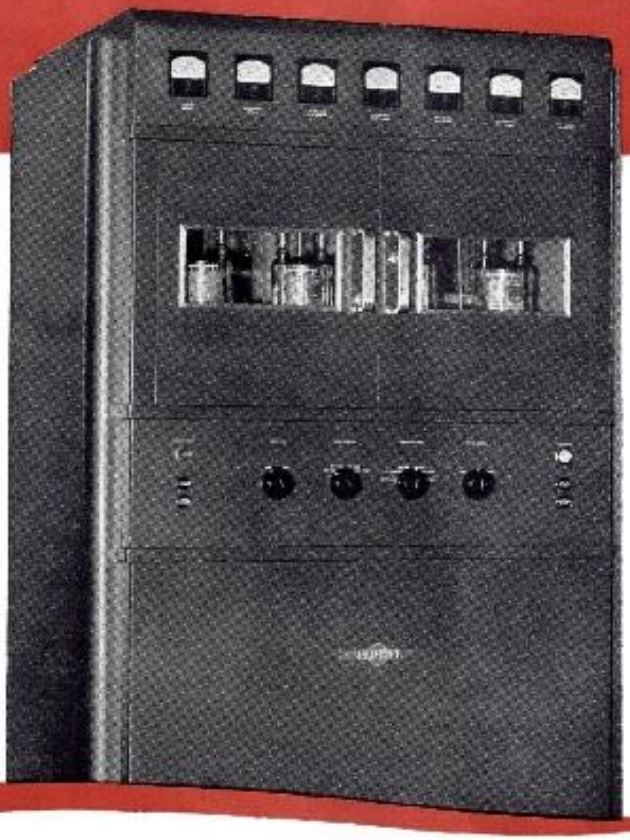
# COLLINS

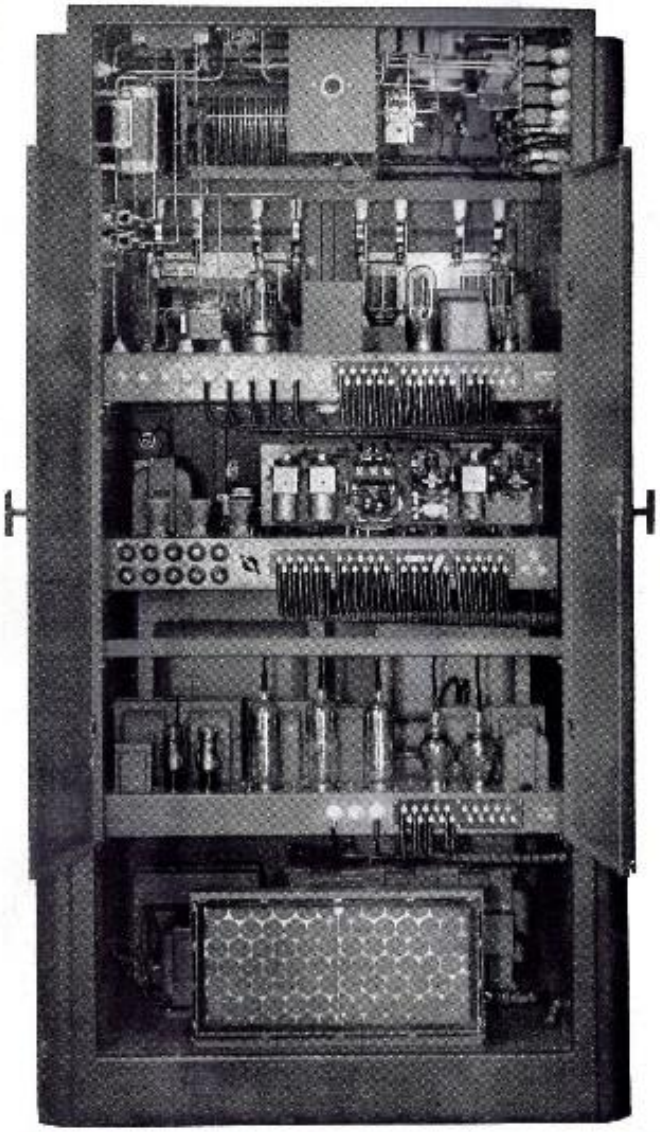


## THE COLLINS 20K

**One Kilowatt AM Broadcast Transmitter**

1000/500 watts • motor tuning • modern styling
complete metering • accessibility
inverse feedback • variable output
coupling • high level modulation
dust filters • dependability

