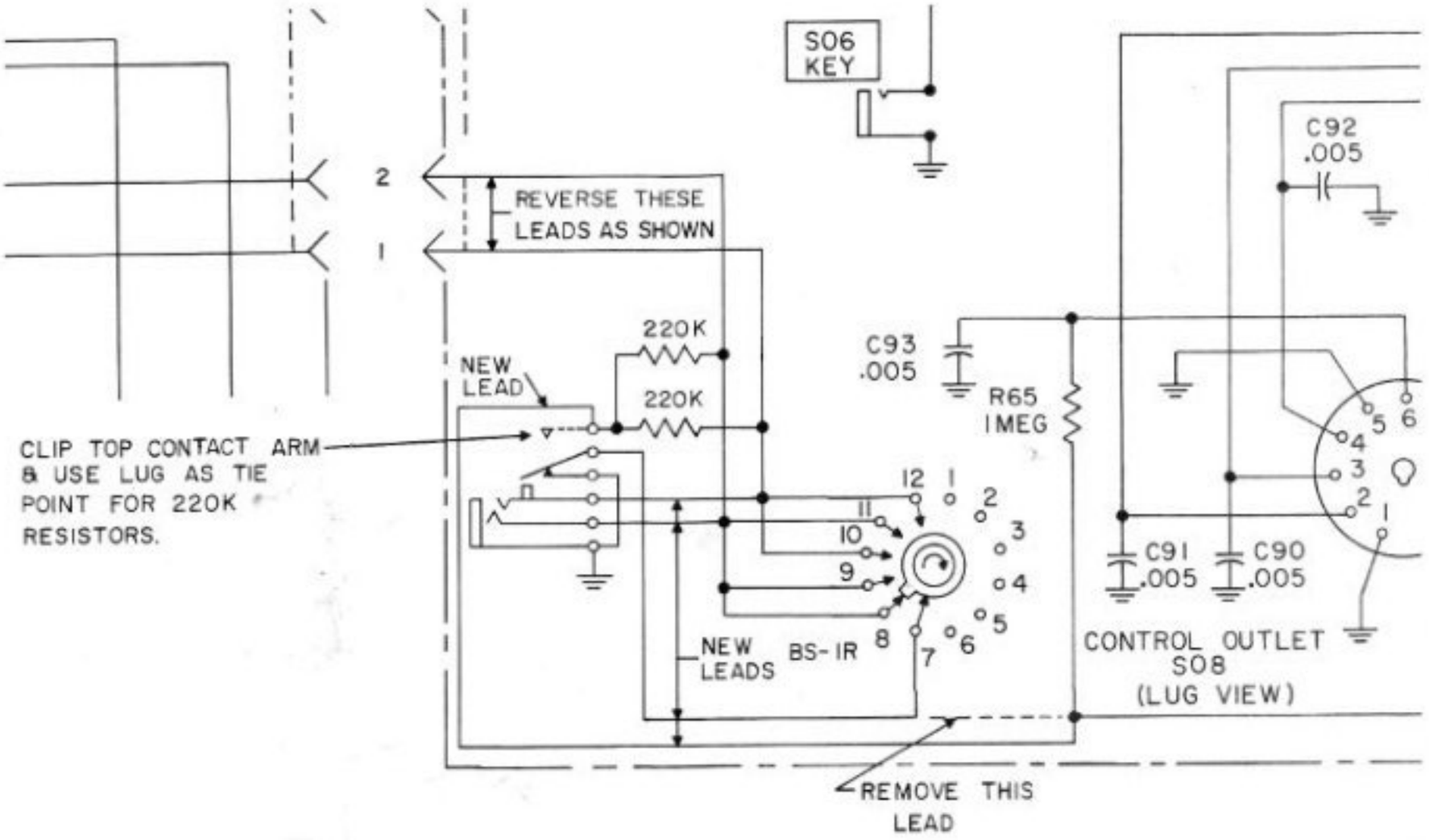

Partial Schematic Diagram Of HT–32 Showing RTTY Conversion

CONVERSION OF HT-32 TRANSMITTER

FOR

TELETYPE OPERATION

the hallicrafters co.

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GENERAL

This suggested method of converting our HT-32 transmitter for RTTY is extremely simple and does not require the drilling of any holes in the unit. The conversion can generally be made in less than one hour.

THEORY OF OPERATION

In the HT-32 the sideband switching oscillators, a 12AT7 tube V4, operate at either 4.05 MC or 13.95 MC, depending upon which sideband is to be transmitted. When either of these two frequencies is mixed with the 4.95 MC SSB signal, the resultant is a 9.0 MC signal at the output of the sideband generator.

To disable either of the two oscillator sections of V4, blocking bias is applied to the grids via certain band switch sections. Hence, if certain bias wiring changes are accomplished, both oscillator tubes could be biased to cutoff. Then, upon keying either tube, an output signal would be present.

If the frequency on one of the oscillators were shifted 850 CPS then, as both oscillators were alternately keyed by an RTTY signal, a frequency shift RF carrier would be had.

It is not important which of the two oscillators be changed in frequency from the factory setting. However, the higher frequency oscillator, 13.95 MC, marked LOWER SB, can be more readily shifted to a lower frequency with negligible loss of output. Trimmer C130 can be used to accomplish this shift. When the trimmer is moved for RTTY, it must be returned to its original factory setting for SSB. It is suggested, therefore, that a plug-in trimmer, hereinafter described, be employed to obtain the shift.

As additional frequency conversion is employed on 40, 15, and 10 meters, the frequency shift reverses on these bands from 80 to 20 meters. Thus, on 80 and 20 meters, the shifted signal is lower than the indicated V. F. O. dial. On 40, 15, and 20 meters, the shift is higher.

The schematic diagram contained herein must be referenced to the over-all schematic of the HT-32, Figure 12 of the Instruction Book. BS-1R is the reversed side of the band switch wafer nearest the front panel of the transmitter. It is necessary to remove the transmitter from the cabinet to locate the wafer.

PARTS REQUIRED FOR RTTY CONVERSION OF HT-32

Polar Relay or Polar Key Board

3 Conductor Plug (Mallory Type 76)

3 Conductor Jack (Switch-Craft Type C55B)

2 Resistors (220 K OHM +10% 1/2 watt)

Test Socket Adapter (Peco Model TB S9)

Ceramic Trimmer Capacitor 1.5 to 7 MMF NPO (Erie Resistor Co. Style 555-07)

PROCEDURE

1. Install phone jack in 3/8" diameter hole on rear chassis apron.

2. Wire phone jack. (See Schematic Diagram contained herein.)

3. Wire phone plug to polar relay or polar keyboard, where the sleeve of the phone plug is wired to the movable contact, the ring to one fixed contact, and the tip to the other fixed contact.

4. Solder the 1.5 to 7 MMF trimmer between terminals 5 and 7 on Peco Test Socket Adapter.

5. Remove Sideband Switching Oscillator Tube V4, (12AT7).

6. Plug Peco Test Socket into socket from which V4 was removed.

7. Plug V4 (12AT7) into test socket.

8. Short the 3 conductor phone plug that is in the 3 conductor phone jack and tune the signal on a receiver and adjust the 1.5 to 7 MMF trimmer for a 850 cycle note.