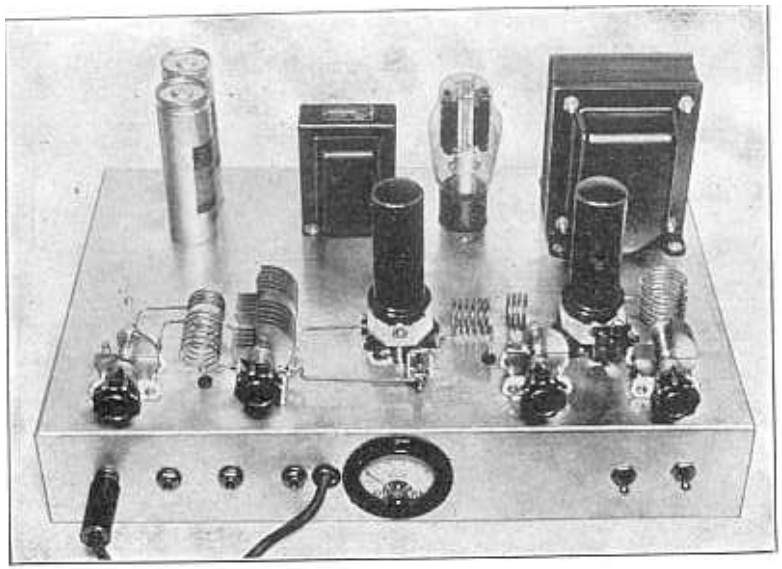
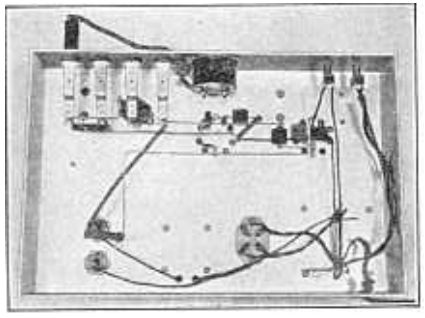


5-Meter Mopa

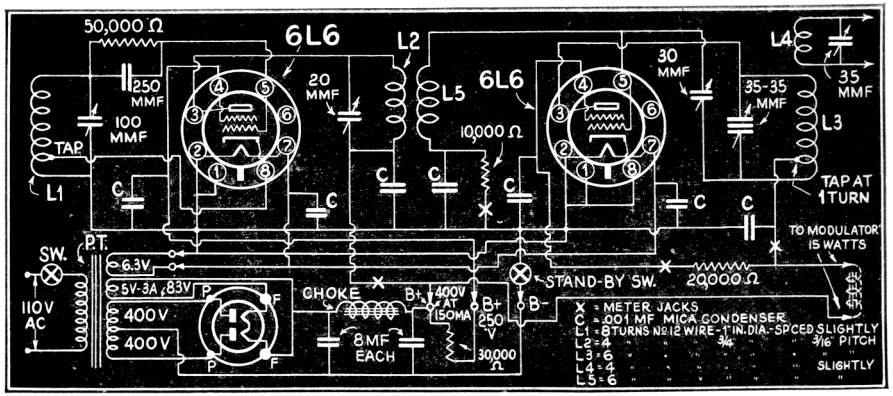
THE 5-meter amateur band has become extremely popular with the young ham. Nearly all newcomers start off with a 5-meter transmitter.

Since the introduction of the beam type power tubes, many amateurs have incorporated them in their ultra-high frequency apparatus. The 5-meter transmitter illustrated in the photograph was originally designed by W2AMN and described in SHORT WAVE & TELEVISION magazine. This transmitter provides a very steady and sharp signal which does not cause a lot of interference with other amateurs. Two type 6L6 tubes (metal type) are employed. One as an electron coupled oscillator and the other as a 5-meter power amplifier. The oscillator grid circuit is tuned to 10 meters and the plate circuit is tuned to 5. Frequency doubling in this stage is employed in order to improve stability.



Bottom view of the 5-meter MOPA

The amplifier is inductively coupled to the oscillator and the diagram shows a neutralizing condenser. However, this condenser is not needed if the amplifier is properly adjusted. The neutralizing circuit is shown for those who may desire to incorporate it in the transmitter. The entire transmitter, not including the modulator, is mounted on a 17" x 11" x 3" aluminum chassis. No drilling specifications are given. Reference to drawing clearly shows the placement of parts. A circuit diagram for a suitable modulator which will work well with this transmitter is given in one of the drawings. Commercial audio amplifiers having an output of around 15 watts work very satisfactory and in many cases are much cheaper to buy than build. A single meter is employed for measuring currents in the various circuits. Four jacks are provided along the left-hand edge of the chassis. These are single closed circuit jacks and are



connected as shown in the diagram. On the right-hand edge of the chassis we have the standby switch. This opens the B-negative circuit, shutting the transmitter off during reception.

Tuning and adjusting the transmitter is simple if the following procedure is adhered to: With the amplifier tube removed from its socket, the oscillator grid condenser should be adjusted until a signal from the oscillator is picked up, in the proper portion of the band, on the receiver. Next, disconnect the B-plus from the amplifier tube by inserting a dummy plug in the proper jack and insert the amplifier tube. The meter plug should then be connected to indicate grid current of the amplifier. The plate circuit of the oscillator is then adjusted for maximum grid current as indicated by the meter. Next, insert the meter plug into the final amplifier plate jack, after removing the dummy plug, this will connect the B-plus to the amplifier.

Swing the amplifier plate condenser until plate current is at minimum. Then couple the antenna and adjust for a plate current of 75 milliamperes.

Parts List

HAMMARLUND

1—MC-100-S Condenser
1—MC-20-S Condenser
1—MC-35-S Condenser
1—MCD-35-X Condenser
1—MEX trimmer
2—S-8 8-prong Isolantite sockets
1—S-4 4-prong Isolantite socket

AEROVOX

6—.001 mf. mica receiving type condensers
1—.001 mf. mica 1,000 volt condenser
2—8 mf. electrolytic-500 V condensers

I. R. C.

1—50,000 ohm 1 watt resistor
1—10,000 ohm 1 watt resistor
1—20,000 ohm 20 watt resistor
1—20,000 ohm 75 watt voltage divider

STANCOR

1—Plate and filament trans. No. P-3005
1—Filter choke, No. C-1421

R. C. A.

2—6L6 beam tubes
1—83V rectifier tube

TRIPLETT

1—0-100 ma. small meter

MISC.

4—Single closed circuit jacks
1—Phone plug, 1—Toggle switch
4—Knobs
1—Aluminum chassis 17"x11"x3"