

1A FAULT LOCATOR
(W. E. CO. J-94730A)
DESCRIPTION

1. GENERAL

1.01 The W. E. Co. J-94730 fault locator is used for detecting and isolating crosses and false grounds in point to point or multiple wiring. The fault locator is also used to make cable continuity tests.

1.02 This section describes the major components of the fault locator. Also included is a description of a modified oscillator to illustrate how the functions of the unit can be simplified or altered to expedite testing. The oscillator described in Part 3, is a modified version of the J-94730B oscillator; the modification is not available from W. E. Co.

1.03 Refer to Section 108-701-500 for test procedures and auxiliary testing apparatus.

2. DESCRIPTION

2.01 The following components comprise a complete fault locator:

- (a) One J-94730B oscillator.
- (b) One 147-type amplifier (with belt clip and carrying strap).
- (c) One 572A tool (probe).
- (d) One 723A receiver.
- (e) One ladder strap.
- (f) One carrying case.
- (g) One 1W13B test cord assembly.
- (h) Two W1AK test cord assemblies.

2.02 The fault locator components (including carrying case) weigh 12 pounds. Major components are described in Paragraphs 2.03-2.11. Figure 1 shows all of the components.

Oscillator

2.03 The J-94730B oscillator (Figure 2) is mounted in an aluminum case. Outside dimensions are 7 3/16 in. x 4 1/4 in. x 4 5/8 in. A 3-wire, plug-ended cord supplies commercial power to ground the case and cover of the oscillator. A plug adapter is furnished for 2-wire outlets. Controls and jacks are shown in Figure 2.

(a) The T/W toggle switch provides whistle or tone.

(1) In the T (tone) position, the oscillator circuit is arranged at a fixed frequency to locate crosses.

(2) In the W (whistle) position, the oscillator circuit is arranged for variable-frequency operation to identify opens, crosses with other leads, and crosses with battery or ground.

(b) The HR/LRT toggle switch provides for high range or low range audible indication.

(1) In the HR (high range) position, and with the T/W switch in the W position, the oscillator produces an audible whistle on leads of 1000-10,000 ft. in length.

(2) In the LRT (low range and tone) position, and with the T/W switch in the W position, the oscillator produces an audible whistle on leads of approximately 1000 ft. in length.

NOTE: The HR/LRT switch must be in the LRT position whenever the T/W switch is in the T position.

(c) The VOLUME knob controls a potentiometer for adjusting the volume of the tone.

(d) The PL pilot lamp glows when power is connected to the oscillator.

(e) The WT (whistle or tone) jack has two functions:

(1) To connect the oscillator to the lead to be tested.

(2) In conjunction with the T (tone) or TC (tone-capacitor) jacks, to connect the 500-cycle frequency when a probe is used to locate a cross.

(f) The RW (remote whistle) jack is used in conjunction with the T jack to connect the oscillator to the distant end in a two-man continuity test.

