

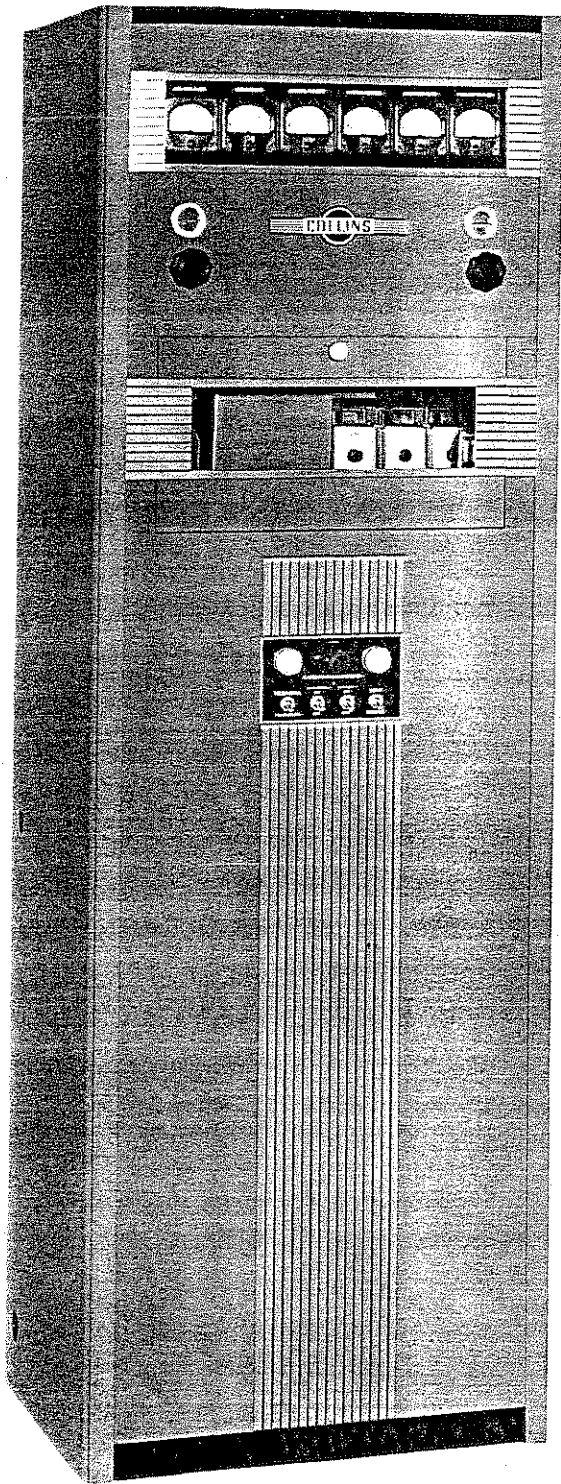
COLLINS 30J HIGH FREQUENCY TRANSMITTER

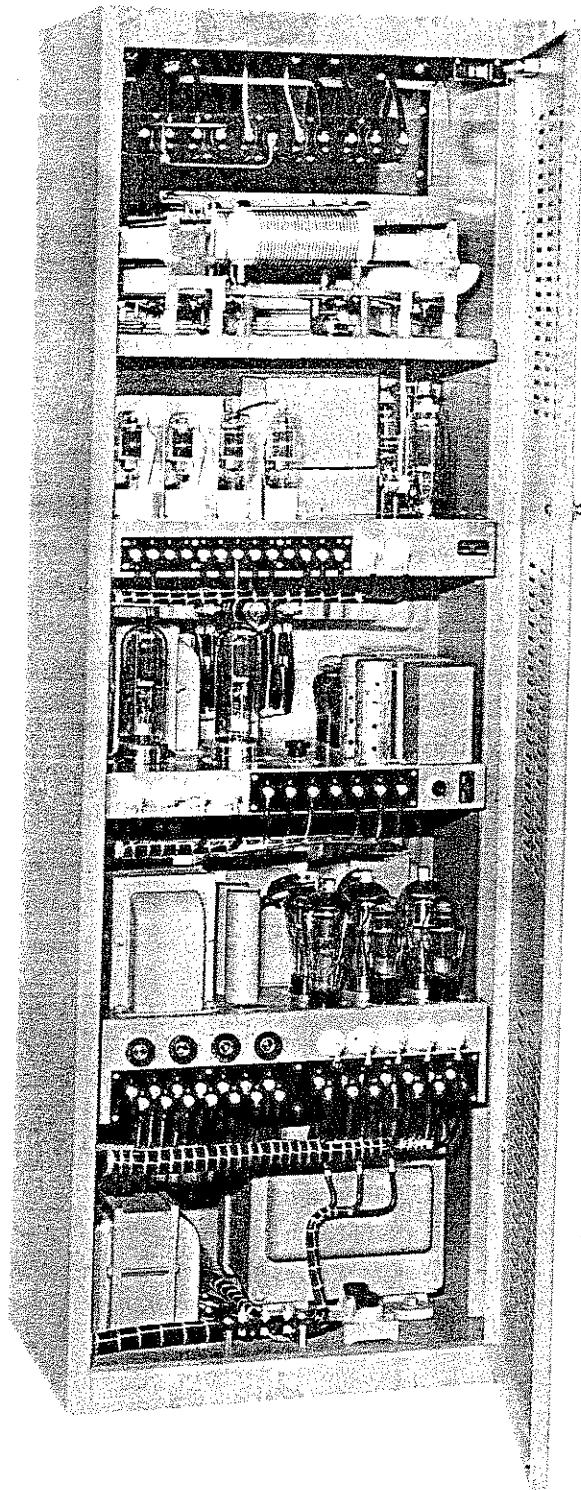
The 30J Transmitter is a general purpose model, rated at 250 watts output on radiotelephone and radiotelegraph. Its frequency range extends from 1.5 mc. to 60 mc.

The transmitter is compactly constructed in an attractively designed cabinet. All r-f tubes are mounted on a single deck and comprise an oscillator, three intermediate stages, and a push-pull power amplifier stage. The output circuit is a balanced pi network, arranged to couple the plates of the power amplifier tubes to a balanced transmission line. Speech amplifier and modulator components are constructed on a second deck and are arranged to modulate fully the r-f power amplifier stage. A plug-in receptacle is provided for direct connection of a diaphragm type crystal microphone or high impedance moving coil microphone. The power supply components are assembled in the lower section of the transmitter, and comprise a 1250 volt rectifier supplying the final r-f and class "B" modulator stages, a 575 volt rectifier supplying the intermediate r-f stages, and 375 volt rectifier supplying bias to the power amplifier and plate voltage to the oscillator and speech amplifier.

Pretuned, plug-in tank circuits are utilized for the low level r-f circuits. Adjustable plug-in coils are used in the output network. Six instruments mounted behind a plate-glass window indicate current and voltage conditions in important circuits. Conveniently grouped on the control panel are the filament and plate power switches with indicating lights, the filament voltage control, the send-receive switch, and the telephone-telegraph switch. Terminals are provided for extending the control circuits to a nearby operating position.

The 30J Transmitter is characterized by its neat and sturdy mechanical design, and by its efficient operation over a wide range of frequencies. The transmitter is completely enclosed, and the front and rear doors are fitted with safety inter-locks.





COLLINS 30J TRANSMITTER

SPECIFICATIONS

POWER OUTPUT: 250 watts (A1 and A3) at frequencies up to 30 mc. 150 watts at 60 mc.

FREQUENCY RANGE: 1.5 mc. to 60 mc.

FREQUENCY CHANGE METHOD: Plug-in coils and plug-in pretuned units.

R-F TUBES: 1—C-100D, 2—6L6G, 2—807, 2—C-101.

