

BEHIND-PANEL DETAILS are shown in this view. A small bracket made from $\frac{1}{16}$ -inch thick sheet aluminum supports the socket for the 6AL7-GT indicator eye tube at left. The phone line isolating capacitors (C_{18} and C_{19}) are stacked and fastened with long machine screws at center of chassis.

OMNIVOX (continued from page 5)

"Aux." provides an immediate disconnect between the phone line and the patch circuit without a blast from the speaker. When running a phone patch through the OMNIVOX, the positive gating action of the VOX control tube and the easy shift from automatic to manual control, provide sufficient flexibility to meet the variety of operating conditions and degree of familiarity with patch procedures likely to be encountered.

The 6AL7-GT monitoring indicator is also useful for frequency checking and zero-beating to net or roundtable frequencies. Since the indicator is DC-coupled to the 1N48 anti-trip diode, and the time constant of the filter is relatively short, the compressed pattern opens abruptly as zero-beat is approached.

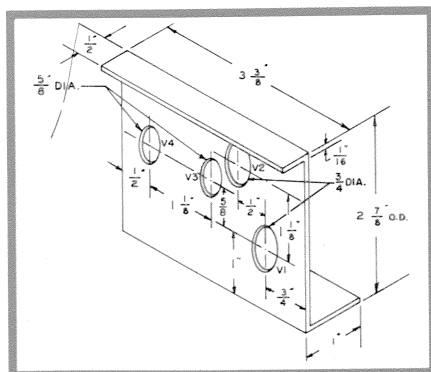


FIG. 8. LAYOUT DIAGRAM for the sub-chassis on which the four miniature tubes are mounted. A sheet of $\frac{1}{16}$ -inch thick aluminum $4\frac{1}{2} \times 3\frac{3}{8}$ inches is required.

Balance (R₂₆) and *Calibrate* (R₃₅) controls, the *Receiver Output* (J₂) and *Audio Output* (J₃) jacks, and control relay (R₇₁), are mounted on the rear side of the chassis. Power for the heater and plate power come in on a 4-wire cable.

Almost all wiring is run with insulated hookup wire. Leads from J_1 to R_1 , R_1 to the control grid of V_1 , and to the *Phone Gain* control (R_{11}) are run with shielded single conductor wire. Small parts are mounted on lugs of components they connect with, and on terminal strips.

TESTING THE OMNIVOX, when completed consists of connecting it to a power supply furnishing 300 volts DC at 40 milliamperes, and 6.3 volts at 2 amperes. The audio section should be checked out first, and then bias voltage measurements in the ALC circuit are taken to check its operation.

The VOX circuit should then be tested, and calibration of the indicator eye tube is completed. Instructions for adjusting the various controls have been given heretofore in the description of the OMNIVOX circuits, and will not be repeated here. Balancing and testing of the *Phone Patch* circuit should be done last after the other adjustments have been completed.

Finally the chassis cover plate is installed with self-tapping screws, and the OMNIVOX is installed in the position it will occupy in the station. The package has been designed so that it can set under, or on top of, a receiver, speech amplifier, etc. Or, it can be stood on end between units on the operating desk. If the latter position is chosen, vent holes should be drilled in the chassis sides which form the bottom and top. Small rubber feet also should be secured to the bottom side.

Operation of OMNIVOX is pretty much automatic once the *Microphone Gain*, *Telephone Gain*, and *VOX Sensitivity* controls have been set. The *Anti-Trip* control should be adjusted so that speaker noise does not actuate the *VOX* circuit. The *Hold Time* control should be set to individual tastes, with sufficient hold in time so that R_{V2} remains closed between spoken sentences.

Portions of the OMNIVOX circuitry may easily be adapted to existing transmitter audio equipment, if desired. The audio gain-controlled amplifier, with its speech frequency range emphasis, and the VOX circuits too, are superior to similar circuits found in some commercial transmitters.

Improve your amateur station by incorporating the complete OMNI-VOX, or portions of the circuit, into your equipment.