600A

THE NEW COLLINS 600 WATT TRANSMITTER

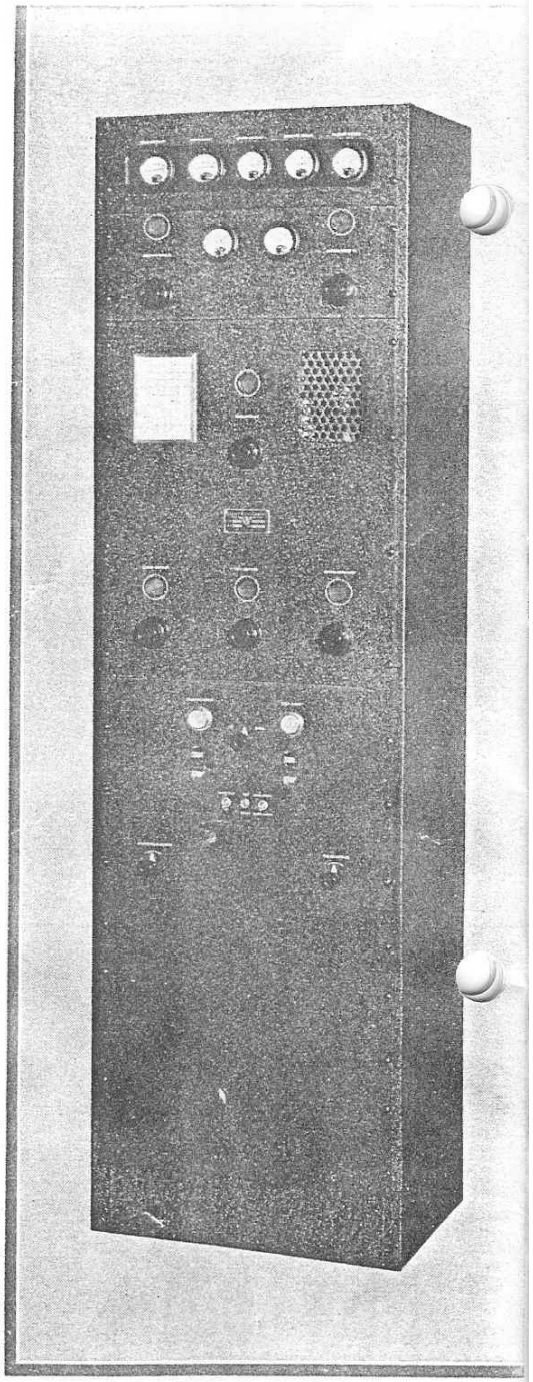
THE 600A is a high-powered telegraph and medium-powered telephone transmitter of novel design. The terms high and medium power, of course, are relative and apply to the class of transmitters employing air cooled tubes. The telegraph output rating of the 600A is 600 watts. In actual operation, an output of 800 watts is readily obtained without over-loading any component. The normal radiotelephone rating is 150 watts output, but this value is also below the measured output which ranges from 200 to 300 watts. The radiotelegraph performance of the 600A is exactly comparable to that of the new 202A Transmitter and the radiotelephone operation is equivalent to that of the older 300BA model. The cost of the 600A is somewhat less than that of the 300BA, and at the same time this new set has all of the new devices and refinements which characterize the new series of Collins transmitters. The 600A Transmitter is intended primarily for Government communication service, for high-frequency broadcast stations, and for deluxe amateur operation.

The list of tubes employed in the 600A is as follows: C-100 high-stability oscillator, 46 first doubler, RK23 first amplifier, RK20 second amplifier, two C-200 or two C-300 final amplifier, two 866 high-voltage rectifiers, one 83V low-voltage rectifier and one RK19 bias rectifier. Either the C-200s or C-300s may be used in the final amplifier without circuit changes. The C-300s have a higher plate dissipation capability and are useful when a radiophone output of 300 watts is desired. On the other hand the less expensive C-200s may be used to obtain maximum radiotelegraph output with a radiophone output of 150 to 200 watts.

The unit-type of construction is effectively employed in the 600A, and all of the components are systematically arranged in a standard rack cabinet. The lower deck carries the high-voltage plate transformers and the first section of the high-voltage filter. The second deck contains the high-voltage rectifiers, the filament transformers and the second section of filter. Above this deck is the control unit which consists of the power relays, timing relays and overload devices, the low-voltage and bias rectifiers, and the push-buttons and pilot lights. The radio frequency section of the transmitter is constructed as a single unit, although the low-level r-f stages are carefully isolated from the high-powered stages. The new type of frequency shift unit is used for interchanging the crystals and excitation tank circuits, all of which are contained in a small aluminum case. The other plug-in unit is the final amplifier coil which also carries the inductive neutralization and output coupling devices.

The antenna impedance matching unit is of a newly designed type permitting continuous adjustment of the inductances. This arrangement is especially suited for use with the Multiband Antenna, although it may be used with other types of antennas as well.

A distinctive development which has made its first appearance in the 600A is the new precision-flush dial. The dials which have previously been used by the Collins Radio Company have more or less set the fashion in transmitter construction, but it is believed that the new dials are even more attractive in appearance and more convenient for adjustment. An etched nickel-silver dial and indicator plate are located behind a circular window. A knob of generous proportions is located a little distance from the window and the control designation is engraved between the knob and the window. A vernier ratio of 6 to 1 between the knob and the dial is obtained by means of an accurately machined gear train. Another type has the knob directly connected to the shaft of the control element. The controls on the front panel of the 600A Transmitter are as follows: Oscillator Tuning, First Amplifier Tuning, Second Amplifier Tuning, Final Amplifier Tuning and the two Network Controls. In addition are the filament and bias rheostats, the phone-CW switch and the various pushbuttons. A card holder is located on the front panel with an interchangeable printed card for recording the exact dial settings for each frequency.



FRONT—600A

Seven flush-type, high-grade instruments are furnished for reading plate and grid currents to the various amplifier stages, as well as filament voltage and antenna currents. All except the r-f meters are mounted behind a plate glass window.

The new control-grid type of modulation, perfected by the Collins Radio Company and so successfully employed in the 45A Transmitter, is also used in the new 600A. The transmitter controls are so arranged that it is possible to change instantly from radiotelegraph to radiotelephone operation with the assur-