A-F TUBES: 2—6J7G, 2—6F6G, 2—C-120.

RECTIFIER TUBES: 4—C-866A, 2—5Z3.

FREQUENCY CONTROL: Direct crystal control by 292, 294 or 1C Mounted Quartz Plates.

MODULATION SYSTEM: High level Class B. Capability, 100%.

A-F RESPONSE: Uniform within ± 1.5 db from 50 to 5000 c.p.s.

A-F AMPLITUDE DISTORTION: Less than 10% r.m.s. total harmonics at any modulation level.

RESIDUAL NOISE LEVEL: More than 40 db below 100% modulation.

A-F INPUT LEVEL: —.03 volts to grid of first amplifier tube.

R-F OUTPUT IMPEDANCE: 30 to 1200 ohms $\pm j300$ ohms, balanced to ground.

CABINET DIMENSIONS: 60" high, 20" wide, 14" deep.

NET WEIGHT: 300 lbs. approx.

POWER SOURCE: 115 volts, 50 60 cycles, single phase.

POWER INPUT:

	Radiotelephone		Radiotelegraph	
"Stand-by"	350 w	"Stand-by"	310 w	
Unmodulated	1100 w	Key open	500 w	
100% modulated	1400 w	Key closed	1000 w	

Average power factor, 0.9

SERVICE RATING: Intermittent duty at max. ambient of 40° C.

CODE WORD: ZOTOZ

AUGUST 1938

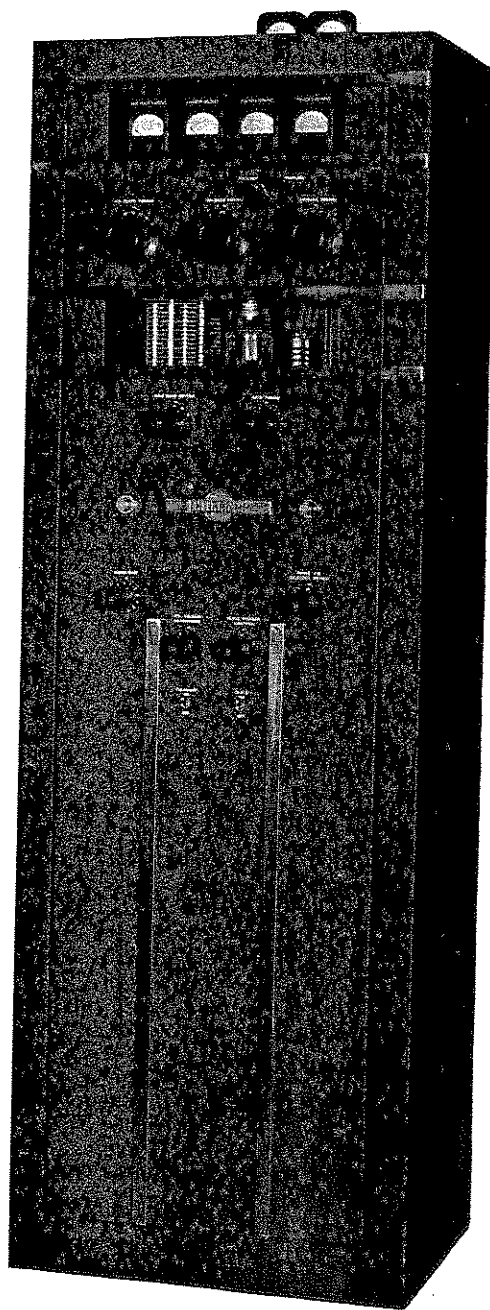
COLLINS RADIO COMPANY

CEDAR RAPIDS, IOWA—NEW YORK, N. Y.: 11 West 42nd St.

PRINTED IN U.S.A.

