TM 11-6660-219-12

DEPARTMENT OF HTE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

RADIOSONDE BASELINE CHECK SETS AN/GMM-1 AND AN/GMM-1A

This copy is a reprint which includes current pages from Changes 1 through 6.

HEADQUARTERS DEPARTMENT OF THE ARMY
20 JULY 1961

W A R N I N G

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when working on the 115-volt ac line connections.

DON’T TAKE CHANCES!

TM 11-6660-219-12
C#6
HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *12 AUGUST 1985*

CHANGE)
)
No. 6)

Operator's and Organizational Maintenance Manual
RADIOSONDE BASELINE CHECK SETS AN/GMM-1 AND AN/GMM-1A
(NSN 6660-00-527-8392)

TM 11-6660-219-12, 20 July 1961, is changed as follows:

Page 5. Delete paragraph 2 and substitute:

2. Consolidated Index of Army Publics. tions and Blank Forms

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

Paragraphs 2.1 and 2.2 are superseded as follows:

3. 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.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report or Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/ NAVMATINST 4355.73A/AFR 400-54/MCO 4430.3F.

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 4610.33C/AFR 55-18/MCO P4610.19D/ DLAR 4500.15.

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 or DA Form 2028 (Recommended Changes to Publications and Blank Forms), direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007. In either case, a reply will be furnished direct to you.

3.2. Reporting Equipment Improvement Recommendations (EIR)

If your equipment 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. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007. We'll send you a reply.

Page 7. Paragraph 5.2 is changed as follows: Change Cable Assembly, Power Electrical: 12 cond, to read Cable Assembly, Power Electrical 2 Cond.

Page 9. Paragraph 9.1 is superseded as follows:

9.1. Description of Radiosonde Test Set TS-1348/GMM-1A

The test set (fig. 7.1) is enclosed in a metal housing with a latched cover to protect the front panel when the equipment is in use. The front panel (fig. 16.1) contains three operating fuses, three operating voltage meters, and one milliammeter, and associated controls and switches for testing a radiosonde or a battery pack. Three connectors (fig. 7.2) are at one end of the test set for connection to a radiosonde, a battery pack, or a vehicular battery.

Page 10. Paragraph 10c1, change cable assembly (CX-10479/GMM-1A) to read cable assembly (CX-10470/ GMM-1A).

Page 33. Paragraph 34b add the following note before item 10:

NOTE

In lieu of a radiosonde, the unit mechanic can test the operation of the selector switch as prescribed in paragraph 42.2.

Page 39. Paragraph 40b is changed as follows: Add figure FO-1 and FO-2 after figure 19.

Page 40. Paragraph 42. Paragraph 42.2 is added after paragraph 42.1.

42.2. Relay Operational Checks

a. Connect the cabinet assembly to the control unit directly or with the remote control cable. Connect the control unit to a source of 115 vac and place the power switch to on.

b. Place selector switch S1 to REF Set up Multimeter TS-352B/U (or equivalent) to measure the resistance between the black-yellow and then the black-blue terminals of the terminal board in the chamber. The meter should indicate infinite resistance between all terminals.

c. Place the selector switch to the REF position. Repeat the measurements between the terminals as for b. above. (For measuring low resistance values, use the lowest resistance range of the multi-meter.) The meter should indicate infinite resistance between the black-yellow terminals and should indicate zero resistance between the black-blue terminals.

d. Place the selector switch to HUM, again measure the resistance between the terminals of the terminal board. The meter should indicate zero resistance between the black-yellow terminals and infinite resistance between the black-blue terminals.

e. Place the selector switch to the AUTO position. Repeat the measurements as above. The relays should switch at approximately 15-second intervals. The sequence of switching should be reference, temperature, reference, humidity, reference, etc.

Page 45. Appendix A is superseded as follows:

APPENDIX A
REFERENCES

DA Pam310-1	Consolidated Index of Army Publications and Blank Forms.
DA Pam 738-750	The Army Maintenance Management System (TAMMS).
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies and Equipment Used by the Army.
TM 11-6625-366-15	Organizational, Direct Support, General Support, and Depot Maintenance Manual: Multi meter TS-352B/U (NSN 6625-00-543-01 42).
TM 11-6660-204-10	Operator's Manual Radiosonde Recorders AN/TMQ-5 (NSN 6660-00-324-9426), AN/TMQ-5A (NSN 6660-00-393-2234), AN/TMQ-5B (NSN 6660-00-393-2234), AN/TMQ-5C (NSN 6660-00-682-4500).
TM 11-6660-206-12	Operator's and Organizational Maintenance Manual for Rawin Sets AN/GMD-1A (NSN 6660-00-224-61 37), AN/GMD-1B (NSN 6660-00-599-8257), AN/GMD-1C (NSN 6660-01-077-7797), AN/GMD-1D (NSN 6660-01-072-9995).
TM 11-6660-218-12	Operator's and Organizational Maintenance Manual: Meteorological Station, Manual AN/TMQ-4 (NSN 6660-00-537-9195).
TM 11-6660-222-12	Operator's and Organizational Maintenance Manual: Meteorological Balloons, Thermo-meters ML-4 (NSN 6660-00-253-2553), ML-5 (NSN 6660-00-239-4015), and ML-7 (NSN 6660-00-239-4010), Psychrometer ML-24 (NSN 6660-00-223-5083) and ML-224 (NSN 6660-00-223-5084) Instrument Shelter, Meteorological S/01/UM (NSN 541 0-00-222-0507), Support, Instrument Shelter MT-1426/UM (NSN 6660-00-408-4807) and Launching Equipments.
TM 11-6660-228-10	Operator's Manual, Radiosonde Sets AN/AMT-4D and AN/AMT-4E (NSN 6660-00-542-1964).

Page 53. After page 53 add figure FO-1 and FO-2.

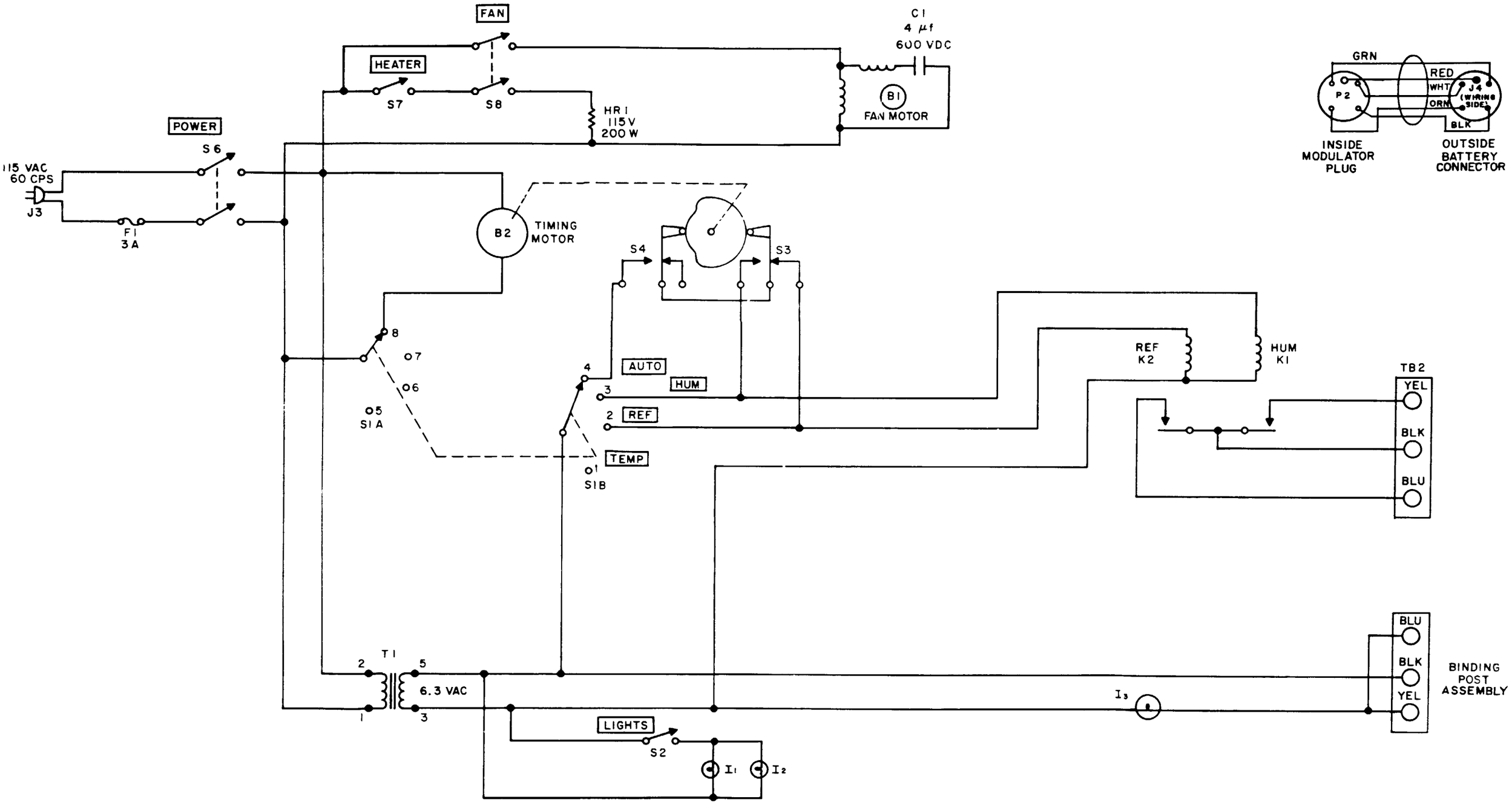
By Order of the Secretary of the Army:

JOHN A. WICKHAM JR.
General, United States Army
Chief of Staff

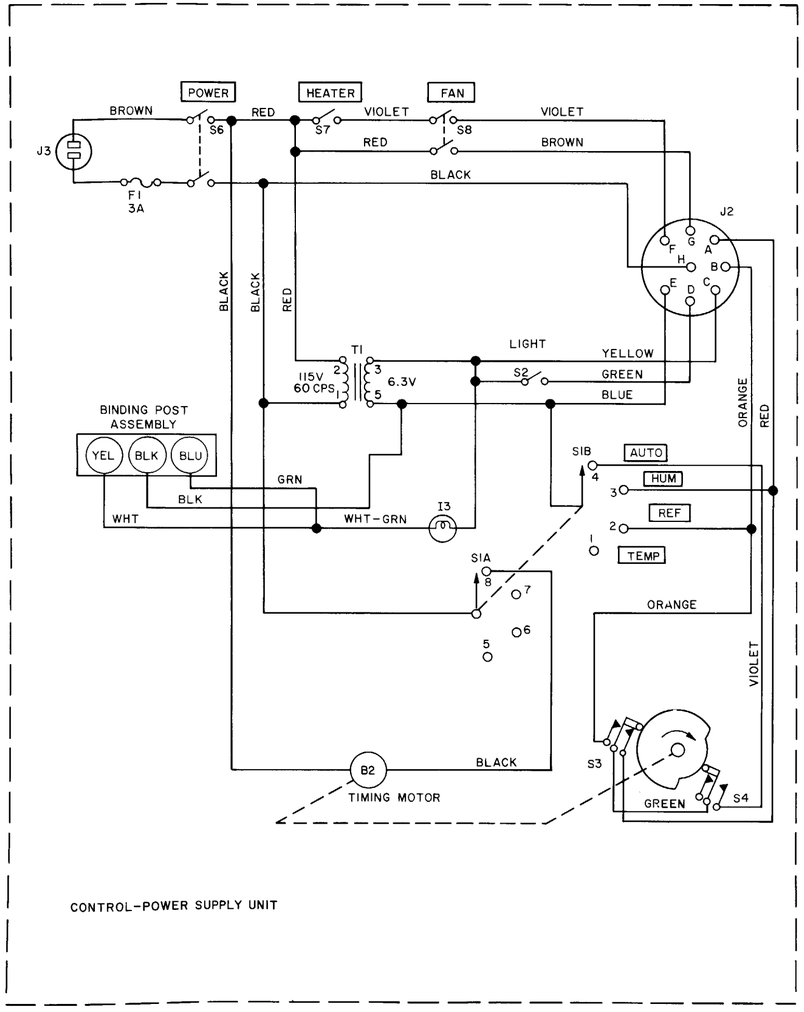
Official:

DONALD J. DELANDRO
Brigadier General, United States Army
The Adjutant General

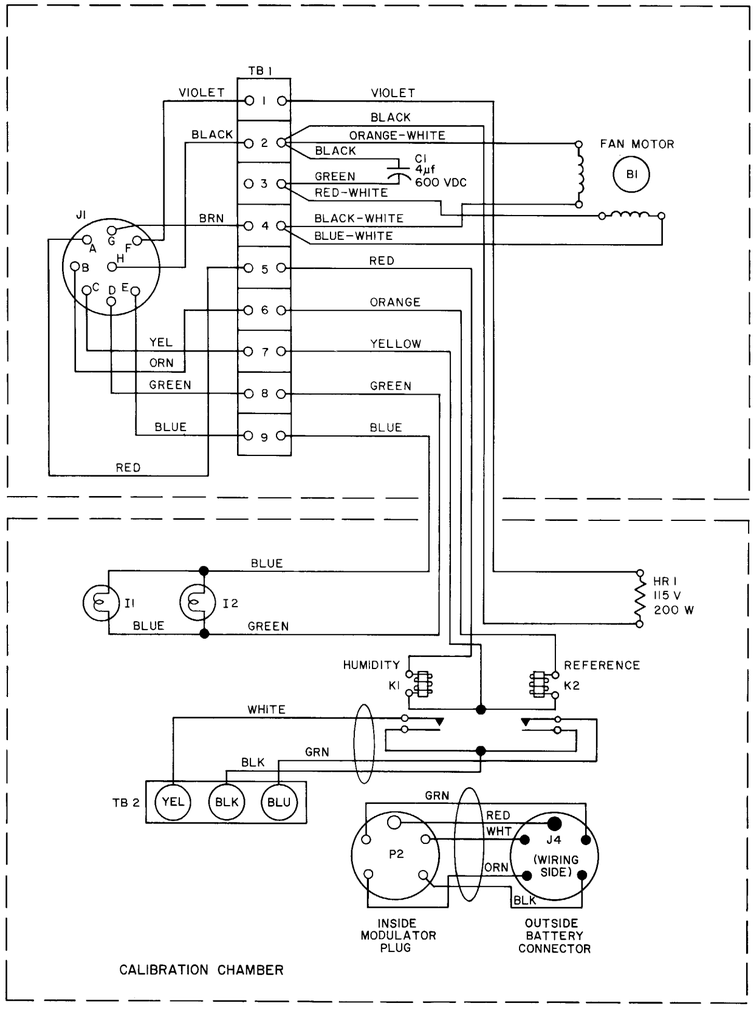
DISTRIBUTION:
To be distributed in accordance with DA Form 12-36 literature requirements for AN/GMM-l; AN/GMM-lA.



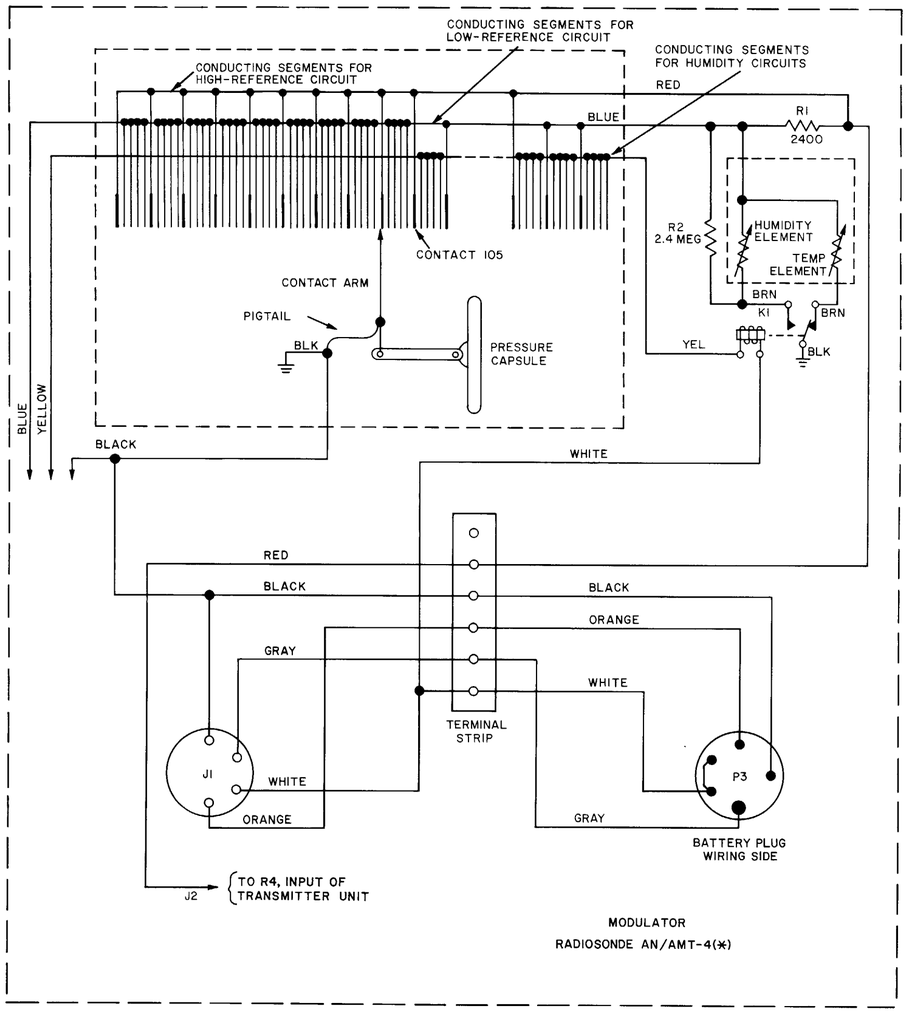
FO-1. Radiosonde Baseline Check Set AN/GMM-1A, Simplified Schematic Diagram.



CONTROL-POWER SUPPLY UNIT



CALIBRATION CHAMBER



MODULATOR
RADIOSONDE AN/AMT-4(*)

TECHNICAL MANUAL

Operator and Organizational Maintenance Manual

RADIOSONDE BASELINE CHECK SETS AN/GMM-1 AND AN/GMM-1A

TM 11-6660-219-12
CHANGE No. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *11 September 1963*

TM 11-6660-219-12, 20 July 1961, is changed as follows:

Page 5. Add paragraph 1.1 after paragraph 1.

1.1. Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to this equipment. DA Pam 310-4 is a current index of technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders that are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc) and the latest changes and revisions of each equipment publication.

Delete paragraph 2 and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions in TM 38-750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. Reporting of Equipment Manual Improvements. The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8 or 9) will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The origina and one copy will be forwarded direct to: Commanding Officer, U.S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N.J. 07703. One information copy will be furnished to the individual's immediate supervisor (e.g., officer, noncommissioned officer: supervisor, etc).

Page 30. Delete paragraphs 31, 32, and 33 and substitute:

31. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of the baseline check set are listed below together with a reference to the paragraphs covering the specific maintenance function. The duties include instructions for performing preventive maintenance and corrective maintenance and do not require tools or test equipment.

a. Daily preventive maintenance checks and services (par. 33.2).

b. Weekly preventive maintenance checks and services (par. 33.3).

c. Cleaning and touchup painting (par. 33.4).

d. Equipment performance checklist (par. 34).

e. Replacement of fuse (par. 35*a*).

f. Replacement of lamps (pars. 35*b* and *c*).

32. Materials Required for Operator's Maintenance

The following materials are required for preventive maintenance of the baseline check set.

a. Cheesecloth, bleached, lint-free.

b. Cleaning Compound (FSN 7930-395-9542).

c. Fine sandpaper.

33. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 33.2, 33.3, and 33.4 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (pars. 33.2 and 33.3) outline functions to

be performed at specific intervals. These checks and services are to maintain Army equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the chart indicates what to check, how to check, and what the normal conditions are. The *references* column lists the paragraphs that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator, higher echelon maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38–750.

Add paragraphs 33.1 through 33.4 after paragraph 33.

33.1. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of the baseline check set are required on a daily and weekly basis.

a. Paragraph 33.2 specifies checks and services that must be accomplished daily or under the special conditions listed below.

(1) When the equipment is initially installed.

(2) When the equipment is reinstalled after removal for any reason.

(3) At least once each week if the equipment is maintained in standby condition.

b. Paragraph 33.3 specifies *additional* checks and services that must be performed *once* each week.

33.2. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Exterior surfaces	Clean the exterior of all components	Par. 33.4.
2	Calibration chamber	Remove any water that may have accumulated on the floor of the calibration chamber (fig. 4).	
3	Psychrometer	Inspect the thermometers for breakage (fig. 13). Replace psychrometer if required.	Par. 19*a*(11)–(18).

33.3. Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Cables	Check the power and remote control cables (fig. 15) for cracks, cuts, or fraying.	
2	Calibration chamber window.	Inspect the window for discoloration or breakage. Clean with a clean damp cloth if required.	
3	Operational check	Perform equipment performance check; be alert for any unusual operation or condition.	Par. 34.

33.4. Cleaning and Touchup Painting

Inspect the exteriors of all the components of the baseline check set. The exterior surfaces should be free of dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean soft cloth.

***Warning:* Cleaning compound is flammable and its fumes are toxic. Provide adequate ventilation. *Do not* use near a flame.**

b. Remove grease, fungus, and ground-in dirt from the cases; use a cloth dampened (not wet) with cleaning compound.

c. Remove dust or dirt from plugs and jacks with a brush.

d. Clean the front panel and control knob of the control unit; use a soft clean cloth. If dirt is difficult to remove, dampen the cloth with water; mild soap may be used for more effective cleaning.

e. Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to applicable cleaning and refinishing practices specified in TM 9–213.

Page 31. Delete figure 19.

Page 32. Delete figure 20.

Page 33, paragraph 34*a*. Delete the fourth sentence.

Page 36. Delete paragraph 36 and substitute:

36. Scope of Second Echelon Maintenance

The maintenance duties assigned to the second echelon repairman of the baseline check set are listed below together with a reference to the paragraphs covering the specific maintenance function. The tools, materials, and test equipment required are listed in paragraph 37.

a. Monthly preventive maintenance checks and services (par. 39.1).

b. Quarterly preventive maintenance checks and services (par. 39.3).

c. Troubleshooting (par. 40).

d. Replacement of heater element (par. 41).

e. Replacement of psychrometer thermometers (par. 42).

Delete paragraphs 38 and 39 and substitute:

38. Second Echelon Preventive Maintenance

a. Preventive maintenance checks and services of the baseline check set at the second echelon level are made at monthly and quarterly intervals unless otherwise directed by the commanding officer.

b. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38–750.

39. Monthly Maintenance

Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart (par. 39.1) once each month. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours a day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services. Equipment in limited storage (requires service before operation) does not require monthly preventive maintenance.

Add paragraphs 39.1 through 39.3 after paragraph 39.

39.1. Monthly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Carrying case	Inspect handles, latches, and hinges for looseness.	
2	Connectors	Inspect for broken pins, cracked inserts, and bent shells. Replace as required.	
3	Binding post assemblies.	Inspect binding post assemblies (figs. 4 and 7) for damage or corrosion.	Par. 33.4.
4	Heater and heater insulators.	*a.* Inspect the heater (fig. 4) for deterioration or damage.	*a.* Par. 41.
		b. Inspect the heater insulators for cleanliness or damage.	*b.* Par. 33.4.
5	Relays	Inspect relays K1 and K2 (fig. 4) for security and condition of connecting wires.	
6	Gaskets	Inspect the gasket around the edge and in the bottom of the calibration chamber (figs. 4 and 23) for looseness and damage.	Secure loose gasket with rubber cement; replace damaged gaskets.
7	Fan and guard	Inspect fan (fig. 4) and guard for security or damage.	

39.2. Quarterly Maintenance

Quarterly preventive maintenance checks and services on the baseline check set are required. Periodic weekly and monthly services (pars. 33.3 and 39.1) constitute a part of the quarterly preventive maintenance checks and services and must be performed concurrently. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38–750. Perform all the checks and services listed in the quarterly preventive maintenance checks and services chart (par. 39.3) in the sequence listed.

39.3. Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Completeness	See that the equipment is complete (app. III).	
2	Installation	See that the equipment is properly installed (pars. 18, 19, and 20).	
3	Preservation	Check all surfaces for evidence of fungus. Remove rust and corrosion and spot-paint bare spots.	Par. 33.4.
4	Publications	See that all publications are complete, serviceable, and current.	DA Pam 310–4.
5	Modifications	Check DA Pam 310–4 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	TM 38–750 and DA Pam 310–4.
6	Fuses	See that all operating fuses (fig. 16) are of the correct value. Check spare fuses for proper value and quantity.	App. III.
7	Spare parts	Check all spare parts for general condition and method of storage. There should be no evidence of overstock, and all shortages must be on valid requisitions.	App. III.

Page 37. Delete figure 21.

Page 38. Delete figure 22.

Page 45. Appendix I. Add the following references:

DA Pam 310–4 Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.

TM 9–213 Painting Instructions for Field Use.

TM 38–750 The Army Equipment Record System and Procedures.

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:
J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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USATC Engr (2)
USATC Inf (2)
USATC Armor (2)
USASTC (5)
Instl (2) except
Ft Monmouth (65)
Svc Colleges (2)
Br Svc Sch (2) except
GENDEP (OS) (2)
Sig Dep (OS) (12)
Sig Sec, GENDEP (5)
Army Dep (2) except
Ft Worth (8)
Lexington (12)
Sacramento (28)
Tobyhanna (12)
Jefferson PG (5)
USA Elct RD Actv, White Sands (13)
USA Elct RD Actv, Ft Huachuca (2)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
USAOSA (1)
AMS (1)
WRAMC (1)
AFIP (1)
Army Pic Cen (2)
USA Mol Spt Cen (1)
USA Elct Mat Agcy (12)
Chicago Proc Dist (1)
USARCARIB Sig Agcy (1)
Sig Fld Maint Shop (3)
Units organized under following TOE's (2 copies each unless otherwise indicated):

6-100	11-98
6-101	11-117
6-185	11-155
6-186	11-157
6-200	11-500 (Tms AA-AC) (4)
6-201	
6-300	11-557
6-301	11-587
6-302	11-592
6-385	11-597
6-386	17
6-525	17-100
6-565	29-56
6-575	37
6-576	37-100
7	39-51
7-100	39-65
11-7	44-16
11-16	57
11-57	

NG: None.
USAR: None.
For explanation of abbreviations used, see AR 320-50.

TM 11-6660-219-12
C 2

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *18 January 1971*

Operator and Organizational Maintenance Manual Including Repair Parts and Special Tool Lists

RADIOSONDE BASELINE CHECK SETS AN/GMM-1 AND AN/GMM-1A

TM 11-6660-219-12, 20 July 1961, is changed to reflect equipment modified by MWO 11-6660-219-35/2.

The title is changed as shown above.

NOTE

The parenthetical references to previous changes (page 2 of C 1) indicates that pertinent material was published in that change.

Page 5, paragraph 1*b*. After the last sentence, add: Radiosonde Set AN/AMT-12(*) represents Radiosonde Sets AN/AMT-12 and AN/AMT-12A.

Paragraph 1.1 (page 1 of C 1). Delete paragraph 1.1 and substitute:

1.1 Indexes of Publications

a. DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA Pam 310-7. Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

Paragraph 2 (page 1 of C 1). Delete paragraph 2 and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions given in TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army), NAVSUP Publication 378 (Navy), AFR (Air Force), and MCO P4610-5 (Marine Corps).

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 (Army), NAVSUP Publication 459 (Navy), AFM 75-34 (Air Force), and MCO P4610.19 (Marine Corps).

d. Reporting of Equipment Manual Improvements. Reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-ME-NMP-AD, Fort Monmouth, N.J. 07703.

Paragraph 3, heading. Change "Purpose and Use" to Purpose and Use, Radiosonde Baseline Check Set AN/GMM-1(*).

Page 6, paragraph 3. After paragraph 3, add:

3.1 Purpose and Use, Radiosonde Test Set TS-1348/GMM-1A

a. Purpose. Radiosonde Test Set TS-1348/GMM-1A (fig. 1.1) is used for preflight testing of Battery Pack BA-259/AM (TM 11-2432A), Radiosonde Set AN/AMT-4(*) (TM 11-6660-228-10), and Radiosonde Set AN/AMT-12(*) (TM 11—6660-220-10).

b. Use. The TS-1348/GMM-1A provides a dummy load to measure the output voltages of Battery Pack BA-259/AM. Also, the TS-1348/GMM-1A measures the operating currents of Radiosonde Set AN/AMT-4(*) and Radio-

sonde Set AN/AMT–12(*) when these equipments are powered by either Battery Pack BA–259/AM, or by a 24-volt vehicular battery. When the AN/AMT–4(*) or AN/AMT–12(*) is being powered by a 24-volt vehicular battery, the TS–1348/GMM–1A converts the 24-volt power into the required operating voltages (para 4.1).

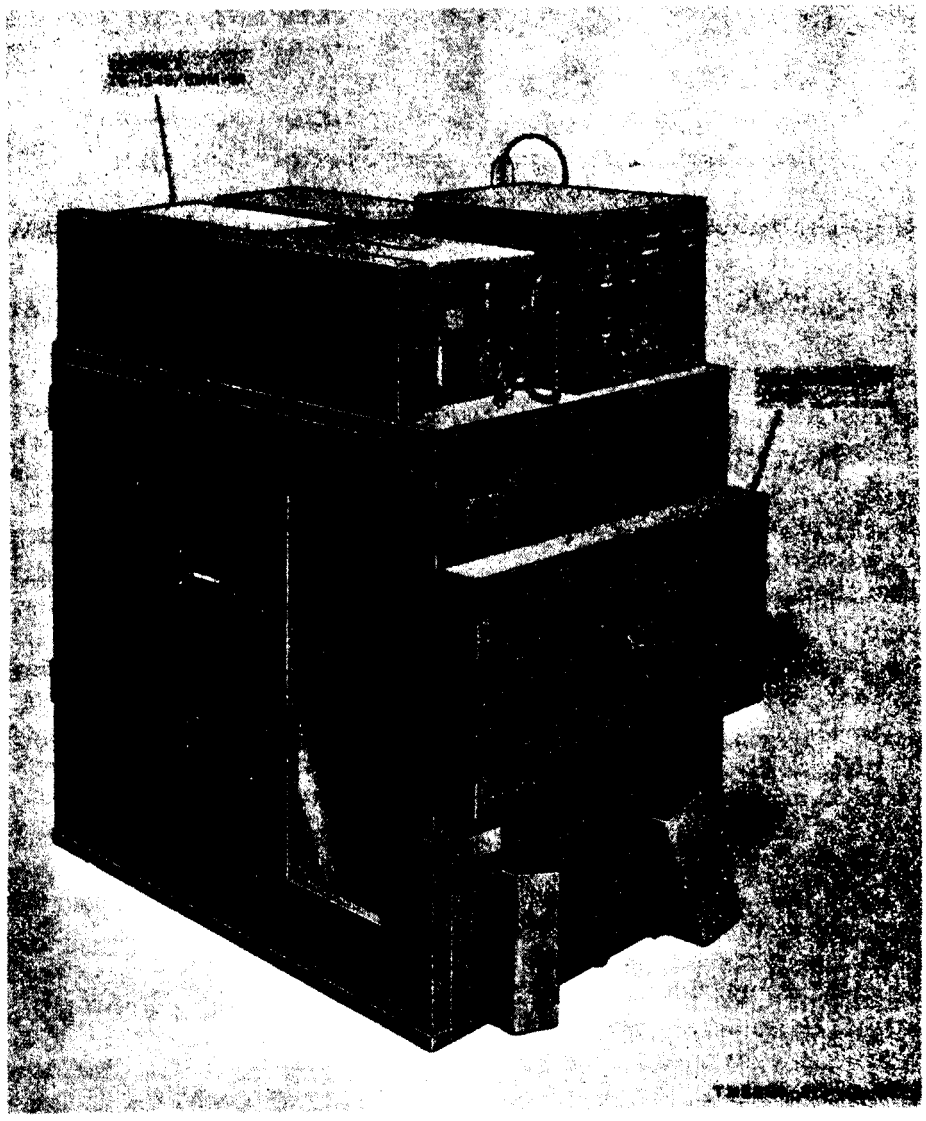

Figure 1.1 Radiosonde Baseline Check Set AN/GMM–1(*) without legs, less carrying case, cable assemblies, and runing spares, as modified by MWO 11–6660–219–35/2.

