

# THE 300B TRANSMITTER

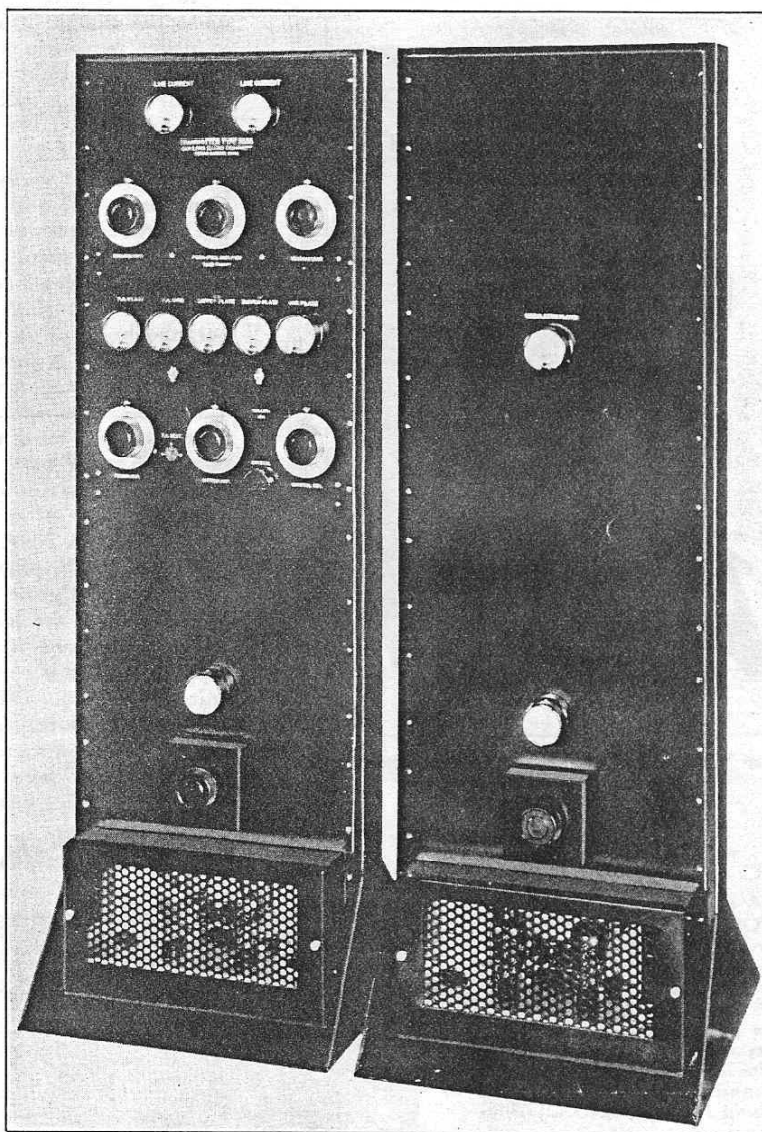
A transmitter which has been available for some time but which has never been described in these pages, is the COLLINS 300B. The 300B follows the same basic design as the 150B except that push-pull 203A's are used in the final class C amplifier to give an output in excess of 200 watts. The complete tube line-up is as follows: 47 crystal oscillator, 46 first buffer, 203A second buffer, 2-203A's final, modulated by 2-203A's class B. A 402A power supply using a 5Z3 handles the oscillator and first buffer. Two 1200B power supplies using 866 rectifiers are used; one for the 203A's in the RF section and the other for the 203A modulators.

Several ingenious circuit arrangements are employed. The 203A second buffer works lighted loaded and furnishes strong excitation to the final so that very high efficiency is obtained in the latter. Provision is made for balancing the excitation to the push-pull amplifier so that identical excitation can be obtained to each of the push-pull tubes. Standard output connection is to a 600 ohm two-wire transmission line for use with a matched impedance Hertz antenna or with an external antenna tuning unit. This arrangement permits most efficient transfer of energy from the final amplifier to the antenna.

Audio excitation to the modulators is obtained direct from a 7B amplifier. The audio system is designed for 30 to 10,000 cycle response with very low amplitude distortion. Complete filtering in the transmitter reduces the hum to a level suitable for broadcast work.

Additional space in the modulator rack can be utilized for mounting a precision frequency control unit and a frequency monitor when the 300B is used in services requiring close frequency tolerances.

If telegraphic transmission alone is required, the radio frequency rack alone can be furnished. This is designated as the 300C transmitter. Of course, the modulation section can be added at any later date.



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A very important feature of the 300B transmitter, as well as all other COLLINS models, is the fact that it is designed for continuous operation at full load. The power transformers are unusually large and every element which must dissipate heat or withstand high voltage is designed with a very large margin of safety. This feature makes the 300B especially suitable for broadcast service.

Another point of interest is that all of the ferrous metal parts on COLLINS transmitters are now heavily copper plated before being finished with Duco. Likewise cables are treated with a special Bakelite varnish to prevent the absorption of moisture. These precautions are of particular value in tropical installations.