

**TM 11-6660-218-12**

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TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL

**METEOROLOGICAL STATION,  
MANUAL AN/TMQ-4**

(NSN 6660-00-537-9195)

This copy is a reprint which includes current  
pages from Changes 2 through 8.

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HEADQUARTERS, DEPARTMENT OF THE ARMY  
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WASHINGTON, DC, 25 May 1967

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\* This manual supersedes so much of TM 11-6660-218-15, 6 April 1961, as pertains to instruction for the operation and maintenance of the equipment including C 2, 18 September 1963, C 3, 3 January 1966.

## CHAPTER 1

### INTRODUCTION

#### Section I. GENERAL

##### 1-1. Scope

a. This manual describes Meteorological Station, Manual AN/TMQ-4, and covers its installation, operation, and maintenance. It includes operation, cleaning and inspection of equipment, and replacement of parts.

b. The basic issue items list is contained in appendix B, and the maintenance allocation chart is contained in appendix C.

c. Official nomenclature followed by (\*) is used to indicate all models of equipment items covered in this manual. Thus, Barometer ML-102-(\*) represents Barometers ML-102-B, ML-102-D, ML-102-E, ML-102-F, and ML-102-G; Reel RL-39(\*) represents Reels RL-39, RL-39-A, and RP 39-B; Radiosonde Set AN/AMTA (\*) represents Radiosonde Sets AN/AMT-4A, AN/AMT-4B, AN/AMT-4C, AN/AMT-4D, and AN/AMT-4E; Radiosonde Recorder AN/TMQ-5 (\*) represents Radiosonde Recorders AN/TMQ-5A, AN/TMQ-5B, and AN/TMQ-5C; Rawin Set AN/GMD-1 (\*) represents Rawin Sets AN/GMD-1A and AN/GMD-1B.

##### 1-2. Indexes of Publications

Refer to the latest issue of DA PAM 3104 to determine whether there are new editions, changes, additional publications or modification work orders pertaining to the equipment.

##### 1-3. Maintenance Forms, Records, and Reports

a. *Report of Maintenance and Unsatisfactory Equipment.* Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System.

b. *Report of Item and Packaging Discrepancies.* Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/ DLAR 4140.55/NAVMATINST 4355.73/AFR 400-54/MCO 4430.3E.

c. *Discrepancy in Shipment Report (DISREP)* (SF 361). Fill out and forward Discrepancy in

Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33B/ AFR 75-18/MCO P4610.19C and DLAR 4500.15.

##### 1-3.1. Reporting Errors and Recommending Improvements

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703. In either case, a reply will be furnished direct to you.

##### 1-3.2. Reporting Equipment Improvement Recommendations (EIR)

If your AN/TMQ4 needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSELME-MQ, Fort Monmouth, NJ 07703. We'll send you a reply.

##### 1-3.3. Administrative Storage

Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage the PMCS should be performed to assure operational readiness.

##### 1-3.4. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.



Figure 1-1. Meteorological Station, Manual AN/TMIQ-4, using visual means of collecting meteorological data.

## Section II. DESCRIPTION AND DATA

## 1-4. Purpose and Use

*a. Purpose.* Meteorological Station, Manual AN/TMQ-4 is a transportable meteorological equipment set. It includes equipment for making and evaluating pilot balloon observations; for making surface observations of temperature, relative humidity, dewpoint, vapor pressure, atmospheric pressure, and wind direction and velocity; and for determining ballistic winds, density, and temperature.

*b. Use.* The equipment is used by field artillery units to make visual (fig. 1-1), and electronic (fig. 1-2) observations of the atmosphere, and to perform sound ranging techniques. The information obtained by these observations is used to make corrections for atmospheric effects on the trajectory of artillery projectiles, and to locate positions of enemy fire.

## 1-5. Technical Characteristics

*a. Anemometer.*

*Note.* Anemometer ML-497/PM is similar to ML-433A/PM. Information in this manual applies to both units, unless otherwise specified.

## ML-433A/PM:

Velometer ----- 0 to 8  $\pm 1.5$  knots. 0 through 40  $\pm 2.0$  knots.

Wind vane and  
compass --- 0-360°  $\pm 11.25^\circ$ .

Mounting ----- Handle.

## ML-497/PM:

Velometer ----- 0 to 8  $\pm 1.5$ , 0 to 40  $\pm 2.0$  mph.

Wind vane and  
compass ----- 0-360°  $\pm 11.25^\circ$ .

Mounting ----- Handle.

*b. Barometer ML-102-(\*).*

Type ----- Aneroid, portable, precision.

Inches of mercury

range ----- 22-31.5 (ML-102-B,-E,-F).

Millibar range ----- 745-1,085 (ML-102-B,-E,-F).  
745-1,065 (ML-102-D,-G).

Graduation intervals:

Inch scale ----- 0.02 from 22 to 31, numbered each 0.1 inch ( ML-102-B,-E,-F),

Millibar scale ----- 1 millibar, numbered each 5 millibars ( ML-102-B, -E, -F).

0.5 millibar, numbered each 10 millibars (ML-102-D, -G).

Reading position -- Vertical (models B, E, and F). Horizontal (models D and G).

*c. Battery Pack BA-259/AM.*

Voltage ----- 1.5- and 6-volt A-supply, 115-volt B-supply.

Operating life ----- 2 to 4 hours.

Type ----- Water activated.

*d. Calcium Hydride Charges ML-304A/TM, ML-305A/TM, and ML-587/TM.*

ML-304A/TM ----- Generates enough hydrogen to inflate a 30-gram balloon to produce a free lift of 155 grams minimum.



Figure 1-2. Electronic observation of upper atmosphere.