Paragraph 4, heading. Change "Technical Characteristics" to Technical Characteristics, Radiosonde Baseline Check Set AN/GMM–1(*).

After paragraph 4, add:

4.1 Technical Characteristics, Radiosonde Test Set TS–1348/GMM–1A

Input voltages:

Using battery pack _ 1.4 vdc at 110 ma.
6.6 vdc at 180 ma.
115 vdc at 84 ma.

Using vehicular battery ..... 24 vdc at 750 ma.

Output voltages:
Using battery pack .. 1.4 vdc at 110 ma.
6.6 vdc at 180 ma.
115 vdc at 34 ma.

Using vehicular battery ..... 1.4 vdc at 110 ma.
6.6 vdc at 180 ma.
115 vdc at 34 ma.

Meter ranges:
A_1-VOLTS meter .. 0 to 3 volts
A-VOLTS meter ... 0 to 10 volts
B-VOLTS meter ... 0 to 150 volts
LOAD CURRENT meter ..... 0 to 50 ma and 0 to 250 ma.

Meter accuracy:
A_1-VOLTS meter ... ±2 percent
A-VOLTS meter ... ±2 percent
B-VOLTS meter ... ±2 percent
LOAD CURRENT meter ..... ±2 percent

Paragraph 5, heading. Change "Components" to: Components, Radiosonde Baseline Check Set AN/GMM-1(*)

After paragraph 5, add:

5.1 Components, Radiosonde Test Set TS-1348/GMM-1A
(fig. 8-1)

The components of Radiosonde Test Set TS-1348/GMM-1A are listed in *a* below and the running spares in *b* below.

a. Components.

Quantity	Item	Height (in.)	Depth (in.)	Length (in.)	Unit weight (lb.)
1	TS-1348/GMM-1A (fig. 1.1)	4⅛	17	5¾	7
1	Cover	4¼	17⅛	1¼	14½ oz
1	Output cable	----	----	86	14 oz
1	Power cable	----	----	180	15 oz
1 set	Running spares (*b* below)				
1	Psychrometer case	1⅝	6⅝	13¼	2 to 3 oz.

b. Running Spares.

Quantity	Item	Federal Stock No.
5	Fuse, ½ ampere	
5	Fuse, ¼ ampere	
5	Fuse, ⅛ ampere	

Page 7, figure 2. (Change "3 FUSE" to 6 FUSE.

Paragraph 6, chart. At the end of the chart, add:

Nomenclature or item	Common name
Radiosonde Test Set TS-1348/GMM—1A	Test set.
Main component of Radiosonde Test Set TS-1348/GMM-1A.	Tester.
Battery Pack BA-259/AM	Battery pack.

Paragraph 7. Make the following changes: Delete subparagraph *a* and substitute:

a. The baseline check set consists of a calibration chamber (fig. 3) with a cabinet assembly and a psychrometer case screwed to its side, a control unit (fig. 1.1), a test set, and associated parts and accessories required for operating and testing the equipment.

Subparagraph *c*, line 3. After "9," add 9.1.

Paragraph 8*a*, line 4. Change "top" to side.

Page 9, paragraph 8*d*. After subparagraph *d*, add:

d.1 *Psychrometer Case.* The psychrometer case (fig. 5.1) is a metal box with compartments that contain the psychrometers and their associated components.

After paragraph 9, add:

9.1 Description of Radiosonde Test Set TS–1348/GMM–1A

The test set (fig. 7.1) is inclosed in a metal housing with a latched cover to protect the front panel when the equipment is not in use. The front panel (fig. 16.1) contains three operating

[illegible] end of the test set for [illegible] voltage meters, and one [illegible] and associated controls and switches [illegible] radiosonde or a battery pack. [illegible] connection to a radiosonde [illegible] or a vehicular battery.

[illegible] after figure 5:

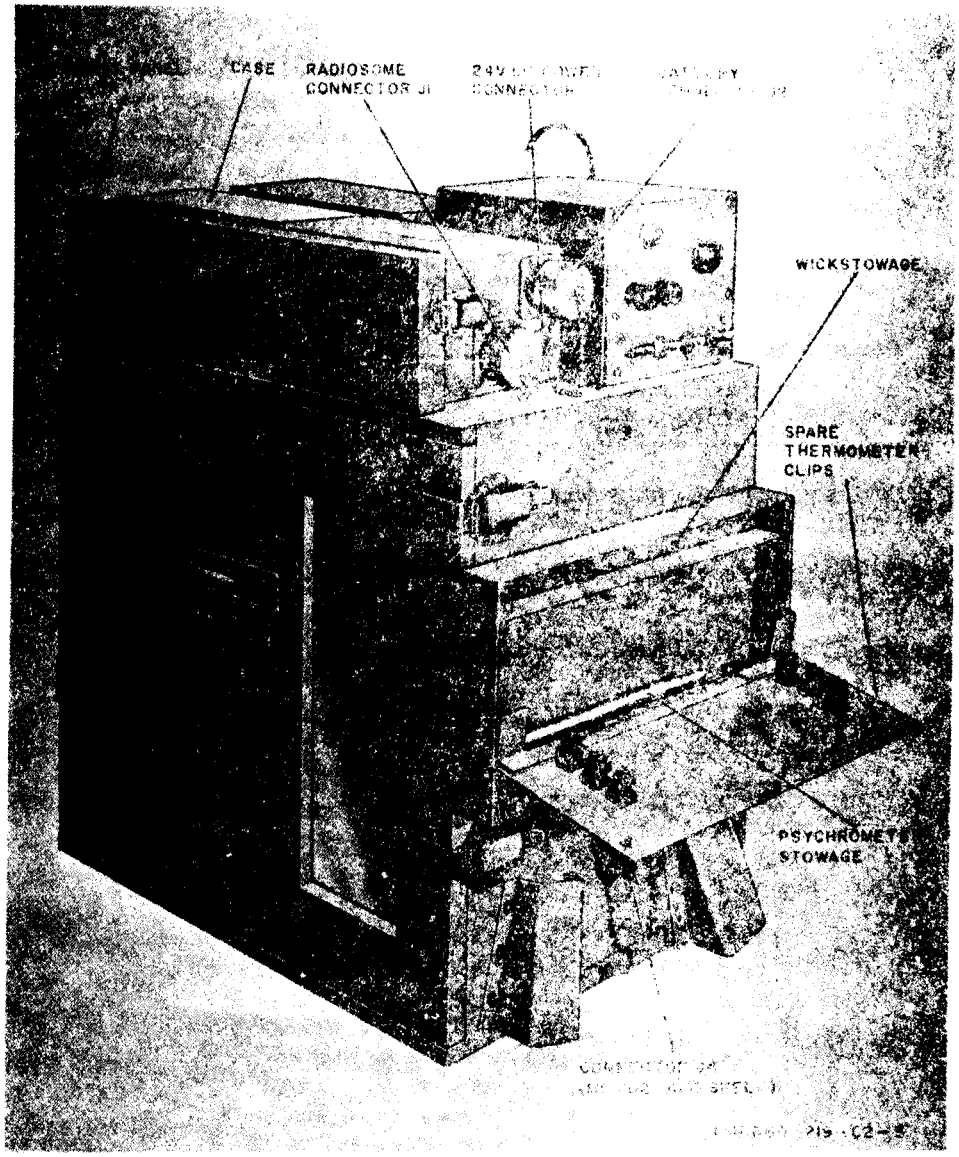

Figure 5.1 Psychrometer case, Radiosonde Test Set AN/GMM-1 (*) with mounted cover open, [illegible]

Paragraph 10. Make the following changes:

After subparagraph *b*, add:

b.1 *Electrical Power, Cable Assembly.* The Electrical Power Cable Assembly (CX-10479/GMM-1A) (fig. 8.1) is a 3-foot, five-conductor cable, terminated at each end in connectors P-2 and J-4. One end of the cable terminates in a female plug; the other end terminates in a male plug.

After subparagraph *c*, add:

c.1 *Electrical Output, Cable Assembly.* The special purpose electrical cable assembly (CX-10479/GMM-1A) (fig. 8.1) is a 3-foot, five-conductor cable, terminated at each end in connectors P-2 and J-4.

Page 11. Add figures 7.1 and 7.2 after figure 7:

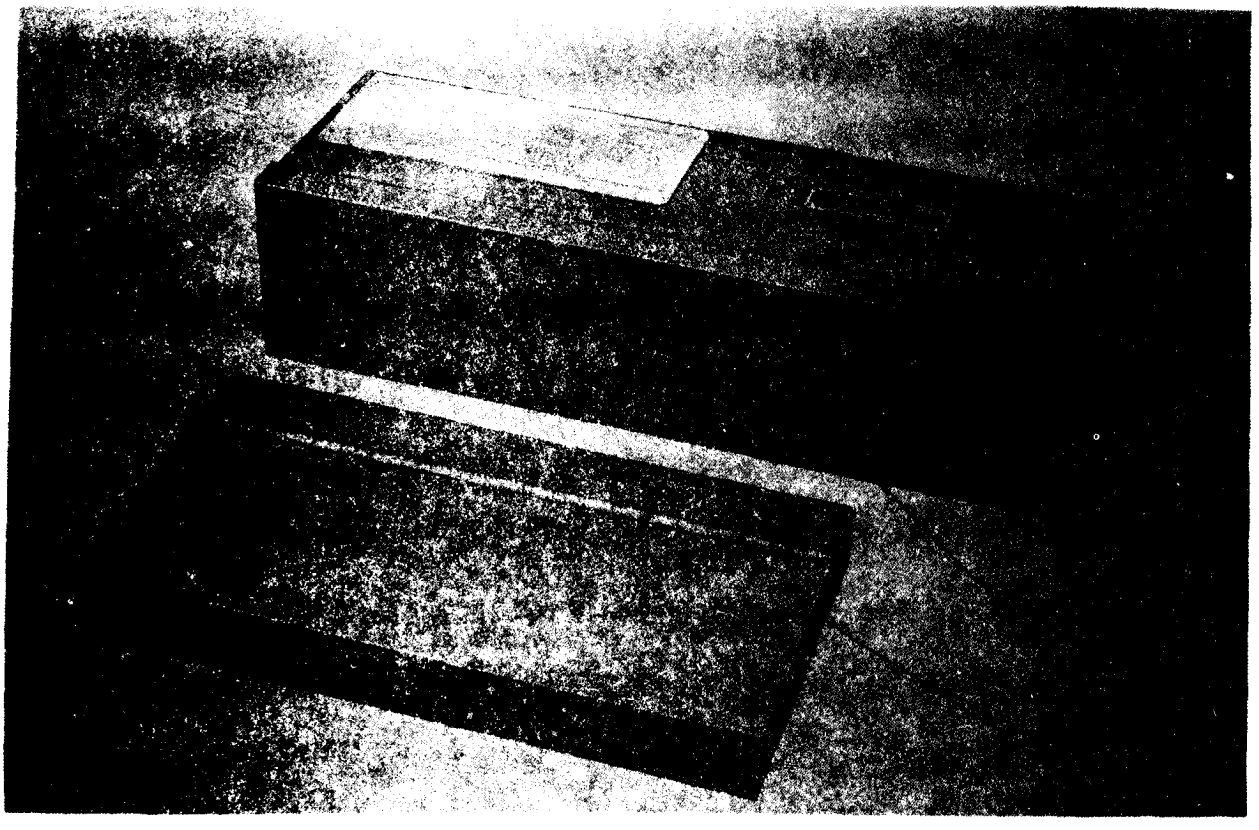

Figure 7.1 Radiosonde Test Set TS-1343/GMM-1A and psychrometer case for units modified by MWO 11-6660-219-35/2.

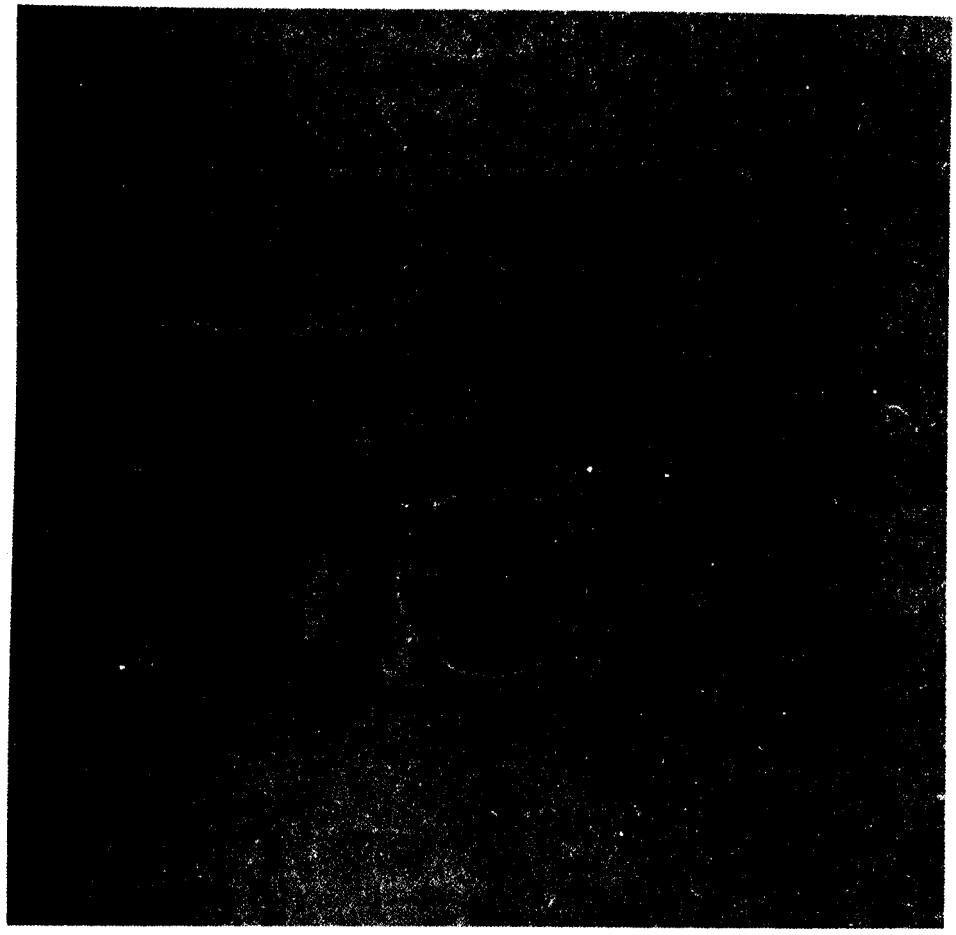

Figure 7.2 Radiosonde Test Set TS-1348/GMM-1A, side view.

Page 12. Add figure 8.1 after figure 8:

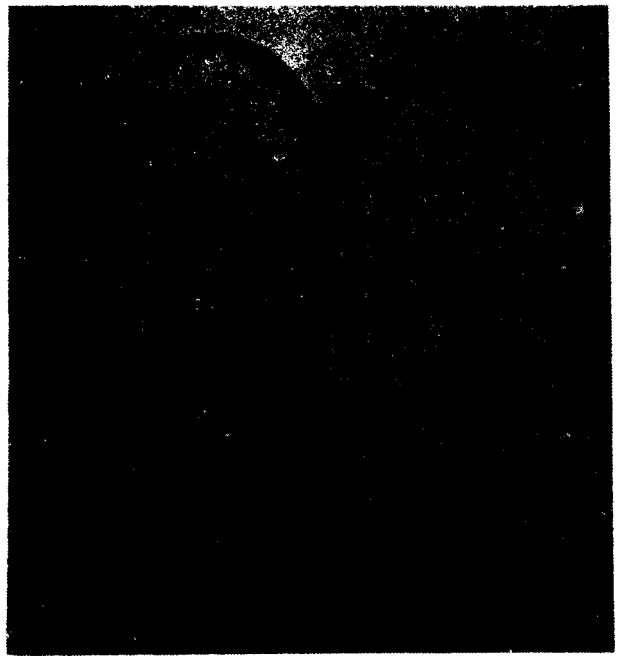

Figure 8.1 Minor components, less carrying case, as modified by MWO 11–6660–219–35/2.

Page 13, paragraph 12. Make the following changes:

Line 1. Before "Radiosonde", add *a*.

After subparagraph *a*, add:

b. Radiosonde Baseline Check Sets AN/GMM–1 and AN/GMM–1A, as modified by MWO 11–6660–219–35/2, are similar in size, shape, and general appearance. The psychrometer case is replaced with a smaller, metal case unit and repositioned to the side of the temperature-humidity chamber (fig. 1–1). The original psychrometer case is replaced by the TS–1348/GMM–1A.

Page 16, paragraph 15. Make the following changes:

Subparagraph *c*, line 2. Change "(fig. 5)" to (figs. 5 and 5.1).

Subparagraph *e*. Delete subparagraph *e* and substitute:

e. Cable Assemblies. Check the remote control cable, the power cable, and, Special Purpose Electrical Cable Assembly CX–10470/GMM–1A (fig. 8 and 8.1) to be sure that the cables and their connectors are in good condition.

After subparagraph *e*, add:

f. Test Set (figs. 7.2 and 16.1) Check to see that the test set cover latches are not sprung or broken, and connectors and controls and meters are in good condition.

Page 22, paragraph 21. Make the following changes:

Heading. Change "Controls and Indicators" to Controls and Indicators, Control Unit

After paragraph 21, add:

21.1 Controls and Indicators, Radiosonde Test Set TS–1348/GMM–1A (fig. 16.1)

Control or indicator	Function
A_1-ADJUST control	Adjusts A_1 (filament) voltage when 24-volt vehicular battery input is used.
A-ADJUST control	Adjusts A (filament) voltage when 24-volt vehicular battery input is used.
B-ADJUST control	Adjust B (B+) voltage when 24-volt vehicular battery input is used.
A_1-VOLTS meter	0 to 3-volt dc meter; indicates A_1 voltage.
A-VOLTS meter	0 to 10-volt dc meter; indicates A voltage.
B-VOLTS meter	0 to 150-volt dc meter; indicates B voltage.
LOAD CURRENT meter	0 to 50-ma range; indicates total plate current (ma) when LOAD CURRENT SELECTOR switch is in the 0–50 MA B position.
	0 to 250-ma range; indicates A_1; or A filament current (ma) depending on position of LOAD CURRENT SELECTOR switch.
LOAD CURRENT SELECTOR switch:	
0–250 MA A_1	Sets up LOAD CURRENT meter for A_1 filament current indication.
0–250 MA A	Sets up LOAD CURRENT meter for A filament current indication.
0–50 MA B	Sets up LOAD CURRENT meter for total plate current indication.

Control or indicator	Function
LOAD SELECTOR switch:	
DUMMY	Sets up tester to operate with internal load.
RADIOSONDE	Sets up tester to operate with a radiosonde as load.
POWER SELECTOR switch:	
OFF	Disconnects power from meter circuits.
24 VDC	Sets up tester to operate from vehicular battery.
BATTERY PACK	Sets up tester to operate from battery pack.

Page 23. Add figures 16.1 and 16.2 after figure 16:

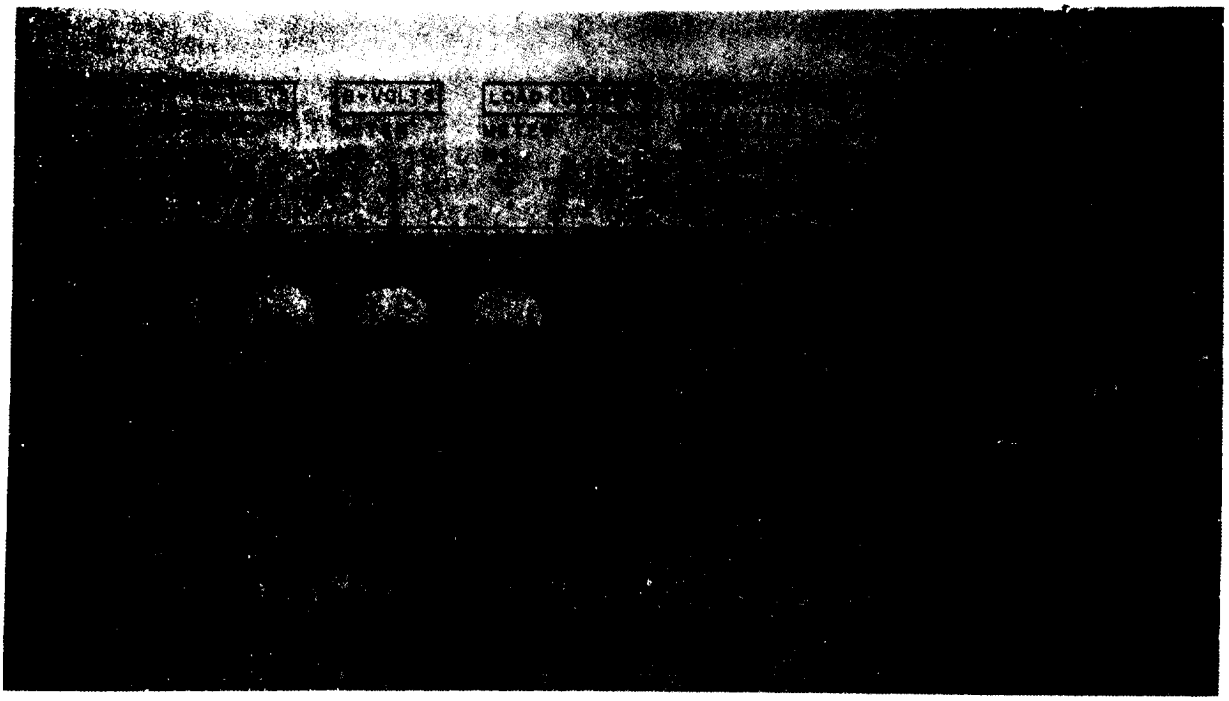

Figure 16.1 Radiosonde Test Set TS-1348/GMM-1A, front panel with cover removed.

Page 25. After paragraph 23, add:

23.1 Battery Pack Test

a. Activate the battery pack per instructions on the battery pack label (steps 1 and 2).

b. Set the test set POWER SELECTOR switch (fig. 16.1) to OFF.

c. Set the LOAD SELECTOR switch to DUMMY.

d. Drain the excess water from the battery pack per instructions on the battery pack label (step 3).

e. Place the tray (fig. 4) on the top of the test set; then place the activated battery pack in the tray. Connect the battery pack to BATTERY connector J2 on the test set, using the extender cable furnished on MWO 11-6660-219-35/2 (fig. 16.2)

f. Operate the POWER SELECTOR switch to BATTERY PACK.

g. After the battery pack reaches full power (approximately 20 minutes), the operating voltage meters should indicate as follows:

Meter	Indication (volts)
A_1-VOLTS METER	1.1 to 1.7
A-VOLTS METER	5.5 to 7.9
B-VOLTS METER	90 to 130

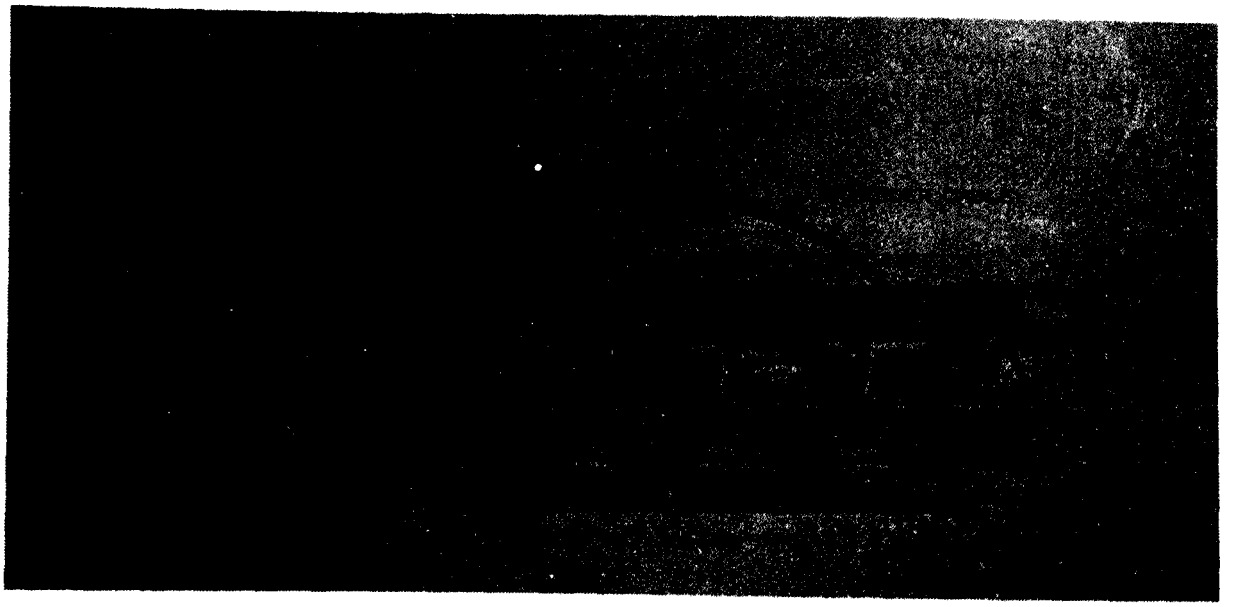

Figure 16.2 Battery test using entender cable.

h. If any of the voltages (*g* above) do not fall within the limits listed, reject the battery pack.

NOTE

Indications on the LOAD CURRENT meter should not be used as a criteria to reject or accept a battery pack.

i. If the battery pack is defective, repeat the procedures given in *a* through *h* above with a new battery pack.

j. If the battery pack is acceptable and no further tests are required, shut down the test set by placing the POWER SELECTOR switch at OFF and disconnecting the battery pack from BATTERY connector J2 on the test set.

23.2 Radiosonde Test Using Battery Pack as Power Source

a. Prepare and test a battery pack (para 23.1).

b. Place the radiosonde to be tested in the calibration chamber (fig. 18).

NOTE

If the AN/AMT–4(*) or AN/AMT–12(*) is to be tested, slide the cover away from the large hole in the floor of the chamber and place the radiosonde securely on the frame, inserting the antenna through the hole. The temperature element of the radiosonde should be on the right side when the radiosonde is placed within the chamber.

c. Connect the special purpose cable CX–10470/GMM–1A to connector J4 (fig. 18.1) on the outside of the calibration chamber, and to RADIOSONDE connector J1 (fig. 7.2) on the tester.

d. Connect the radiosonde battery connector to battery connector P2 inside the calibration chamber.

NOTE

If the radiosonde is to be tested outside the temperature-humidity chamber (fig. 5.1), connect the CX–10470/GMM–1A directly to radiosonde battery connector J2, and to RADIOSONDE connector J1 (fig. 7.2) on the test set.

e. Set the test set LOAD SELECTOR switch (fig. 16.1) to RADIOSONDE.

f. Operate the LOAD CURRENT SELECTOR switch (in sequence) to the positions listed in the chart below. The LOAD CUR-

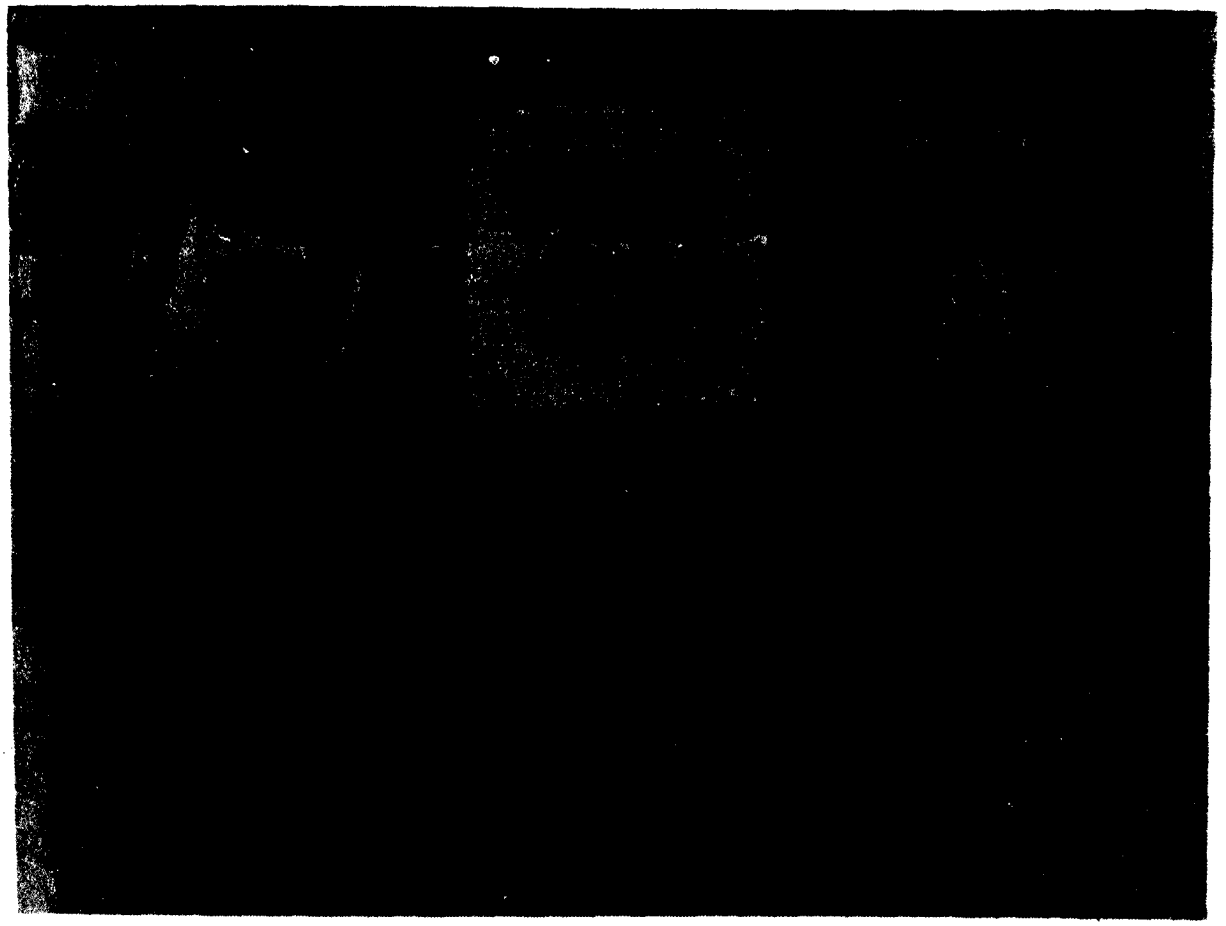

Figure 18.1 Connector J4 as modified by MWO 11-6660-219-35/2.

RENT meter indications should be within the limits listed in the *Indication (ma)* column.