THE **C O L L I N S** 30K-1

amateur transmitter



500 watts input on CW, 375 watts input on phone

THE COLLINS 30K-1 AMATEUR TRANSMITTER

500 watts input on CW, 375 watts input on phone

The 30K-1 is for you who want quality and reliability. It combines the desires and dreams of hams with brass in their blood and also those who want only a push-to-talk button. It was designed by engineers to whom CQ is a cherished and friendly sound. Every detail has been worked out carefully to provide efficient, economical operation. Select quality components are used throughout to assure long, trouble-free life.

Versatile and reliable, it is thoroughly engineered for continuous operation. The 30K-1 amply meets the exacting requirements of amateur radio.

These features are for your advantage:

fully metered	speech clipper
PTO* controlled	115 v. a-c power source
smooth, modern styling	3 pairs antenna terminals
clean, sharp keying	band switching
unit construction	100% modulation
	fused primaries
	80, 40, 20, 15, 11, 10 meters

BANDSWITCHING

All circuits are bandswitched with the exception of the antenna tuning network. Two separate plug-in coils are supplied for that position—one covers 80 and 40 meters, the other covers 20, 15, 11, and 10 meters.

REMOTE CONTROL

The exciter unit, in a receiver type cabinet, sits on the operating desk right at your finger tips. With PTO* control, you can vary the operating frequency several kilocycles up or down, without retuning the final. A push-to-talk switch can be connected for phone operation.

SPEECH CLIPPER

The audio peak clipping circuit permits running the audio gain at a high level, thus maintaining a

high level of modulation. With the circuit set to become operative at 90% modulation, the carrier will not be overmodulated, and the high audio power in the carrier side bands strengthens the signal. Intelligibility is also improved, assisting the QSO during QRM or static. The clipper circuit is followed by a cut-off filter which attenuates all frequencies above 4000 cps.

CIRCUIT PROTECTION

Primary power circuits are well fused. The power amplifier bias circuit includes a plate power relay which opens if bias should fail.

EFFICIENCY

High efficiency is obtained on all bands. The low grid-plate capacity of the 4-125A eliminates the requirement for neutralization and makes the plate to grid reaction very small even on ten meters.

TUBE LINE-UP

- 1—4-125A r-f power amplifier
- 1—6SJ7 speech amplifier
- 1—6SN7 audio amplifier
- 1—6H6 speech clipper
- 1—6B4G modulator driver
- 2—75TH Class B modulators
- 1—5R4GY bias rectifier
- 1—5R4GY low voltage rectifier
- 2—866A high voltage rectifiers

METERS

Modulator plate current, filament voltages, power amplifier grid current, power amplifier plate current, r-f output.

RELAY OPERATION

An extra section is placed on the P. A. grid band-switch for operating automatically antenna relays, or other control relays.

* The Collins 70E-8A Permeability Tuned Oscillator

CONTROLS

- Plate ON-OFF switch
- Filament ON-OFF switch
- Phone-CW switch
- Audio gain control
- Filament voltage adjustment
- Low voltage-tune-operate switch
- P. A. grid tuning
- P. A. grid bandswitch
- P. A. plate tuning
- P. A. plate bandswitch
- Antenna loading

ANTENNA MATCHING

An antenna impedance matching circuit is incorporated in the output. It efficiently couples the 30K-1 to any antenna or transmission line that approximates an integral number of quarter wave lengths. A separate antenna tank is utilized, thus providing additional harmonic attenuation.

The antenna tank with its swinging link is plug-in. Only two coils are necessary to cover all bands from 80 meters through 10 meters. Either parallel or series tuning may be used, and adjustment is simple. The carrier frequency can be shifted over a considerable range without exceeding the amplifier tube plate dissipation rating.

DIMENSIONS

22" wide, 16½" deep, 66½" high.

FINISH

St. James Gray.

POWER SOURCE

115 volts a-c, 60 cps, single phase.

OTHER COLLINS EQUIPMENT FOR AMATEURS

32V-1 transmitter—150 watts input on CW, 120 watts on phone, 6 bands, bandswitching, PTO* control, table model.

