leads between stators and related tube sockets. The neutralizing capacitor, C_5 , must be insulated from the chassis, and another National TPB feedthrough is used from the rotor terminal to the underside of the chassis.

The coil shield cans are made from baking-powder (Calumet) cans emptied and sprayed on the outside with grey lacquer. A hole is cut in

the cover and the cover is held to the chassis by the same screws that secure the socket. The two black tube shields visible in one of the pictures are ordinary tube shields sprayed with flat black.

Alignment

During the first stages of testing the transmitter, it is suggested that the 27- and 5100-ohm resistors be disconnected from Pin 3 of the 6DQ5 socket. This will open the cathode circuit for d.c. and the tube will be inactive in the socket. At the same time, open the lead from L_9 to the rectifiers.

With the tubes in place, and coils and crystals for a band plugged in, the unit should first be tuned as a c.w. transmitter. First checks for output and resonance can be made with S_3 in the "calibrate" position, using the 500,000-ohm CALIBRATE LEVEL control as an excitation control. A useful tool at this point is a pick-up loop and a shielded lead to a receiver. Checking at L_5 should show r.f. of the desired frequency that is controllable in amplitude by the setting of the CALIBRATE LEVEL control. With an insulated screwdriver on the padder across C_{3A} , adjust the ganged shafts of C_3 and C_4 and the screwdriver on the padder for maximum output as indicated

Band (Mc.)	3.8-4.0	7.2-7.3	14.2-14.35
Crystal Y_1	5.2-5.0	16.2-16.3	5.2-5.35
L_3	46 t.*	22 t.**	10 t.**
Shunt	10,000 ohms	10,000 ohms	None
L_4	None	None	10 t.** $\frac{1}{2}$ inch from L_3
L_5	46 t.*	22 t.**	10 t.**
Shunt	4700 ohms	4700 ohms	47,000 ohms
L_6	46 t.**	24 t.**	12 t.***
L_7	72 t.*	20 t.**	Same as 3.8 Mc.
C_7 ($\mu\mu\text{f.}$)	1000	330	—

*No. 24, 32 t.p.i., 1-inch diam. (B&W 3016).

**No. 20, 16 t.p.i., 1-inch diam. (B&W 3015).

***No. 18, 8 t.p.i., 1-inch diam. (B&W 3014).

Coils are mounted in $1\frac{1}{4}$ -inch o.d. polystyrene plug-in coil forms (Allied Radio 24-4P and 24-5P).

Shunt resistors are $\frac{1}{2}$ -watt except 4700 ohms, which are 1-watt.

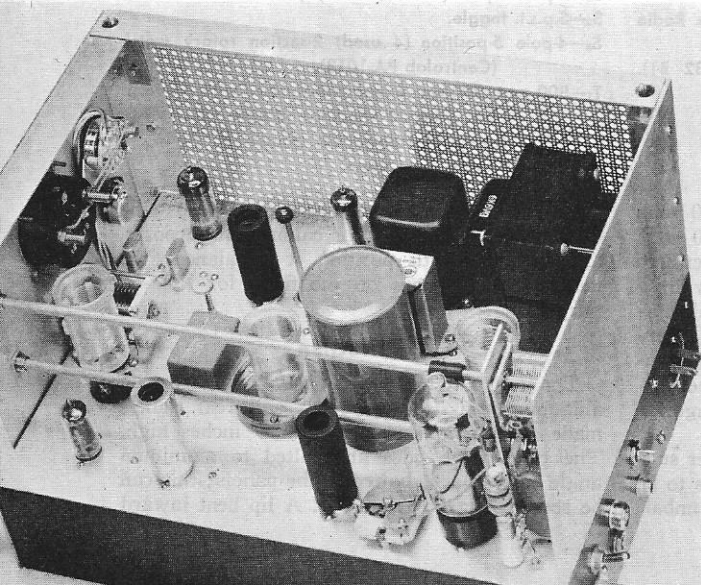


Fig. 9-9—Another view of the top of the filter sideband exciter. The variable capacitor in the VXO circuit is under the meter; the small box to the right of this capacitor is the crystal filter, and the two matched oscillator crystals supplied with the filter are near the panel. The 7360 beam-deflection modulator is in the black tube shield near the filter; a grommet on the shaft (next to the 7360) of the balance potentiometer serves as a knob.

Tubes in the foreground, from left to right, are 6AU6 VXO, 6BA7 mixer, 6CL6 (black shield) amplifier and 6DQ5 output stage. The long extension shafts behind the tubes control plate tuning and output loading capacitors.