**The Collins 20K is a wholly reliable and efficient one kilowatt transmitter for high fidelity operation . . .** in the 540 kc-1600 kc AM broadcast band. Housed in a single, attractively styled cabinet, it is thoroughly developed and field tested in conformance with the Collins advanced engineering standards. Efficient design, utilizing highest quality components, provides ample safety factors and assures continuous, satisfactory service. The carrier power can be quickly and easily reduced to 500 watts output.



## Design Considerations:

Front and rear doors allow immediate access to all tubes and working parts. All doors and panels are fully interlocked for personnel protection, and overload relays protect the equipment from damage. Tuning elements are motor driven, and are controlled from the front panel. Nine meters and a selective metering switch furnish a continuous visual check on transmitter operation. Power tubes are visible through windows in the front of the cabinet. A centralized panel contains all controls necessary for complete operation.

## Frequency Control:

The oscillator is isolated from the transmitter proper. The Collins 40E frequency control unit contains two crystals with individual temperature ovens, and maintains the carrier to well within ±10 cps of the specified frequency. Either crystal may be selected by means of a switch; thus one oven may be removed with no interruption of proper and complete transmitter operation. The inherent stability of the oscillator provides frequency control that is accurately maintained despite variations in line voltage or tube characteristics. A highly sensitive mercury thermostat maintains a 50° C. ambient temperature. The power supply is self-contained.

The 40E is designed for rack mounting, and can be installed in a type 190 cabinet, with ample room for monitoring facilities and speech equipment. It may be placed beside the transmitter or at some distance from it.

*Collins Quality Equipment Continues .*

## Fidelity:

The audio amplifier is designed for very high fidelity, and is further improved and stabilized by employing a fixed feedback circuit. The audio amplifier and modulator are rendered insensitive to changes in voltages and tubes, and the hum and distortion are kept extremely low.

## Ventilation:

Air is drawn through a removable filter at the lower rear of the cabinet, and circulated by means of a large blower. This forced air ventilation serves to cool the transmitter and also to set up a small amount of pressure inside the transmitter to exclude dust.

## 20K Specifications:

Frequency range: 540 kc to 1600 kc.

Carrier power: 1000/500 watts.

Frequency stability: less than 10 cps deviation from assigned value.

Audio frequency response: ±1.5 db from 30-10,000 cps.

Audio distortion: less than 2% rms between 50 and 7500 cps at 100% modulation.

Audio input level: +6 dbm for 100% tone modulation.

Noise level: More than 60 db below 100% modulation (unweighted).

R-f termination: concentric or four wire grounded transmission lines of 60 to 300 ohms impedance.

Monitoring: provision for connection of frequency and modulation monitors.

### Tubes:

Radio Frequency
- 1 6SK7 Oscillator
- 1 6V6G Class A Buffer
- 1 807 Second Buffer
- 1 813 Intermediate Amplifier
- 2 833 Final Class C Amplifier

Audio Frequency
- 2 6J5G Class A First Audio
- 2 845 Class A Second Audio
- 2 833 Class B Modulator

Rectifiers
- 3 872A 2500 volt Rectifiers
- 2 866A 1000 volt Rectifiers
- 3 5Z3 Rectifiers

Cabinet Sizes:
- Transmitter Proper: 40" wide x 30" deep x 78" high
- Monitor Rack: 20½" wide x 14" deep x 78" high

Floor Space Required:
- Transmitter Proper: 40" x 30"
- Monitor Rack: 20½" x 14"

Power Consumption: Maximum 4.7 kw at 100 per cent sine wave modulation, with a power factor of 0.82.

Power Source: 220 volts, 60 cycles, 3 phase.