75A-1 receiver—precision calibration, double conversion, extreme stability, high image rejection on all bands.

70E-8A PTO*—precision unit, 1600 kc to 2000 kc range, linear tuning.

310B-1—v.f.o. all band exciter—40 watts input.

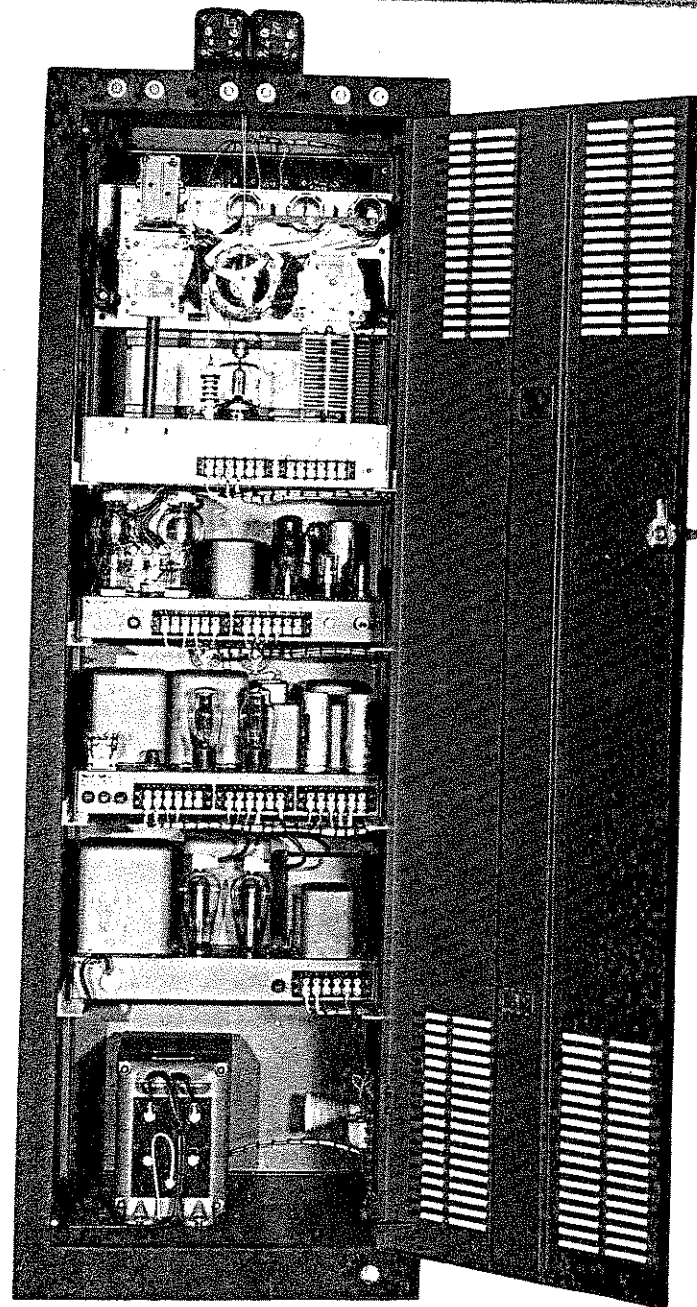
310B-3—Same as 310B-1, but with antenna network for use as low power transmitter or exciter.