Position	Indication (ma)
0–50 MA B	20 to 35
0–250 MA A	130 to 200
0–250 MA A_1	85 to 120

g. If any of the current indications (*f* above) do not fall within the limits listed, reject the radiosonde.

h. Place the LOAD SELECTOR switch at DUMMY and disconnect the rejected radiosonde.

i. Repeat the procedures given in *b* through *g* above with a new radiosonde.

j. If the radiosonde is acceptable, shut down the test set as follows:

(1) Set the POWER SELECTOR switch to OFF.

(2) Disconnect the battery pack from the test set.

(3) Disconnect the CX–10470/GMM–1A from the test set and the temperature-humidity chamber, or from the radiosonde.

23.3 Radiosonde Test Using 24-Volt Vehicular Battery as Power Source

a. Set the test set POWER SELECTOR switch to OFF.

b. Connect the female end of the CX–10469/U (fig. 8.1) to test set 24-VDC POWER connector J3 (fig. 7.2).

c. Connect the male end of the CX–10469/U to the 24-volt dc vehicular power source.

d. Set the SELECTOR switch to DUMMY (fig. 16.1).

e. Set the POWER SELECTOR switch to 24 VDC.

f. Adjust the voltage adjusting controls until the operating voltage meters indicate within the limits listed in the chart below.

Controls	Meters	Indications (volts)
A_1 ADJUST	A_1-VOLTS	1.1 to 1.7
A ADJUST	A-VOLTS	5.5 to 7.9
B ADJUST	B-VOLTS	90 to 130

g. Connect the CX-10470/GMM-1A to the radiosonde battery connector and to RADIOSONDE connector J1 on the test set (fig. 7.2).

h. Test the radiosonde by following the procedures given in paragraph 23.2*e*, *f*, and *g*.

i. Perform the following procedures for each additional radiosonde to be tested.

(1) Set the LOAD SELECTOR switch to DUMMY.

(2) Disconnect the previously tested radiosonde and connect the new radiosonde to be tested.

(3) Perform the tests given in paragraph 23.2*e*, *f*, and *g*.

NOTE

After testing three of four radiosondes, monitor the operating voltages by following the procedures given in *d*, *e*, and *f* above.

j. When tests are completed, shut down the test set by placing the POWER SELECTOR switch at OFF and disconnecting the CX-10469/U from the power source and the test set.

Page 30, paragraph 33.2 (page 2 of C 1), chart. After Sequence No. 3, add:

Sequence No.	Item	Procedure	References
4	Meters	Inspect the meter glasses for discoloration or breakage. Clean with a clean, damp cloth if required.	Para 33.4.

Paragraph 33.4*d* (page 2 of C 1). Delete the first sentence and substitute: Clean the front panels, the control knobs, and the meters of the test set and the control unit; use a soft, clean cloth.

Paragraph 34, heading. Change "Equipment Performance Checklist" to Equipment Performance Checklist, Radiosonde Baseline Check Set AN/GMM-1(*).

Page 31. **After figure 19 (page 2 of C 1), add figure 19.1.**

Figure 19.1 Radiosonde Test set TS-1348/GMM-1A, front panel rear view.

Page 34, **paragraph 34. After paragraph 34, add:**

34.1 Equipment Performance Checklist, Radiosonde Test Set TS-1348/GMM-1A

Operate the equipment as indicated in the chart below.

CAUTION

If, at any time during the performance of the procedures a meter needle moves off scale, set the POWER SELECTOR switch to OFF and refer the equipment to higher category of maintenance.

	Item No.	Item	Action of condition	Normal indications	Corrective measures
PREPARATORY	1	POWER SELECTOR switch	Set to OFF.		
	2	Test set	Connect CX–10469/U from 24-VDC POWER connector to vehicular battery (24 volts dc). Connect CX–10470/GMM–1A to radiosonde (known to be good) and RADIOSONDE connector.		
EQUIPMENT PERFORMANCE	3	LOAD SELECTOR switch	Set to DUMMY.		
	4	POWER SELECTOR switch	Set to 24 VDC	All meters deflect: *a.* A_1-VOLTS meter indicates from 1.1 to 1.4. *b.* A-VOLTS meter indicates from 4.0 to 4.5. *c.* B-VOLTS meter indicates from 100 to 115.	Check setting of controls: *a.* Adjust A_1-ADJUST control. *b.* Adjust A-ADJUST control. *c.* Adjust B-ADJUST control; replace ½ AMP fuse (para 35*a*.1).
	5	LOAD SELECTOR switch	Set to RADIOSONDE	Operating voltages meters should indicate (item 4 above).	Refer to higher category of maintenance for repair.
	6	LOAD CURRENT SELECTOR switch.	Set to 0–250 MA A_1 Set to 0–250 MA A Set to 0–50 MA B	*a.* LOAD CURRENT meter indicates from 82 to 101. *b.* LOAD CURRENT meter indicates from 121 to 145. *c.* LOAD CURRENT meter indicates from 31.8 to 38.	*a.* Replace ¼ AMP fuse (para 35*a*.1). *b.* Refer to higher category of maintenance for repair. *c.* Replace 1/16 AMP fuse (para 35*a*.1).
	7	POWER SELECTOR switch	Set to OFF	All meters indicate zero.	Refer to higher category of maintenance for repair.
STOP	8	Test set	Disconnect CX–10470/G CX–10470/GMM–1A from RADIOSONDE connector and radiosonde. Disconnect CX–10469/U from 24VDC POWER connector.		

Page 34, paragraph 35*a*(5). After subparagraph (5), add:

a.1 *Fuses, 1/16 AMP, ¼ AMP, and ½ AMP* (fig. 16.1).

(1) Turn the fuse cap in the direction indicated by the arrow and pull the cap and fuse out of the fuse holder.

(2) Insert a spare fuse and cap in the fuseholder and turn the cap in the opposite direction to that indicated by the arrow on the cap.

NOTE

If, after replacement, a fuse burns out again, shut down the equipment and transfer it to higher category maintenance for repair.

Page 36, paragraph 39.1 (page 3 of C 1), chart. After "Sequence No. 7", add:

Sequence No.	Item	Procedure	References
8	Converter	Inspect for normal operation and signs of overheating (fig. 19).	Para 34.1
9	Control knobs	Inspect for looseness	Tighten setscrews.
10	Operation	Check for normal operation	Para 34.

Page 39, paragraph 40. Make the following changes:

Line 1. After "baseline check set", add and test set.

Subparagraph *a*, line 7. Change "(para 34)" to (para 34 and 34.1).

Subparagraph *b*, line 2. Change "4, 7, 15, and 16" to 1.1, 4, 5.1, 7, 7.1, 7.2, 15, 16, 16.1 and 19.

Page 40 paragraph 40*b*, chart. At the end of the chart, add:

Symptom	Probable cause	Corrective measures
All voltage meters indicate zero	*a*. Defective CX–10469/U	*a*. Check continuity of cable; repair or replace.
	b. Defective diode CR1	*b*. Check resistance of diode CR1 (para 42.1*b*); refer to higher category of maintenance for replacement.
A_1-VOLTS meter does not indicate from 1.1 to 1.4 volt.	Defective resistor	Check resistors R2, R5, R6 and R9 (para 42.1*a*); replace defective resistors (para 42.1*c*).
A-VOLTS meter does not indicate from 4.0 to 4.5 volts.	Defective resistor	Check resistors R2, R3, R4, and R7 (para 42.1*a*). Replace defective resistors (para 42.1*c*).
B-VOLTS meter does not indicate from 100 to 115 volts.	Defective resistor	Check resistors R8, R10, and R11 (para 42.1*a*). Replace defective resistors (para 42.1*c*).
LOAD CURRENT meter indicates zero.	Defective CX–10470/GMM–1A	Check continuity of cable. Repair or replace.
LOAD CURRENT meter indicates incorrect value.	Defective meter shunts	Refer to higher category of maintenance for repair.

Paragraph 42. After paragraph 42, add:

42.1 Test Set Checks and Parts Replacement

a. Resistors. Remove the front panel cover (fig. 5.1). Remove the test set front panel (fig. 16.1) by removing the 14 screws and carefully pulling the chassis out from the case; then perform the procedures given in (1) through (4) below.

(1) Set the POWER SELECTOR switch to OFF.

(2) Set the LOAD SELECTOR switch to RADIOSONDE.

(3) With Multimeter TS–352B/U (TM 11–6625–366–15), check the value of each resistor and refer to the chart below for resistance values.

NOTE

It is not necessary to disconnect the resistors from the terminals.

Resistor	Resistance (ohms) ±5%
R1	10
R2	33
R3	33
R4	33
R5	12
R6[a]	0 to 100
R7[a]	0 to 100
R8[a]	0 to 1000
R9	160
R10	1000
R11	2300

[a] Resistors R6, R7, and R8 are A_1-ADJUST, A-ADJUST, and B-ADJUST resistor controls, respectively; rotate each knob control from one extreme (left to right) to the other.

(4) Replace any resistor found to be defective (*c* below).

b. Diode CR1. Remove the test set front panel cover and the front panel as described in *a* above, and perform the procedures given in (1) through (5) below:

NOTE

Do not disconnect the leads from diode CR1.

(1) Set the POWER SELECTOR switch to OFF.

(2) Set up Multimeter TS–352B/U for resistance measurements.

(3) Connect the positive lead of the TS–352B/U to the positive (+) terminal of diode CR1, and the negative lead to the negative (—) terminal; the TS–352B/U should indicate approximately 150 ohms.

(4) Reverse the TS–352B/U leads; the TS–352B/U should indicate approximately 750,000 ohms.

(5) If the approximate resistances ((3) and (4) above) are not obtained, refer the equipment to higher category of maintenance for repair.

c. Parts Replacement.

(1) Check to see that no power is applied to the equipment.

(2) Tag all the leads before disconnecting the part.

(3) Do not replace diode CR1; refer it to higher category of maintenance.

(4) After repairs are completed, use the TS–352B/U to check the continuity of the repaired circuit before operating the equipment.

(5) After all the checks are completed, replace the front panel and the screws (fig. 16.1) and front panel cover (fig. 5.1).

Page 45, appendix I (page 4 of C 1). Delete appendix I and substitute:

APPENDIX A
REFERENCES

DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310–7	U. S. Army Equipment Index of Modification Work Orders.
SB 38–100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used by the Army.
TM 9–213	Painting Instructions for Field Use.
TM 11–2432A	Radiosondes AN/AMT–4A, AN/AMT–4B, AN/AMT–4C, and Radiosonde Set AN/AMT–4D.
TM 11–6660–204–10	Radiosonde Recorders AN/TMQ–5, AN/TMQ–5A, AN/TMQ–5B, and AN/TMQ–5C.
TM 11–6625–366–15	Organizational, DS, GS, and Depot Maintenance Manual: Multimeter TS–352B/U.
TM 11–6660–206–10	Operator's Manual: Rawin Sets AN/GMD–1A and AN/GMD–1B.
TM 11–6660–220–10	Operator's Manual: Radiosonde Sets AN/AMT–12 and AN/AMT–12A.
TM 11–6660–222–12	Meteorological Balloons, Thermometers ML–4 and ML–5, Psychrometers ML–24 and 224, Shelter S–101/V and Launching Accessories.
TM 11–6660–228–10	Operator's Manual: Radiosonde Sets AN/AMT–4B, AN/AMT–4C, and AN/AMT–4D.
TM 38–750	The Army Maintenance Management System (TAMMS).

APPENDIX B

BASIC ISSUE ITEMS

Section I. INTRODUCTION

B–1. Scope

This appendix lists items which accompany the AN/GMM–1 and AN/GMM–1A or are required for installation, operation, or operator's maintenance.

B–2 General

This basic issue items list is divided into the following sections:

a. Basic Issue Items—Section II. A list of items which accompany the AN/GMM–1 and AN/GMM–1A and are required by the operator/crew for installation, operation, or maintenance.

b. Maintenance and Operating Supplies—Section III. Not applicable.

B–3 Explanation of Columns

The following provides an explanation of columns in section II.

a. Source, Maintenance, and Recoverability Codes (SMR), Column 1.

(1) Source codes indicate the selection status and source for the listed item. Source codes are—

Code	*Explanation*
P—	Repair parts which are stocked in or supplied from the GSA/DSA, or Army supply system and authorized for use at indicated maintenance categories.
P2—	Repair parts which are procured and stocked for insurance purposes because the combat or military essentiality of the end item dictates that a minimum quantity be available in the supply system.
P9—	Assigned to items which are NSA design controlled: unique repair parts, special tools, test, measuring and diagnostic equipment, which are stocked and supplied by the Army COMSEC logistic system, and which are not subject to the provisions of AR 380–41.
P10—	Assigned to items which are NSA design controlled: special tools, test, measuring and diagnostic equipment for COMSEC support, which are accountable under the provisions of AR 380–41, and which are stocked and supplied by the Army COMSEC logistic system.
M—	Repair parts which are not procured or stocked, but are to be manufactured at indicated maintenance levels.
A—	Assemblies which are not procured or stocked as such, but are made up of two or more units. Such component units carry individual stock numbers and descriptions, are procured and stocked separately and can be assembled to form the required assembly at indicated maintenance categories.
X—	Parts and assemblies which are not procured or stocked and the mortality of which normally is below that of the applicable end item or component. The failure of such part or assembly should result in retirement of the end item from the supply system.
X1—	Repair parts which are not procured or stocked. The requirement for

Code	Explanation
	such items will be filled by use of the next higher assembly or component.
X2—	Repair parts which are not stocked. The indicated maintenance category requiring such repair parts will attempt to obtain same through cannibalization. Where such repair parts are not obtainable through cannibalization, requirements will be requisitioned with accompanying justification, through normal supply channels.
C—	Repair parts authorized for local procurement. Where such repair parts are not obtainable from local procurement, requirements will be requisitioned through normal supply channels accompanied by a supporting statement of nonavailability from local procurement.
G—	Major assemblies that are procured with PEMA funds for initial issue only as exchange assemblies at DSU and GSU level. These assemblies will not be stocked above DS and GS level or returned to depot supply level.

(2) Maintenance codes indicate the lowest category of maintenance authorized to install the listed item. The maintenance level codes are—

Code	Explanation
C	Operator/crew
O	Organizational maintenance

(3) Recoverability codes indicate whether unserviceable items should be returned for recovery or salvage. Items not coded are expendable. Recoverability codes are—

Code	Explanation
R—	Repair parts and assemblies that are economically repairable at DSU and GSU activities and are normally furnished by supply on an exchange basis.
S—	Repair parts and assemblies which are economically repairable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. When items are determined by a GSU to be uneconomically repairable, they will be evacuated to a depot for evaluation and analysis before final disposition.
T—	High-dollar value recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts normally are repaired or overhauled at depot maintenance activities.
U—	Repair parts specifically selected for salvage by reclamation units because of precious metal content, critical materials, or high-dollar value reusable casings or castings.

b. Federal Stock Number, Column 2. This column indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Description, Column 3. This column indicates the Federal item name and any additional description of the item required. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses.

d. Unit of Measure (U/M), Column 4. A 2-character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ft, ea, pr, etc.

e. Quantity Incorporated in Unit, Column 5. This column indicates the quantity of the item used in the AN/GMM–1 and AN/GMM–1A. A "V" appearing in this column in lieu of a quantity indicates that a definite quantity cannot be indicated (e.g., shims, spacers, etc.).

f. Quantity Furnished With Equipment, Column 6. This column indicates the quantity of an item furnished with the equipment.

g. Illustration, Column 7. This column is divided as follows:

(1) *Figure number, column 7a.* This column indicates the figure number in which the item is shown.

(2) *Item number, column 7b.* This column indicates the callout number used to reference the item in the illustration.

B–4. Explanation of Columns in the Tabular List of Maintenance and Operating Supplies—Section III

Not applicable.

B–5. Special Information

Identifications of the usable on codes included in column 3 of this appendix are—

Code	*Used on—*
1	AN/GMM–1
2	AN/GMM–1A

B–6 Federal Supply Codes for Manufacturers

Code	*Manufacturer's name*
74393	United Lace and Braid Co.
80063	Army Electronics Command
81348	Federal Specifications
81349	Military Specifications
96906	Military Standards

SECTION II BASIC ISSUE ITEMS

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number & Mfr Code	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) QTY FURN WITH EQUIP	(7) ILLUSTRATIONS (a) FIG. NO.	(7) ILLUSTRATIONS (b) ITEM NO. OR REFERENCE DESIGNATION
		TECHNICAL MANUAL TM 11 6660-229-12 Requisition through pinpoint account number if assigned; otherwise through nearest Adjutant General facility. For technical manuals the quantity indicates the maximum number of copies authorized for package (or issue) with the equipment. Where a number of these equipments are concentrated in a small area the quantity on hand may be reduced to the minimum actual requirements as determined by the commanding officer of the unit.		ea	1	1		
P-O	7610-408-4818	BOOK, REFERENCE: U.S. Dept. of Commerce Weather Bureau Psychrometric Tables	1,2	ea	1	1	8	1
P-O-R	6660-265-6329	CABLE ASSEMBLY, POWER ELECTRICAL: 12 cond, #14 AWG, stranded, 15 ft. lg. o/a; SC-B-21403 (80063)	1,2	ea	1	1	8	2
P-O-R	5995-356-0202	CABLE ASSEMBLY ELECTRICAL: 8 cond, #18 AWG, 102 ft. lg; SC-D-21356 (80063)	1,2	ea	1	1	8	3
P-O-R	6660-614-8175	CASE, CARRYING: For components, wood, 35-23/32" lg. X 26-1/4" wd X 17-1/8" h; MIL-C-10879 (81349) (This item is nonexpendable)	1,2	ea	1	1	9	
P-O-R	6660-503-3963	CONTROL, POWER SUPPLY: For chamber, 7" lg. X 6" w X 5-1/8" h; SC-D-21343 (80063) (This item is nonexpendable)	1,2	ea	1	1	1	2
P-O	6685-309-5693	CUP: SC-B-21274 (80063)	1,2	ea	1	1	8	6
P-O	5920-010-6652	FUSE, CARTRIDGE: FO3G3R00A (96906)	1,2	ea	1	5	2	3
P-O	6240-057-2887	LAMP LM-27: 6-8 volt, 0.25 amp	1,2	ea	3	6	2	4
P-O	6660-356-5150	POST, SUPPORTING: SC-B-21275 (80063)	1,2	ea	2	2	8	5
P-O	6660-356-5151	POST, SUPPORTING: SC-B-21276 (80063)	1,2	ea	2	2	8	5
P-O-R	6660-	PSYCHROMETER ML-224: SC-DL-20624 (80063) (This item is nonexpendable)	1,2	ea	1	1	8	10
P-O	8130-351-8217	REEL, WIRE: 12-3/8" lg. X 2-3/4" wd; SC-D-96171 (80063)	1,2	ea	1	1	8	4
P-O-R	6625-924-0327	TEST SET, RADIOSONDE T3-1348/GMM-1A: 24 vdc, 4-3/8" wd X 5-3/8" h X 19" lg; SM-D-444350 (80063) (This item is nonexpendable)	1,2	ea	1	1	1-1	
P-O	6685-533-5971	THERMOMETER, SELF-INDICATING, LIQUID-IN-GLASS: SC-C-20627 (80063)	1,2	ea	2	3	2	2
P-O	4020-247-1737	THREAD, COTTON: No. 40, 100 yd. spool; V-T-276, Type 1A1 (81348)	1,2	ea	1	1	8	9
P-O	6740-291-5834	TRAY, PROCESSING PHOTOGRAPHIC: SC-C-21277-9 (80063)	1,2	ea	1	1	8	7
P-O	9390-264-6158	WICK: 109 (74393)	1,2	ea	1	99	8	8
		RADIOSONDE TEST SET T3-1348/GMM-1A						
P-O	5920-232-3675	FUSE, CARTRIDGE: 1/16 amp, 250 v max; F01A250V-1/16A (96906)		ea	1	5		F1
P-O	5920-504-8634	FUSE, CARTRIDGE: 1/4 amp; F02A250-1/4A (96906)		ea	1	5		F2
P-O	5920-280-8344	FUSE, CARTRIDGE: 1/2 amp; F02A250V-1/2A (96906)		ea	1	5		F3
P-O-R	5995-914-8814	CABLE ASSEMBLY, POWER ELECTRICAL CX-10469/U: 15 ft 3/16" lg; SM-C-444373 (80063)		ea	1	1		W3
P-O	6685-940-8114	CASE, PSYCHROMETER: 13-1/8" lg X 6-5/8" wd X 1-9/16" h; SC-D-160502 (80063)		ea	1	1	1.1	A044
P-O	6740-926-1700	TRAY, PROCESSING, PHOTOGRAPHIC, RUBBER: 8" wd X 11" lg X 2" d; RR-T-646, type III, Size 1 (81348)		ea	1	1	8	
		NO ACCESSORIES, TOOLS, OR TEST EQUIPMENT ARE TO BE ISSUED WITH THIS EQUIPMENT NO BASIC ISSUE ITEMS ARE MOUNTED IN OR ON THE EQUIPMENT						

APPENDIX C
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C–1. General

This appendix provides a summary of the maintenance operations covered in the equipment literature for the AN/GMM–1 and AN/GMM–LA. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C–2. Maintenance Functions

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards.

b. Test. To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc. This is accomplished with external test equipment and does not include operation of the equipment and operator type tests using internal meters or indicating devices.

c. Service. To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents, and air. If it is desired that elements, such as painting and lubricating, be defined separately, they may be so listed.

d. Adjust. To rectify to the extent necessary to bring into proper operating range.

e. Align. To adjust two or more components or assemblies of an electrical or mechanical system so that their functions are properly synchronized. This does not include setting the frequency control knob of radio receivers or transmitters to the desired frequency.

f. Calibrate. To determine the corrections to be made in the readings of instruments or test equipment used in precise measurement. Consists of the comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared with the certified standard.

g. Install. To set up for use in an operational environment such as an encampment, site, or vehicle.

h. Replace. To replace unserviceable items with serviceable like items.

i. Repair. To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes, but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

j. Overhaul. Normally, the highest degree of maintenance performed by the Army in order to minimize time work in process is consistent with quality and economy of operation. It consists of that maintenance necessary to restore an item to completely serviceable condition as prescribed by maintenance standards in technical publications for each item of equipment. Overhaul normally does not return an item to like new, zero mileage, or zero hour condition.

k. Rebuild. The highest degree of materiel maintenance. It consists of restoring equipment as nearly as possible to new condition in accordance with original manufacturing standards.

Rebuild is performed only when required by operational considerations or other paramount factors and then only at the depot maintenance category. Rebuild reduces to zero the hours or miles the equipment, or component thereof, has been in use.

l. Symbols. The uppercase letter placed in the appropriate column indicates the lowest level at which that particular maintenance function is to be performed.

C–3. Explanation of Format

a. Column 1, Group Number. Not applicable.

b. Column 2, Functional Group. Column 2 lists the noun names of components, assemblies, subassemblies, and modules on which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the maintenance category at which performance of the specific maintenance function is authorized. Authorization to perform a function at any category also includes authorization to perform that function at higher categories. The codes used represent the various maintenance categories as follows:

Code	*Maintenance Category*
C	Operator/crew
O	Organizational maintenance
F	Direct support maintenance
H	General support maintenance
D	Depot maintenance

d. Column 4, Tools and Test Equipment. Column 4 specifies, by code, those tools and test equipments required to perform the designated function. The numbers appearing in this column refer to specific tools and test equipment which are identified in table I.

e. Column 5, Remarks. Self-explanatory.

C–4. Explanation of Format of Table I, Tool and Test Equipment Requirements

The columns in table I are as follows:

a. Tools and Equipment. The numbers in this column coincide with the numbers used in the tools and equipment column of the maintenance allocation chart. The numbers indicate the applicable tool for the maintenance function.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated the facility.

c. Nomenclature. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

d. Federal Stock Number. This column lists the Federal stock number of the specific tool or test equipment.

e. Tool Number. Not used.

SECTION II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	RADIOSONDE BASELINE CHECK SET AN/GMM-1, AN/GMM-1A	C		C										Visual and operation Clean and ventilate
			O										2	Voltage & continuity checks
			O										2	Replace unit
							D						2,3	
											H		2,3	
	CABLE ASSEMBLIES									O			1,2	
										H			3	
											H		2,3	
												D	2,3	
	CHAMBER, TEMPERATURE-HUMIDITY			O										Clean and ventilate
		O												Visual, door gasket and moisture damage to heating element
									O				1	
										F			3	
											H		3	
												D	3	
	CABINET ASSEMBLY		O										1,2	Continuity voltage checks
									F				2,3	
											H		2,3	
												D	2,3	
	CONTROL POWER SUPPLY	O												Visual
			O										2	Continuity-voltage
									O					
										F			2,3	
											H		2,3	
												D	2,3	
	PSYCHROMETER								C					
										O			1	
	REEL, WIRE									H			2,3	

MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	AN/GMM-1, AN/GMM-1A (cont.)													
	TEST SET, RADIOSONDE TS-1348/GMM-1A	C			C									Operation
		O												Internal, plugs, cables, jacks
			O										2	Diode test
									O				1	Voltage & current
										F			2,3	
												H	3	
	CABLES AND CONNECTORS								O				1	
										O			1,2	
	CONVERTER								F				2,3	
	FUSE HOLDER								O				1,2	
	KNOBS, RESISTORS								O				1,2	
	MULTIMETER, MA								F				2,3	
	SEMI-CONDUCTOR, DIODE 1N254								F				2,3	
	SWITCHES (S-1, S-2, S-3)								F				2,3	
	VOLTMETER (Va, VA, VB)								F				2,3	

TABLE I. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
		AN/GSM-1, AN/GSM-1A (cont.)		
1	O	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-610-8177	
2	O	MULTIMETER TS-352	6625-242-5023	
3	F,H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-605-0079	

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:

KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

USASA (2)
ACSC-E (2)
CNGB (1)
Dir of Trans (1)
CofEngrs (1)
TSG (1)
CofSptS (1)
USAARENBD (3)
USAMB (10)
USACDC (2)
USACDC Agcy (1)
USAMC (1)
CONARC (5)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (4)
USARYIS (5)
USAREUR (10)
LOGCOMDS (5)
USAMICOM (4)
USATECOM (2)
USASTRATCOM (4)
USAESC (70)
MDW (1)
Armies (2)
Corps (2)
1st Cav Div (3)
Svc Colleges (2)
USASCS (10)
USASESS (10)
USAADS (2)
USAFAS (10)
USAARMS (5)
USAIS (5)
USAES (2)
USAINTS (3)
WRAMC (1)
USACDCEC (10)
Instl (2) except
  Fort Gordon (10)
  Fort Huachuca (10)
  WSMR (3)
  Fort Carson (25)
Army Dep (2) except
  LBAD (14)
  SAAD (30)
  TOAD (14)
  LEAD (7)
  NAAD (5)
  SVAD (5)
  ATAD (10)
Gen Dep (2)
Sig Sec Gen Dep (5)
Sig Dep (10)
Sig FLDMS (2)
ATS (1)
USAERDAA (2)
USAERDAW (5)
USACRREL (2)
MAAG (1)
USARMIS (1)
DPG (5)
JPG (5)
USAFABD (2)
Units org under fol TOE:

(2 cys each unit)	
6-100	11-36
6-101	11-38
6-125	11-39
6-200	11-95
6-201	11-117
6-300	11-158
6-302	11-215
6-305	11-225
6-306	11-226
6-325	11-227
6-326	11-500(AA-AC)
6-565	17
6-575	17-100
6-576	29-124
6-700	29-126
6-701	37
7	37-100
7-100	29-51
11-15	57
11-16	67
11-35	

NG: State AG (3)

USAR: None.

For explanation of abbreviation used, see AR 310-50.

TM 11-6660-219-12
C 3

Change No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *5 October 1973*

Operator and Organizational Maintenance Manual Including Repair Parts and Special Tool Lists RADIOSONDE BASELINE CHECK SETS AN/GMM-1 AND AN/GMM-1A

TM 11-6660-219-12, 20 July 1961, is changed as follows:

Page 5, paragraph 2. Delete paragraph 2 and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army)/NAVSUP PUB 378 (Navy)/AFR 71-4 (Air Force)/and MCO P4030.29 (Marine Corps).

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 (Army)/NAVSUP PUB 459 (Navy)/AFM 75-34 (Air Force)/and MCO P4610.19 (Marine Corps).

2.1. Recommendations for Equipment Publications Improvements

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-S Fort Monmouth, NJ 07703.

Page 7. After paragraph 5.1 add:

5.2. Items Comprising an Operable Equipment

FSN	*QTY*	*Nomenclature, part No., and mfr code*	*Usable on code*	*Fig. No.*
		NOTE The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 708-42 and used to identify manufacturer, distributor, or Government agency, etc. **NOTE** In the usable on code column, number 1 refers to Radiosonde Baseline Check Set AN/GMM-1; number 2 refers to Radiosonde Baseline Check Set AN/GMM-1A.		
		Radiosonde Baseline Check Set AN/GMM-1 Radiosonde Baseline Check Set AN/GMM-1A		
7610-408-4818	1	Book, Reference: U.S. Dept. of Commerce Weather Bureau Psychrometic Tables.	1,2	8

FSN	QTY	Nomenclature, part No., and mfr code	Usable on code	Fig. No.
6660-265-6329	1	Cable Assembly, Tower Electrical: 12 Cond, #14 AWG, stranded, 15 ft lg o/a; SC-B-21403; 80063	1,2	8
5995-356-0202	1	Cable Assembly Assembly Electrical: 8 cond, #18 AWG, 102 ft lg; SC-D-21356; 80063	1,2	8
6660-503-3963	1	Control, Power Supply: For chamber, 7 in. lg x 6 in. w x 5-1/8 in. h; SC-D-21343; 80063 (This item is nonexpendable)		
6685-300-5693	1	Cup: SC-B-21274; 80063	1,2	2
6660-356-5150	2	Post, Supporting: SC-B-21275; 80063	1,2	8
6660-356-5151	2	Post, Supporting: SC-B-21276; 80063	1,2	8
6660-640-9162	1	Psychrometer ML-224: SC-DL-20624; 80063 (This item is nonexpendable)	1,2	8
8130-351-8217	1	Reel, Wire: 12-3/4 in. lg x 2-3/4 in. wd; SC-D-98171, 80063	1,2	8
6685-533-5971	2	Thermometer, Self-Indicating, Liquid-in-Glass: SC-C-20627; 80063	1,2	2
4020-247-1737	1	Thread, Cotton: No. 40, 100 yd spool; V-T-276, Type 1A1; 81348	1,2	8
6740-291-5834	1	Tray, Processing Photographic: SC-C-21277-9; 80063	1,2	8
9390-264-6158	1	Wick: 109; 74393	1,2	8
6625-924-0327	1	Radiosonde Test Set TS-1348/GMM-1A: 24 vdc, 4-3/8 in. w x 5-3/4 in. h x 19 in. lg; SM-D-444350; 80063 (This item is nonexpendable) consisting of:	1,2	1-1
5995-914-8814	1	Cable Assembly, Power Electrical CX-10469/U: 15 ft 3/16 in. lg; SM-C-444373; 80063		
6740-926-1700	1	Tray, Processing, Photographic, Rubber: 8 in. wd x 11 in. lg x 2 in. d; RR-T-646, type III, Size 1; 81348		

Page 15, paragraph 15a(2), third sentence. Delete "the table of components (para 5)" and substitute, "use the basic issue items list (app B) and paragraph 5.2."

Page 50, appendix B. Delete appendix B and substitute:

APPENDIX B
BASIC ISSUE ITEMS LIST (BIIL) AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST (ITIAL)
Section I. INTRODUCTION

1. Scope

This appendix lists only basic issue items required by the crew/operator for installation, operation, and maintenance of Radiosonde Baseline Check Set AN/GMM-1 and AN/GMM-1A.

