

NEW

60-WATT RADIO TRANSMITTER

**NEW****MECK****MODEL
T60-1***T60-2*

**EFFICIENT PERFORMANCE
ON ANY AMATEUR BAND
10 TO 80 METERS
PHONE OR C. W.**

☆ Metal Cabinet, 15" x 11" x 9"

☆ Combined Plate and Screen Modulation

☆ Plug-In Coils for Band Selection

1 set of coils covering 10 and 11 meter bands furnished.
Coils for other bands available at additional cost.

☆ Two Complete Built-in 60-Cycle Power Supplies

1 for final RF and 1 for Modulator . . . Speech Amplifier
. . . Oscillator

NEW COMPACT SINGLE UNIT

This new compact single unit transmitter is extremely simple to operate yet flexible in application.

TRANSMITTER

A 6L6G tube is used in a regenerative oscillator circuit which operates with the output of the crystal frequency on all bands except 10 meters. For operation on 10 meters, the plate of the oscillator is tuned to the second harmonic of the crystal with ample driving power because of the regenerative oscillator circuit. This oscillator drives two 6L6G's operating as push-push doublers in the final RF amplifier. This provides an efficient method of doubling in the final on all bands.

MODULATION

The microphone preamplifier consists of a single 6SN7 GT G connected as a cascaded amplifier. This is followed by another 6SN7 GT G which functions as a phase in-

verter. Two 6L6G's in push-pull, operating as class AB amplifiers, are used as modulators. Any crystal or high impedance dynamic microphone may be used!

ADDITIONAL FEATURES

Built-in antenna changeover relay; provisions for plug-in Battery or Vibrapot operation; meter switching to final amplifier grid or plate circuits for tuning; crystal socket on front panel for rapid frequency changing; send receive switch equipped with extra contacts wired to terminal strip on rear of chassis for receiver standby.

TUBES FURNISHED

1-6L6G oscillator (oscillator-doubler on 10 meters); 2-6L6G final amplifier doubler; 1-6SN7 GT G cascaded 2 stage speech amplifier; 1-6SN7 GT G phase inverter driver; 2-6L6G push-pull modulator; 1-5U4G final RF amplifier rectifier; 1-5U4G modulator, speech amplifier and oscillator rectifier.



MECK TRANSMITTERS

JOHN MECK INDUSTRIES, Inc., PLYMOUTH, IND.

SPECIAL NOTICE

The tubes and coils are packed inside the transmitter case. Unpack and handle carefully so as not to damage the coils.

One set of coils, for operation on the 10 or 11 meter amateur bands, is furnished with this transmitter. Coils for other amateur bands are available at \$5.50 per set of 2 coils for each band.

Termination of War contracts left us with a small quantity of 6SL5 KC BT cut crystals and we are including one of these crystals with each transmitter as long as this supply lasts. This crystal is for operation in the 11 meter band at 27.260 K.C. BT cut crystals should be used for 10 and 11 meter band operation where doubling in the oscillator is required. BT and AT cut crystals are also desirable for operation on their fundamental frequencies because of their low drift characteristics.

The plate voltage to the final RF Amplifiers is approximately 400 Volts at 120 AC line voltage.

When operating C.W. the gain control should be kept at zero.

NOTICE -

The "Red" pilot bulb (left - type 51) is in the cathode circuit of the final RF Amplifier and serves as a fuse and modulation indicator. If there are no meter readings on both the PA Grid and PA Cathode, this usually indicates that this pilot bulb must be replaced.

INSTRUCTIONS FOR

MECK AMATEUR RADIO TRANSMITTER MODEL T60-1

JOHN MECK INDUSTRIES, INC. PLYMOUTH, INDIANA

General

This transmitter is designed to give the amateur a compact single unit transmitter that is extremely simple to operate and at the same time flexible in its application. The T60-1 will perform well on any amateur band from 10 to 80 meters either on phone or C. W.