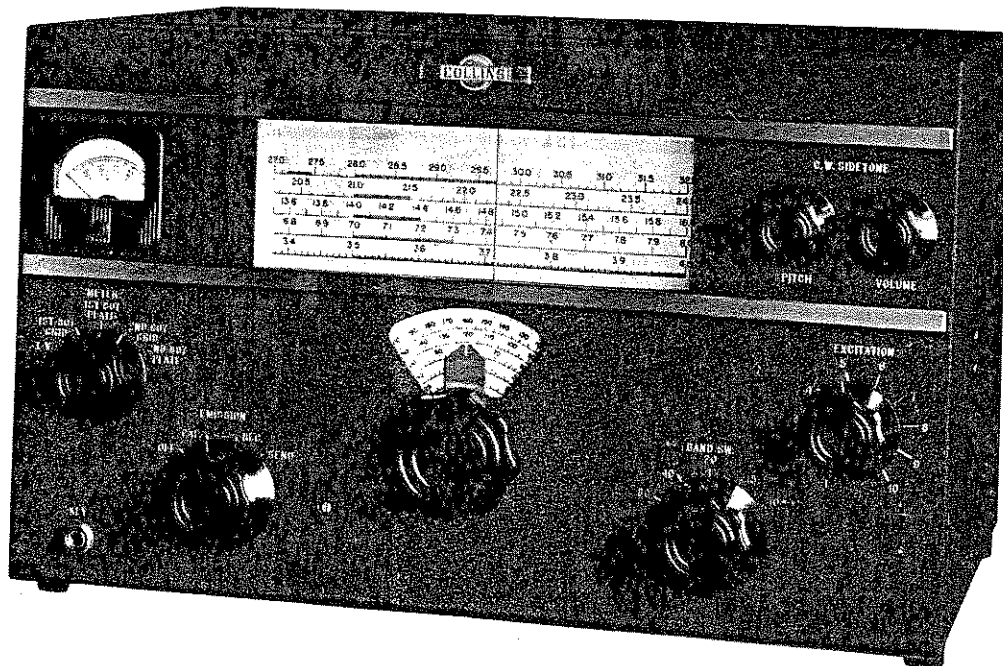
310C-1—80 meter frequency control unit.

310C-2—Same as 310C-1, but with power supply.

30K-1

rear view





The 310A-3 exciter unit for the 30K-1 has a Collins 70E-8A PTO, and an r-f output of 10 watts. All circuits are ganged together and controlled by a single tuning knob. The slide rule dial gives a rough indication of operating frequency, while the vernier dial provides a direct reading in kilocycles. Both accuracy and stability are very high. The PTO operates in the 160 meter band. The output tube in the exciter is an 807 which is used as a doubler on all bands except 80 meters.

One control bandswitches all circuits simultaneously. The 310A-3 covers the 80, 40, 20, 15, 11, and 10 meter bands. The send-receive switch has four positions—Off, Calibrate, Receive, and Send. In the Calibrate position, the exciter can be tuned to zero beat with a received signal without turning on the transmitter. This switch has extra sections which can be used to operate a transmitter relay and disable a receiver in the Send position.

A c-w sidetone oscillator is controlled at the front panel for pitch and volume. Grid block keying is provided. A keying filter eliminates key clicks. When the key is removed from the jack, the circuit is auto-

matically closed for phone operation. The exciter output is controlled at the front panel and is fed through a 73 ohm coaxial transmission line to a matching circuit associated with the grid coil in the transmitter.

The multi-range panel-mounted meter has a 5-position switch, and indicates the low voltage supply, and the grid and plate currents in the two 807 multiplier stages.

- Tube Lineup:
- 1—6SJ7 PTO
 - 1—6AG7 buffer amplifier
 - 1—6AG7 doubler
 - 1—807 multiplier
 - 1—807 multiplier
 - 1—6SL7GT c-w sidetone oscillator
 - 2—VR105 voltage regulators
 - 2—VR150 voltage regulators

Dimensions: 17 $\frac{1}{4}$ " w, 10 $\frac{1}{2}$ " h, 12 $\frac{1}{2}$ " d.

Power Source: 30K-1 power supply.

Net price of 30K-1, complete with 310A-3 Exciter, Tubes, Microphone Cord, R. F. Cable, Power Cable, and Instruction Book.....\$1,450.00

FOR RESULTS IN AMATEUR RADIO, IT'S . . .

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New York 18, N. Y.

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Los Angeles 13, California