2. General

This Basic Issue Items and Items Troop Installed or Authorized List is divided into the following sections:

a. Basic Issue Items List—Section II. A list, in alphabetical sequence, of items which are furnished with, and which must be turned in with the end item.

b. Items Troop Installed or Authorized List—Section III. Not applicable.

c. Part Number. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements, to identify and item or range of items.

d. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., and is identified in SB 708-42.

e. Description. Indicates the Federal item name and a minimum description required to identify the item.

f. Unit of Measure (U/M). Indicates the standard of basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation, (e.g., ea, in., pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

g. Quantity Furnished with Equipment (Basic Issue Items Only). Indicates the quantity of the basic issue item furnished with the equipment.

Section II. BASIC ISSUE ITEMS LIST

(1) Illustration		(2) Federal stock number	(3) Part number	(4) FSCM	(5) Description Usable on code	(6) Unit of meas	(7) Qty furn with equip
(A) Fig. no.	(B) Item no.						
9		6660-614-8175	MIL-C-10879	81349	CASE, CARRYING, FOR COMPONENTS, WOOD, 35-23/82 IN. LG X 26-1/4 IN. WD X 17-1/8 IN. H (THIS ITEM IS NONEXPENDABLE)	EA	1
1-1		6685-940-8114	SC-D-160502	80063	CASE, PSYCHROMETER, 13-1/8 IN. LG X 6-5/8 IN. WD X 1-9/16 IN. H (PART OF RADIOSONDE TEST SET TS-1348/GMM-1A)	EA	1

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:
VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:
Active Army:

USASA (2)
CNGB (1)
ACSC-E (2)
Dir of Trans (1)
COE (1)
TSG (1)
USAARENBD (1)
USAMB (1) (10)
AMC (1)
FORSCOM (5)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (4)
USAREUR (10)
LOGCOMDS (3)
MICOM (2)
TECOM (2)
USASTRATCOM (4)
MDW (1)
Armies (2)
Corps (2)
HISA (ECOM) (21)
Svc Colleges (1)
USASESS (5)
USAADS (2)
USAFAS (10)
USAARMS (5)
USAIS (5)
USAES (2)
USAINTS (3)
Instl (2) except
Fort Gordon (10)
Fort Huachuca (10)
WSMR (1)
Fort Carson (10)
Ft Richardson (ECOM Ofc) (2)
WRAMC (1)
USACDCEC (10)
ATS (1)
Army Dep (2) except
LBAD (14)
SAAD (30)
TOAD (14)
ATAD (10)
USA Dep (2)
Sig Sec USA Dep (5)
Sig Dep (5)
Sig FLDMS (2)
USAERDAA (1)
USAERDAW (1)
MAAG (1)
USARMIS (1)
DPG (2)
USAFABD (2)
Units org under fol TOE:
(1) cy each unit)

6-100	11-39
6-185	11-85
6-200	11-95
6-201	11-117
6-300	11-158
6-302	11-215
6-525	11-225
6-526	11-228
6-575	11-237
6-576	11-500 (AA-AC)
6-700	17
6-701	17-100
7	29-134
7-100	29-136
11-15	37
11-16	37-100
11-35	39-51
11-36	57
11-38	67

NG: State AG (3)
USAR: None
For explanation of abbreviations used, see AR 310-50.

TM 11-6660-219-12
C 4

CHANGE
NO. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC *13 July 1977*

Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tools Lists RADIOSONDE BASELINE CHECK SETS AN/GMM-1 AND AN/GMM-1A (NSN 6660-00-527-8392)

TM 11-6660-219-12, 20 July 1961, is changed as follows:

The title is changed as shown above.

Page 36, paragraph 36. After paragraph 36*f*, add paragraph 36*g*:

g. Refer to TM 11-6660-219-20P for organizational repair parts.

Page 45, appendix A. Add the following:

TM 11-6660-219-20P	Organizational Repair Parts and Special Tools Lists for Radiosonde Baseline Check Sets GMM-1 and GMM-1A. (NSN 6660-00-527-8392.)

Page 46. Appendix C is superseded as follows:

APPENDIX C
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations for AN/GMM-1. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system. This function does not include the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

C-3. Column Entries

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "work time" figures will be shown for each category. The number of task-hours specified by the "work time" represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

C — Operator/Crew
O — Organizational
F — Direct Support
H — General Support
D — Depot

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

C-4. Tool and Test Equipment Requirements (Sect III)

a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit)

in parentheses.

C-5. Remarks (Sec IV)

a. Reference Code. This code refers to the appropriate item in section II, column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.

(Next printed page is 3)

SECTION II MAINTENANCE ALLOCATION CHART FOR

RADIOSONDE BASELINE CHECK SETS AN/GMM-1 & AN/GMM-1A

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
00	RADIOSONDE BASELINE CHECK SET AN/GMM-1, AN/GMM-1A	Inspect	0.1						
		Service	0.1						
		Test		0.2				1,2	
		Repair		0.2				1,2	A
		Test			0.3			2,3,4	
		Repair			0.3			2,3,4	
		Calibrate					2.0	2,3,4	
		Overhaul					40	2,3,4	
01	Cable Assembly, Power	Test		0.1				1,2	
		Repair				1.0		3	
02	Cable Assembly, Power Remote	Repair				1.0		2,3	
03	Chamber, Temperature-Humidity	Inspect		0.1					
		Service		0.1					
		Replace		0.2				1	
		Repair			0.5	1.0		2,3	
04	Control Power Supply	Inspect		0.1					
		Test		0.2				2	
		Replace		0.2					
		Replace			0.5			2,3	
05	Psychrometer Assembly	Replace	0.1						
		Repair		0.1				1	
0501	Psychrometer Case	Repair				1.0		3	
06	Test Set, Radiosonde TS-1348/GMM-1A	Inspect	0.1						
		Test		0.3				2	
		Replace		0.1				1	
		Repair			0.5	1.0		2,3,4	
07	Cable Assembly CX-10470/GMM-1A	Repair				1.0		2,3	
08	Cable Assembly CX-10469/U (AN/GMM-1A)	Repair				1.0		2,3	

SECTION III **TOOL AND TEST EQUIPMENT REQUIREMENTS**
FOR
RADIOSONDE BASELINE CHECK SETS AN/GMM-1 & AN/GMM-1A

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	O	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-00-610-8177	
2	O, F, H, D	MULTIMETER AN/USM-223	6625-00-999-7465	
3	F, H, D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-00-605-0079	
4	F, H, D	MULTIMETER ME-26/U	6625-00-360-2493	

SECTION IV. REMARKS

RADIOSONDE BASELINE CHECK SETS AN/GMM-1 & AN/GMM-1A

REFERENCE CODE	REMARKS
A	Repair by replacement of items 01-08

By Order of the Secretary of the Army:

BERNARD W. ROGERS
General, United States Army
Chief of Staff

Official:

PAUL T. SMITH
Major General, United States Army
The Adjutant General

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USAFABD (2)
DARCOM (1)
TECOM (2)
USACC (4)
TRADOC (2)
OS Maj Comd (4)
except USAREUR (10)
MDW (1)
Armies (2)
Corps (2)
HISA (Ft Monmouth) (33)
Ft Richardson (ECOM Ofc) (2)
Instl (2) except
Ft Gillem (10)
Ft Gordon (10)
Ft Huachuca (10)
Ft Carson (5)
SAAD (30)
LBAD (14)
TOAD (14)
SHAD (3)
DPG (2)
USAFAS (10)
USAARMS (5)
USAIS (5)
USAICS (3)
USAADS (2)
USAES (2)
Svc Colleges (1)
MAAG (1)
USARMIS (1)
USAERDAA (1)
USAERDAW (1)
Sig FLDMS (1)
Units org under fol TOE:-1 ea.
6-100
6-185
6-201
6-300
6-302
6-525
6-526
6-575
6-576
6-700
6-701
7
7-100
11-15
11-16
11-35
11-36
11-38
11-39
11-85
11-95
11-117
11-215
11-225
11-228
11-500(AA-AC)
17
29-134
29-136
37
57

ARNG: State AG (3).
USAR: None.
For explanation of abbreviations used, see AR 310-50.

CHANGE
NO. 5

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, *17 March 1981*

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL
RADIOSONDE BASELINE CHECK SETS AN/GMM-1 AND AN/GMM-1A (NSN 6660-00-527-8392)

TM 11-6660-219-12, 20 July 1961, is changed as follows:

The title is changed as shown above.

Page 5. Paragraph 2 is superseded as follows:

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

d. 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 or DA Form 2028 (Recommended Changes to Publications and Blank Forms), direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703.

Paragraph 2.1 is superseded as follows:

2.1 Reporting Equipment Improvement Recommendations (EIR)

If your equipment 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 SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ, 07703. We will send you a reply.

Add paragraph 2.2 after paragraph 2.1

2.2 Hand Receipt

Hand receipts for End Item/Components of End Item (COEI), Basic Issue Items (BII) and Additional Authorization List (AAL) items are published in a Hand Receipt Manual. The Hand Receipt Manual numerical designation is the same as the related technical manual with the letters HR added to the number. The manual is published to aid in property accountability and is available through Commander, US Army Adjutant General Publications Center, ATTN: AGDL-OD, 1555 Woodson Road, St. Louis, MO 63114.

Page 7. Paragraph 5.2 change the following: "Cable Assembly, Tower" to read "Cable Assembly, Power." "Cable Assembly Assembly" to read "Cable Assembly Power." "SC-DL-20624" to read "SC-C-20626" Figure 2, Change 6 FUSE to 3 FUSE.

Page 30. Paragraph 32*b* "(FSN 7930-395-9542)" is changed to read "(NSN 6850-00-597-9765)".

Paragraph 33.4 WARNING is changed as follows:

WARNING

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposi-

tion are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

Page 36. Change paragraph 36*g* to read 36*f*.

Page 46. Appendix B is superseded as follows:

APPENDIX B
COMPONENTS OF END ITEM LIST

Section I. INTRODUCTION

B-1. Scope

This appendix lists integral components of and basic issue items for the AN/GMM-1(*) to help you inventory items required for safe and efficient operation.

B-2. General

This components of End Item List is divided into the following sections:

a. Section II. Integral Components of the End Item. These items, when assembled, comprise the AN/GMM-1(*) and must accompany it whenever it is transferred to turned in. The illustrations will help you identify these items.

b. Section III. Basic Issue Items. These are the minimum essential items required to place the AN/GMM-1(*) in operation, to operate it, and to perform emergency repairs. Although shipped separately packed they must accompany the AN/GMM-1(*) during operation and whenever it is transferred between accountable officers. The illustration will assist you with hard-to-indentify items. This manual is your authority to requisition replacement BII, based on TOE/MTOE authorization of the end item.

B-3. Explanation of Columns

a. Illustration. This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustrations on which the item is shown.

(2) *Item number.* The number used to identify item called out in the illustration.

b. National Stock Number. Indicates the National stock number assigned to the item and which will be used for requisitioning.

c. Description. Indicates the Federal item name and, if required, a minimum description to identify the item. The part number indicates the primary number used by the manufacturer, which controls the design and characteristics of the item by means of its engineering drawings, specification, standards, and inspection requirements to identify an item or range of items. Following the part number, the Federal Supply Code for Manufacturers (FSCM) is shown in parentheses.

d. Location. The physical location of each item listed is given in this column. The lists are designed to inventory all items in one area of the major item before moving on to an adjacent area.

f. Quantity Required (Qty Reqd). This column lists the quantity of each item required for a complete major item.

g. Quantity. This column is left blank for use during an inventory. Under the Rcvd column, list the quantity you actually receive on your major item. The Date columns are for your use when you inventory the major item.

SECTION II INTEGRAL COMPONENTS OF END ITEM

(1) ILLUSTRATION (A) FIG NO.	(1) ILLUSTRATION (B) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION PART NUMBER (FSCM)	(4) LOCATION	(5) USABLE ON CODE	(6) QTY REQD	(7) QUANTITY RCVD	(7) QUANTITY DATE
1		6660-00-527-8392	Radiosonde Baseline Check Set AN/GMM-1(*) Consisting of:			1		
8	1	7610-00-408-4818	Book, Reference: US Department of Commerce Weather Bureau Psychrometric Tables (82187)			1		
8	2	6660-00-265-6329	Cable Assembly, Power Electrical 15 ft long SC-B-21403 (80063)			1		
8	3	5995-00-356-0202	Cable Assembly, Power Electrical 102 ft long SC-D-21356 (80063)			1		
6		6660-00-503-3963	Control, Power Supply SC-D-21343 (80063)			1		
8	6	6685-00-309-5693	Cup SC-B-21274 (74082)			1		
8	5	6660-00-356-5150	Post, Supporting SC-B-21275 (80063)			2		
8	5	6660-00-356-5151	Post, Supporting SC-B-21276 (80063)			2		
8	10	6660-00-640-9162	Psychrometer ML-224 SC-C-20626 (80063)			1		
1.1		6625-00-924-0327	Radiosonde Test Set TS-1348/GMM-1A SM-D-444350 (80063)			1		
8	4	8130-00-351-8217	Reel Cable SC-D-98171 (80063)			1		
2	2	6685-00-533-5971	Thermometer Self Indicating Liquid-in-glass SC-C-20627 (80063)			2		
8	9	4020-00-247-1737	Thread cotton No. 40 (81348)			1		
8	7	6740-00-291-5834	Tray Processing Photographic SC-C-21277-9 (80063)			1		
8	8	9390-00-264-6158	Wick (74393)			1		

SECTION III BASIC ISSUE ITEMS

(1) ILLUSTRATION (A) FIG NO.	(1) ILLUSTRATION (B) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION PART NUMBER (FSCM)	(4) LOCATION	(5) USABLE ON CODE	(6) QTY REQD	(7) QUANTITY RCVD	(7) QUANTITY DATE
9		6660-00-614-8175	Case carrying MIL-R-108790 (80063)			1		
1.1		6685-00-940-8114	Case, Psychrometer SC-D-160502 (80063)			1		

Page 54. Appendix D is added after Appendix C.

APPENDIX D
EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. Scope

This appendix lists expendable supplies and materials you will need to operate and maintain the AN/GMM-1(*). These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

D-2. Explanation of Columns

a. Column 1 – Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use cleaning compound, item 5, App. D").

b. Column 2 – Level. This column identifies the lowest level of maintenance that requires the listed item.

C — Operator/Crew
O — Organization Maintenance
F — Direct Support Maintenance
H — General Support Maintenance

c. Column 3 – National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column 4 – Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if applicable.

e. Column 5 – Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

SECTION II EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION PART NO. AND FSCM	(5) UNIT OF MEAS
1	C	8305-00-222-2423	Cloth Cotton (Cheesecloth) CCC-C-440 (81348)	YD
2	C	6850-00-597-9765	Cleaning Compound O-C-1889 (81348)	GL
3	C	7930-00-249-8036	Detergent, General Purpose 5 pound can P-D -220 (81348)	LB
4	C	6850-00-105-3084	Trichlorotrifluoroethane (Cleaning Agent) 16 ounce can Freon type TF (81349)	PT

By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

J. C. PENNINGTON
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The Adjutant General

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USAES (2)	11-38
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USAERDAA (1)	11-117
USAERDAW (1)	11-125
Fort Gordon (10)	11-225
Fort Carson (5)	11-228
Army Dep (1) except	11-237
SAAD (30)	11-500 (AA-AC)
TOAD (14)	17
SHAD (2)	17-100
Fort Gillem (10)	29-134
USA Dep (1)	29-136
Sig Sec USA Dep (1)	37
Fort Richardson (CERCOM Ofc) (2)	37-100
Units org under fol TOE:	39-51
(2 copies each unit)	57
29-207	67
29-610	

NG: State AG (3); Units — None
USAR: None
For explanation of abbreviations used, see AR 310-50.

Technical Manual
No. 11-6660-219-12

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., 20 July 1961

RADIOSONDE BASELINE CHECK SETS AN/GMM-l AND AN/GMM-lA

•This manual supersedes as much of TM 11-2440 with C1, 18 November 1953; C2, 15 JULY 1954; C3.5 January 1959; and C4, 20 April 1959, applicable to operations and orgazational maintenance of the equipment.

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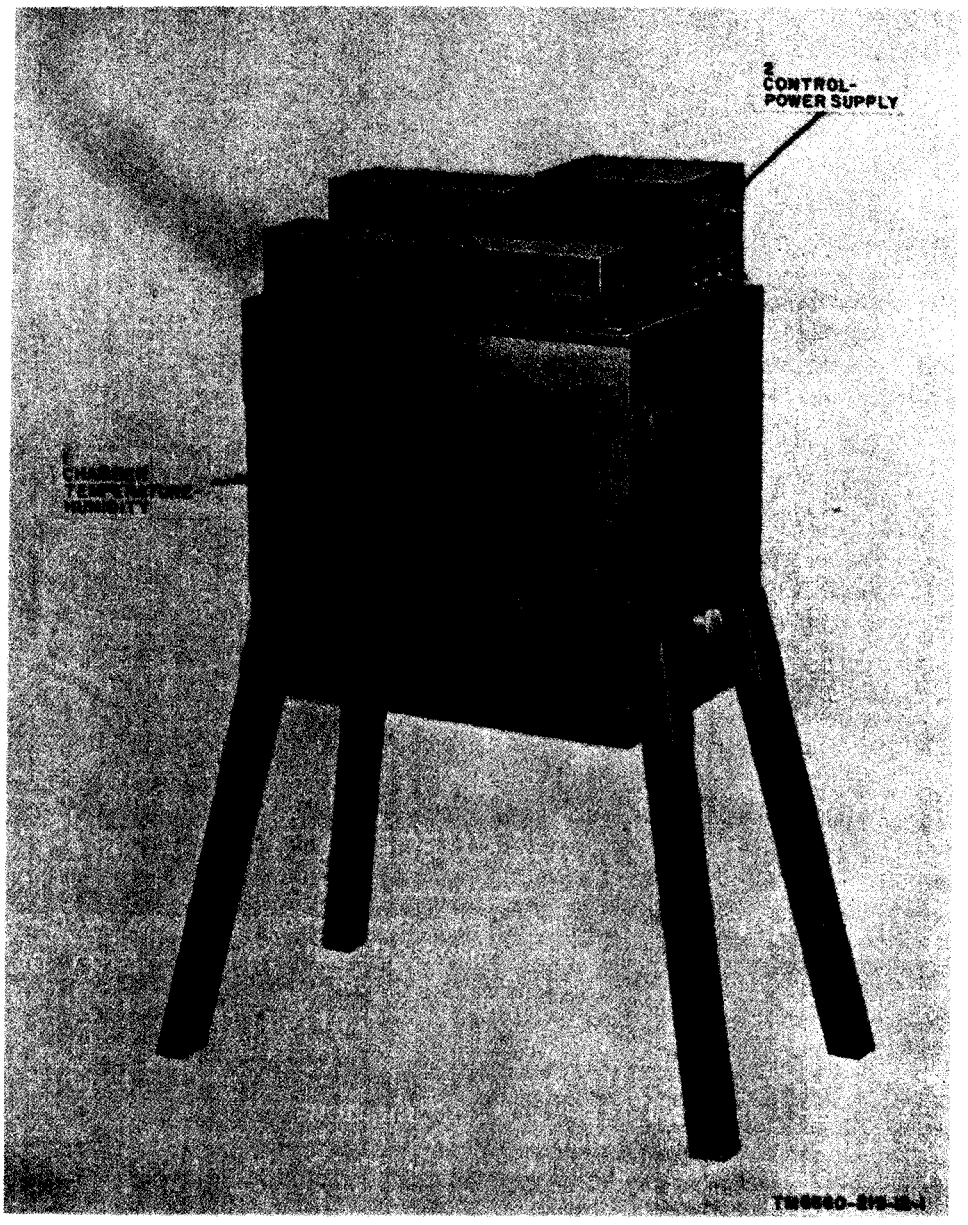


Figure 1. Radiosonde Baseline Check Set AN/GMM-1(*), less carring case, cable assemblies, and running spares.

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual describes Radiosonde Baseline Check Sets AN/GMM-1 and AN/GMM-1A and covers their installation, operation, and organizational maintence (first and second echelon). It includes operation under usual and unusual conditions, cleaning and inspection of the equipment, and replacing those parts available to first and second echelon maintenance personnel.

b. Official nomenclature followed by (*) is used to indicate all models of the equipment item covered in this manual. Thus, Radiosonde Baseline Check Set AN/GMM-1(*) represents Radiosonde Base1ine Check Sets AN/GMM-l and AN/GMM-1A. Radiosonde AN/AMT-4(*) represents Radiosondes AN/AMT-4B, AN/AMT-4C, and Radiosonde Set AN/AMT-4D. Radiosonde Recorder AN/TMQ-5(*) represents Radiosonde Recorders AN/TMQ-5, AN/TMQ-5A, AN/TMQ-5B, and AN/TMQ-5C. Rawin Set AN/GMD-1(*) represents Rawin Sets AN/GMD-1, AN/GMD-1A, and AN/GMD-1B.

2. Forms and Records

a. Unsatisfactory Equipment Reports.

(1) Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-ML, Fort Momnouth, N. J., as prescribed in AR 700-38.

(2) Fill out and forward AF TO Form 29 (Unsatisfactory Report) to the Commander, Air Materiel Command, Wright-Patterson Air Force Base, Ohio, as prescribed in AF TO 00-35-D-54.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), Navy Shipping Guide, Article 1850-4 (Navy), and AFR 71-4 (Air Force).

c. Preventive Maintenance Forms (fig. 19-22). Prepare DA Form 11-238 (Maintenance Check List for Signal Equipment-Sound Equipment, Radio, Direction Finding, Radar, Carrier, Radiosonde and Television) in accordance with instructions on the form.

d. Parts List Form. Forward DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8, or 9) direct to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-ML, Fort Monmouth, N. J., with comments on parts listings.

e. Comment on Manual. Forward all other comments on this publication direct to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-PA2d, Fort Monmouth, N. J.

Section II. DESCRIPTION AND DATA

3. Purpose and Use

a. Purpose. **Radiosonde Baseline Check Set AN/GMM-1(*) (fig. 1) provides a chamber with a known temperature and humidity that remain constant enough under controlled conditions for preflight testing of radiosondes.**

b. Use. **The AN/GMM-1(*) is used to make a complete baseline check of temperature and humidity elements of Radiosonde AN/AMT-4(*) and Radiosonde Set AN/AMT-12 before their release for measurements aloft. The baseline check indicates whether or not the radiosonde being tested is operating properly in all respects. The check is made in conjunction with a Rawin Set AN/GMD-1(*) and Radiosonde Recorder AN/TMQ-5(*). Rawin Set AN/GMD-1(*) picks up the sig-**

nals transmitted by the radiosonde and relays them to Radiosonde Recorder AN/TMQ-5(*), which records on graph paper temperature, humidity and reference readings transmitted by the radiosonde. Only radiosondes that give a satisfactory baseline check are released Into the atmosphere to gather weather data.

4. Technical Characteristics

Power requirements . . . 110 to 115 vac, 60 cps, single phase.

Fan, centrifugal:
- Motor type . . . . . Capacitor-induction.
- Horsepower. . . . . 1/50.
- Speed . . . . . 3,300rpm.
- power requirements . . 115 vac, 60 cps, single phase, 15 watts.

Heater:
- Type . . . . . Resistance element, strip.
- Resistance . . . . . 66.1 ohms.
- Power . . . . . 200 watts.

Control-power supply motor:
- Type . . . . . Synchronous.
- Speed . . . . . 240 rpm.
- Power input requirements . . . . . 115 vac, 60 cps, single phase.

Psychrometer:
- **Type . . . . . Hand sling.**
- Thermometers (2) . . . Self-indicating, mercury thermal element.
- Temperature range. . . -37° to +46° C.
- Thermometer scales. . 1/2°C subdivisions.

5. Components

The components of Radiosonde Baseline Check Set AN/GMM-1(*) are listed in *a* below and the running spares in *b* below.

a. Components

Quantity	Item	Height (in.)	Depth (in.)	Length (in.)	Unit weight (lb)
1	Case, carrying (fig. 9)	17-1/8	26-1/4	35-3/4	65
1	Chamber, temperature-humidity (fig. 1)	22	14	19	20
1	Control-power supply	5-1/8	6	7	6
1	Book, reference (1, fig. 8)				
1	Cable assembly, power, electrical			15 ft	
1	Cable assembly, electrical			102 ft	
1	Reel, wire		9	12-3/4	
2	Post, supporting	1-1/2	1-1/2	22-3/4	
2	Post, supporting	1-3/4	1-1/2	22-3/4	
1	Cup		1-1/8	1-5/8	
1	Tray, humidity				
1	Wick		3/8	3	
1 spool	Thread, cotton			40 yd	
1	Psychrometer ML-224 (with sling handle)		15/16	11-15/16	
1 set	Running spares (*b* below)				

b. Running Spares (fig. 2).

Quantity	*Item*	*Federal stock No.*
1	Psychrometer ML-224	6685-223-5084
3	Thermometer	7A 1324A/3
5	Fuse	5920-189-0846
6	Lamp LM-27	6240-057-2887
99	Wick	9390-264-6158
1	Book, reference (1, fig. 8)	6635-408-4818

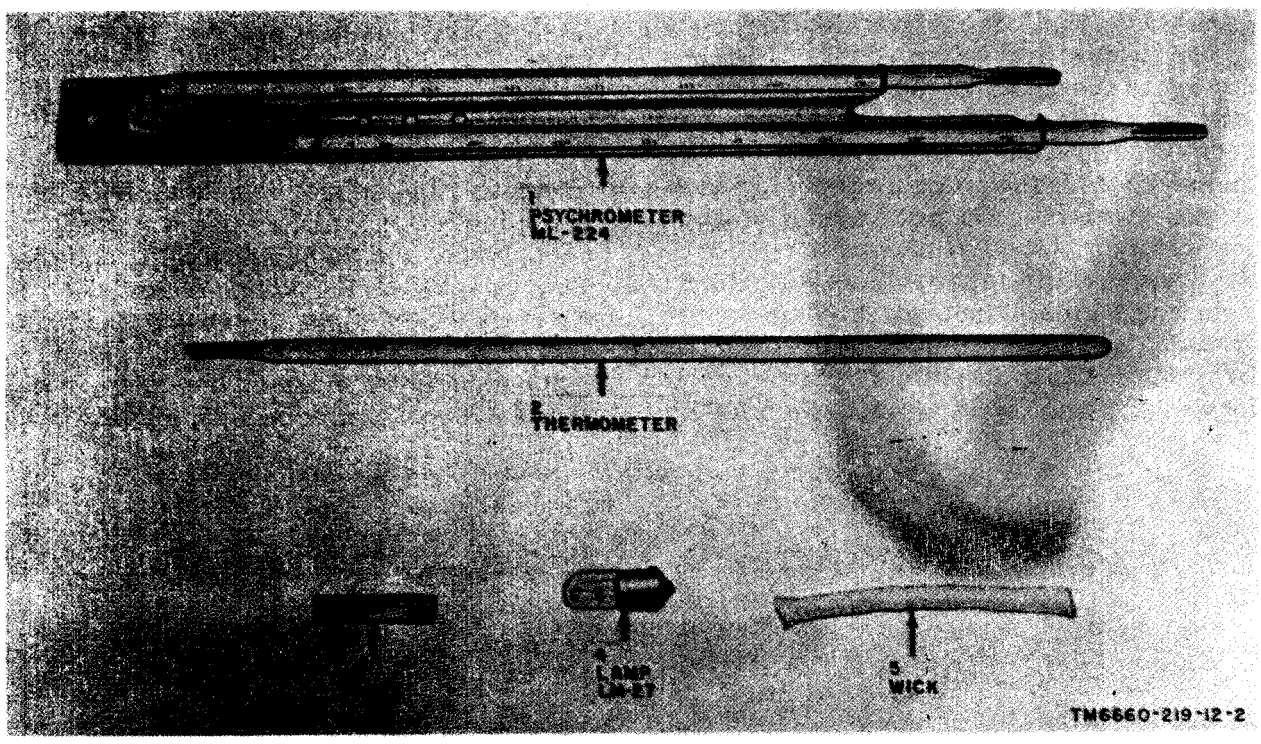


Figure 2. Running spares, less reference book.

6. Common Names

Common names have been assigned to the items listed below:

Nomenclature or item	Common name
Radiosonde Baseline Check Set AN/GMM-1(*).	Baseline check set
Control-power supply.....	Control unit
Chamber, temperature-humidity...	Calibration chamber
Cable assembly, power, electrical	Power cable
Cable assembly, electrical	Remote control cable
Post supporting.....	Leg
Reel, wire.....	Reel
Tray, humidity.....	Tray
Radiosonde AN/AMT-4(*) and Radiosonde Set AN/AMT-12	Radiosonde
Radiosonde Recorder AN/TMQ-5(*)	Radiosonde recorder
Rawin Set AN/GMD-1(*).....	Rawin set

7. Description of Radiosonde Basealine Check Set AN/GMM-1(*)

a. The baseline check set consists of a calibration chamber (fig. 3) with a cabinet assembly arid a 'psychrometer-case screwed to its top,a control unit (fig. 1), and associated parts and accessories required for operation of the equipment.

b. After assembly in the field, the baseline check set is made apart of a system in conjunction with other equipment to perform baseline checks on radiosondes. Refer to paragraph 13 for a detailed description of system application.

c. Detailed descriptions of the major and minor components of the AN/GMM-1(*) are covered in paragraphs 8, 9, and 10.

