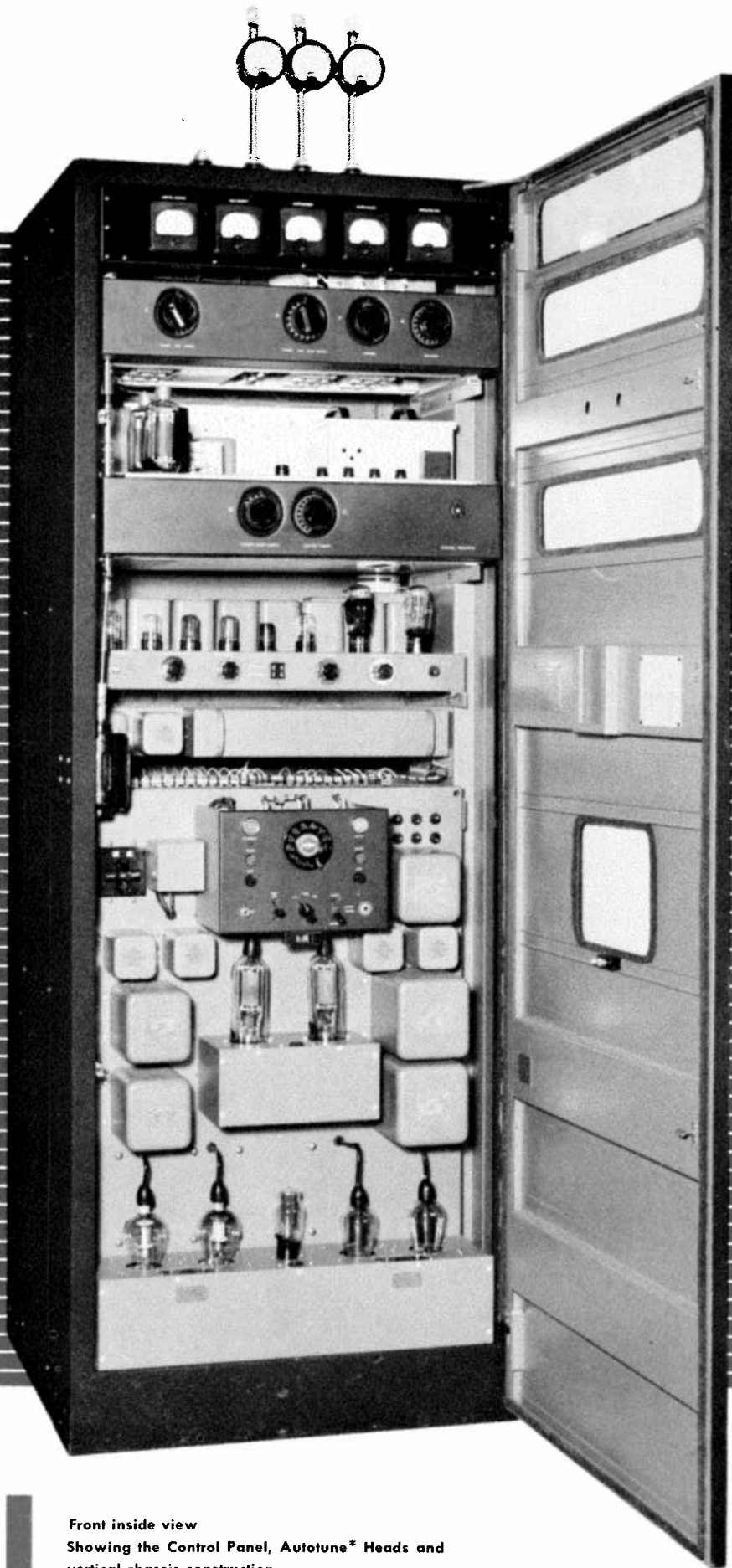


*Collins* 16F-14 TRANSMITTER



Front inside view  
Showing the Control Panel, Autotune\* Heads and  
vertical chassis construction.