Features

1. Built in antenna changeover relay.
2. Combined plate and screen modulation.
3. 60 Watts input to the final with remarkably high efficiency.
4. Provisions for plug in Battery or Vibropac operation.
5. CW Keying jack in oscillator circuit.
6. 2 Complete built-in 60 cycle A.C. power supplies - 1 for the final RF amplifiers and 1 for the modulator, speech amplifier and oscillator.
7. Meter switching to final amplifier grid or plate circuits for tuning.
8. Crystal socket on front panel for rapid frequency changing.
9. Plug in coils for band switching.
10. Only 2 simple RF tuning controls and 1 speech amplifier gain control.
11. Send receive switch equipped with extra contacts wired to the terminal strip on rear of chassis for receiver standby.
12. Green pilot lite indicates heaters are on - Red pilot lite on when transmitting.
13. Power amplifier "off" switch for tuning the oscillator only.
14. Easily replaceable fuse on back of chassis.
15. Built-in high gain speech amplifier for crystal or high impedance dynamic microphone with gain control.
16. All this in a hinged cover table type of metal cabinet 15" x 11" x 9".

Tubes

- 1 - 6L6G oscillator. (oscillator - doubler on 10 meter)
- 2 - 6L6G final amplifier doubler.
- 1 - 6SN7 GT/C cascaded 2 stage speech amplifier.
- 1 - 6SN7 GT/C phase inverter driver.
- 2 - 6L6G push pull modulator.
- 1 - 5U4G final RF amplifier rectifier.
- 1 - 5U4G modulator, speech amplifier and oscillator rectifier.

CIRCUIT DESCRIPTION

Transmitter Section

A 6L6G tube is used in a regenerative oscillator circuit which operates with the output at the crystal frequency on all bands except 10 meters. For operation on 10 meters the plate of the oscillator is tuned to the second harmonic of the crystal with ample driving power because of the regenerative oscillator circuit. This oscillator drives the grids of the two final 6L6's in push pull with the plates in parallel operating as push-push doublers. This provides an efficient method of doubling in the final on all hands.

Modulation and Speech Section

The microphone preamplifier consists of a single 6SN7 GT/G connected as a two stage cascaded amplifier. This is followed by another 6SN7 GT/G which functions as a phase inverter. Two 6L6G's in push pull, operating as class AB amplifiers, are used as modulators.

POWER SUPPLY

Two separate power supplies are employed. Each uses a 5U4G tube as the rectifier, and each has approximately the same current demands. One supply furnishes high voltage DC for the final RF amplifiers and the other for the modulator, speech amplifier and the oscillator. A 3 ampere type 3AG easily replaceable fuse is used in the 60 cycle power supply lead as a safety precaution.

OPERATION

Important Notice

This transmitter can be operated on either 105-125V 60 cycle AC or a power supply delivering 6V DC at 6 amperes and 400 V DC at 350 ma. For operation from an AC supply, the dummy plug furnished, must be inserted in the 7 prong socket located on the rear of chassis. If operation is desired from a DC pack, its plug must be connected as shown in schematic diagram.

All connections should be made to the transmitter before the line cord is plugged into the 60 cycle power line or the DC Power pack turned on.

Preliminary Connections

An antenna, preferably one with a low impedance line, approximately 72 ohms, should be connected to terminals on the front marked ANT.

The Receiver antenna terminals should be connected to terminals marked RCVR on the transmitter.

The Receiver antenna terminals should be connected to terminals marked RCVR on the transmitter.

The relay in the transmitter provides antenna changeover from receiver to transmitter. If it is desired to disable your receiver while transmitting, connect two leads from receiver B supply to terminals on rear of chassis which are marked RCVR. **DISABLING.** For more efficient operation when used continuously on CW and for additional protection to the final RF amplifier tubes, an external C bias battery of 22½ to 45 volts should be connected to the terminals on the rear of the chassis which are marked **EXT. BIAS.** Polarity should be as indicated. Use caution in connecting this battery since both terminals are above ground. (Note- normally these terminals will be connected with a shorting wire, which must be removed when an C battery is used.)

Any ordinary medium level crystal or dynamic high impedance microphone can be used and is connected to the amphenol microphone connector located on the front panel. For operating on C.W., the key plug is to be inserted in the jack provided on front panel.