8. Description of Temperature-Humidity Chamber

a. Exterior. The calibration chamber (fig. 3) is a plywood compartment, with a cabinet assembly *(c* below) and a psychrometer case (*d* below) secured to the top of the compartment. Also secured on the top is a mounting plate for mounting a control unit (para 9). Sockets are provided on each side of the calibration chamber for mounting legs to support the chamber when it is not wall mounted. The front of the chamber is a door with a clear plastic window. The door is held closed by two spring-loaded

catches. On the lower right side is a connector (with a protective cover). The connectcr is used to connect a radiosonde battery to the radiosonde being checked when the battery is located outside the chamber. A sliding shelf under the connector supports the radiosonde battery.

b. Interior. The interior of the calibration chamber (fig. 4) contains a radiosonde mounting frame, connector, psychrometer bracket, fan, heater, and lamps. A plastic terminal strip (binding post assembly) containing three binding posts is mounted on the radiosonde mounting frame. The ends of the binding posts are painted blue, yellow, and black and are used to connect the baseline check set to the radiosonde being checked. A 2-1/4-inch diameter hole (aperture) in the floor below the radiosonde mounting frame allows the antenna of a radiosonde to extend outside the chamber during a baseline check. A metal cover secured to the floor is used to cover the aperture when the chamber is not in use. Connector P2 is mounted on the right wall and is used to connect the radiosonde being

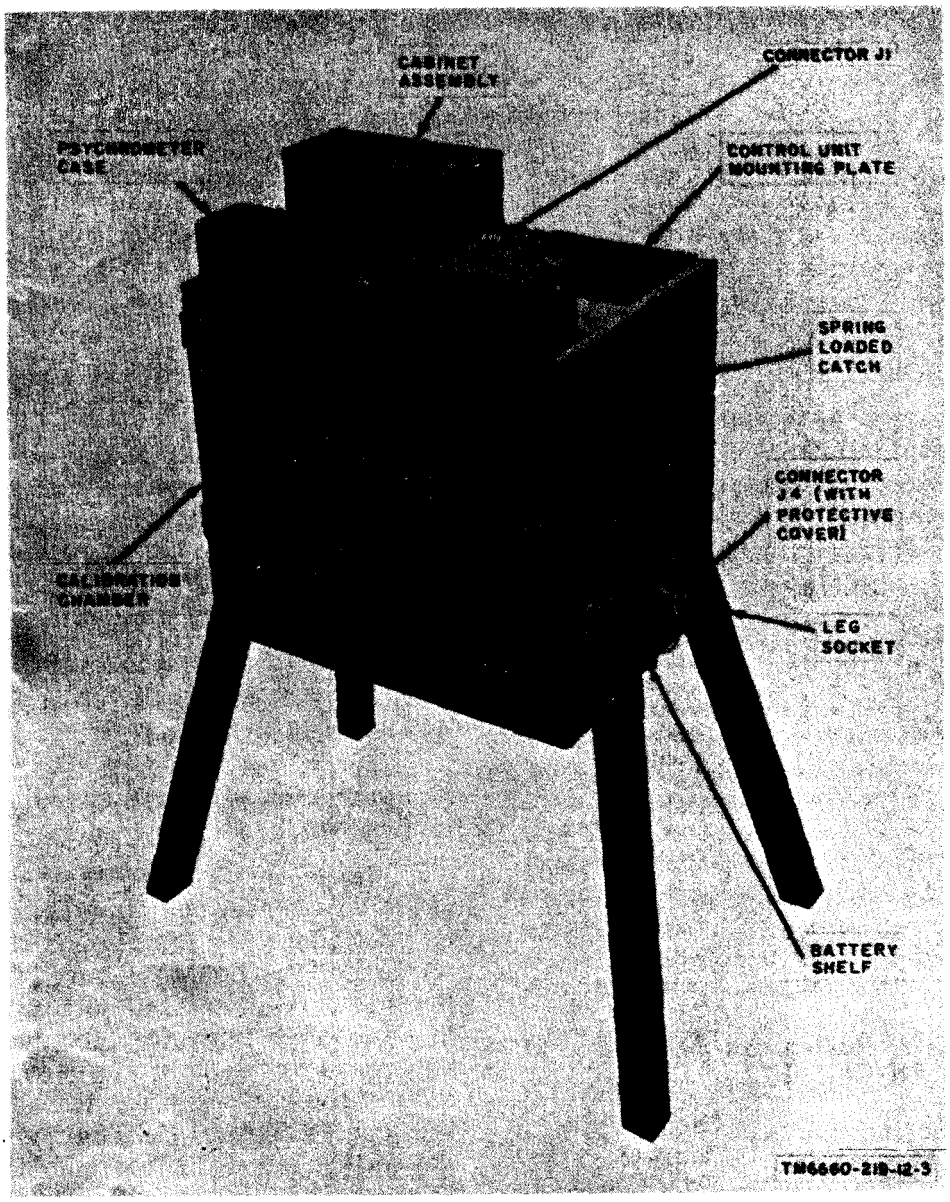


Figure 3. Calibration chamber, exterior view.

checked to its battery when the battery is located outside the chamber. An indentation in the floor below the psychrometer bracket is used to hold a cup (para *10f)* for use with a psychrometer (para *10j).* A shelf and a strap on the rear wall support and secure a tray (para *10g).* The Interior is illuminated by two minature lamps mounted in a reflector at the top of the chamber. A rubber gasket around the front edge seals the chamber when the door is closed.

*c. Cabinet Assembly (fig. 3). The cab*inet assembly is a metal box with a connector that projects outside the box for connection of the control unit (para 9) to the calibration chamber.

d. Psychrometer Case. The psychrometer case (fig. 5) is a wooden box with compartments that contain the psychrometer and their associated components. One compartment contains the spare thermometers, and another compartment contains the wicks, a cup, and the sling handle. The cover contains two padded compartments for the psychrometer. Two metal bars across the cover hold the psychrometer in place. The cover is held closed with a fastener at each end of the case.

9. Description of Control-Power Supply

The control unit (fig. 6) is enclosed in a metal housing with a flange at the bottom of each side for mounting the unit on top of the calibration chamber (para 8). The front panel contains an operating fuse, a spare fuse, and all the operating controls of the unit. Three connectors are located at the rear of the unit for connection to a power source, the calibration chamber, and a radiosonde when adjusting the radiosonde commutator (para 25).

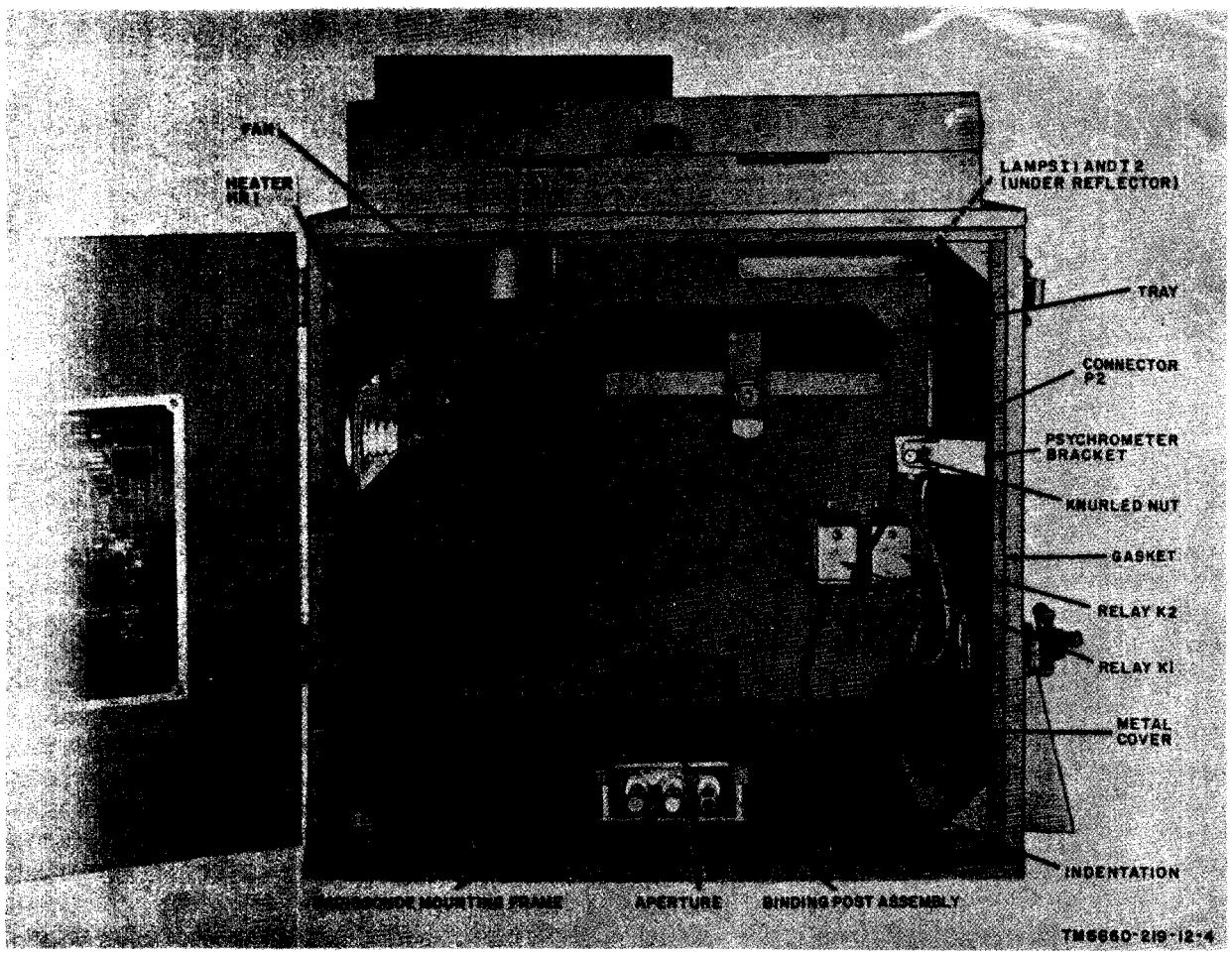


Figure 4. Calibration chamber, interior view.

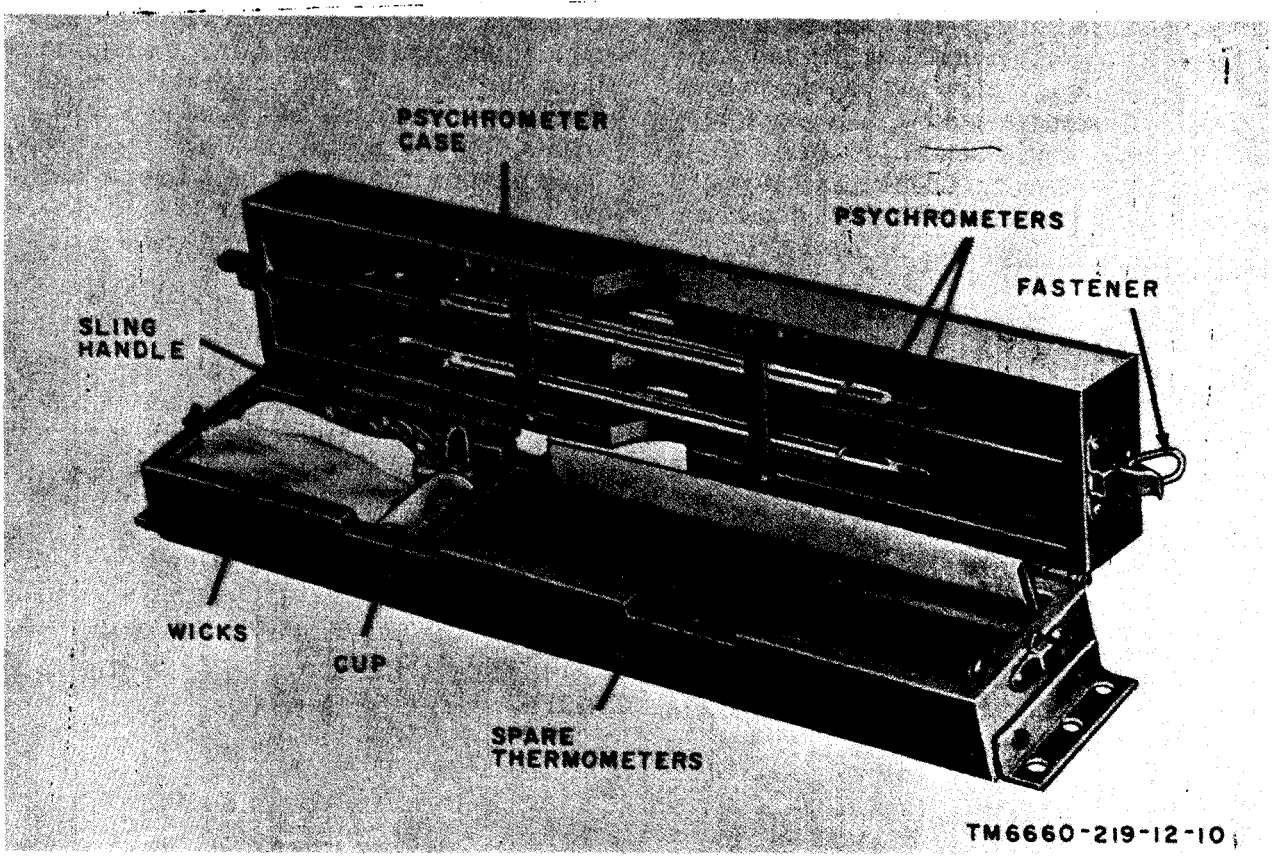


Figure 5. Psychrometer case, cover open.

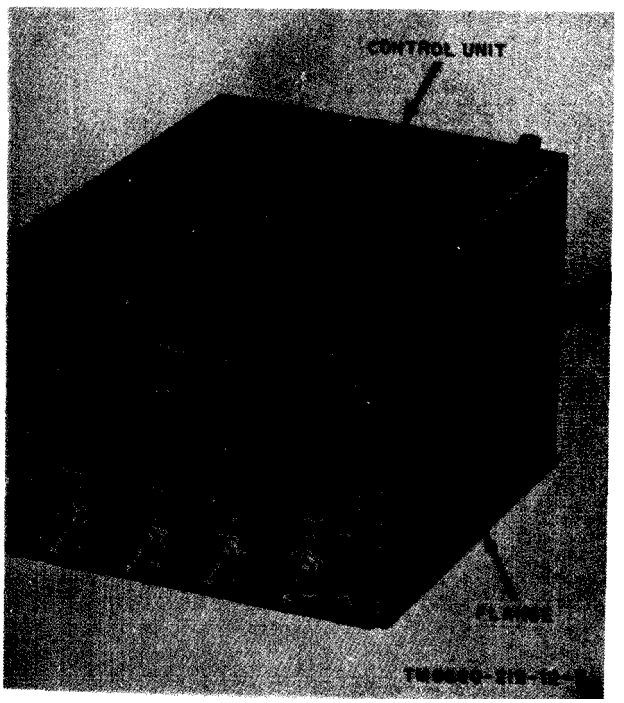


Figure 6. Control unit, front view.

10. Description of Minor Components (fig. 8)

a. Reference Book. The reference Book (1) contains U.S. Department of Commerce Weather Bureau Psychrometer Tables used to convert psychrometer readings into relative humidity and other data.

b. Electrical Power, Cable Assembly. The power cable (2) is a two-conductor cable that is 15 feet long. One end of the cable terminates in a female plug the other end terminates in a male plug.

c. Electrical Cable Assembly. The remote control cable (3) is an eight-conductor cable that is 102 feet long. One end of the cable terminates in a female plug connector; the other end terminates in a male plug connector. Each connector is protected by a screw-on cap.

d. Wire Reel. The reel (4) is metal and holds approximately 100 feet of remote control cable.

e. Supporting Posts. Four wooden legs (5) are supplied with the baseline check

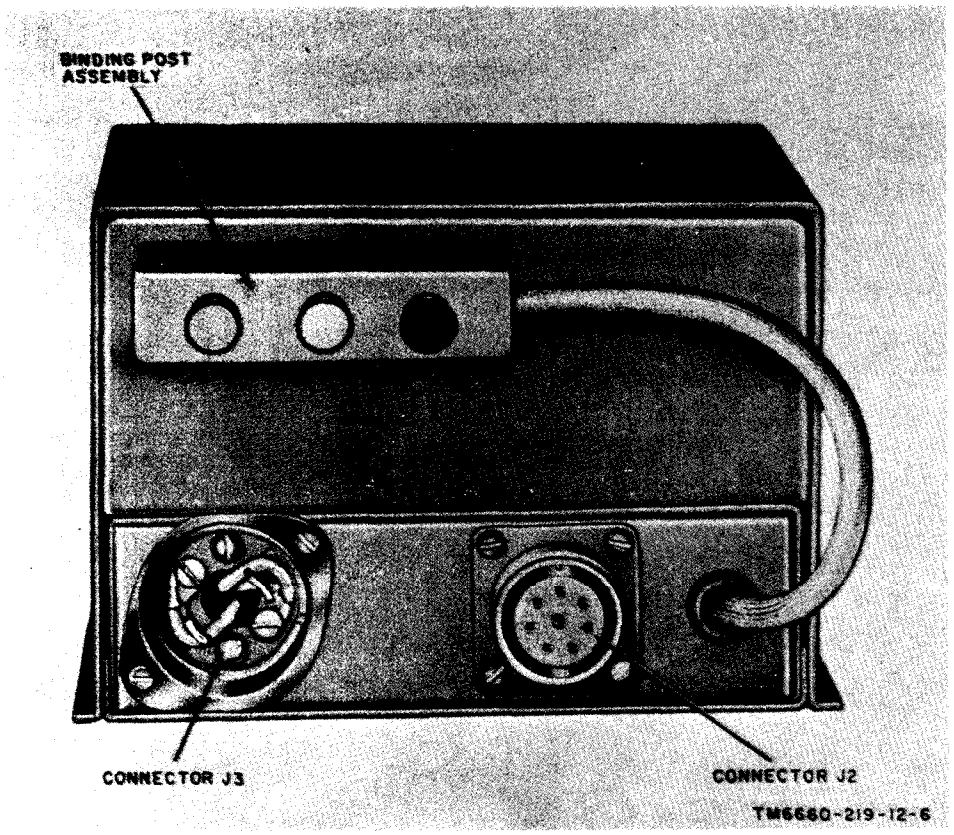


Figure 7. Control unit, rear view.

set, and are used to support the calibration chamber when it is not wall mounted. The legs are similar in shape, but their dimensions are such that a leg fits properly only in two of the four sockets on the calibration chamber.

f. Cup. The cup (6) is plastic, and is 1-1/8 inches in diameter and 1-5/8 inches long. It holds water for the wick on the wet-bulb thermometer of the psychrometer *(j* below).

g. Humidity Tray. The tray (7) is constructed of hard rubber and is used to hold distilled water or calcium chloride to provide or reduce the humidity within the calibration chamber as necessary.

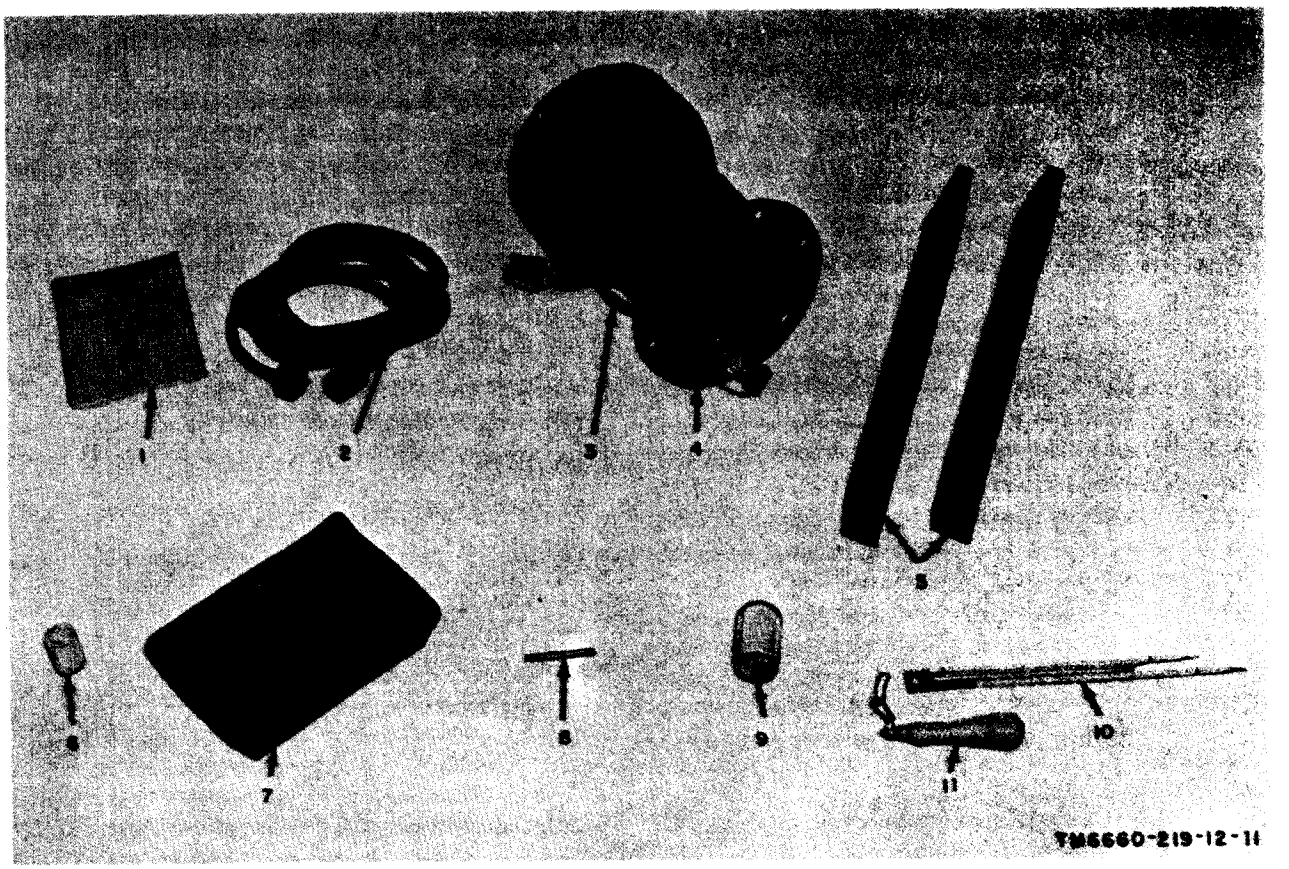
h. Wick. The wick (8) is a 3-inch length of white cloth tubing which provides moisture to the wet-bulb thermometer of the psychrometer *(j* below).

i. Cotton Thread. The thread (9) is No. 40, white cotton, 40 yards to the spool (Fed. spec No. V-T-276, type 1A1). It is used to secure the wick *(h* above) to the wet-bulb thermometer of the psychrometer *(j* below).

j. Psyhrometer ML-224.

(1) *General.* The psychrometer (10) consists of two identical thermometers (a wet- and a dry-bulb thermometer) mounted parallel to each other on a metal frame. Each thermometer is held firmly in place on the frame with metal rings which encircle the top and bottom of each glass tube. In use, the bulb of one thermometer is covered with a wick. This thermometer is known as the wet-bulb thermometer, and is mounted about 1-1/2 inches lower than the dry-bulb thermometer. The psychrometer is mounted inside the calibration chamber during the baseline check of a radiosonde, and it is used to determine temperature and relative humidity in the chamber.

(2) *Sling handle.* A slinghandle (11) is



1 Reference book
2 Power cable
3 Remote control cable
4 Reel
5 Legs
6 Cup
7 my
8 Wick
9 Thread
10 Psychrometer
11 Sling handle

Figure 8. Minor *components, less carrying cace.*

provided with the psychrometer for general use at the site. The sling handle consists of two metal links and a wooden handle. The metal links are connected to the handle by a swivel.

(3) *Scale graduations.* The thermometer scales are etched on the glass stem and graduations are in 1/2° C with numbered graduations for each multiple of 10°. Each whole degree interval is marked by a longer line than the 1/2° intervals, and each 5° and 10° interval is marked by a longer line than the whole degree intervals.

k. Carrying Case. The carrying case (fig. 9) consists of a plywood partitioned bottom with a removable cover. The bottom is divided into three parts: one is used for storage of the calibration chamber, another holds the reel and remote control cable, and the third contains the control unit, power cable, thread, and spare lamps and fuses. The legs for mounting the calibration chamber are held inside the cover.

11. Additional Equipment and Materials

a. Equipment. The following equipment is not supplied with Radiosonde Baseline Check Set AN/GMM-1(*) but is required when the baseline check set is used in the system described in paragraph 13:

(1) Radiosonde AN/AMT-4(*) or Radiosonde Set AN/AMT-12.

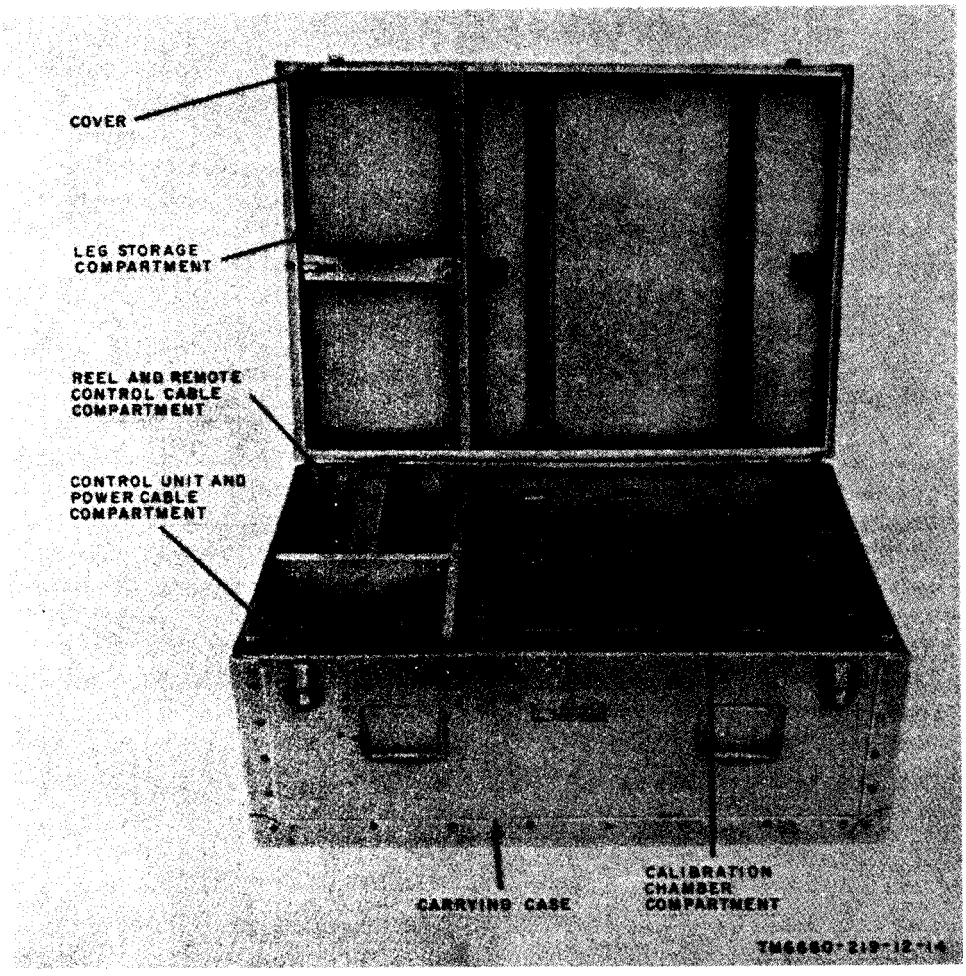


Figure 9. Carrying case, inside view.

(2) Radiosonde Recorder AN/TMQ-5(*).
(3) Rawin Set AN/GMD-1(*).

b. Material. Distilled water and calcium chloride are the only materials required for normal operation of the baseline check set that are not supplied with the equipment. If distilled water is not available, rainwater or tapwater may be used instead.

12. Differences in Models

Radiosonde Baseline Check Sets AN/GMM-1 and AN/GMM-1A are similar in size, shape, and general appearance. The carrying case of the AN/GMM-1 (Order No. 3139-Phila-51) has been modified to provide separate compartments for the power cable and the control unit.

13. System Application of Radiesonde Baseline Check Set AN/GMM-1(*)

The baseline check set is used as part of a rawinsonde system consisting of Radiosonde AN/AMT-4(*) or Radiosonde Set AN/AMT-12, Radiosonde Recorder AN/TMQ-5(*) and Rawin Set AN/GMD-1(*) or other equipments with similar functions. The baseline check set is used during the ground check before launching a radiosonde for weather observations. The functions of the equipment in the rawinsonde system during the baseline check of the ground check (fig. 10) are given in *a* through *d* below.

a. Radiosonde. A radiosonde is a balloon-borne, battery-powered meteorological instrument that automatically transmits radio signals relating to the

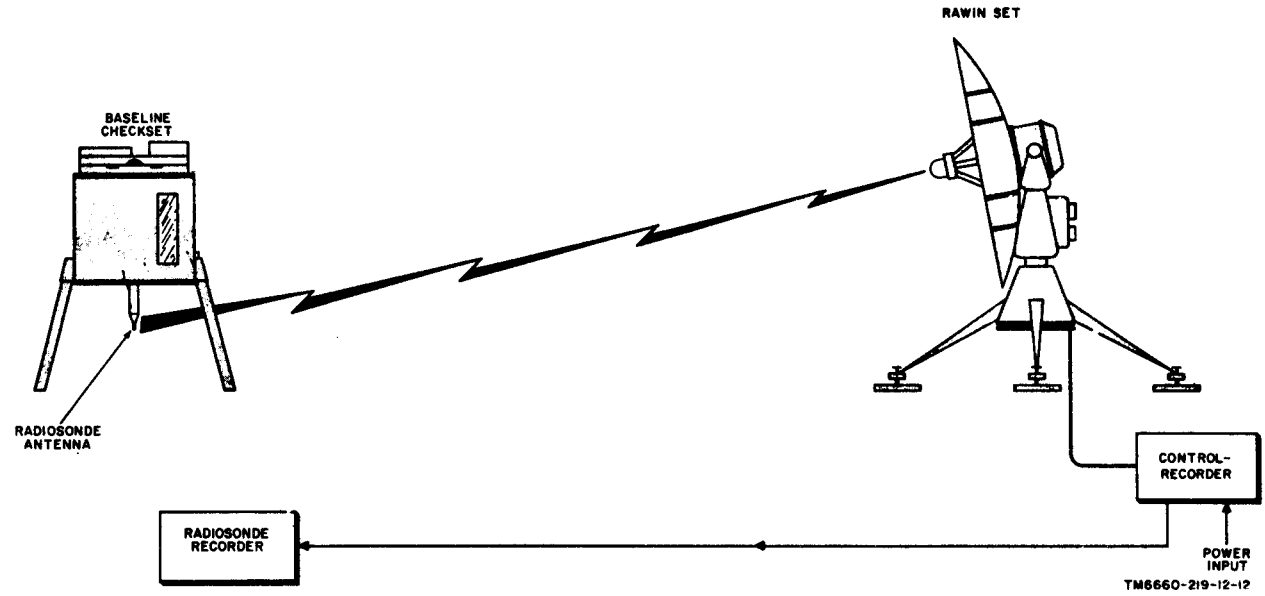


Figure 10. Radiosonde system application.

pressure, temperature, and humidity of the upper air, to the ground receiving equipment. During the baseline check, the radiosonde is placed in the baseline check set with the radiosonde antenna extended through the bottom of the chamber.

h. Baseline Check Set. The baseline check set provides a constant known temperature and humidity for the temperature and humidity elements of the radiosonde. During the baseline check, the radiosonde is connected to the baseline check set. The baseline check set switches internal circuits of the radiosonde so that the radiosonde will transmit signals containing temperature-humidity and reference information. The circuits in the radiosonde are switched so that each type information is transmitted for 15 seconds in the following cycle: low reference, temperature, low reference, humidity. During the baseline check, low reference signals are used in the radiosonde recorder to correctly position its recording pen for the audio-frequency of the radiosonde being tested.

c. Rawin Set AN/GMD-1 (*). The rawin set receives the radio signals transmitted by the radiosonde, and amplifies and converts them to af (audio frequency) signals. The af signals are applied to the rawin sets control-recorder.

d. Radiosonde Recorder AN/TMQ-5(*). The radiosonde recorder receives the af signals from the rawin sets control-recorder and converts the af to direct current (dc) voltages that position a pen which records the voltages on a graph. The traces on the graph are evaluated in terms of temperature-humidity and low reference. The temperature and humidity traces are calibrated against numerical values during the baseline check. Variations in the successive temperature or humidity traces during the baseline check indicate that the corresponding element on the radiosonde for that trace is probably defective. Identical successive temperature, humidity, and low reference traces indicate that the radiosonde and other equipment used during the check are functioning properly.

CHAPTER 2

INSTALLATION

14. Unpacking

a. Packaging Data. When packaged for shipment all the components except technical manuals and reference books are packed in the carrying case (fig. 9).

(1) When packaged and packed for oversea shipment the carrying case is placed in a fiberboard container and cushioned on top, bottom, and corners by pads. The fiberboard container is enclosed in a water-resistant barrier, and placed in another fiberboard container. This fiberboard container along with technical manuals and reference books contained in waterproof bags are packed in a wooden box. The wooden box is nailed closed and strapped with metal strapping. The dimensions of the wooden box are 40 by 31 by 21 inches. The volume is 15 cubic feet and it weighs 255 pounds. An exploded view of a baseline check set set packaged for export is shown in figure 11.

(2) When packaged and packed for domestic shipment, the methods applied may vary depending on the supply source.

b. Removing Contents.

(1) Place the wooden box that contains the baseline check set as near the operating position (para 16) as convenient.

