OPERATING INSTRUCTIONS FOR AMECO 6-METER CONVERTER MODEL CB-6

The Ameco 6-meter Converter, Model CB-6, is a crystal-controlled, broadband Converter. When used in conjunction with a receiver, it will provide reception of the 6-meter amateur band - 50 Mc. to 54 Mc. The converter uses a 6ES8 cascode r-f amplifier and a 6U8A mixer-oscillator.

The circuitry used, together with considerable internal shielding and by-passing, provide high sensitivity to the desired signals and maximum rejection of spurious, undesired signals. A novel feature of this unit is that the output frequency may be changed by simply changing the crystal and the tap on the output coil. This feature prevents the converter from becoming obsolete when the receiver is changed to a different type.

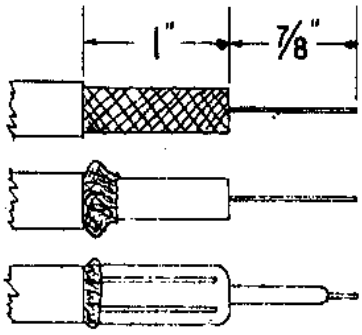
POWER REQUIREMENTS

The converter requires 6.3 V. AC at .815A for the filaments and 100 to 150 V. DC at 16 Ma. for the plates and screen. This power may be obtained from the receiver or from the Ameco Power Supply, Model PS-1. The receiver should be a good quality commercial receiver. Do not attempt to take power from an AC-DC receiver. If the Ameco Power Supply, Model PS-1 is used, merely plug the power supply into the converter. The socket of the power supply mates with the plug of the converter. The power supply socket is wired to apply the correct voltages to the converter. In the event that power for the converter is taken from the receiver or some other source, wire the socket that will mate with the converter plug so that the receiver chassis is connected to pin 2, 6.3 volt filament to pin 7 and B+ (150 V.) to pin 8. (See the schematic at the end of the instructions).

If the receiver B+ is over 150 volts, add a resistor in series with the B+ lead. With 250 volts B+, use a 6000 ohm, 5 or 10 watt resistor; with 200 volts, use a 3000 ohm, 2 watt carbon resistor. Use ohms law and the power formula to figure out the resistor specifications for other voltages.

CABLE REQUIREMENTS

The connections to the input and output of the converter should be made with 50 ohm coaxial cable (RG8/U or RG58/U) terminated with auto radio antenna plugs (Ameco #AP-1 or Cinch #1320). The cable is connected to the plug in the manner shown:



emove outer vinyl covering for 1-7/8".
Strip braid and inner insulation off center conductor for 7/8".
Push braid back to form a bead all around.
Insert center conductor through pin until braid is against end of plug.
Bend center conductor to hold plug in place.
Roll braid between fingers to roll it over the end of the plug for about 1/16".
Solder the braid to the four tabs of the plug.
Solder the center conductor to the pin and cut off excess wire.

The coaxial cable from the output of the converter to the receiver can be up to a maximum of about three feet. If some undesirable IF signals are getting through, the chances are that it is due to the long ground wire (at the antenna terminal strip) inside most receivers. A short jumper wire (1 or 2 inches) between the converter chassis and the receiver chassis will usually correct this.

ANTENNA REQUIREMENTS

Any type of 6-meter antenna may be used with this converter. A rotatable beam is best; however, a quarter wave whip, a ground plane, a halo or other type may be used. While the input and output impedance is not critical, it is nominally 50 ohms and 50 ohm coaxial cable should be used between the antenna and the converter. If the antenna terminates at 300 ohms and 300 ohm transmission line is used, then a matching balun* should be used between the line and the converter.

ALIGNMENT PROCEDURE WITHOUT INSTRUMENTS

A. Put the tubes and shields in place and connect the power supply to the converter.
B. Connect the output of the converter to the antenna terminals of the receiver with coaxial cable.
C. Tune the receiver approximately 1.3 Mc. up the band. (For example, if a 7-11 Mc. output is used, tune the receiver to 8.3 Mc.).
D. Connect the antenna temporarily to the mixer grid (terminal C of transformer A-7595-C).

*The Ameco Model VB-1 Balun is recommended for this purpose. It matches a 300 ohm balanced line to a 50 to 75 ohm unbalanced converter input.