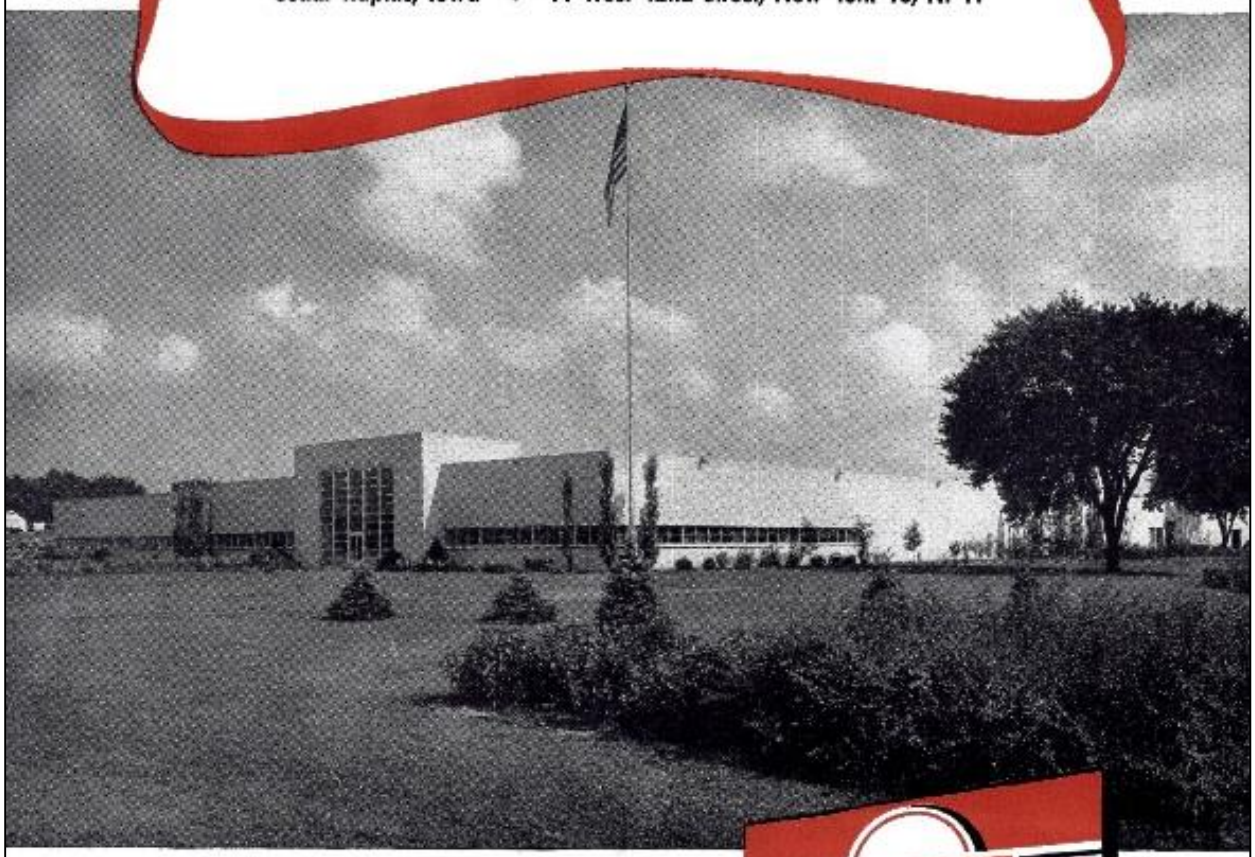
Weight: Installed 1364 pounds. Packed (all accessories), approximately 2586 pounds.

. . Its Place of Leadership!

The Collins main plant in Cedar Rapids is a modern, completely air and light controlled structure, containing 150,000 square feet of floor space. It is designed for the most efficient office, engineering and manufacturing use. The Collins management, organization and equipment are devoted entirely to the designing and production of radio communication equipment.

**COLLINS RADIO COMPANY**

**Cedar Rapids, Iowa • 11 West 42nd Street, New York 18, N. Y.**



FOR BROADCAST QUALITY, IT'S COLLINS