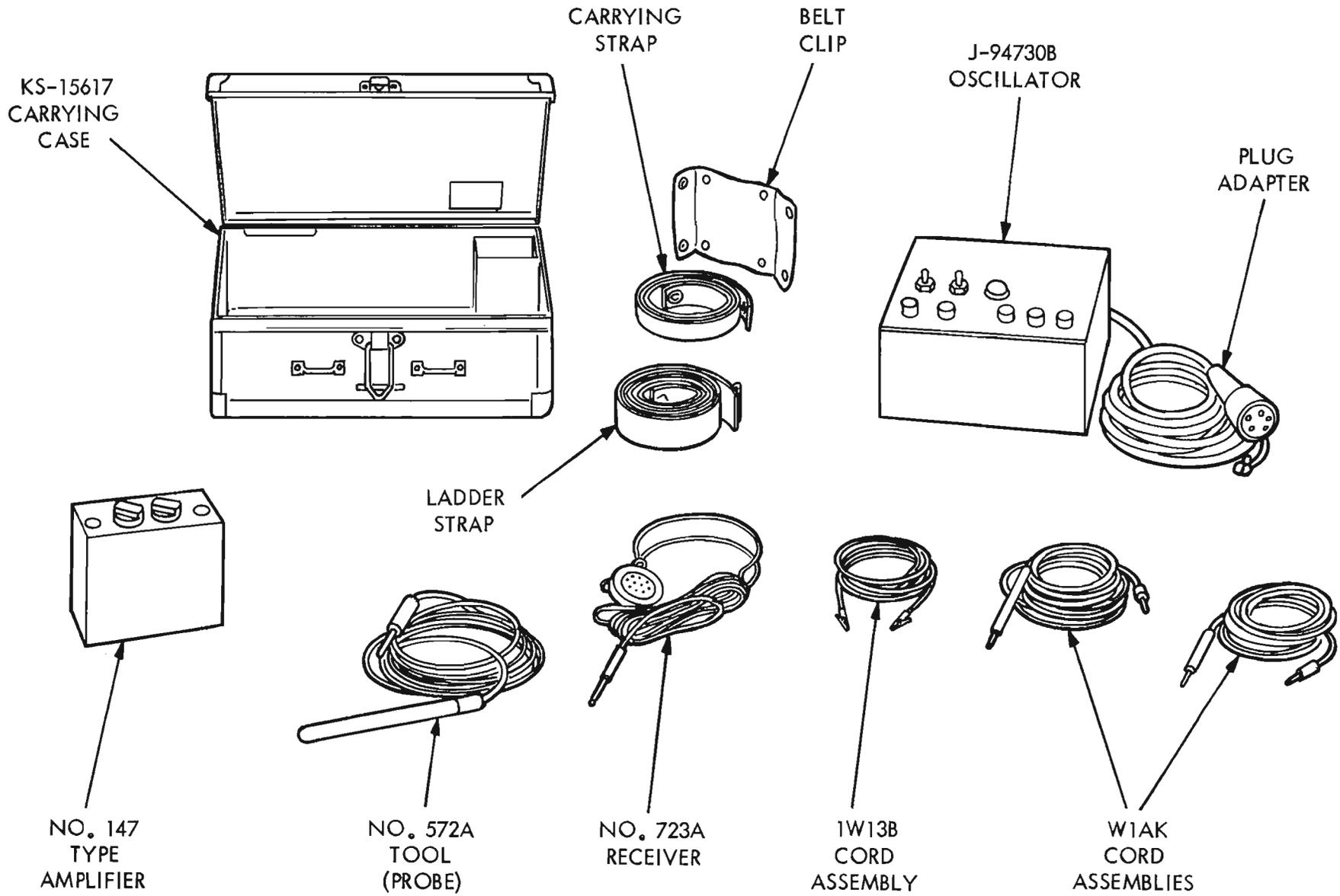


Figure 1. 1A Fault Locator Components

2.04 The oscillator can be secured to a rolling ladder by means of the brackets at each end of the case, and by the ladder strap.

Amplifier

2.05 The amplifier (Figure 3) is mounted in an aluminum casing. Outside dimensions are 4 7/16 in x 4 7/16 in. x 1 7/16 in.

2.06 The COIL/PROBE selector switch should be in the COIL position at all times.

2.07 The VOLUME selector knob controls a potentiometer for adjusting tone output to the receiver.

2.08 The INPUT jack is used to connect the 572A probe to the amplifier.

2.09 The REC (receiver) jack is used to connect the receiver and battery supply to the amplifier.

2.10 The amplifier is carried by a strap or belt clip. The strap or clip is attached to the unit by snap fasteners.

572A Probe

2.11 The 572A magnetic-type probe is 1/2 inch in diameter and 6 5/8 inches long. It is used to identify leads and locate crosses by picking up the 500-cycle frequency supplied by the oscillator to the leads under test.

3. MODIFIED J-94730B OSCILLATOR

3.01 The oscillator shown in Figure 4 was modified to arrange the circuit for testing leads (which may or may not be connected to battery or ground) by operating a WT/WB switch. The switch is in the WT position when testing leads not normally connected to battery or ground. The switch is in the WB position when testing leads which are connected to battery or ground.

NOTE: This modified unit is not available from W.E.Co.

3.02 Figure 5 is a partial schematic of the oscillator circuit showing how the modification (dotted lines) is added to the standard W.E.Co. circuit.

