THE 30FXB TRANSMITTER

The 30FXB Transmitter is the latest 100 watt CW-Radiophone model designed to provide the highest possible performance at moderate cost.

General Specifications

POWER OUTPUT—100 watts, nominal rating.

FREQUENCY RANGE—1500-15,000 kc (provision for operation on higher and lower frequencies available on special order at a slight additional charge.) Coils for any one band furnished with the transmitter. New Isolantite coil forms are standard equipment.

FREQUENCY CONTROL—Direct crystal control with isolation of the crystal oscillator from the power amplifier by a buffer stage.

RADIO FREQUENCY TUBES—47 crystal oscillator, 2-46's parallel as buffers, 1-203A or 1-211 tube as power amplifier.

RECTIFIER TUBES—2-866 high voltage rectifiers, 1-5Z3 low voltage rectifier, 1-45 keying rectifier.

MAXIMUM PERCENTAGE OF MODULATION—100.

AUDIO FREQUENCY RANGE—70-10,000 cycles within plus or minus 1.5 DB.

AMPLITUDE DISTORTION—Less than 5% at 100% modulation.

KEYING—Grid block in the 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.

INSTRUMENTS—Six flush type high-grade instruments are furnished for reading oscillator and first amplifier plate current, second amplifier grid current, second amplifier plate current, modulator plate current, filament voltage and antenna current. All tuning operations and adjustments of the transmitter can be checked by means of these instruments.

SPEECH AMPLIFIER—The 7C Speech Amplifier designed primarily for use with a crystal microphone is furnished as an integral part of the 30FXB Transmitter. Thus, no external apparatus, except the microphone and telegraph key, is required and the installation is neat, self-contained and compact.

ANTENNA TUNING—A 2C pi section antenna matching network is furnished as standard equipment. This provision makes it possible to connect the 30FXB to any available antenna and to accomplish efficient energy transfer with proper attenuation of harmonics. (Arthur A. Collins, "A More Efficient Antenna Coupling System," QST February, 1934).

DIMENSIONS—60" high, 20½" wide, 20" deep. The Transmitter is mounted on a standard COLLINS 60" relay rack.

WEIGHT—Approximately 210 lbs.

SHIPPING WEIGHT—270 lbs.

Radio Frequency Tube Line-Up

The 30FXB Transmitter uses the new 10J Radio Frequency Unit. The final amplifier uses either a 203A or a 211 in a straight neutralized amplifier with a split stator tank circuit. Low-loss tank coils, mounted on Isolantite forms, are used in all stages and the oscillator and buffer tank coils are provided with fixed taps which automatically match impedances and provide adequate excitation. The buffer can be operated as a doubler, especially on 14 mc. operation when a 7 mc. crystal is employed. The exacting design of this Unit has made it possible to realize very high efficiency in the final stage due to proper load relations and adequate grid excitation, especially on 14 mc.

Fixed Neutralization

All neutralization in the 30FXB Transmitter is fixed at the factory so that the user does not have to do any balancing of the various circuits. 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.

Radiophone Operation

Two 830B's serve as class B modulators for radiophone operation. These tubes have a rated power output of 170 watts, but they are required to deliver only 100 watts of audio power to fully modulate the 200 watt plate input into the 203A class C stage, so that they can be operated with negligible distortion. Provision is also made for inserting RCA 800's or 830's as modulators in case the 830B's are not available.

The Speech Amplifier is the COLLINS 7C Unit described in a separate bulletin. The use of this Amplifier in connection with a crystal microphone insures remarkable audio fidelity. It is also a very convenient arrangement in that it is compact and entirely self-contained within the transmitter. No microphone batteries or pre-amplifiers are required. A special impedance matching unit can be furnished so that moving coil or ribbon type microphones may be used. However, the crystal type of microphone is recommended.

Power Supply

The 405C Power Unit incorporated in the 30FXB Transmitter is of very rugged construction, electrically and mechanically,although it is built in very compact form. The high voltage rectifier using 2-866's delivers 1,000 volts D. C. at 200 to 400 Ma. for radiophone operation and 12500 volts D. C. at 200 Ma. for telegraph operation. The change in voltage output is made by means of a tap on the plate transformer primary. The choke input filter uses a 4 mfd. 2,000 volt pyranol filter condenser. The low voltage rectifier supplying the oscillator and buffer stages delivers 400 volts D. C. at 125 Ma. with a 5Z3 high-vacuum rectifier. A 45 connected as a diode rectifier furnishes a negative potential for grid block keying of the final amplifier.

Constructional Details

The external dimensions of the 30FXB Transmitter have been outlined under GENERAL SPECIFICATIONS. The 10J Unit employs a dull finish aluminum panel. The chassis sub-assembly is of burnished aluminum accurately formed and pierced. Wiring is rigid conductor or laced cable. Coupling condensers are high-grade mica and resistors are of the wire wound vitreous enamel type. Special Cardwell condensers are used for tuning. Inductances are wound on low-loss Isolantite forms.

The modulator and power supply chassis are heavily copper-plated steel finished with aluminum duco. Transformers are fully encased and every component is designed for continuous duty under full load. Connections are also provided for the key and standby switch.

GUARANTEE—In common with other COLLINS products, the 30FXB Transmitter is unconditionally guaranteed to give complete satisfaction and every purchaser is given individual attention to see that his particular installation is performing at greatest efficiency.

Price On Application

— 30FXB TRANSMITTER —

3309 I Maunaloa Ave.
Honolulu, Hawaii
May 26, 1934

Mr. Arthur A. Collins
Collins Radio Company
Cedar Rapids, Iowa

Dear Mr. Collins,

I received your good letter of the eighth and the 20 meter coil and I want to thank you for your very kind consideration.

I am very satisfied with the splendid performance of the 4-A transmitter. It lives up to your advertisement and more! During the five weeks that I have had it, I worked all W districts (within one week), VE 3-4-5, KA, J, AC, PK, VK, etc. on 40 meters. This is not the limit by all means. Hi. All of them report my sigs as T9, QSA 4-5, R6-7-8.

My antenna is 66'7" long Zepp with 33' feeders, direction almost exactly north and south, height, 30 feet at feeder (south) end, and 40 feet at north end.

The results are surely FB and would recommend the 4-A transmitter to every ham who wants to start off with a moderate investment and get the most out of it.

Just dropping you a line to tell you that I have become one of the many satisfied Collins' users, I remain

Very truly yours,

Norman T. Kobayashi
K6KCB