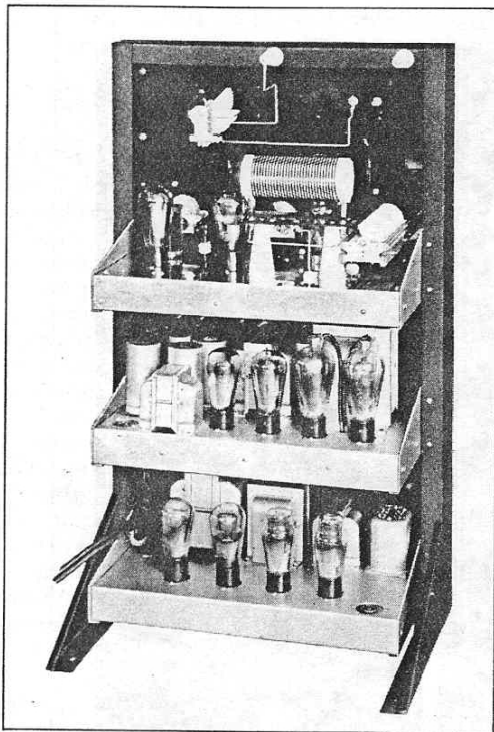


## A HIGH-POWER SEMI-PORTABLE TRANSMITTER



Rear View of the 42B 75 Watt Transmitter

The ability of type 10 tubes to deliver upwards of 60 watts of audio power, when operated at relatively high plate voltages, led us to the design of a transmitter using these tubes as modulators in order to obtain moderately high output with low power consumption and light weight. The 42B uses a 47 crystal oscillator, parallel 46's as a buffer, and a 203A with 750 volts on plate as the final amplifier. The 210 modulators are also operated with a plate voltage of 750 derived from the same power supply and inputs up to 120 watts can be fully modulated. Inasmuch as this transmitter will normally be used for voice, the average input to the 10 tubes remains within a safe value and no noticeable heating occurs. Tests seem to indicate that normal life can be expected of 10's when operated under these conditions. The 203A is heavily excited so that good efficiency is obtained and outputs in the neighborhood of 70 watts can be obtained on all frequencies. 14 mc. operation is accomplished by using a 7 mc. crystal doubling in the buffer stage and operating the 203A as a straight amplifier. The 42B can be operated from a 500-watt 110 volt 60 cycle engine generator and its dimensions are such that it can be easily transported in a car or it can be installed aboard small pleasure craft. The illustration shows the 42B mounted without a rear enclosure. The exact type of mounting can be modified to suit the user's requirements. A 203A is used in the final amplifier in preference to smaller tubes in parallel or push-pull. The tube cost with the 203A is only slightly greater and the efficiency, reliability and ease of adjustment are increased.

If radiophone is not required, the 42A transmitter can be supplied which is identical to the 42B except that the modulation unit is omitted. This furnishes a very compact semi-portable radio telegraph transmitter with a power output of 70 to 80 watts. If external antenna tuning apparatus can be used, the 42A can be mounted in the same size frame as the 30W transmitter (12" x 19" x 16") or it can be supplied mounted on a rack.

## THE 4A TRANSMITTER

The 4A transmitter marks the entry of the COLLINS line in the extremely low-priced field. The 4A uses a 47 crystal oscillator and parallel 46's in the power amplifier permitting an output of 18 to 20 watts on 1.7, 3.5 or 7 mc. The power amplifier is operated on the crystal frequency in each case. Despite its low cost, the 4A embodies the mechanical and electrical refinements found in the larger COLLINS transmitters. A separate power supply is used for the oscillator to reduce frequency "chirp." Standard COLLINS plug-in coils are employed. A single Weston meter is provided with a switching arrangement to read plate and grid currents. The 4A is ideal for an amateur who wants to start out with a minimum investment and yet have a transmitter which will deliver a high quality C. W. signal. The 4A can also serve as a stand-by transmitter in a high-powered station to be used when full power is not required. Really surprising results can be obtained and amateurs who are accustomed to think in terms of kilowatts can get a great deal of service and amusement from one of these little transmitters.



The 4A 20 Watt Transmitter