(2) Cut the metal straps just below the cover; fold back the metal straps.

(3) Remove the nails from the cover, one side, and one end of the wooden box.

(4) Lift the cover, the side, and end away from the box.

(5) Remove the outer fiberboard container, technical manuals, and reference books from the wooden box.

(6) Cut the tape and open the outer fiberboard container.

(7) Cut the barrier to expose the top of the inner fiberboard container.

(8) Cut the tape and open the inner fiberboard container.

(9) Lift the top flat pad from the inner fiberboard container and remove the carrying case.

15. Checking Unpacked Equipment

a. General.

(1) Inspect the equipment for any loss or damage that might have occurred during shipment. If the equipment has been damaged or is incomplete, refer to paragraph 2.

(2) Check the equipment against the packing list. When no packing list accompanies the equipment, the table of components (para 5) may be used as a general check to indicate the equipment which probably was packed.

(3) If the equipment has been used or reconditioned, check to see whether it has been changed by a modification work order (MWO). If modified, the MWO number will appear near the nomenclature plate on the front panel of the calibration chamber on top of each modified control unit and on the exterior of the box in which the equipment is packed.

(4) This manual covers baseline check sets that have been modified by MWO SIG 11-2440-1,28 September 1953; MWO SIG 11-2440-2, 2 April 1954; and MWO 11-6660-219-35/1, 10 November 1959. Check DA PAM 310-4 for additional MWO's that may have been published on this equipment.

b. Temperature-Humidity Chamber. Check the calibration chamber (fig. 3 and 4) for the following:

(1) That the door closes properly and can be secured with the spring-loaded catches.

(2) That the rubber gasket around the

calibration chamber door opening is secure.

(3) That the leg sockets are not dented or bent.

c. *Psychrometer Case.* Open the psychometer case (fig. 5) and check to see that the components in the case are in good condition, and that the psychrometer thermometers and spare thermometers are not broken. Check the mercury column in each thermometer tube. It should be continuous and join the mercury in the bulb.

d. Control-Power Supply. Check the control unit (fig. 6) for the following:

(1) That the flange on each side of the unit is not bent and that the control unit fits in its mounting plate on top of the calibration chamber (fig. 3).

(2) That the binding post assembly and connectors (fig. 7) are in good condition.

e. Cable Assemblies. Check the remote control cable and power cable (2 and 3, fig. 8) to be sure that the cables and their connectors are in good condition.

16. Siting

The ideal site for the operation of a baseline check set is in a wooden building away from sources of electrical interference, particularly interference

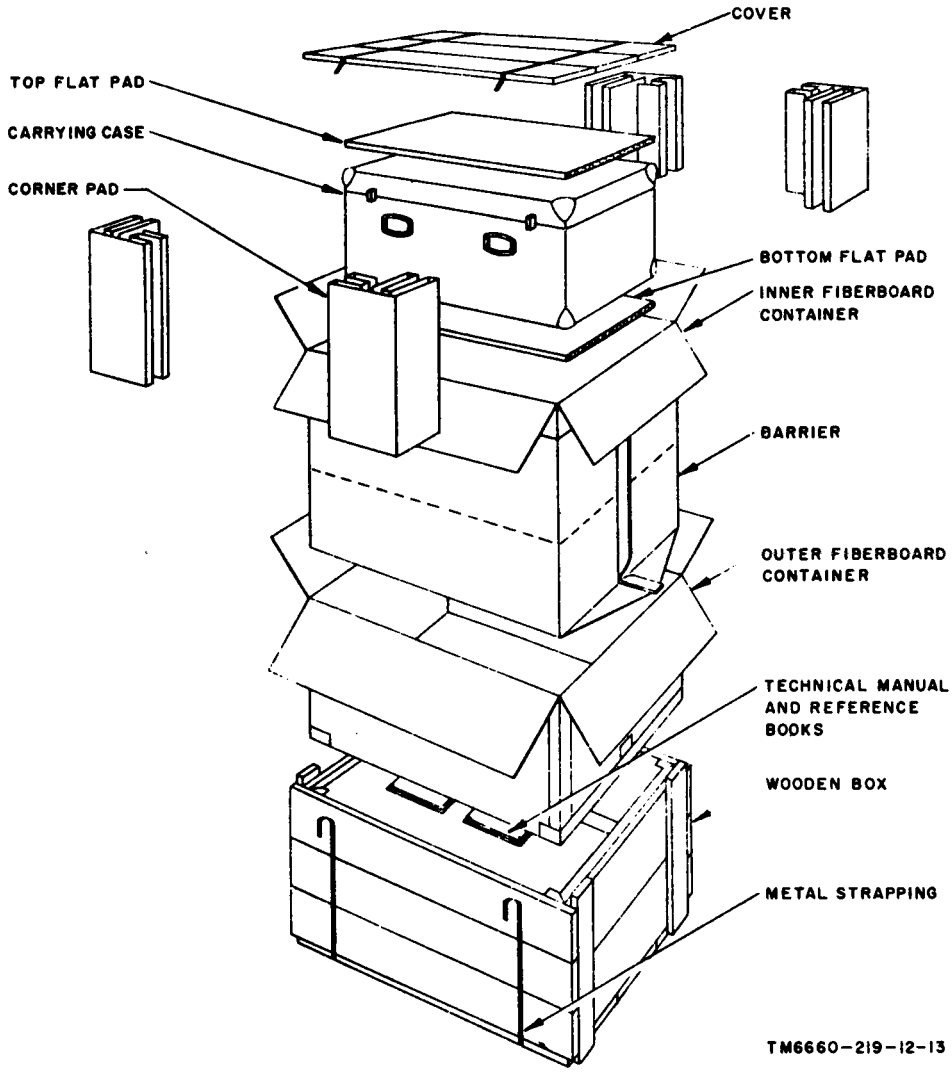


Figure 11. Baseline check set, packaging and packing diagram for export shipment.

caused by automobile ignition systems. However, ideal conditions seldom exist, and the selection of an operating site may often be a compromise. Several major considerations for siting the baseline check set are listed below:

a. The distance from the operating location of the calibration chamber to the control unit must not exceed 100 feet (this is the length of the remote control cable.)

b. The control unit must be within 15 feet of a 115-volt, 60-cycle alternating-current (at) outlet.

c. Avoid nearby radio transmitters, electrical machinery, high-tension power-lines, telephone, telegraph, and teletype-writer lines; they may cause electrical interference during radiosonde tests. Avoid movement of personnel within 6 feet of the calibration chamber, since it may interfere with the stability of the audio signal.

d. The area between the calibration chamber and the receiving antenna of the radiosonde receptor (rawin set, fig. 10) should be free of obstacles that would block the transmitted signal, such as earth and large metallic objects.

e. Place the calibration chamber so that it is shielded from the direct or reflected rays of the sun.

17. Tools and Materials

a. General. None of the tools or materials (c below) required for the installation of the baseline check set are furnished as part of the AN/GMM-1 (*). The tools are contained in the tool equipment that is issued with the rawin set.

b. Leg-Mounted Installation. When the calibration chamber of the baseline check set is leg-mounted, no tools or materials are required for its installation.

c. Wall-Mounted Installation. To mount the calibration chamber of the baseline check set on a wall, the following tools and materials are required:

(1) One screwdriver.
(2) One hammer.
(3) One tape rule or equivalent.
(4) Two fasteners, the type depending upon the wall structure to which the equipment is to be mounted.

18. General Installation Instructions

a. The procedures for installing the baseline check set will vary according to the installation site and how the equipment is to be operated.

b. The different types of installations for the baseline check set covered in this manual are given below. The procedures for installation of the equipment are covered in paragraphs 19 and 20.

(1) Calibration chamber leg-mounted, locally controlled (para *19a).*
(2) Calibration chamber wall-mounted, locally controlled (para *19b).*
(3) Calibration chamber leg-mounted, remotely controlled (para *20a).*
(4) Calibration chamber wall-mounted, remotely controlled (para *20b).*

19. Installation, Locally Controlled

a. Calibration Chamber Leg-Mounted.

(1) Remove the calibration chamber from the carrying case (fig. 12) and place it on the floor or a table with the back side of the chamber down.
(2) Remove the legs from the cover of the carrying case by pulling back on the spring-loaded drawbolt, and lifting the bar that holds the legs in place.
(3) Install the legs in the sockets on the sides of the calibration chamber.

Note. There are two different size legs. Be sure that the legs fit tightly in their sockets.

(4) Set the calibration chamber upright on its legs, and move it to the desired operating location (not more than 15 feet from an appropriate power source (para *16b)).*
(5) Open the door of the calibration chamber by releasing the spring-loaded catches (fig. 3).
(6) Check to see that the tray is

strapped in place on the shelf inside the chamber (fig. 4). If it is not there, locate it and strap it to the shelf.

(7) Open the psychrometer case and remove the cup (fig. 5).

(8) Instpect the cup for cleanliness. Do not touch the inside of the cup.

(9) If the cup is dirty or oily, wash it until the inside is clean.

(10) Place the cup in the indentation under the psychrometer bracket (fig. 4).

(11) Remove a psychrometer and a wick from the psychrometer case (fig. 5).

Caution: Inaccurate readings of the wet-bulb thermometer of the psychrometer may be caused by oil or perspiration transferred from the hands or other sources to the wick. To avoid this, wash the hands thoroughly with soap and water before installing or handling the wick. If facilities for washing the hands are not available, hold a small piece of clean paper between the fingers and the wick.

(12) Slip the wick over the end of the wet-bulb thermometer of the psychrometer (the thermometer extends farthest from the frame) and push it up until it projects above the constriction in the thermometer (fig. 13).

(13) Remove a length of thread (about a foot long) from the spool of thread (9, fig. 8). The thread is packed in the control unit and power cable compartment of the carrying case (fig. 12).

(14) Tie the wick securely in place around the constriction of the thermometer with a short length of the thread (fig. 13).

(15) Tie the remaining short length of thread tightly around the wick just below the end of the thermometer.

(16) Remove the knurled nut (fig. 4) from the psychrometer mounting screw in the calibration chamber.

(17) Place the center hole of the psychrometer frame (fig. 13) on the mounting screw and replace the knurled nut (fig. 4), but do not tighten it.

(18) Adjust the position of the psychrometer so that the wick extends well into the plastic cup, and tighten the knurled nut to hold the psychrometer in this position.

(19) Close the calibration chamber door and secure it with the spring-loaded catches (fig. 3).

(20) Close the psychrometer case and secure its top with the fasteners on each end of the case (fig. 5).

(21) Remove the control. unit from the carrying case (fig. 12) and mount the unit on the calibration chamber by sliding the flanges along the bottom sides of the unit (fig. 6) into the dovetail grooves on the control unit mounting plate (fig. 14) until connector J2 on the control unit (fig. 7) and connector J1 of the cabinet assembly (fig. 14) fit together.

(22) Screw the collar (fig. 14) securely in place around the control unit connector J2 (fig. 7).

(23) Set all the switches on the front panel of the control unit (fig. 16) to OFF.

(24) Remove the power cable from the carrying case (fig. 12) and connect the female plug of the power cable (fig. 15) to connector J3 on the back of the control unit (fig. 7) and turn it approximately 20° clockwise to lock the connector in place.

(25) Connect the male plug of the power cable (fig. 15) to the power source.

b. Calibration Chamber, Wall-Mounted.

(1) Remove the calibration chamber from the carrying case (fig. 12) and place it on the floor or a table with the bottom down.

(2) Remove the screws that hold the brackets in their normal positions on the back of the calibration chamber (fig. 14).

(3) Remove the brackets, and place them against the chamber in position for wall-mounting.

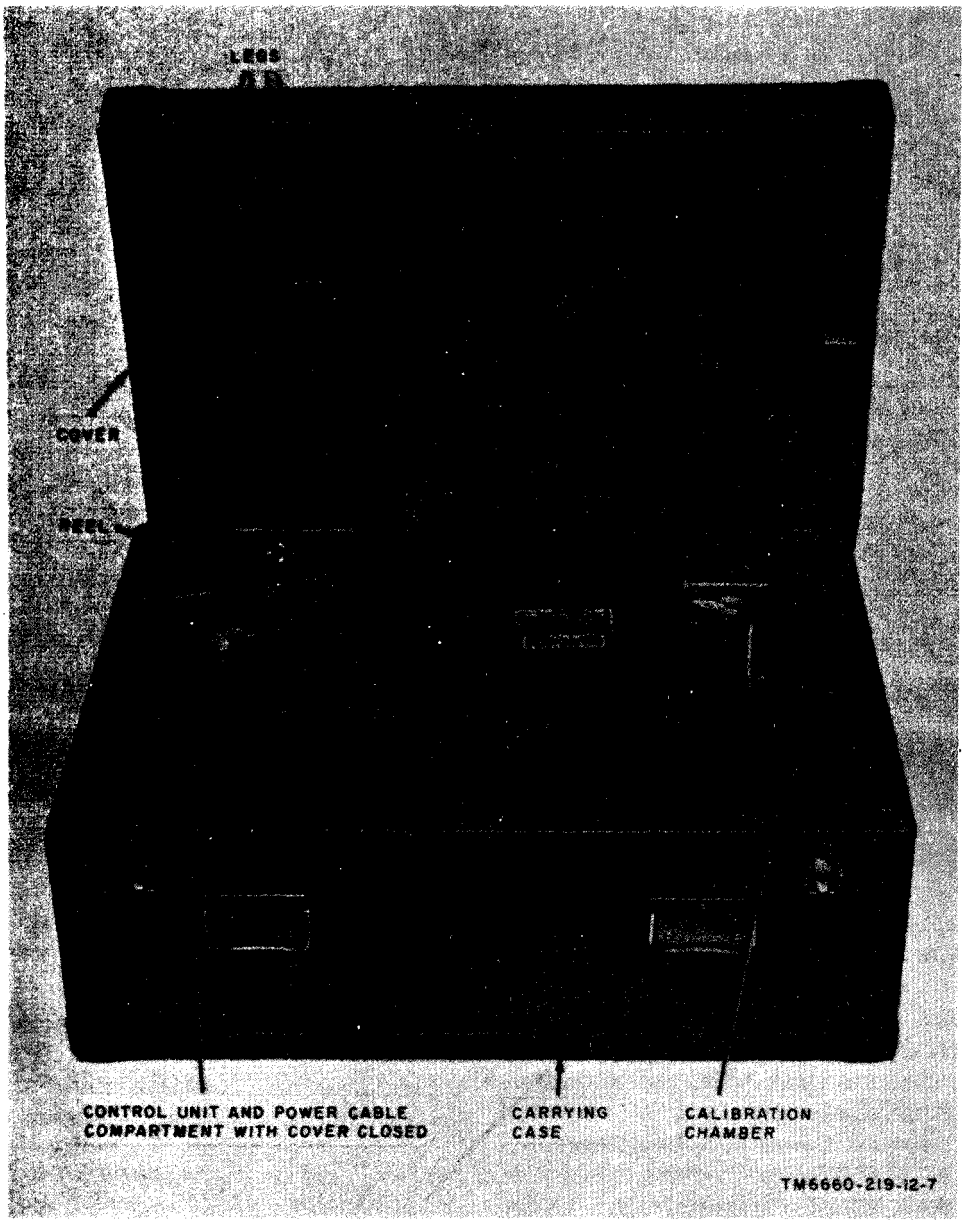


Figure 12. Equipment location.

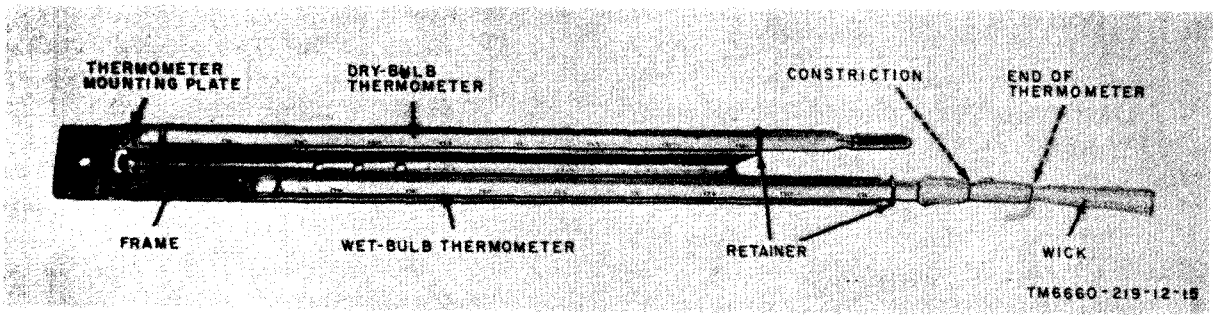


Figure 13. Psychrometer, wick installed.

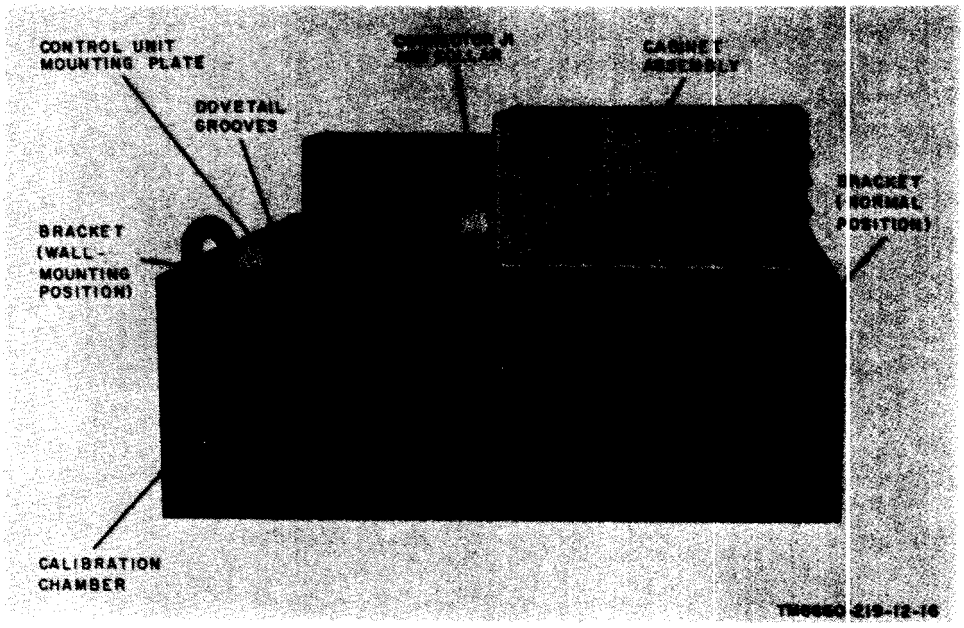


Figure 14. *Calibration chamber, partial rear view,*

(4) Secure the brackets to the chamber with the screws that were removed in (2) above.
(5) Mark two points in a horizontal plane on the wall 16 inches apart approximately 40 inches above the floor, and secure a fastener to the wall at each point.
(6) Place the calibration chamber against the wall with the heads of the two fasteners through the bottom of the holes in the brackets. Lower the chamber until it is hanging from the fasteners.
(7) Perform the procedures given in ***a(5)*** through (25) above.

20. **Installation, Remotely Controlled**

a. Calibration Chamber, Leg-Mounted. ***If*** the calibration chamber is to be leg-mounted, perform the instructions in paragraph 19a(l) through (20) and then proceed with c(l) through (9) below.

b. Calibration Chamber, Wall-Mounted, ***If*** the calibration chamber is to be wall-mounted, perform the instructions in paragraph 19b(l) through (6) and then proceed with paragraph 19a(5) through (20). Complete the installation by perturbing instructions given in c(l) through (9) below.

c. ***Installing Control Unit.*** After the calibration chamber has been installed ***(a*** and ***b above),*** perform the following:

(1) Remove the control unit from the carrying case (fig. 12) and place it at the desired operating position.

Note. To allow connection of the contro 1 unit to the calibration chamber and power source, place the control unit within 100 feet of the calibration chamber, and not more than 15 feet from a power source.

(2) Remove the power cable and the reel that contains the remote con trol cable from the carrying case (fig. 12).
(3) Remove the remote control cable from the reel; place the reel back in its compartment in the carrying case.
(4) Unscrew the covers from the connectors on the remote control cable (fig. 15).
(5) Connect the female connector plug on the remote control cable to connector J1 on the cabinet assembly of the calibration chamber (fig. 14)

and screw the collar of connector J1 securely around the female connector plug.

(6) Connect the male connector plug on the remote control cable to connector J2 on the control unit (fig. 7) and screw the collar of connector J2 securely around the male connector.

(7) Coil up any excess remote control cable, and place the coil in an out-of-the-way place (such asunder the calibration chamber).

(8) Connect the female plug of the power cable (fig. 15) to connector J3 on the back of the control unit (fig. 7) and turn it clockwise about 20° to lock it in place.

(9) Connect the male plug of the power cable (fig. 15) to the power source.

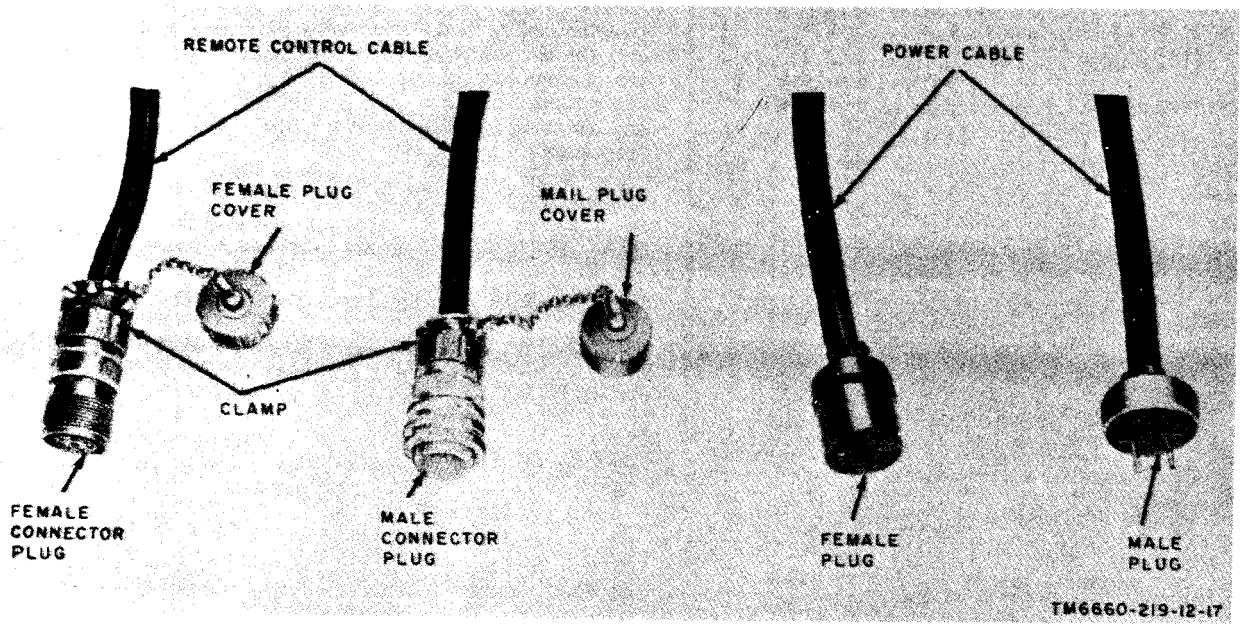


Figure 15. Power and remote control cables, end view.

CHAPTER 3
OPERATING INSTRUCTIONS

Section I. OPERATION UNDER USUAL CONDITIONS

21. Controls and Indicators
(fig. 16)

Control or indicator	Function
POWER switch	Turns the baseline check set on and off.
FAN switch	Turns the fan in the calibration chamber on and off.
HEATER switch	Turns the heater in the calibration chamber on and off.
LIGHT switch	Turns the two lamps under the reflector in the calibration chamber on and off.
Selector switch (4-position rotary switch)	Switches internal circuits of the radisoonde being tested in and out so that the radiosonde transmits weather information as follows:
	Sw pos — *A* TEMPERATURE — Places the temperature circuit in operation, causing the radiosonde to transmit temperature information. REFERENCE — Places the temperature and humidity circuits out of operation, causing the radiosonde to transmit low reference information. HUMIDITY — Places the humidity circuit in operation, causing the radiosonde to transmit humidity information. AUTOMATIC — Automatically switches the circuits in the radiosonde so that it transmits information in 1-minute cycles as follows: Low reference, temperature, low reference, humidity. Each type information is transmitted for 15 seconds.
Indicator	Illuminates each time the contact arm of a radiosonde touches a conducting segment of the commutator during adjustment of the radiosonde commutator using the light method (para 25*a*(2)).

22. Starting Procedure

The radibsondes tested in the baseline check set contain Humidity Element ML-418-AMT-4 or Humidity Element ML-476/AMT. To ready the calibration chamber for a baseline check of a radiosonde, proceed as follows:

a. Radiosonde Containing Humidity Element ML-418/AMT-4.

(1) Open the door of the calibration chamber by releasing the two spring-loaded catches (fig. 3).

(2) Fill the tray (fig. 17) three-quarters full with distilled water.

(3) Inspect the cup and the wick to be sure that the wick is clean and the cup is almost filled with clear distilled water.

(4) If the wick is not clean (white) or does not saturate immediately when submerged ((5) below), or if the water in the cup contains foreign matter, perform the following:

(a) Remove the knurled nut from the psychrometer mounting screw (fig. 4) and remove the psychrometer and cup from the calibration chamber.

(b) Remove a wick from the psychrometer case (fig. 5) and replace

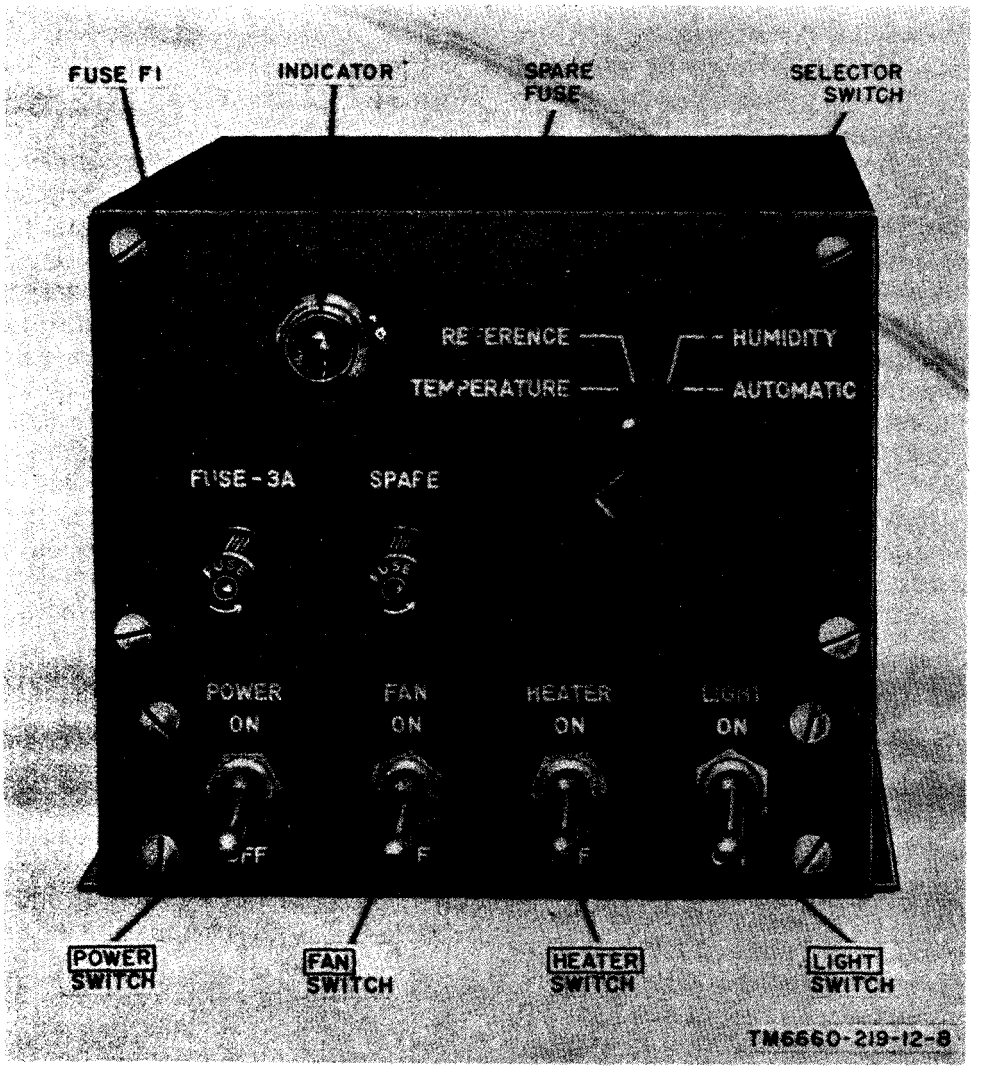


Figure 16. Control unit, front panel.

the psychrometer wick (para *19a(12)* through (15)).

(c) Was h the cup thoroughly with soap and water, and fill the cup until almost full with distilled water.

(d) Place the cup in the indentation under the psychrometer bracket.

(e) Replace the psychrometer (para *19a(17)* and (18)).

(5) Saturate the wick by carefully raising the cup until the bottom of the wet-bulb thermometer (fig. 13) touches the bottom of the cup (fig. 17).

(6) Slide the metal cover away from the aperture (fig. 4).

(7) Place the radiosonde to be tested (with its battery installed) on the radiosonde mounting f r a m e as shown in figure 17.

(8) Connect the radiosonde test leads to the binding post assembly. (Connect each lead to a binding post of the same color as the lead.)

b. Radiosonde Containing Humidity Element ML-476/AMT.

(1) Open the door of the calibration chamber by releasing the two spring-loaded catches (fig. 3).

(2) Check the tray and the floor of the calibration chamber (fig. 18) to see that they are dry.

(3) Perform the procedures given in

a(3) through (6) above.

(4) Place the radiosonde to be tested (with its battery removed) on the radiosonde mounting frame with the radiosonde battery connector outside the radiosonde as shown in figure 18.

(5) Connect the radiosonde test leads to the binding post assembly. (Connect each lead to a binding post of the same color as the lead.)

(6) Connect the radiosonde battery connector to connector P2.

(7) Remove the cover from connector J4.

(8) Pull out the battery shelf and place the battery on the shelf.

(9) Connect the battery receptacle to connector J4.

23. Operating Procedure

a. Close the calibration chamber door and secure it with the spring-loaded catches (fig. 3).

b. Operate the POWER and FAN switches on the control unit (fig. 16) to ON.

c. If the interior of the calibration chamber is dark and the psychrometer markings are not visible, operate the LIGHT switch to ON to illuminate the psychrometer (fig. 18).

d. Allow approximately 10 minutes for stability of the temperature and relative humidity within the calibration chamber to be reached. Stability is indicated by a temperature change of ±5° C or less, and a humidity change of ±5 percent or less during a 5-minute period.

e. Under certain conditions, it may be necessary to operate the HEATER switch on the control unit (fig. 16) to ON. The heater is normally used only on very humid days to dry out the interior of the calibration chamber, or to provide heat in the chamber when the temperature is below freezing.

f. After stability is obtained, check the psychrometer reading. If the relative humidity within the chamber is greater than 90 percent, perform procedures given in (1) or (2) below, depending on the humidity element used.

(1) When testing a radiosonde containing Humidity Element ML-418/AMT-4, proceed as follows:

(a) Operate the FAN and POWER switches (fig. 16) to OFF.

(b) Open the calibration chamber door by releasing the spring-loaded catches (fig. 3).

(c) Remove the battery from the radiosonde under test.

(d) Connect the radiosonde to its battery as instructed in paragraph 22b(6) through (9).