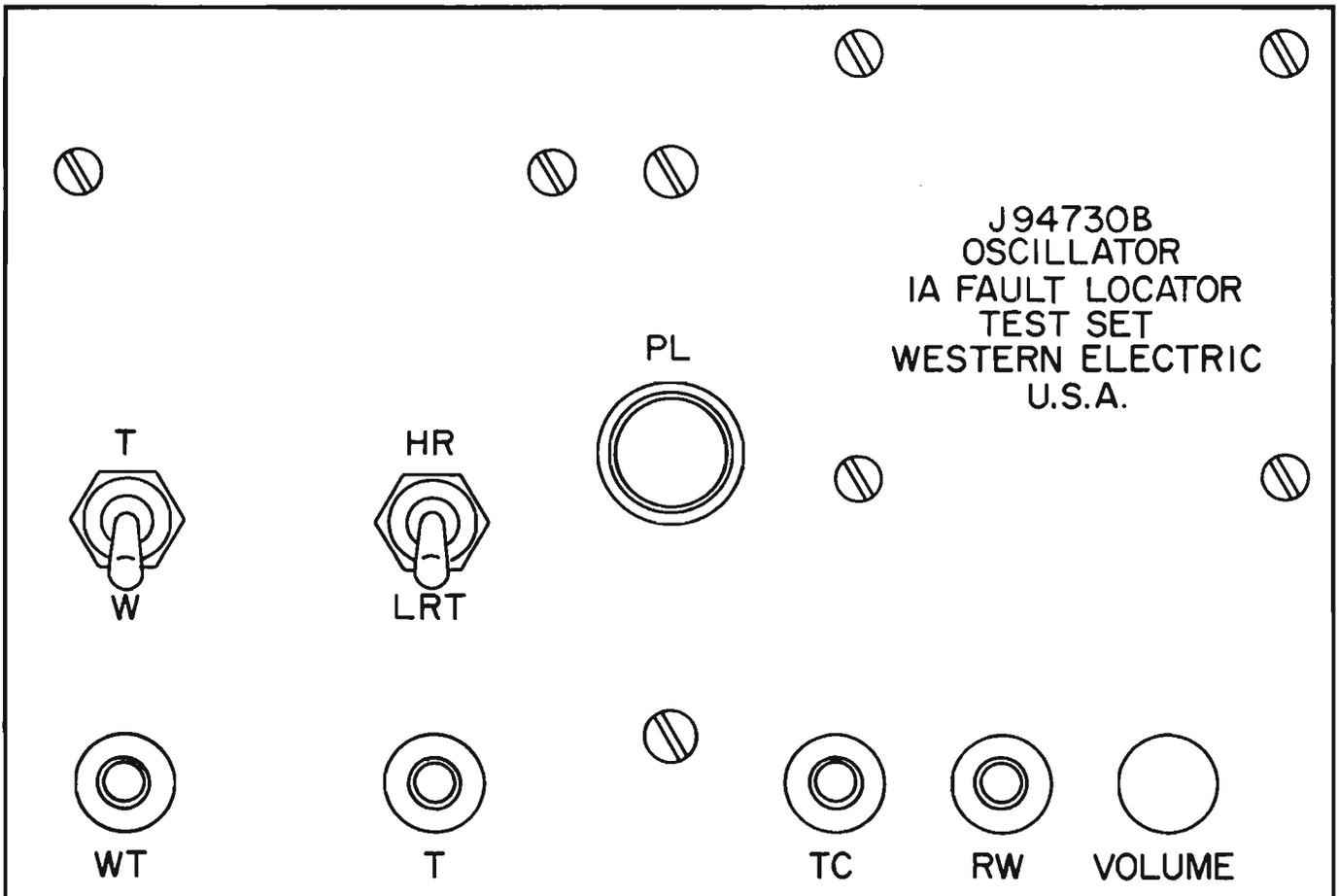


Figure 2. J-94730B Oscillator

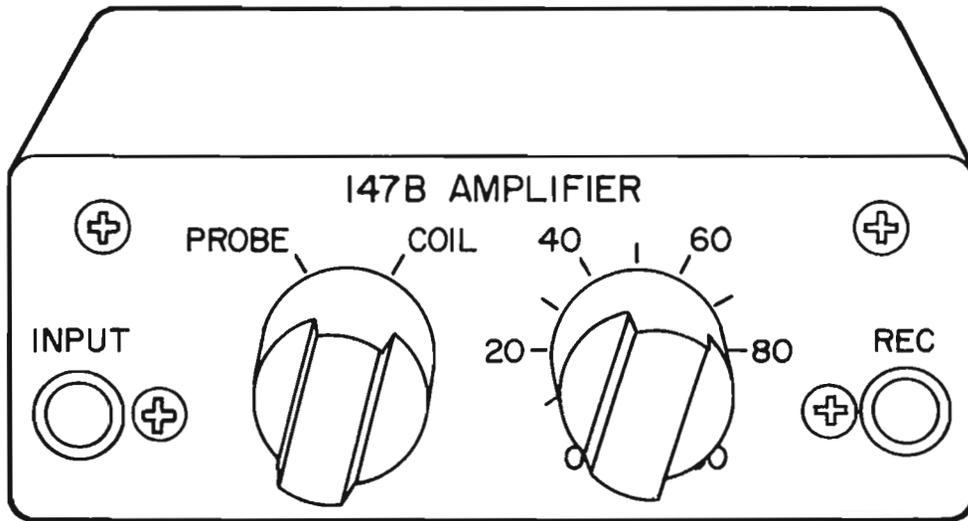


