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DEPARTMENT OF THE ARMY TECHNICAL MANUAL

FIELD AND DEPOT MAINTENANCE
MULTIMETER AN/URM-105
INCLUDING MULTIMETER ME-77/U

This reprint includes all changes in effect at the time of
publication; changes 1 through 3.

HEADQUARTERS, DEPARTMENT OF THE ARMY
JULY 1959

TECHNICAL MANUAL
Field and Depot Maintenance Manual
MULTIMETER AN/URM-105 INCLUDING MULTIMETER ME-77/U

TM 11-6625-203-35 }
CHANGES No. 1 }

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., 28 August 1961

TM 11-6625-203-35, 22 July 1959, is changed as follows:

Page 19, chapter 3. Change the heading of chapter 3 to: FOURTH ECHELON TESTING PROCEDURES AND FINAL TESTING

Add section I below the heading of chapter 3:

Section I. FOURTH ECHELON TESTING PROCEDURES

12.1. General

a. Testing procedures are prepared for use by Signal Field Maintenance Shops and Signal Service organizations responsible for fourth echelon maintenance to determine the acceptability of repaired signal equipment. These procedures set forth specific requirements that repaired signal equipment *must* meet before it is returned to the using organization. A summary of the performance standards is given in paragraph 12.8.

b. Each test depends on the preceding one for certain operating procedures and, where applicable, for test equipment calibrations. Comply with the instructions preceding each chart before proceeding to the chart. Perform each test in sequence. *Do not vary the sequence.* For each step, perform all the actions required in the *Test equipment control settings* and *Equipment: under test control settings* columns; then perform each specific test procedure and verify it against its performance standard.

12.2. Test Equipment and Materials

All test equipment, materials, and other equipment required to perform the testing procedures given in this section are listed in the following chart and are authorized under TA 11-17, Signal Field Maintenance Shops, and TA 11-100 (11-17), Allowance of signal Corps Expendable Supplies for signal Field Maintenance Shops. Continental United States, except as noted.

Nomenclat	Federal stock No.	Reference
Meter Test Set TS-682 (*)/GSM-1 ^a .	6625-669-0747	TM 11-2535A TM 11-2535B
Resistor, ^b fixed film, 900K ohms $\pm 1\%$ (precision resistor).	5905-655-3687	None
Decade Resistor ZM-16/U and ZM-16A/U ^c .	6625-669-0266	TM 11-5102
Battery BA-58/U (2 required).	6135-120-1030	None
Battery BA-261/U (1 required).	6135-160-7159	None

^a Indicates Meter Test Set TS-682/GSM-1 and TS-682A/GSM-1.
^b Repair part for Multimeter ME-77/U. Required only if Decade Resistor ZM-16/U is not available.
^c Decade Resistor TS-679/U can be used in lieu of ZM-16/U or ZM-16A/U.

12.3. Special Requirements

a. The location and labeling of certain controls and test jacks differ on Meter Test Set TS-682A/GSM-1 from those on Meter Test Set TS-682/GSM-1. Reference to controls, control settings, and test jacks in the charts and illustrations apply to Meter Test Set TS-682/GSM-1. If Meter Test Set TS-682A/GSM-1 is used, make connections to corresponding test jacks where physical location is different and to the jack nearest the higher voltage value where a jack of the specified voltage does not exist.

b. To perform the ohmmeter circuit test (par. 12.7), install the dry batteries (par. 12.2) in the ME-77/U under test.

c. When the ohmmeter circuit test (par. 12.7) is performed, several resistance values of a high degree of accuracy are required. Decade Resistor ZM-16/U or ZM-16A/U may be set to each of the resistance values required. However, Decade

Resistor TS-679/U has an upper limit of 111,111 ohms, and the precision fixed resistor listed in the chart (par. 12.2) or one of equal accuracy and value must be used in conjunction with the TS 679/U.

12.4. Physical Test and Inspection

a. Test Equipment and Materials.

Battery BA-58/U (2 ea)

Battery BA-261/U (1 ea)

b. Test Connections and Conditions. Remove the cover from the ME-77/U.

c. Procedure.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
1	None.....	Selector switch: OFF.	a. Inspect the ME-77/U for loose or missing screws, washers, or other parts. b. Inspect the ME-77/U case and cover for cracks, chips, and other damage, and the cover gasket for condition. c. Inspect the test leads for condition of the prods and the lead wire. d. If the alligator and electrical clips have been submitted with the ME-77/U under test, inspect them for serviceability.	a. There are no parts missing. All screws are tight. b. There are no cracks, chips, or other damage of a serious nature in evidence. The cover gasket is in good condition, free from cuts, nicks, or signs of serious deterioration. <i>Note.</i> Minor chips, cracks, or marks on the case should not be cause for rejection if they do not impair the operation of the equipment or its waterproof qualities. c. The test lead prods are in serviceable condition. The tips are tight in the prod bodies and unbent. Test lead wire is in serviceable condition, free from insulation cuts, abrasions, burns, and broken conductors. Test leads are of proper color (negative black, positive red) and not less than 30 inches long. d. The clips are free from damage and fit firmly on the test lead prods.
2	None.....	Selector switch: OFF.	a. Lay the ME-77/U on a horizontal work surface, face up, and note the condition and position of the meter pointer. Adjust meter zero adjustment for zero indication (fig. 8). b. Turn the selector switch knob to each of its indicated positions. c. Turn the OHMS ADJ. control knob throughout its limits of travel.	a. The meter pointer is not bent or otherwise damaged and is directly over the 0 mark at the left edge of the ac and dc volts scale. b. The switch operates smoothly without binding. Switch detent action is positive. The knob is tight on its shaft and properly indexed. c. The control operates smoothly without binding. The knob is tight on its shaft and does not rub the panel.