(e) Repeat a through e above.

(2) When testing a radiosonde containing Humidity Element ML-476/AMT, proceed as follows:

(a) Operate the FAN switch to OFF.

(b) Open the calibration chamber door by releasing the spring-loaded catches (fig. 3).

(c) Place approximately 4 ounces of calcium chloride into the tray (fig. 18) and repeat a through e above.

(d) Add additional calcium chloride to the tray as necessary to bring the relative humidity within the calibration chamber below 90 percent.

(e) Repeat a through e above.

g. If the relative humidity within the calibration chamber is less than 28 percent and Humidity Element ML-476/AMT is used, perform procedures given in (1) through (4) below. If Humidity Element ML-418/AMT-4 is used, the relative humidity within the chamber will not be below 2.8 percent, as water is in the tray during the baseline check.

(1) Open the calibration chamber door by releasing the spring-loaded catches (fig. 3).

(2) Remove the tray (fig. 18) and fill it three-quarters full with distilled water.

(3) Replace the tray on its shelf and secure it with the strap.

(4) Repeat a through e above.

h. Perform the baseline check (ground check) of the radiosonde to establish a lock-in value of the temperature and humidity elements with psychometric data.

During the check, the radiosonde signals are recorded and evaluated on Radiosonde Recorder AN/TMQ-5 (TM 11-2436).

(1) Operate the SELECTOR switch (fig. 16) to AUTOMATIC.

(2) While the first low-reference signal is being received, adjust the recorder controls so that the trace is recorded at 95.0 ordinates. Check each successive low-reference trace and adjust to 95.0 whenever necessary. The sequence of temperature, reference, and humidity signals are continued until the requirements listed below are satisfied in the same series of consecutive traces.

(a) All low-reference traces used in the baseline check must be consecutive, a n d all must be recorded at 95.0 without adjusting the controls. When an adjustment is required, a new series of baseline cycles will be started.

(b) Two consecutive traces of temperature must be recorded so that the ordinate values of each trace are identical.

(c) Two consecutive traces of humidity must be recorded so that the ordinate values of each trace are identical.

(3) When the requirements for a satisfactory baseline check have been met, terminate the recording on the next low reference which must also be recorded at 95.0.

(4) Immediately read and verify the wet- and dry-bulb temperatures to the nearest 0.1°.

24. Stopping Procedure

a. Set the selector switch on the control unit (fig. 16) to TEMPERATURE.

b. Operate the HEATER, FAN, LIGHT, and POWER switches to OFF.

c. Open the calibration chamber door by releasing the two spring-loaded catches (fig. 3).

d. Disconnect the radiosonde test leads from the binding post assembly (fig.17).

e. If the battery is outside the calibration chamber, perform the following:

(1) Disconnect the battery receptacle from connector J4 (fig. 18).

(2) Disconnect the radiosonde battery connector from connector P2.

(3) Remove the battery from the battery shelf, and slide the shelf into place under the calibration chamber.

(4) Screw the cover onto connector J4.

f. Remove the radiosonde from the calibration chamber.

g. Slide the metal cover (fig. 4) over the aperture, close the calibration chamber door, and secure it with the spring-loaded catches (fig. 3).

25. Adjusting Radiosonde Commutator

a. *General*. Adjustment of the radiosonde commutator is performed before the radiosonde is sent aloft. This adjustment accurately positions the commutator with respect to the contact armor pin arm of the aneroid capsule of a radiosonde for the barometric pressure at the meteorological station. A detent action of the commutator adjustment screw permits accurate positioning of the commutator. The detent consists of a notched knob on the adjustment screw and a spring that bears against the knob. As the screw is turned, the detent spring makes a clicking sound at each notch. Each click represents a specific movement of the contact point of the contact arm or pin arm with respect to the commutator. This adjustment can be made by the sound method ((1) below) or the light method ((2) below).

(1) *Sound method*. The sound method consists of setting the commutator to a position with respect to the contact arm or pin arm of the radiosonde according to changes in a tone received by a rawin set. Detailed instructions for adjusting a radiosonde commutator with the sound method are contained in the applicable technical manual for the radiosonde to be adjusted.

(2) *Light method*. The light method

consists of connecting the radiosonde to the control unit of the baseline check set and adjusting the setting of the commutator to a position with respect to the contact arm or pin arm of the radiosonde according to a signal light on the control unit. Detailed instructions for adjusting a radiosonde commutator using the light method are given in *b* below.

b. Procedure. Adjust the commutator of a radiosonde by using the light method as follows:

(1) Place the radiosonde on top of or near the control unit of the baseline check set, and connect the radiosonde test leads to the binding post assembly on the back of the control unit (fig. 7). Connect each colored lead to a binding post of the same color.

(2) Operate the POWER switch on the control unit (fig. 16) to ON.

(3) Note the station barometric pressure.

(4) Open the top of the radiosonde modulator and lower the contact pin of the contact arm or pin arm onto the commutator by moving the contact arm lifter or pin arm lifting lever towards the commutator.

Note. Refer to the applicable technical manual for the location of controls and parts of the radiosonde being adjusted.

(5) Check the pressure unit calibration chart issued with the modulator of the radiosonde (refer to applicable radiosonde manual) to determine the proper contact number of the

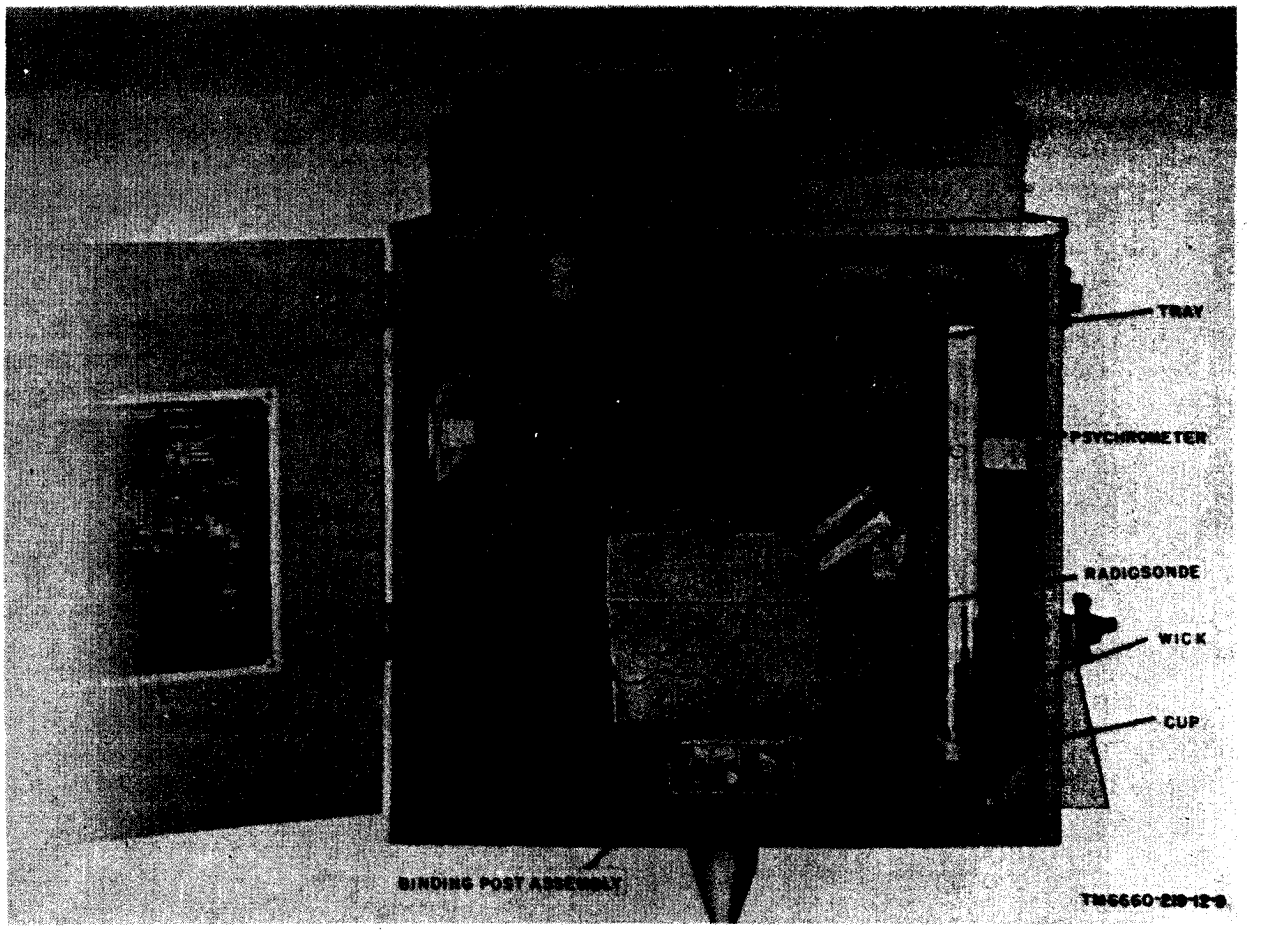


Figure 17. Calibration chamber, radiosonde installed.

barometric pressure at the launching site.

Caution: **Be sure that the serial number on the chart is the same as the serial number on the modulator.**

(6) Turn the commutator adjustment screw until the contact point rests on the insulating segment to the left of the contact determined in (5) above.

(7) Turn the adjustment screw until the contact point touches the beginning of the contact determined in (5) above. When the contact point touches a conducting segment, the indicator will glow.

(8) Turn the adjustment screw and count the clicks until the indicator light flashes off and then on again to show that the contact point has reached the beginning of the next conducting segment.

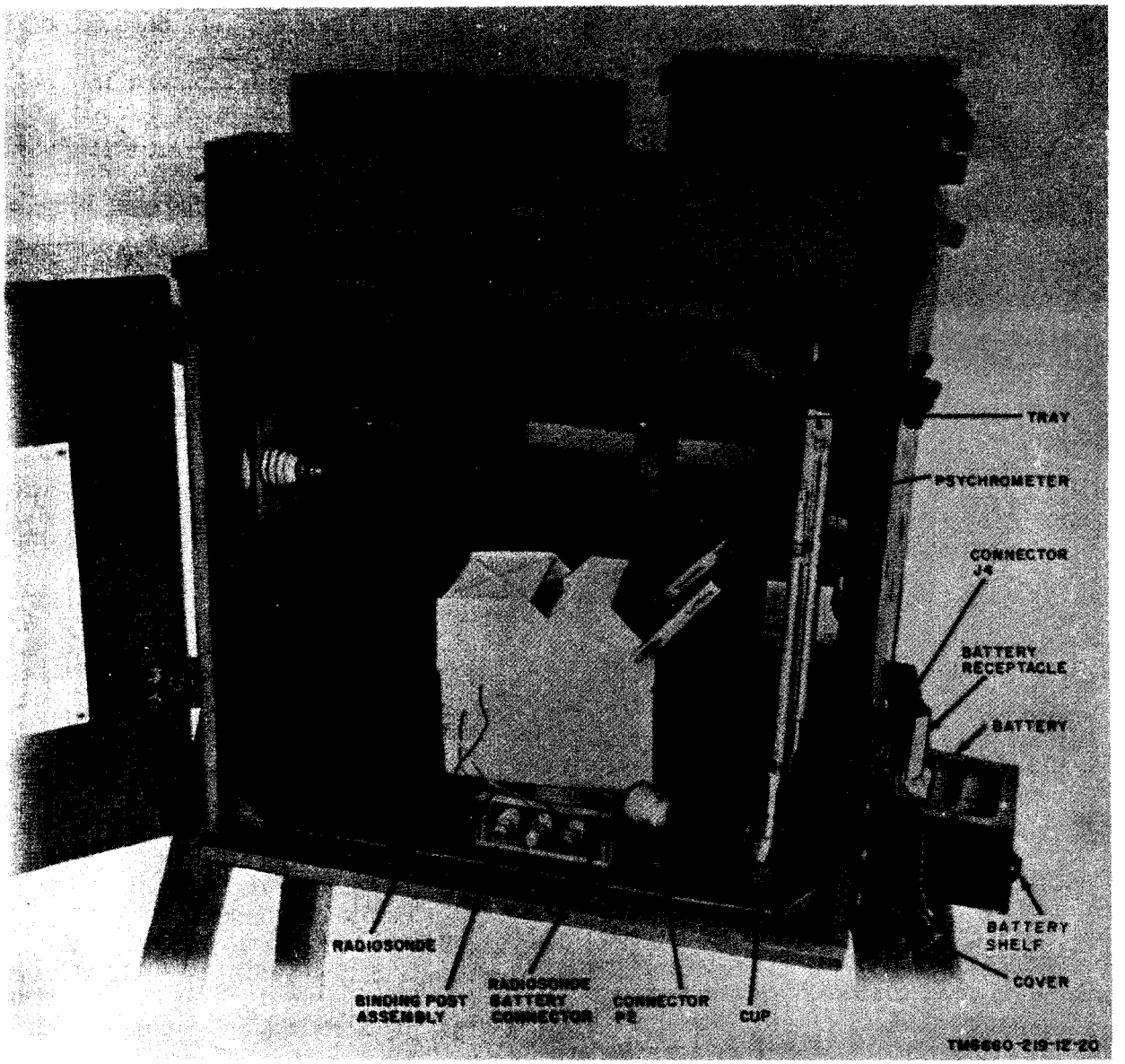


Figure 18. Calibration chamber, rodiosonde installed with battery outside.

(9) Record the number of clicks counted on the pressure unit calibration chart.
(10) Check the click count by repeating (6), (7), and (8) above.
(11) Calculate the number of clicks required to move the contact point from the beginning of the contact to the correct position for the barometric pressure at the meteorological station. Do this by multip 1 yin g the number of clicks counted in (8) above by the distance in tenths of a contact from the beginning of the contact to the setting determined in (5) above.

Example. Station barometric pressure: 1,013 millibars. Contact setting from chart that corresponds to station pressure: 4.5. Width of fourth contact in number of clicks counted: 35. Distance in tenths from beginning of contact to proper setting:

4.5-4=0.5

Number of clicks required to move contact point from beginning of contact to correct position: 0.5x35=17.5, which is rounded off to 18 clicks.

(12) Set the contact point at the beginning of the contact in accordance with (7) above.
(13) Move the commutator to the correct position (to the left) by turning the adjustment screw the exact number of clicks calculated in (11) above.
(14) Operate the control unit POWER switch (fig 16) to OFF.
(15) Disconnect the radiosonde test leads from the binding post assembly of the control unit.

26. Operation of Psychrometer ML-224

a. General The psychrometer (10, fig. 8) may be used to obtain the temperature of the free air and measure the water vapor content of the air at the site. From such data, the relative humidity, dewpoint, and vapor pressure of the atmosphere may be evaluated. To obtain this data, perform the procedure in *b* below, and refer to the reference book packed with the baseline check set to convert wet- and dry-bulb thermometer readings to the information desired.

b. Wet- and Dry-Bulb Readings.
(1) Remove a psychrometer, a wick. and the sling handle from the psychrometer case (fig. 5), and connect the psychrometer to the sling handle.
(2) Install the wick on the wet-bulb thermometer of the psychrometer (para *19a(12)* through (15)).
(3) Prepare the wick as follows:
(a) At dry-bulb temperatures of 3° and higher, submerge the wick in distilled water.
(b) At dry-bulb temperatures of less than 3°, moisten the wick thoroughly with water that is at room temperature. Expose the psychrometer to outside temperature for approximately 15 minutes before whirling to permit release of the latent heat when the wick freezes.
(4) Select an observation site that will provide readings which are representative of the free air and where the psychrometer is sheltered from precipitation or sunshine.
(5) Whir 1 the psychrometer while holding it by the sling handle in front of the body at waist height.
(6) After whirling the psychrometer for 15 seconds, read the wet-bulb thermometer.
(7) Whirl the psychrometer for another 10 seconds.
(8) Read the wet-bulb thermometer again. If the reading has decreased, whirl the psychrometer for another 10 seconds.
(9) Continue to procedures in (6) and (7) above until no further decrease is noted in the reading on the wet-bulb thermometer.
(10) Record the readings on the wet- and dry-bulb thermometers to the nearest 0.1°.
(11) Remove the sling handle from the psychrometer, and place the sling handle and psychrometer in the psychrometer case (fig. 5).

Section II. OPERATION UNDER UNUSUAL CONDITIONS

27. Special Operating Instructions, General

The operation of the baseline check set outdoors may be more difficult in regions where extreme cold, heat. humidity and moisture, sand conditions, etc, prevail. Paragraphs 28 through 30 provide operation information that may be used to minimize the effects of regional extremes.

28. Operation in Arctic Climates

a. If possible, locate the equipment inside a heated enclosure where no cold winds or drafts will whip around the calibration chamber and thus strike the psychrometer when the calibration door is opened. If such a location is unavailable, protect the calibration chamber from direct contact with the elements by placing a blanket, tarpaulin, or some other barrier between it and the elements.

b. Make sure the rubber gasket around the calibration chamber opening is in place. Seal all openings in the bottom of the calibration chamber, except the opening for the antenna of the radiosonde under test.

c. Equipment which has been exposed to the cold will sweat when brought into a warm room until it reaches room temperature. A similar condition arises when equipment warms up during the day after being exposed to a sharp drop in temperature during the night. In either case, dry the equipment thoroughly after it reaches room temperature.

29. Operation in Tropical Climates

a. Moisture conditions are more acute in tropical, swampy areas. The high relative humidity causes moisture condensation on the equipment when the temperature of the equipment is below that of the surrounding air. Fungus and molds tend to grow readily in the tropics. Keeping the equipment clean, dry, and well-ventilated will minimize these conditions.

b. Use as much calcium chloride as necessary in the tray to bring the surrounding relative humidity within the calibration chamber as close to 33 percent as possible. Keep the tray clean to prevent fungus growth.

c. Change the psychrometer wick and water in the cup every day to preclude fungus growth. It may be necessary to apply a thin layer of optical antifog compound of light oil to the inside of the plastic window to prevent condensed moisture from obscuring the psychrometer.

30. Operation in Desert Climates

a. Be extremely careful to keep sand and dust out of the calibration chamber. Make sure that the door and rubber gasket seal the calibration chamber well. Sea 1 all openings in the bottom of the calibration chamber, except the opening for the antenna of the radiosonde under test.

b. If baseline checks are made with the equipment outdoors, shade the calibration chamber from the direct rays of the sun.

c. Inspect the equipment frequently for signs of dust and sand. Replace the water in the cup and the wick if there is any evidence of dust and sand.

Caution: **Windstorms often arise suddenly in desert areas; therefore, avoid using tents or other temporary structures as supports for cables, wires, and connections. The force of the wind may jerk loose the connections or break the cables.**

CHAPTER 4

OPERATOR'S MAINTENANCE INSTRUCTIONS

31. Scope of Operator's Maintenance

a. The following is a list of maintenance duties normally performed by the operator of the baseline check set. These procedures do not require special tools or test equipment.

b. Operator's maintenance for the baseline check set consists of the following:

(1) Preventive maintenance (para 32).
(2) Visual inspection (para 33).
(3) Troubleshooting (para 34).
(4) Replacement of lamps and fuse F1 (para 35).

c. The following materials are required for preventive maintenance of the baseline check set.

(1) Cleaning compound (FSN 7930-395-9542).
(2) Cheesecloth, bleached, lint-free.

32. Preventive Maintenance

a. DA Form 11-238. DA Form 11-238 (fig. 19 and 20) is a preventive maintenance checklist to be used by the operator Items not applicable to the equipment are lined out in the figures. References in the ITEM block in figure 20 are to items in this paragraph which contain additional maintenance information pertinent to the particular item. Instructions for the use of the form appear on the form.

b. Items. The information shown in the chart below is supplementary to DA Form 11-238. The item numbers correspond to the ITEM numbers on the form.

Item	Maintenance procedure
1	Check the equipment at the site for agreement with the table of components (para 5). See that all accessories, components, and associated parts are clean and in good condition.
2	Clean the exterior of all components with a clean, lint-free cloth that has been wet with cleaning compound. Dry with a clean, lint-free cloth. Remove any water that may have accumulated on the floor of the calibration chamber (fig. 4).
3	Inspect the psychrometer (fig. 13) to see that the thermometers are not damaged. If damaged remove the psychrometer and replace it (para 19a(11) through (18)). Refer to higher echelon maintenance for replacement of defective thermometers.
4	Use the information in paragraph 34 to determine if if the baseline check set is operating normally. Make notes of improper operation, binding, noisy contacts, and other difficulties requiring corrective measures beyond the operator's ability to handle.
7	Check the power cable and the remote control cable for cracks or fraying.
11	Inspect the window in the door of the calibration chamber (fig. 3) to see that it is not discolored or broken. Clean the window on both sides with a clean, damp cloth.

Warning: Cleaning compound is flammable and its fumes are toxic. Provide adequete ventilation; do not use near a flame.

33. Visual Inspection

a. When the equipment fails to perform properly, turn off the power and check all the items listed below. Do not check any items with the power on.

(1) Incorrect settings of switches and controls (para 21).
(2) Cables or radiosonde test leads poorly connected (para 19 and 20).
(3) Disconnected cables, plugs, or radiosonde test leads.
(4) Burned-out fuse F1 (usually indicates some other fault).

b. If the above checks do not locate the trouble, proceed to the equipment performance checklist (para 34).

34. Equipment Performance Checklist

a. General. The equipment performance checklist is used to systematically check equipment performance. All corrective measures which the operator can perform are given in the corrective measures column. If the action does not correct the fault, additional maintenance must

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
26. ~~INSPECT ANTENNA FOR ECCENTRICITIES, CORROSION, LOOSE FIT, DAMAGED INSULATORS AND REFLECTORS.~~	
27. ~~SHOCK FOR NORMAL OPERATION.~~	
28. ~~BEFORE SHIPPING OR STORING, REMOVE BATTERIES.~~	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION.

ITEM 4. FAN AND HEATER INOPERATIVE, REPORTED TO 2D ECHELON FOR REPAIR.

MAINTENANCE CHECK LIST FOR SIGNAL EQUIPMENT
SOUND EQUIPMENT, RADIO, DIRECTION FINDING
RADAR, CARRIER, RADIOSONDE AND TELEVISION
(AR 750-625)

EQUIPMENT NOMENCLATURE
RADIOSONDE BASELINE CHECK SET AN/GMM-1(*)

EQUIPMENT SERIAL NUMBER
1234

INSTRUCTIONS

This form may be used for a period of one month by using the correct dates and weeks of the month. It is to be used as a Preventive Maintenance check list for Signal equipment in actual use, or for a check on equipment prior to issue.

1. For detailed Preventive Maintenance instructions see:
   a. The Technical Manual *(in TM 11 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   b. The Supply Bulletin *(SB 11-100 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   c. The Department of the Army Lubrication Order. *(See DA Pamphlet Number 310-4)*

2. The following action will be taken by either the Communications Officer/ Chief for 1st echelon, or the Inspector for higher echelon:
   a. Enter Equipment Nomenclature and Serial Number.
   b. Strike out items that do not apply to the equipment.

3. Operator/Inspector will enter in the columns entitled CONDITION, on the proper line, a notation regarding the condition, using symbols specified under LEGEND.

4. After operator completes each daily inspection he will initial over the appropriate dates under "Daily Condition for Month", then return form to his supervisor.

TYPE OF INSPECTION
PREVENTIVE MAINTENANCE

OPERATOR	2/3 ECHELON	DATE	SIGNATURE
✓		7 APRIL 1961	John Doe
✓		14 APRIL 1961	John Doe

FOLD

DA FORM 1 MAY 57 11-238

REPLACES DA FORMS 11-238, 1 NOV 55; 11-239, 11-244, 11-245, 11-248, 11-249, 11-250, AND 11-251; WHICH ARE OBSOLETE.

TM6660-219-12-21

Figure 19. DA Form 11–238, pages 1 and 4 operator's maintenance.

LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF APRIL 1961

NO.	DAILY ITEM	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		2D 3D ECHELON
1.	COMPLETENESS AND GENERAL CONDITION OF EQUIPMENT. (~~Transmitter, receiver, carrying cases, wire, cables, microphones, tubes, spare parts, technical manuals~~) PARA 32b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
2.	CLEAN DIRT AND MOISTURE FROM ~~ANTENNA, MAST SECTIONS, HEADSETS, MIKES~~ JACKS, PLUGS, COMPONENT PANELS. PARA 32b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
3.	INSPECT CONTROLS FOR NORMAL OPERATION. TAP CONTROLS LIGHTLY FOR EVIDENCE OF CUT-OUT FROM LOOSE CONTACTS. PARA 32b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
4.	CHECK FOR NORMAL OPERATION OF EQUIPMENT. BE ALERT FOR UNUSUAL OPERATION OR CONDITION. PARA 32b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	⊘	✓	X			

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
5. CLEAN ~~AND POLISH~~ EXTERIORS OF CASES, RACKS, MOUNTS, ~~TRANSMISSION LINES~~	✓	✓				
6. INSPECT CASES, MOUNTS, ~~ANTENNA POLES~~ AND EXPOSED METAL SURFACES FOR RUST, CORROSION.	✓	✓				
7. INSPECT CORDS, CABLE, WIRE, SHOCK MOUNTS FOR CUTS, KINKS, BREAKS, FRAYING, UNDUE STRAIN. PARA 32b	✓	✓				
8. ~~CHECK ANTENNA GUY WIRES FOR PROPER TENSION OR DAMAGE.~~						
9. INSPECT CANVAS ~~AND LEATHER~~ ITEMS FOR MILDEW, TEARS, FRAYING.	✓	✓				
10. INSPECT ACCESSIBLE ITEMS FOR LOOSENESS: SWITCHES, KNOBS, JACKS, CONNECTORS, RELAYS, ~~TRANSFORMERS, MOTORS~~, PILOT LIGHTS, BLOWERS, ETC.	✓	✓				
11. CLEAN AND/OR INSPECT ~~AIR FILTERS~~, BRASS NAME PLATES, ~~DIAL~~ AND ~~METER~~ WINDOWS. PARA 32b	✓	✓				
12. ~~INSPECT STORAGE BATTERIES FOR DIRT, LOOSE TERMINALS, SPECIFIC GRAVITY, DAMAGED CASES. INSPECT DRY BATTERIES FOR LEAKAGE.~~						

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
13. ~~INSPECT SHELTERS AND COVERS FOR ACCUMULATION OF MOISTURE, PROPERLY TAUT, FRAYING.~~	
14. ~~CHECK TERMINAL BOX COVERS FOR CRACKS, DIRT, LEAKS, DAMAGED GASKETS, BROKEN~~	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. ~~INSPECT SEATING OF READILY ACCESSIBLE PLUG-IN ITEMS: TUBES, LAMPS, FUSES, CRYSTALS, CONNECTORS, INDICATORS, PLUG-IN COILS.~~	
16. ~~INSPECT RELAYS AND CIRCUIT BREAKERS FOR LOOSE MOUNTINGS, BAD CONTACTS, MISALIGNMENT OF CONTACTS AND SPRINGS, PROPER SPRING TENSION.~~	
17. ~~INSPECT VARIABLE CAPACITORS FOR DIRT, MISALIGNMENT OF PLATES, LOOSE MOUNTINGS, MOISTURE.~~	
18. ~~INSPECT RESISTORS, BUSHINGS AND INSULATORS FOR CRACKS, CHIPPING, BLISTERING, MOISTURE, DISCOLORATION.~~	
19. ~~CLEAN AND TIGHTEN SWITCHES, TERMINAL BLOCKS, BLOWERS, RELAY CASES AND INTERIORS OF CHASSIS AND CABINETS NOT READILY ACCESSIBLE.~~	
20. ~~INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.~~	
21. ~~INSPECT TERMINALS OF LARGE FIXED CAPACITORS AND RESISTORS FOR DIRT, CORROSION, LOOSE CONTACTS.~~	
22. ~~INSPECT TRANSFORMERS, CHOKES, POTENTIOMETERS AND RHEOSTATS FOR OVERHEATING AND OIL LEAKAGE.~~	
23. ~~INSPECT GENERATORS, AMPLIDYNES, DYNAMOTORS FOR BRUSH WEAR, SPRING TENSION, ARCING AND PITTING OF COMMUTATOR.~~	
24. ~~INSPECT CATHODE RAY TUBES FOR BURNT SCREEN SPOTS.~~	
25. ~~INSPECT WATERPROOF GASKETS FOR TEARS, WORN OR LOOSE PARTS.~~	

CONTINUED ON PAGE 4

2 3

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TM6660-219-12-22

Figure 20. DA Form 11–238, pages 2 and 3 operator's maintenance.

be performed by higher echelon maintenance personnel. The operator should note on DA Form 11-238 how the equipment performed and what corrective measures were taken. When using the checklist, start at the beginning and follow each step, in order, to locate trouble. However, if trouble is suspected in a particular area, start checking at that point and continue the steps in the sequence given.

b. Procedure. Operate the equipment as indicated in the checklist below.

	Item No.	Item	Action or condition	Normal indications	Corrective measures
PREPARATORY	1	Control unit	Connected to the cabinet assembly (fig. 3) direct or with the remote control cable (3, fig. 8).		
	2	All switches on control unit (fig. 16)	Operate to OFF		
	3	Power cable (2, fig. 8)	Connected to connector J3 of the control unit (fig. 7) and 115 vac power source.		
START	4	POWER switch	Operate to ON		
EQUIPMENT PERFORMANCE	5	FAN switch	Operate to ON	Fan in calibration chamber (fig. 4) operates.	Check to see that the power cable is connected to a 115 vac source and that the POWER switch (fig. 16) is in the ON position. Check fuse F 1 in the control unit by substitution (para 35).
	6	HEATER switch	Operate to ON	Heater begins to warm up.	Check to see that the POWER and FAN switches (fig. 16) are set to ON and that the fan is ope (item 5 above).
	7	LIGHT switch	Operate to ON	Lamps 1 and 2 light.	*a.* If lamps I1 and I2 do not light, check to see that the POWER switch is set to ON. Check fuse F1 in the control unit by substitution (para 35). *b.* If only one lamp lights, check the lamp that is out by substitution (para 35).
	8	HEATER switch	Operate to OFF	Heater (fig. 4) cools off.	Refer to higher echelon for repair.
	9	Indicator	Connect a jumper wire from the black binding post of the binding post assembly (fig. 7) to the yellow binding post, then to the blue binding post of the assembly. Remove the jumper wire.	Indicator is illuminated when jumper wire is connected to the binding posts	Check lamp I3 behind the indicator (fig. 16) by substitution (para 35).
	0	Selector sw	Place a radiosonde that is known to be operative in the calibratio chamber and connect the radiosonde test leads to the binding		

	Item No.	Item	Action or condition	Normal indications	Corrective measures
EQUIPMENT PERFORMANCE			post assembly (connect each test lead to a binding post of the same color) as shown in figure 17. Place the equipment in the rawinsonde system in which the baseline check set is used (para 13) in operation (appx I), and position the rawin set antenna to receive a signal from the radiosonde.		
			Operate the selector switch (fig. 16) to TEMPERATURE.	Temperature trace is recorded by the radiosonde recorder. (Refer to radiosonde recorder manual.)	Refer equipment to higher echelon for repair.
			Operate the selector switch to REFERENCE.	Low reference trace is recorded by the radiosonde recorder.	Refer equipment to higher echelon for repair.
			Operate the selector switch to HUMIDITY.	Humidity trace is recorded by the radiosonde recorder.	Refer equipment to higher echelon for repair.
			Operate the selector switch to AUTOMATIC.	The radiosonde recorder records the following traces for periods of 15 seconds in the following order: low reference, temperature, low reference, humidity.	Refer equipment to higher echelon for repair.
STOP	11	LIGHT switch ..	Set to OFF.....	Lamps I1 and I2 (fig. 4) go out.	Refer to higher echelon for repair.
	12	FAN switch (fig. 16).	Set to OFF.....	Fan stops operating.	Refer to higher echelon for repair.
	13	POWER switch .	Set to OFF.....		
	14	Rawinsonde system equipment.	Set to OFF (appx I).		

