7-A POLARIZED SOUNDER
REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

1.1 This section covers the installation and maintenance requirements for the 7-A polarized sounder. Unless otherwise specified herein or in the "Circuit Requirements Table" on circuit drawings the requirements covered by this section apply to all 7-A polarized sounders.

1.2 Part 2 of this section covers the requirements for the inspection of mechanical adjustments which shall be used to determine whether the sounder is in proper condition for delivery to the customer and for service. These are called "Test Requirements."

1.3 Part 3 of this section covers the mechanical requirements which must be met in readjusting a sounder which fails to meet the test requirements. These are called ***"Readjust Requirements"***. In addition to the readjust requirements, Part 3 also gives the approved maintenance methods of meeting these requirements.

1.4 The 74-C gauge is required.

2. TEST REQUIREMENTS

2.01 Unless otherwise specified, any sounder covered by this section shall meet the test requirements as given in this section.

3. READJUST REQUIREMENTS

General

3.01 A sounder should be readjusted in accordance with the following methods to meet the readjust requirements specified.

3.1 ***Magnetic Airgap*** (See Reqt 2.1)
The magnetic airgap is determined by the adjustment of the stop screw on the lever. The .003 blade of the 74-C gauge should be inserted between the armature and one polepiece. The stop screw should then be unscrewed until the armature clamps the gauge when downward pressure is applied to the armature by the finger. The stop screw should then be screwed in far enough to allow the gauge blades to slide freely between the pole-pieces and armature. The lock nut on the stop screw should then be tightened.

3.2 ***Lever Travel*** (See Reqt 2.2)
The lever travel is determined by adjustment of the back stop screw. With the lever held down in its operated position the back stop shoud be screwed down until there is a clearance of from .010" to .020" between it and the lever. This adjustment is not critical. The lock nut should then be tightened.

3.3 ***Compression Spring*** (See Reqt 2.3)
The screw acting upon the coiled compression spring should be adjusted so that the lever will remain in either the operated or spacing position when placed there by hand. This is the neutral or unbiased adjustment.

3.4 ***Electrical Requirements*** (See Reqt 2.4)
Should the sounder not follow the fast speed hand signals the airgap should be reduced.

DEFINITIONS AND GENERAL INFORMATION

2.001 ***Operate — Operated or Marking Position*** — Operate means that the specified operating or "marking" current should pull the armature down smartly, causing the stop screw on the aluminum lever to strike the anvil with sufficient impact to produce a sharp click.

2.002 ***Release — Spacing Position*** — Release means that the armature should return to its unoperated or spacing position when the operating or "marking" current is cut off and the "spacing" current is applied. The spacing current creates a magnetic flux in opposition to the flux produced by the permanent magnet, so that the compression spring alone acts on the aluminum lever, causing it to strike the upper stop screw with a sharp click.

2.003 ***Magnetic Airgap*** — The magnetic airgap is the clearance between the armature and the polepieces when the armature is in the operated position.

2.004 ***Lever Travel*** — The lever travel is the distance between the back stop and the lever when the lever is in the down or operated position.

2.005 Unless otherwise specified the requirements given on this sheet are both test and readjust requirements.

2.006 Requirements are given in the order in which adjustments should be made by the customer.

2.007 Methods and gauges are listed for the use of the customer.

REQUIREMENTS

2.1 ***Magnetic Airgap*** — The magnetic airgap shall be minimum .002", maximum .004".

2.2 ***Lever Travel*** — The lever travel shall be minimum .010", maximum .020", as gauged by eye.

2.3 ***Compression Spring*** — The sounder shall be without bias, that is, the lever shall remain in either the operated or non-operated position when moved manually, and there is no current flowing in the windings.

2.4 ***Electrical Requirements (Readjust Only)*** — The sounder shall be capable of operating at the fastest hand speed when positive and negative current signals of 5 (five) milliamperes are sent through the relay in series with a non-inductive resistance of not less than one thousand ohms.