Figure 3. 147-type Amplifier

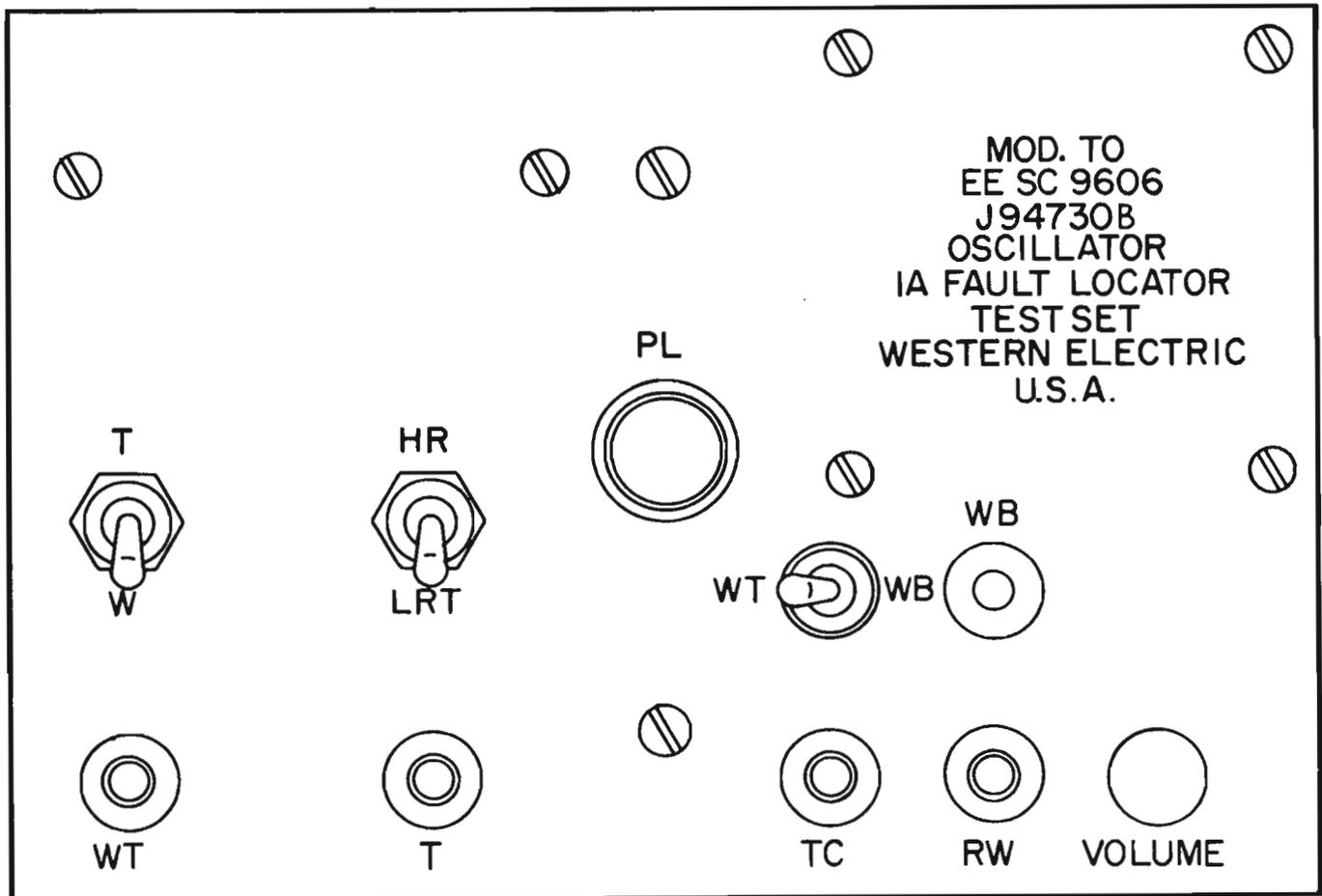


Figure 4. Modified Version J-94730B Oscillator

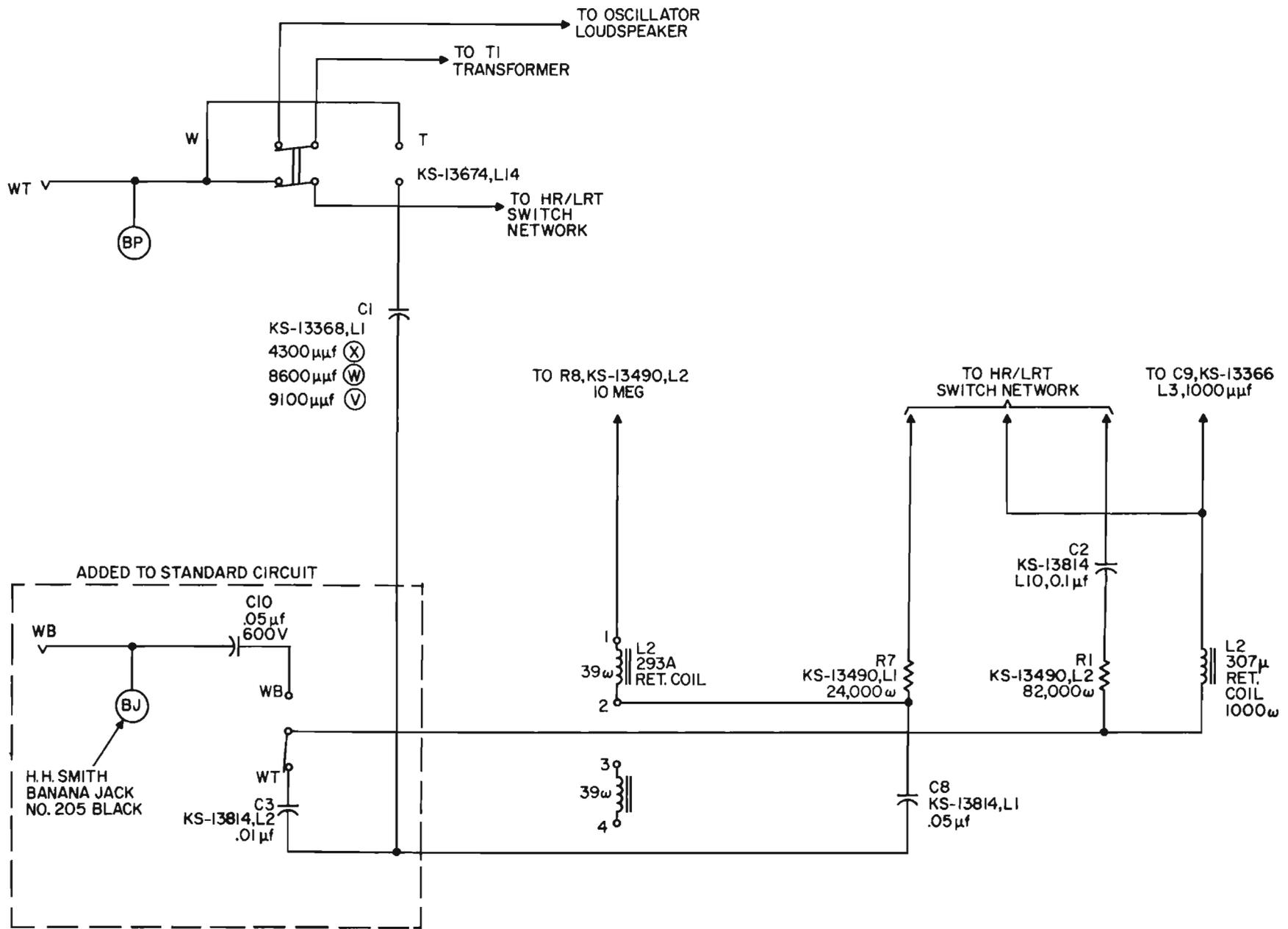


Figure 5. Partial Schematic of Modified J-94730B Oscillator, Showing Addition of WB Jack and WB/WT Toggle Switch.