TECHNICAL MANUAL

OPERATOR'S, UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL

METEOROLOGICAL MEASURING SET AN/TMQ-38 (NSN 6660-01-343-2462) (EIC: N/A)

HEADQUARTERS, DEPARTMENT OF THE ARMY

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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-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-LT, Fort Monmouth, New Jersey 07703-5007. In either case a reply will be furnished direct to you.

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How To USE THIS MANUAL

This manual is used by the Army for operation of the Meteorological Measuring Set AN/TMQ-38.

This manual is divided into chapters, sections, and paragraphs which are numbered in sequence. Pages and paragraphs are numbered by chapters. For example, chapter 1, page 2 is marked 1-2; chapter 2, page 9 is marked 2-9; chapter 3, paragraph 6 is marked 3-6.

Use the table of contents to help locate specific information. The Table of Contents tells you the exact page where the paragraph you want is located. For example, the Table of Contents states that Chapter 1, Section I, General Information, begins on page 1-1.

Each section of a chapter has its own index. Use the section Index to help locate specific information. For example, the Table of Contents states that Chapter 2, Section Ill, Operation Under Usual Conditions, begins on page 2-21. The section index on page 2-21 tells you the exact page where the paragraph you want is located. For example:

SECTION	CONTENTS	PAGE
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Page numbers appear on the left-hand sides of even pages, and on the right-hand sides of odd pages. Match your procedures and tasks with the titles in the Index. The Index will send you to the proper page of the step-by-step task instructions.

CHAPTER 1

INTRODUCTION

Section I - GENERAL INFORMATION

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1-3.	REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)	1-1
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1-1. SCOPE.

This manual provides the general principles of operation, operating instructions, and operator/organizational and direct support maintenance information for the AN/TMQ-38 Meteorological Measuring Set shown in Figure 1-1.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS.

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, as contained in Maintenance Management Update. Air Force personnel will use AFR 66-1 for maintenance reporting and TO-00-35D54 for unsatisfactory equipment reporting. Navy personnel will report maintenance performed utilizing the Maintenance Data Collection Subsystem (MDCS) IAW OPNAVINST 4790.2, Vol 3 and unsatisfactory material/conditions (UR submissions) IAW OPNAVINST 4790.2 Vol 2, chapter 17.

b. Reporting 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/SECNAVINST 4355.18/AFR 400-54/MCO 4430.3J.

c. Transportation Discrepancy Report (TDR) (SF 361). Fill out and forward Transportation Discrepancy Report (TDR) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-3. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

a. Army. If your AN/TMQ-38 Meteorological Measuring Set 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 or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ED-PH, Fort Monmouth, New Jersey 07703-5007. We will send you a reply.

b. Air Force. Air Force personnel are encouraged to submit EIR's in accordance with AFR 900-4.

c. Navy. Navy personnel are encouraged to submit EIR's through their local Beneficial Suggestion Program.

1-4. DESTRUCTION OF ARMY ELECTRONICS MATERIEL

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

1-5. 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. Disassembly and repacking of equipment for shipment or limited storage are covered in paragraph 3-6.

1-6. CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS.

Refer to the latest issue of DA Pam 25-30 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

1-7. REFERENCE INFORMATION.

1-7-1. Nomenclature Cross-Reference List.

Common Name	Official Nomenclature
Antenna Set	NAVAID Antenna Set, A6
CDU	Control Display Unit, A9
DCT	Digital Communications Terminal, AN/PSC-2, A3
MARWIN Processor	Receiving Set, Radiosonde, AN/UMQ-14, A1
MMS	Meteorological Measuring Set, AN/TMQ-38
Power Supply Unit	Power Supply Unit, A4
Printer	Printer, ink Jet, A2
RDF Unit	Radio Direction Finding Unit, A8
24 VDC Power Supply	Power Supply, 24 VDC, A10