# Collins

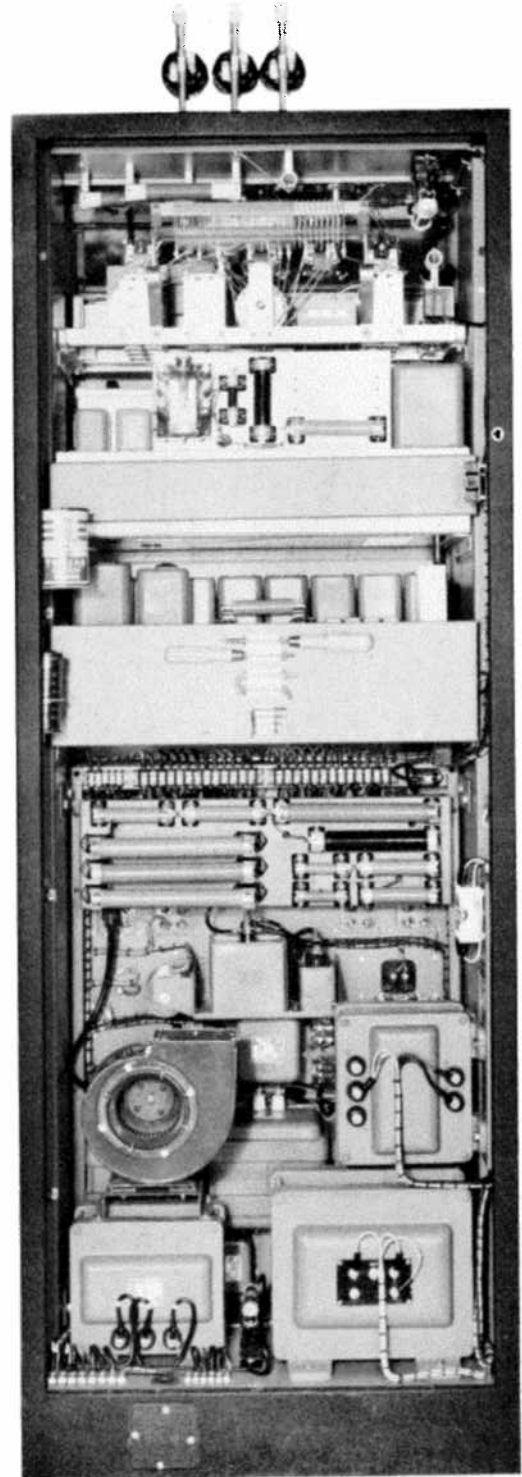
## 16F-14 TRANSMITTER

The Collins 16F-14 HF transmitter, with a power output of 250 watts on voice or MCW and 400 watts CW, has found wide application in point-to-point communication installations all over the world. Multi-channel operation is facilitated by Collins Autotune\* system, which permits rapid selection of any one of ten pre-tuned frequency channels by a telephone dial located on the transmitter control panel or a remote control unit. An electronic carrier control permits keying speeds of several hundred words per minute. Frequency shift keying may be utilized with an accessory kit.

A combination power amplifier plate tank and antenna coupling circuit will match the transmitter output impedance to either balanced or unbalanced antenna systems, over a wide frequency range, without the use of an auxiliary tuning unit. Other inherent characteristics include low losses, even at high frequencies, together with effective harmonic attenuation. To meet unusual operating conditions, two antennas may be permanently connected to the output terminals and switched as desired.

The transmitter employs unit type construction and is self contained in a single, heavy gauge reinforced sheet metal cabinet. The exterior is finished with durable black wrinkle enamel and the interior is flat gray. A full length front door provides access to all units. The eye-level meter panel is located behind a glass covered aperture. All tuning and operating controls are accessible without opening the cabinet door. The rear panel of the transmitter is secured by sliding pins and is easily removed for installation and subsequent inspection. Safety interlock switches located on both front door and rear panel protect the operating personnel.

Two types of remote control units are available. Either permits operation of all transmitter functions from distances up to 25 miles over two standard telephone pairs or a "spiral four." Remote units may be used in parallel if desired. A receiver disabling circuit, operated by the carrier control system is incorporated.



Rear inside view

Good engineering provides maximum accessibility.

# SPECIFICATIONS

**TEMPERATURE RANGE:** 0 to 50° C.

**HUMIDITY:** Up to 90% relative humidity.

**ALTITUDE:** Sea level to 6000 feet.

**TYPE OF EMISSION:** CW, MCW, or Voice. Any mode may be automatically selected with any frequency channel, or may be manually selected.

**POWER OUTPUT:** 250 watts Voice or MCW; 400 watts CW

**NUMBER OF FREQUENCIES:** Ten, anywhere within the frequency range.

**KEYING SPEED:** Electronic keying allows up to 200 wpm on CW; up to 60 wpm on MCW. The keying circuit is used as a carrier control for voice operation.

**FSK INPUT:** Frequency shift keying may be used on three channels by addition of external keyers, such as the Collins 709D-1.

**POWER SOURCE:** 115 or 230 v, 50/60 cycles, single phase for the transmitter. 115 v, 60 cps (available for 50 cps operation on request), single phase for the-remote control unit. Maximum power required is approximately 1600 watts at 85% power factor.

**INPUT IMPEDANCE:** 500/600 ohms input to the audio amplifier.

**INPUT LEVEL:** +10 to -20 dbm.

**FREQUENCY RESPONSE:** Within 3 db, 150 to 3500 cycles per second.

**MCW FREQUENCY:** Variable in 7 steps from 400 to 1200 cps.

**COMPRESSION CHARACTERISTIC:** Less than 3 db rise in the audio output with a 15 db increase in input signal. Control set to start compression at 70% modulation.

**DISTORTION:** Less than 10% of total harmonic distortion up to 95% modulation and 15 db of compression.

**NOISE:** At least 40 db below 100% modulation.

**R-F OUTPUT IMPEDANCES:** Unbalanced antennas or concentric transmission lines with an impedance range of 50-1200 ohms pure resistance, 70-850 ohms at 45° phase angle, or 100-600 ohms at a 60° phase angle.

**FREQUENCY RANGE:** Any frequency within 2-20 mc.

**FREQUENCY STABILIZATION METHOD:** Crystal control.

**MAXIMUM FREQUENCY SHIFT TIME:** 10 seconds.

## WEIGHTS AND DIMENSIONS

Unit	Size	Weight
Transmitter	28" w, 30" d, 80 <sup>5</sup> / <sub>8</sub> " h	1170 lbs.
177G-9 Control Unit	19" w, 10 <sup>7</sup> / <sub>8</sub> " d, 8 <sup>3</sup> / <sub>4</sub> " h.	56 lbs.
177G-10 Control Unit	19" w, 9 <sup>1</sup> / <sub>2</sub> " d, 10 <sup>1</sup> / <sub>2</sub> " h	31 lbs.



177G-9 REMOTE CONTROL UNIT . . . for use in applications where extraneous sound level is normal



177G-10 REMOTE CONTROL UNIT . . . especially adapted for use in locations where extraneous sound level is high.

## COLLINS RADIO COMPANY

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