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DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR MULTIMETER, AN/USM-451 (BALLANTINE, MODEL 9632M)

Headquarters, Department of the Army, Washington, DC
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*This bulletin supersedes TB 9-6625-2119-35, dated 8 June 1988, including all changes.

SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Multimeter, AN/USM-451 (Ballantine, Model 9632M). The manufacturer's manual and TM 11-6625-2953-14 were used as the prime data sources in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this bulletin.

a. Model Variations. Some of the earlier models have a twist wire capacitor instead of a screw type for the 200 V ac frequency compensation adjustment C52 and the 2 V ac frequency compensation adjustment C50.

b. Time and Technique. The time required for this calibration is approximately 1 hour using the dc and low frequency technique.

2. Forms, Records, and Reports

a. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25.

b. Adjustments to be reported are designated (R) at the end of the sentence in which they appear. Report only those adjustments made and designated with (R).

3. Calibration Description. TI parameters and performance specifications which pertain to this calibration are listed in table 1.

Table 1. Calibration Description

Test instrument parameters	Performance specifications
Dc voltage	Range: 0 to +1000 V in 5 ranges Accuracy: ±(0.2% of reading +1 LSD)
Ac voltage	Range: 0 to 1000 V in 5 ranges Accuracy: 200 mV, 2, 20, and 200 V ranges, 40 to 420 Hz ± (0.5% of reading +5 LSD); 200 mV, 2, 20, and 200 V ranges, 420 Hz to 1 kHz ±(2% of reading +5 LSD); 200 mV, 2, 20, and 200 V ranges, 420 Hz to 10 kHz ±(1% of reading +5 LSD); 1000 V range, 40 to 420 Hz ± (2% of reading +5 LSD), 420 Hz to 1 kHz; ± (3.75% of reading +5 LSD)
Dc current	Range: 0 to 10 A in 6 ranges Accuracy: 200 μA range, ±(1% of reading +1 LSD); 2, 20, 200, 2000 mA and 10 A ranges, ±(0.75% of reading +1 LSD)
Ac current[1]	Range: 0 to 10 A in 6 ranges Accuracy: 200 μA range, 40 to 420 Hz +(3.5% of reading +5 LSD), 420 Hz to 1 kHz ±(5% of reading +5 LSD); 2,20, 200, 2000 mA and 10 A ranges, 40 to 420 Hz ±(1.5% of reading +5 LSD), 420 Hz to 1 kHz ±(4% of reading +5 LSC)
Resistance	Range: 0 to 20 MΩ in 6 ranges Accuracy: 200 Ω, 2 Ω, 20 Ω, 200 Ω, and 2000 kΩ ranges ± (0.5% of reading +1 LSD); 20 MΩ range, ± (1% of reading +2 LSD)

[1]Ac current verified when dc current and ac voltage checks are performed.