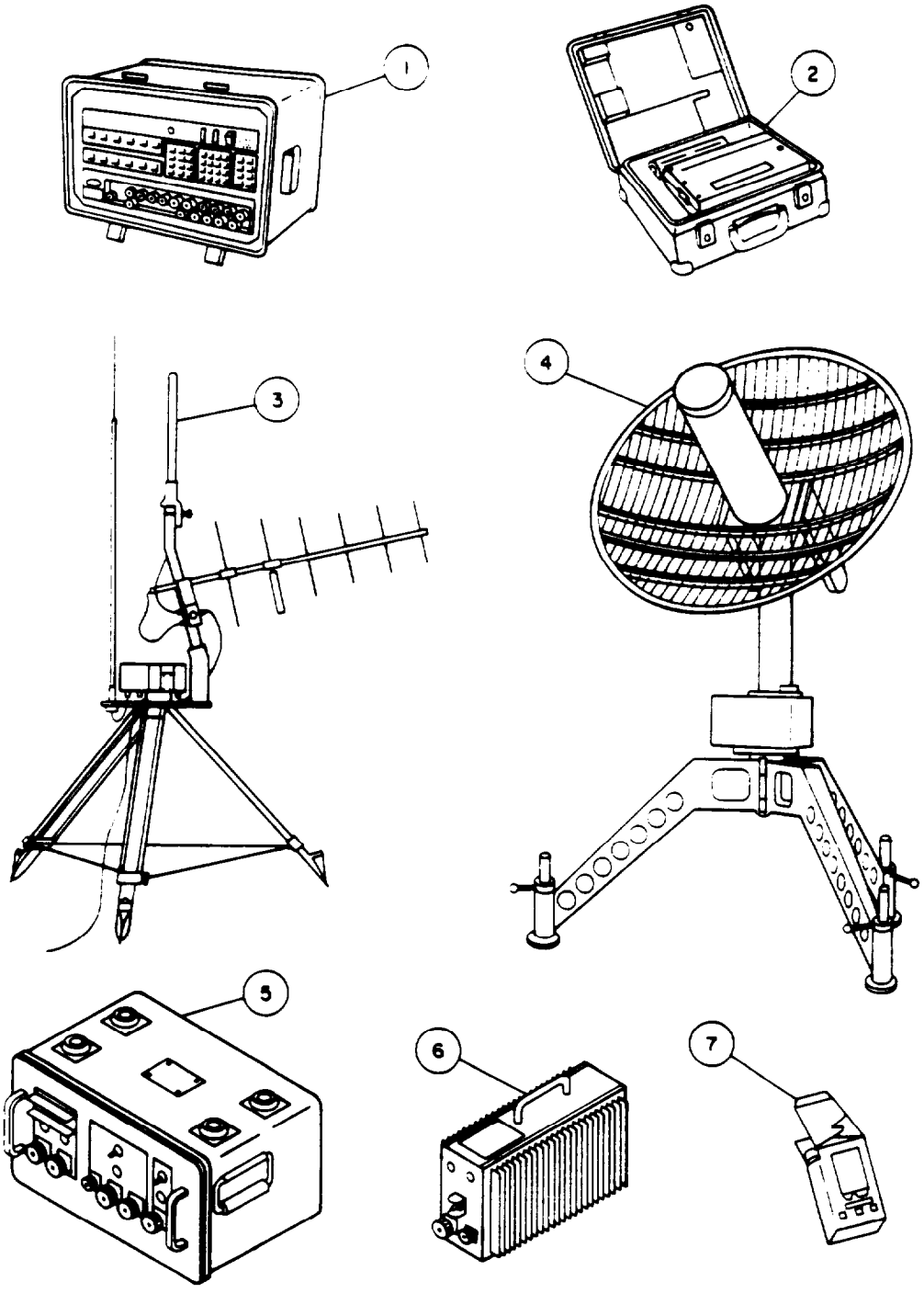
1-7-2. List of Abbreviations/Acronymns.

Abbreviation	Definition
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
AM	Amplitude Modulation
ANT	Antenna
AZ	Azimuth
BIT	Built-In-Test
CDU	Control Display Unit
CONT	Contact
DCT	Digital Communications Terminal, AN/PSC-2
EIR	Equipment Improvement Recommendation
EL	Elevation
EMI	Electromagnetic Interference
FATDS	Field Artillery Tactical Data System
FM	Frequency Modulation
I/O	Input/Output
LCD	Liquid Crystal Display
LCN	Logistic Support Analysis Control Number
LED	Light Emitting Diode
LORAN	Long Range Navigation
LRU	Line Replaceable Unit
MAC	Maintenance Allocation Chart
MET	Meteorological

Abbreviation	Definition
MMS	Meteorological Measuring Set, AN/TMQ-38
NAVAID	Navigational AM
NSN	National Stock Number
PMCS	Preventive Maintenance Checks and Services
PSU	Power Supply Unit
PTU	Air Pressure, Temperature, and Humidity
RDF	Radio Direction Finding
SMR	Source, Maintenance, and Recoverability
SRU	Shop Replaceable Unit
SSTR	Signal Strength
SYSGEN	System Generation
TMDE	Test, Measurment, and Diagnostic Equipment
UHF	Ultra High Frequency
VLF	Very Low Frequency

1-7-3. Glossary.

Term	Definition
Heterodyne	Mixing of two signals to obtain a sum and a difference signal
Non-hygroscopic	Will not absorb moisture



1 MARWIN Processor, A1
2 Printer, A2
3 NAVAID Antenna Set, A6
4 RDF Unit, A8
5 Power Supply Unit, A4
6 24 VDC Power Supply, A10
7 Digital Communications Terminal, A3

Figure 1-1. AN/TMQ-38 Meteorological Measuring Set

Section II - EQUIPMENT DESCRIPTION

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1-8. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

The AN/TMQ-38 Meteorological Measuring Set (MMS), as shown in Figure l-l, consists of the following major components: MARWIN Processor (Al), Radio Direction Finding (RDF) Unit (A8) including the Control Display Unit (CDU) (A9), Digital Communications Terminal (DCT) (A3), Printer (A2), NAVAID Antenna Set (A6), Power Supply Unit (A4), 24 VDC Power Supply (A10), 17 System Interconnect Cables (W1-W3, W5-W14, W16, W18-W20), 7 Transportation Cases, and RDF Tripod Carrying Bag.

Except for the RDF Tripod, all of the components of the MMS are stored and transported in seven reusable transportation cases. Case latches and handles are designed for use with heavy gloves. Each case is non-hygroscopic and non-temperature sensitive and utilizes foam cushioning with equipment contour cutouts to shield the equipment from the effects of shock and vibration. Cases are rain proof and contain an over/under pressure equalizing valve allowing the safe air transportation of the system to an altitude of 40,000 feet.

Power and signal connections between the major components of the MMS are accomplished by seventeen cables which are stored in the transportation cases when not in use. The cables are constructed with standard military connectors, and the shields are terminated with EMI cable sealing backshells. Operating power is converted/conditioned by the Power Supply Unit (PSU) and 24 VDC Power Supply from primary 120 VAC, 50/60 HZ, single phase and 28 VDC input power.