Tuning Procedure

BANK	CRYSTAL FREQ.	OSC. COIL-NO.	Final coil-No.	OPERATING	
				FREQ.	
10 Meter	7000 - 7425 KC	20 Meter-2121	10 Meter-2144	28.0-29.7 mc.	
11 Meter	6790 - 6835 KC	20 Meter-2121	10 Meter-2144	27.160-27.340	
20 Meter	7000 - 7200 KC	40 Meter-2149	20 Meter-2147	14.0-14.4 mc.	
40 Meter	3500 - 3650 KC	80 Meter-2150	40 Meter-2148	7.0-7.3 mc.	
80 Meter	1750 - 2000 KC	160 Meter-2123	80 Meter-2122	3.5-4.0 mc.	

Select the proper crystal for the desired band from the above chart, and insert in crystal socket on front panel. (ET cut crystals are recommended for crystal frequencies above 5000 KC - AT cut for below 5000 KC). Select the proper oscillator and final coils as per the above chart and insert in the proper sockets on chassis.

With the SEND-REC. switch in the REC. position and the P.A. OFF switch in the off position, the transmitter may be turned on.

Allow about 30 seconds for tube warm-up, then place the meter switch in the P.A. GRID position and the SEND-REC. Switch in the SEND position. Adjust OSC. TUNING control for maximum meter reading. (normal grid current is approximately 6 to 7 ma. on the lower scale.)

The meter switch should now be changed to P.A. CATHODE position and the P.A. OFF switch to the up or on position. Red pilot lite will now be illuminated, indicating that power has been applied to the final. Immediately adjust the P.A. TUNING control for minimum reading on the meter.

The "Red" pilot bulb (left-type 51) is in the cathode circuit of the final RF Amplifier and serves as a fuse and modulation indicator. If there are no meter readings on both the P.A. Grid and P.A. Cathode, this usually indicates that this pilot bulb must be replaced.

Adjust the link on final tank coil to give P.A. CATHODE reading of not over 160 ma. on upper scale when the P.A. TUNING is adjusted to the minimum.

The plate voltage to the final RF Amplifiers is approximately 400 Volts at 120 AC line voltage.

If phone operation is desired, adjust GAIN control to give proper amount of modulation. If operating on C.W. it will be necessary to tune the transmitter with the key plug removed, or with keyclosed, if its plug is left in the key jack.

When operating C.W. the gain control should be kept at zero.

The oscillator regeneration adjustment is set at the point of normal feed-back required for the average BT cut crystal when operating as a doubler or AT cut crystal operating on its fundamental frequency. This feedback may be changed by means of the "Osc. Regen. Adj." located on the front center of the chassis. Turning the screw driver to the right increases the regeneration or feedback thereby increasing the grid drive. This feed-back should not be increased to the point of self oscillation as will be indicated by a grid current reading with the crystal removed from its socket. Excessive feed-back will also fracture the crystal.

One set of coils for operation on the 10 or 11 meter amateur band, is furnished with this transmitter. Coils for other amateur bands will be available at a later date at \$5.50 per set of 2 coils for each band.

Termination of War contracts left us with a small quantity of 6815 KC BT cut crystals and we are including one of these crystals with each transmitter as long as this supply lasts. This crystal is for operation in the 11 meter band at 27.260 K.C. BT cut crystals should be used for 10 and 11 meter band operation where doubling in the oscillator is required. BT and AT cut crystals are also desirable for operation on their fundamental frequencies because of their low drift characteristics.

JOHN MECK INDUSTRIES, PLYMOUTH, INDIANA

AUDAR, INC. DIVISION



FINAL COIL

OSCILLATOR COIL

80	80 JVL 4 TURNS REMOVED FROM EACH END	160 MC TAPPED 16 TURNS FROM EACH END
40	40 JVL 2 TURNS REMOVED FROM EACH END	80 MC TAPPED 15 TURNS FROM EACH END
20	20 JVL	40 MC TAPPED 8 TURNS FROM EACH END
10	10 JVL 1 TURN REMOVED FROM EACH END	20 MC TAPPED 2 TURNS FROM EACH END