



THE 32B TRANSMITTER

NEW SPECIFICATIONS

The 32B transmitter was first announced during March, 1933, as an interesting addition to the general line of Collins transmitters. It was originally intended for use by amateurs who wanted an all-purpose transmitter delivering a high-quality signal of medium power. Within the few months that the 32B has been available it has established itself as the most popular and most versatile of all of the transmitters which the Collins Radio Company has built to date. This enthusiastic acceptance is probably due to the fact that its power (25 watts) is sufficiently high to afford reliable communication and yet the transmitter is compact, self-contained, easy to install, has a high-quality audio system requiring only the connection of a suitable microphone, and the price is within the reach of almost every user of transmitting equipment.

Improvements and refinements of the original design have been made and, therefore, it seems desirable to issue this new description of the 32B transmitter. Complete specifications and discussion of its design and operation follow:

GENERAL SPECIFICATIONS OF 32B TRANSMITTER

Power Output—25 watts.

Frequency Range—1500-15,000 kc. (Provision for operation on higher and lower frequencies on special order.) Coils for one band furnished with transmitter.

Frequency Control—Direct crystal control with isolation of the crystal oscillator from the power amplifier by suitably designed buffer stage.

Radio Frequency Tubes—47 crystal oscillator, 46 buffer, two 46 power amplifiers.

Audio Tubes—57 voltage amplifier, 46 driver, 2-46's class B modulators.

Rectifier Tubes—80 and 83.

Maximum Percentage of Modulation—100.

Audio Frequency Range—70-10,000 cycles within ± 1.5 db.

Amplitude Distortion—Less than 5% at 100% modulation.

Keying—Grid block in final amplifier. Provision is made for switching off the crystal oscillator to permit reception on the crystal frequency.

Power Source—110 volts, 60 cycles, single phase is standard. Provision for other voltages and frequencies on special order.

Special converters and engine generators are available for use when no AC supply is obtainable. The total power drain is less than 250 watts under complete modulation.

Instruments—Three surface type high grade milliammeters are furnished for reading plate and grid currents in the various stages. All tuning operations and adjustments of the transmitter can be checked by means of these meters.

Dimensions—16" high, 19" wide, 11½" deep. The standard frame furnished with the transmitter is for table mounting. The panels, however, are of the correct dimensions to fit a standard 19" relay rack and the transmitter can be so mounted on special order.

Weight—Approximately 50 pounds. Shipping weight 90 pounds.

RADIO FREQUENCY TUBE LINE-UP

The 32B transmitter makes use of the standard Collins 10B radio frequency excitation unit. A 47 crystal oscillator drives a 46 buffer and the latter can be neutralized if the transmitter is to be operated on the crystal frequency or can be operated as a buffer-doubler for operation on a multiple of the crystal frequency. The final amplifier using two type 46 tubes is always operated as a straight neutralized amplifier. For instance, for radio telephone operation on 14,200 kc. a crystal having a frequency of 7,100 kc. may be used with a crystal oscillator coil for the same frequency. Coils for 14,200 kc. will be inserted in the buffer-doubler and power amplifier and their plate circuits tuned to that frequency. Very careful attention has been paid to the subject of neutralization so that this can be accomplished without critical adjustments. The buffer is neutralized by a small variable condenser mounted on the buffer inductance so that the neutralization adjustment is not disturbed when coils are changed. Neutralization adjustments of the final amplifier are made with a small inset knob having readily legible calibrations. The tuning chart furnished with the transmitter shows the proper setting of the neutralizing control for each frequency and the neutralization adjustment can be checked accurately with the grid current milliammeter. Shifting from one band to another is merely a matter of changing the plug-in coils and setting the dials to the calibrated position. The entire operation can be performed in a minute's time. The adjustment of the transmitter has been so simplified that it is pos-