35. Replacement of Lamps and Fuse

a. Fuse F2 (fig. 16).

(1) Turn the fuse cap (F1) in the direction indicated by the arrow and pull the cap and fuse out of the fuseholder.

(2) Remove the spare fuse the same as fuse F1 ((1) above).

(3) Insert the spare fuse and cap in the fuseholder and turn the cap in the opposite direction to that indicated by the arrow on the cap.

(4) Remove the defective fuse from the remaining fuse cap and replace it with a new one from the spares (not shown) in the control unit and power cable compartment of the carrying case (fig. 12).

(5) Insert the new fuse and cap into the spare fuseholder (fig. 16), and turn the cap in the opposite direction to

that indicated by the arrow on the cap.

b. Lamp 13.

(1) Remove the indicator (fig. 16) by pressing it in and turning it counterclockwise.

(2) Remove the lamp by pushing it in and turning it counter clockwise.

(3) Replace the lamp with a new one by placing it in its socket and turning it clockwise until seated. The spares (not shown) are in the control unit and power cable compartment of the carrying case (fig. 12).

(4) Replace the indicator by placing it over the lamp, pressing it in, and turning it clockwise.

c. Lamp 11 or 12 (fig. 4).

(1) Remove either lamp by pushing it in and turning it counterclockwise.

(2) Replace the lamp with a new one from the spares.

CHAPTER 5

SECOND ECHELON MAINTENANCE

36. Scope of Second Echelon Maintenance

Second echelon maintenance for the baseline check set consists of the following:

a. Replacement of defective lamps and fuse F1 (para 35).

b. Preventive maintenance (para 38).

c. Visual inspection (para 39).

d. Troubleshooting (para 40).

Replacement of heater element (para 41).

f. Replacement of psychrometer thermometers (para 42).

37. Tools, Materials, and Test Equipment Required for Second Echelon Maintenance

a. Tools. Tool Equipment TE-l13 or equivalent contains all the tools required for second echelon maintenance of the baseline check set.

b. Materials.

(1) Tape, friction.

(2) Tape, rubber.

(3) Cleaning compound.

(4) Clean lint-free cloth.

(5) Rubber cement.

c. Test Eguipment. Multimeter TG-352/U (TM 11-5527) is the only test equipment required for second echelon maintenance of the baseline check set.

38. Second Echelon Preventive Maintenance

a. Use of DA Form 11-238. DA Form 11-238 (fig. 21 and 22) is a preventive maintenance checklist to be used by the organization maintenance man. Items not applicable to the equipment are lined out in the figures. References in the ITEM block in figure 22 are to the paragraph which contains additional maintenance information pertinent to the particular item. Additional preventive maintenance information concerning items 1 through 4, 7, and 11 on DA Form 11-238 will be found in paragraph 32.

h. Items. The information in this subparagraph is supplementary to DA Form 11-238. The item numbers correspond to the ITEM numbers on the form.

Caution **Tignten screws, bolts, and nuts carefully. Fittings tightened beyond the pressure for which they were designed may be damaged or broken.**

Item	Maintenance procedures
7	Repair any cuts in the insulation by covering them with rubber tape and then with friction tape. Replace or repair all broken wires or cables. Replace any defective plugs of connectors on the power cable and remote control cable (fig. 15).
16	Inspect relays K1 and K2 to see that they are secure and that the wires connected to them are not loose or corroded. Remove any corrosion from the relays with a cloth that has been moistened with cleaning compound. Dry thoroughly.
18	Inspect the binding post assemblies (fig. 4 and 7), heater HR1, and the heater insulators. Remove any corrosion from them with a cloth that has been moistened with cleaning compound.
25	Inspect the gasket around the edge of the calibration chamber (fig. 4) to see if it is loose or damaged. Secure a loose gasket with rubber cement; replace a damaged gasket with a new one and secure with rubber cement. Inspect the gasket in the bottom of the calibration chamber (fig. 23). Replace it if worn or damaged.

39. Second Echelon Visual Inspection

Before operating the equipment, inspect it. This will save repair time and may avoid further damage to the set. Inspect the following for obvious defects:

a. Cables, connectors, and plugs (fig. 15).

b. Wiring inside the calibration chamber (fig. 4).

Binding post assembly and connector P2.

d. Connectors on the back of the control unit (fig. 7).

40. Troubleshooting Chart

The following chart will help locate

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
26. ~~INSPECT ANTENNA FOR ECCENTRICITIES, CORROSION, LOOSE FIT, DAMAGED INSULATORS AND REFLECTORS.~~	
27. CHECK FOR NORMAL OPERATION.	✓
28. ~~BEFORE SHIPPING OR STORING, REMOVE BATTERIES~~	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION.

ITEM 10. DEFECTIVE POWER SWITCH. REPORTED TO HIGHER ECHELON FOR REPAIR OR REPLACEMENT.

MAINTENANCE CHECK LIST FOR SIGNAL EQUIPMENT
SOUND EQUIPMENT, RADIO, DIRECTION FINDING
RADAR, CARRIER, RADIOSONDE AND TELEVISION
(AR 750-625)

EQUIPMENT NOMENCLATURE

RADIOSONDE BASELINE CHECK SET AN/GMM-1(*)

EQUIPMENT SERIAL NUMBER

1234

FOLD

INSTRUCTIONS

This form may be used for a period of one month by using the correct dates and weeks of the month. It is to be used as a Preventive Maintenance check list for Signal equipment in actual use, or for a check on equipment prior to issue.

1. For detailed Preventive Maintenance instructions see:
   a. The Technical Manual *(in TM 11 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   b. The Supply Bulletin *(SB 11-100 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   c. The Department of the Army Lubrication Order. *(See DA Pamphlet Number 310-4)*

2. The following action will be taken by either the Communications Officer/ Chief for 1st echelon, or the Inspector for higher echelon:
   a. Enter Equipment Nomenclature and Serial Number.
   b. Strike out items that do not apply to the equipment.

3. Operator/Inspector will enter in the columns entitled CONDITION, on the proper line, a notation regarding the condition, using symbols specified under LEGEND.

4. After operator completes each daily inspection he will initial over the appropriate dates under "Daily Condition for Month", then return form to his supervisor.

TYPE OF INSPECTION

PREVENTIVE MAINTENANCE

OPERATOR	2/~~3~~ ECHELON	DATE	SIGNATURE
	✓	28 APRIL 1961	D. Short

DA FORM 1 MAY 57 11-238

REPLACES DA FORMS 11-238, 1 NOV 55; 11-239, 11-244, 11-245, 11-248, 11-249, 11-250, AND 11-251; WHICH ARE OBSOLETE.

TM6660-219-12-23

Figure 21. DA Form 11–238, pages 1 and 4, second echelon maintenance.

LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF APRIL 1961

NO.	DAILY ITEM	1 17	2 18	3 19	4 20	5 21	6 22	7 23	8 24	9 25	10 26	11 27	12 28	13 29	14 30	15 31	16	2D ~~3D~~ ECHELON
1.	COMPLETENESS AND GENERAL CONDITION OF EQUIPMENT. ~~(Transmitter, receiver,~~ carrying cases, wire, cables, ~~microphones,~~ tubes, spare parts, technical manuals).																	✓
2.	CLEAN DIRT AND MOISTURE FROM ~~ANTENNA, MICRO-PHONES, HEADSETS, HOSE,~~ JACKS, PLUGS, COMPONENT PANELS.																	✓
3.	INSPECT CONTROLS FOR NORMAL OPERATION. TAP CONTROLS LIGHTLY FOR EVIDENCE OF CUT-OUT FROM LOOSE CONTACTS.																	✓
4.	CHECK FOR NORMAL OPERATION OF EQUIPMENT. BE ALERT FOR UNUSUAL OPERATION OR CONDITION.																	✓

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D ~~3D~~ ECH
5. CLEAN AND TIGHTEN EXTERIORS OF CASES, RACKS, MOUNTS, ~~TRANSMISSION LINES~~						✓
6. INSPECT CASES, MOUNTS, ~~ANTENNA TOWERS~~ AND EXPOSED METAL SURFACES FOR RUST, CORROSION.						✓
7. INSPECT CORDS, CABLE, WIRE, SHOCK MOUNTS FOR CUTS, KINKS, BREAKS, FRAYING, UNDUE STRAIN. PARA 38b						(X)
8. ~~SHOCK ANTENNA GUY WIRES FOR PROPER TENSION OR DAMAGE.~~						
9. INSPECT CANVAS ~~AND LEATHER~~ ITEMS FOR MILDEW, TEARS, FRAYING.						✓
10. INSPECT ACCESSIBLE ITEMS FOR LOOSENESS: SWITCHES, KNOBS, JACKS, CONNECTORS, RELAYS, ~~TRANSFORMERS, MOTORS,~~ PILOT LIGHTS, BLOWERS, ETC.						X
11. CLEAN AND/OR INSPECT ~~AIR FILTERS, GRASS~~ NAME PLATES, DIAL AND ~~METER~~ WINDOWS.						✓
12. ~~INSPECT STORAGE BATTERIES FOR DIRT, LOOSE TERMINALS, SPECIFIC GRAVITY, DAMAGED CASES. INSPECT DRY BATTERIES FOR LEAKAGE.~~						

ADDITIONAL ITEMS FOR 2D ~~AND 3D~~ ECHELON INSPECTIONS	CONDITION
13. ~~INSPECT SHELTERS AND COVERS FOR ADEQUACY OF WEATHER PROOFING, TEARS, FRAYING.~~	
14. ~~SHOCK TERMINAL BOX COVERS FOR CRACKS, DIRT, LEAKS, DAMAGED GASKETS, GREASE.~~	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. INSPECT SEATING OF READILY ACCESSIBLE PLUG-OUT ITEMS: ~~TUBES,~~ LAMPS, FUSES, ~~CRYSTALS,~~ CONNECTORS, ~~VIBRATORS, PLUG-IN COILS.~~	✓
16. INSPECT RELAYS ~~AND CIRCUIT BREAKERS~~ FOR LOOSE MOUNTINGS. ~~BAD CONTACTS, MIS-ALINEMENT OF CONTACTS AND SPRINGS, PROPER SPRING TENSION.~~ PARA 38b	✓
17. ~~INSPECT VARIABLE CAPACITORS FOR DIRT, MIS-ALINEMENT OF PLATES, LOOSE MOUNTINGS, MOISTURE.~~	
18. INSPECT RESISTORS, BUSHINGS AND INSULATORS FOR CRACKS, CHIPPING, BLISTERING, MOISTURE, DISCOLORATION. PARA 38b	✓
19. CLEAN AND TIGHTEN SWITCHES, TERMINAL BLOCKS, BLOWERS, RELAY CASES ~~AND INTERIORS OF CHASSIS AND CABINETS NOT READILY ACCESSIBLE.~~	✓
20. INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.	✓
21. ~~INSPECT TERMINALS OF LARGE FIXED CAPACITORS AND RESISTORS FOR DIRT, CORROSION, LOOSE CONTACTS.~~	
22. ~~INSPECT TRANSFORMERS, CHOKES, POTENTIOMETERS AND RHEOSTATS FOR OVERHEATING AND OIL LEAKAGE.~~	
23. ~~INSPECT GENERATORS, AMPLIDYNES, DYNA-MOTORS FOR BRUSH WEAR, SPRING TENSION, ARCING AND PITTING OF COMMUTATOR.~~	
24. ~~INSPECT CATHODE RAY TUBES FOR BURNT SCREEN SPOTS.~~	
25. INSPECT WATERPROOF GASKETS FOR LEAKS, WORN OR LOOSE PARTS. PARA 38b	✓

CONTINUED ON PAGE 4

2 3

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Figure 22. DA Form 11–238, pages 2 and 3, second echelon maintenance. TM6660-219-12-24

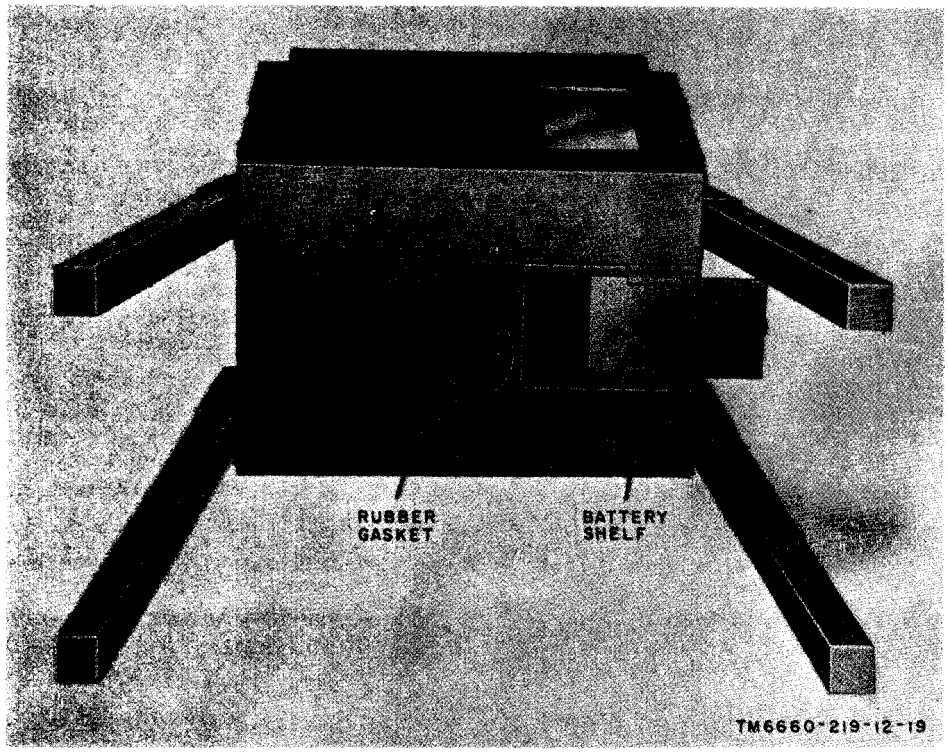

Figure 23. Calibration chamber, bottom view.

trouble in the baseline check set. Only those corrective measures are given which the organizational maintenance man can accomplish. If the measure suggested does not restore normal equipment performance, troubleshooting is required at field maintenance level.

a. *General.* Before using the trouble-shooting checklist, examine the repair tag to determine whether the trouble has been sectionalized. If there has been no sectionalization, perform the procedures outlined in the equipment performance checklist (para 34).

b. Chart. When performing the checks below, refer to figures 4, 7, 15, and 16.

Symptom	Probable cause	Corrective measures
Fan, heater, and lamps I1 and I2 do not operate.	Defective fuse	Replace fuse F1 (para 35).
	Power failure	Check the power source.
	Defective power cable or plug.	Check the power cable and plugs (fig. 15); replace any defective parts.
	Defective power connector J3.	Replace connector J3 (fig. 7).
	Defective remote control cable or connector (if used).	Check the remote control cable and connectors (fig. 15); replace any defective parts.
	Defective POWER switch	Higher echelon repair required.
Fan does does not operate	Defective remote control cable or connector (if used).	Check the continuity between the H pins and then the G pins of the two connectors on the remote control cable (fig. 15). Repair or replace the cable or connectors as required.
Heater does not operate	Defective remote control cable or connector (if used).	Check the continuity between the H pins and then the F pins of the two connectors on the remote control cable. Repair or replace the cable or connectors as required.

Symptom	Probable cause	Correcti measures
Lamps I1 and I2 do not light	Defective heater element.	Remove heater HR1, check its resistance, and replace if defective (para 41).
	Defective remote control cable or connector (if used).	Check the continuity between the D pins and then the E pins of the two connectors on the remote control cable (fig. 15). Repair or replace the cable or connectors as required.
Only one trace is indicated on the radiosonde recorder during a baseline check with the selector switch at AUTOMATIC, or a trace other than the one for which selector switch on the remote control unit is set appears at the radiosonde recorder.	Defective radiosonde	Replace the defective radiosonde with one that is known to be operative.
	Loose or broken connections on the binding post assembly or relays K1 and K2.	Repair any loose or broken wires on the binding post assembly or relay K1 or K2 (fig. 4).
	Defective remote control cable or connector (if used).	Check the continuity between the A pins, the B pins, and the C pins of the two connectors on the remote control cable (fig. 15). Repair or replace the cable or connectors as required.

41. Removal and Replacement of Heater HR1
(fig. 4)

a. Removal.

(1) Disconnect the equipment from the power source.

(2) Remove the two nuts and washers that hold the heater in place and then remove the heater from its mounting bolts.

(3) Remove the two nuts that secure the connecting wires to the heater (not shown), and remove the heater.

b. Checking Heater. Check the heater by measuring the resistance between the two lugs that connect the heater to its circuit (not shown but on the back of the heater). The resistance measured between the lugs of a good heater should be approximately 66 ohms.

c. Replacement

(1) Connect the two wires removed in *a(3)* above to the lugs on the back of the heater (not shown) and secure with the nuts.

(2) Place the heater on its mounting bolts, and secure it with the nuts and washers removed in a(1) above.

(3) Connect the equipment to a power source and check the operation of the heater (para 34).

42. Removal and Replacement of Thermometers
(fig. 13)

a. Removal.

Note. If the wet-bulb thermometer is to be replaced; remove the wick before proceeding with (1) below.

(1) Remove the two screws that secure the thermometer mounting plate to the frame and remove the mounting plate.

(2) Pull the top of the thermometer away from the frame to free the glass hook at the end of the thermometer (not shown) from the hole in the frame.

(3) Remove the thermometer from the frame by sliding the bottom end of the thermometer through the retainer at the bottom of the frame.

b. Replacement.

(1) Remove one of the spare thermometers from the psychrometer case (fig. 5).

(2) Slide the bottom end of the thermometer through the retainer at the bottom of the frame (fig. 13).

(3) Position the glass hook at the top of the thermometer into the hole in the frame (not shown).

(4) Place the thermometer mounting plate over the end of the thermometer and secure it with the screws removed in *a* (1) above.

CHAPTER 6

SHIPMENT, LIMITED STORAGE, AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

43. Disassembly of Equipment

a. General. The disassembly procedures for the baseline check set will vary according to the type of installation (para 18). Disassemble the set by first performing the procedures given in *b* or c below, depending on the way the set is controlled; and then performing the procedures given in *d* or *e* below, depending on the way the calibration chamber is mounted.

b. Locally Controlled.

(1) Disconnect the power cable (2, fig. 8) from the power source and connector J3 on the control unit (fig. 7).

(2) Unscrew the collar of connector J1 on the cabinet assembly (fig. 14) from connector J2 on the control unit (fig. 7), and slide the control unit off the calibration chamber.

c. Remotely Controlled.

(1) Disconnect the power cable (2, fig. 8) from the power source and connector J3 on the control unit (fig. 7).

(2) Disconnect the r e mote control cable (3, fig. 8) from connector J2 on the control unit (fig. 7) and connector J1 on the cabinet assembly (fig. 3).

(3) Screw the covers on the remote control cable connectors (fig. 15).

d. Calibration Chamber Leg-Mounted.

(1) Open the calibration chamber by releasing the two spring-loaded catches (fig. 3).

(2) Remove the tray and cup (fig. 17) fro m the calibration chamber, empty the contents and dry thoroughly.

(3) Place the tray on the shelf, and secure it with the strap.

(4) Remove the psychrometer from the calibration chamber by removing the knurled nut from the psychrometer bracket (fig. 4).

(5) Screw the knurled nut back on the psychrometer bracket and secure the nut tightly to prevent it from falling off during shipment.

(6) Close the calibration chamber door and secure it with the spring-loaded catches (fig. 3).

(7) Remove the wick from the synchrometer (fig. 13).

(8) Turn the calibration chamber on its back and remove the legs from their sockets (fig. 3).

e. Calibration Chamber Wall- Mounted. To disassemble the calibration chamber when it is wall-mounted, perform procedures given in *a* (1) through (7) above, then proceed with the instructions below,

(1) Lift the calibration chamber up and then away from the wall.

(2) Remove the screws that hold the brackets to the back of the calibration chamber (fig. 14).

(3) Remove the brackets, and secure them in their normal positions with the screws removed in (2) above.

44. Repackaging for Shipment or Limited Storage

The exact procedure for repackaging depends on the material available and the conditions under which the equipment is to be shipped or stored. Adapt the procedures outlined below whenever possible. The information concerning the original packaging (para 14) will also be helpful.

a. Required Materials. The following materials are required for packaging the baseline check set. For stock numbers of materials, consult SB 38-100.

Material	Quantity
Waterproof wrapping paper	23 sq ft
Flexible fiberboard paper wrap	23 sq ft
Paperboard wrapping cushioning	21 sq ft
Tape, pressure-sensitive adhesive waterproof, 2 in.	12 ft
Tape, paper, gummed, sealing and securing, 2 in.	9 ft
Strapping, flat, steel, 5/8 x 0.020 inch, for intertheater shipment only	20 ft
Strapping seals, for intertheater shipment only	2 ea
Wooden shipping box (*b* below)	1 ea

b. Wooden Shipping Box. A wooden shipping box is required for shipping the baseline check set. The inside dimensions of the box are 38-1/2 by 29-1/8 by 20-1/4 inches.

c. Packaging.

(1) *Technical manuals and reference books.* Pack age each technical manual and reference book (1, fig. 8) within a close-fitting bag, fabri - cated of waterproof wrapping paper. Seal the bag with water-proof, pressure -sensitive tape.

(2) *Psychrometer case components.* Wrap each of the psychrometer (10, fig. 8), thermometers (fig. 2), sling handle (11, fig 8), and Cup (6) in paperboard wrapping cushioning. Secure the cushioning with gummed paper tape. Seal the bag that contains any remaining wicks with waterproof, pressure-sensitive tape. Place the items in the psychrometer case (fig. 5). Close the psychrometer case cover and secure it with the fasteners on the ends of the case.

(3) *Other components.* Coil the remote control cable (3, fig. 8) around the reel (4). Wind the power cable (2) into a coil so that it can be placed in its compartment in the carrying case (fig. 12). Wrap each of the cables (2 and 3, fig. 8), the control unit (fig. 6), and the legs (5, fig. 8) in paperboard wrapping cushioning. Secure the cushioning with gummed paper tape. Place the packaged items in the carrying case (fig. 12). Secure the legs and remote control cable and reel with the crossbars, and close the control unit and power cable compartment cover (fig. 12). Then wrap the spool of thread (9, fig. 8) and spare lamps and fuses (fig. 2) in paperboard wrapping cushioning. Secure the cushioning with gummed paper tape. Place the packaged spare lamps, fuses, and thread in the control unit and power cable compartment of the carrying case (fig. 12). Place the calibration chamber in the carrying case and put the cover on the carrying case. Secure the cover to the carrying case with the fasteners on the sides of the case.

d. Packing (fig. 24).

(1) Place the carrying case on the flexible fiberboard paper wrap.

(2) Place the technical manuals and reference books on the carrying case.

(3) Wrap the carrying case, technical manuals, and reference books in the flexible fiberboard paper wrap and secure the paper with gummed paper tape.

(4) Wrap the package in waterproof wrapping paper and seal the package with pressure-sensitive adhesive waterproof tape.

(5) Place the package in a wooden box, and nail the box closed.

(6) For intertheater shipment, strap the wooden box wit h flat steel (metal) strapping, and secure the straps with strapping seals.

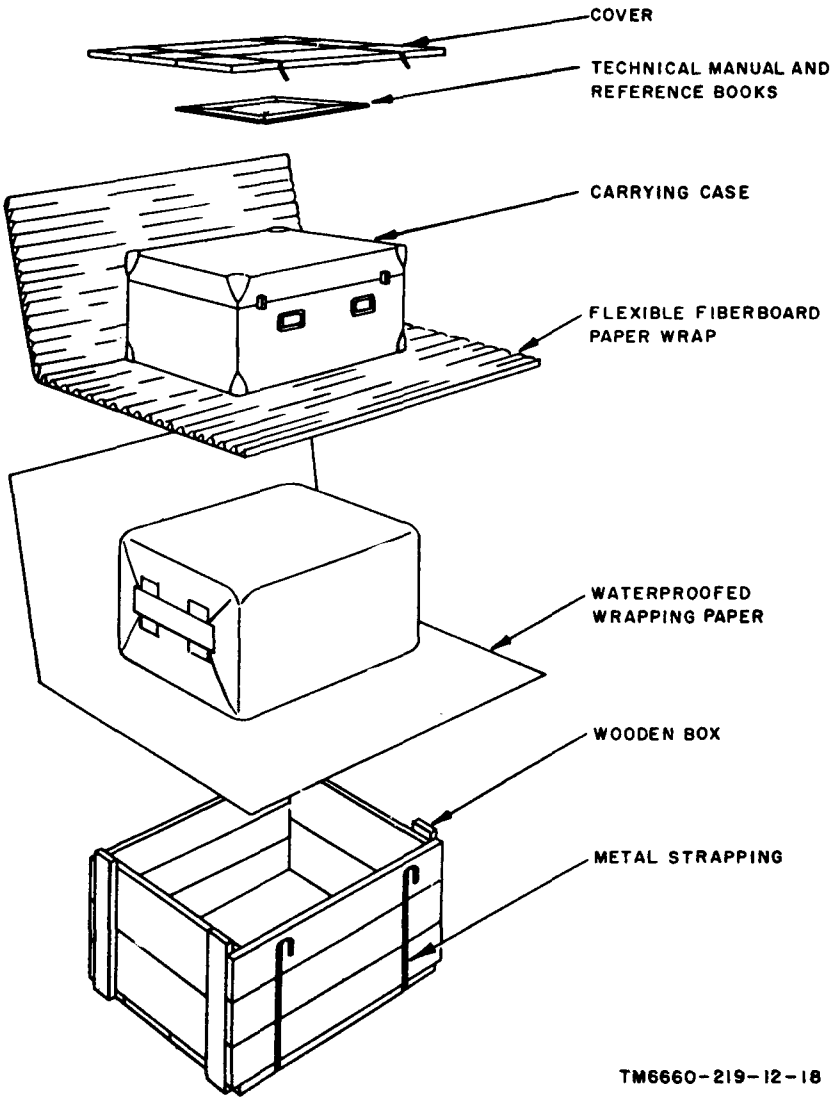

Figure 24. Packing for shipment and limited storage.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

45. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures in paragraph 46 will be used to prevent further use of the equipment.

46. Methods of Destruction

a. If complete destruction of the equipment cannot be accomplished in the time available, destroy the following components in the order given:

(1) Control unit.
(2) Psychrometer and thermometers.
(3) Calibration chamber.
(4) Cables.

b. Use any of the following methods:

(1) *Smash.* Smash the controls, control unit, and calibration chamber; use sledges, axes, handaxes, pickaxes, hammers, or crowbars.
(2) *Cut.* Cut the remote control cable

and power cable; use axes, handaxes, or machetes.

(3) *Burn.* Burn the calibration chamber, carrying case, technical manuals, and reference books; use gasoline, kerosene, oil, flamethrowers, or incendiary grenades.

Warning: **Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.**

(4) *Explode.* If explosives are necessary, use firearms, grenades, or TNT.

(5) Dispose. Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

APPENDIX I
REFERENCES

Following is a list of references applicable and available to the operator and the organizational maintenance man.

SB 11-489	Requisitioning of Calcium Chloride, Dehydrate for Use With. Radiosonde Baseline Check Set AN/GMM-1
SB 38-100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used by the Army
TM 11-271	Rawin Set AN/GMD-1
TM 11-271A	Rawin Sets AN/GMD-1A and AN/GMD-1B
TM 11-2417	Thermometers ML-4 and ML-5; Psychrometer ML-24 and ML-224; Shelters ML-41, ML-41-A, and ML-4-B
TM 11-2432A	Radiosondes AN/AMT-4A, AN/AMT-4B, AN/AMT-4C, and Radiosonde Set AN/AMT-4D.
TM 11-2436	Radiosonde Recorders AN/TMQ-5, AN/TMQ-5A,AN/TMQ-5B, and AN/TMQ-5C
TM 11-5527	Multimeters TS-352/U, TS-352A/U, and TS-352B/U
TM 11-6660-206-10	Operator's Manual, Rawin Sets AN/GMD-1A and AN/GMD-1B
TM 11-6660-220-10	Operator's Manual, Radiosonde Set AN/AMT-12

APPENDIX II
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

a. This appendix assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon.

b. Columns in the maintenance allocation chart are as follows:

(1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the part. Components and parts comprising a major end item are listed alphabetically. Assemblies and subassemblies are in alphabetical sequence with their components listed alphabetically immediately below the assembly listing.

(2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelon capable of performing the operations.

(a) Service. To clean, to preserve, and to replenish fuel and lubricants.

(b) Adjust. To regulate periodically to prevent malfunction.

(c) Inspect. To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.

(d) Test. To verify serviceability and to detect icipient electrical or mechanical failure by use of special equipment such as gages and meters.

(e) Replace. To substitute service assemblies, subassemblies, and parts for unserviceable components.

(f) Repair. To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes, but is not limited to, inspecting, cleaning, preserving, adjusting, replacing, welding, riveting, and straightening.

(g) Calibrate. To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.

(h) Rebuild. To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life, expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

(i) Overhaul. To restore an item to completely serviceable condition as prescribed by serviceability standards developed and published by heads of technical services. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

(3) *1st, 2d, 3d, 4th, 5th echelon.* The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate

that repair parts will be stocked at that level, Echelons higher than the echelon marked by X are authorized to perform the indicated operation.

(4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

(5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

c. Columns in the allocation of tools for maintenance functions are as follows:

(1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

(2) *1st, 2d, 3d, 4th, 5th echelon.* The dagger *(f)* indicates the echelons a located the facility.

(3) *Tool code.* This column lists the tool code assigned.

2. Maintenance by Using Organizations

When this equipment is used by signal services organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

3. Mounting Hardware

The basic entries of the maintenance allocation chart do not include mounting hardware such as screws, nuts, bolts, washers, brackets, and clamps.

Section II. MAINTENANCE ALLOCATION CHART

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
RADIOSONDE BASELINE CHECK SET AN/GMM-1; AN/GMM-1A	service	X						Clean and ventilate calibration chamber
	inspect		X					Visual; Fan and blower guard cables and plugs
	test		X	X	X	X	2	Voltage and continuity of circuit and cables and connectors
	replace		X					Complete unit
	repair		X				1,2	
	calibrate					X	1,2,3	
	overhaul				X		1,2,3	
CABLE ASSEMBLIES	repair		X				1,2	
CASE, CARRYING	repair				X		1	
	rebuild					X	1,3	
	overhaul				X		1,3	
CHAMBER, TEMPERATURE-HUMIDITY	service		X					Clean and ventilate
	inspect		X					Visual; Moisture damage to heating element, door gasket
	replace		X					
	repair		X				1,2	
	rebuild					X	1,2,3	
	overhaul				X		1,2,3	
CABINET ASSEMBLY	test		X				1,2	Continuity and voltage
	repair		X				1	
	rebuild					X	1,2,3	
	overhaul				X		1,2,3	
CONTROL-POWER SUPPLY	inspect		X					Visual
	test		X				1,2	Continuity and voltage
	replace		X					
	repair		X				1,2	
	rebuild					X	1,2,3	
	overhaul				X		1,2,3	
PSYCHROMETER	replace	X						
	repair			X			1	
REEL, WIRE	repair				X		1,3	

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

(1) TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	(2) 1ST ECH	(3) 2ND ECH	(4) 3RD ECH	(5) 4TH ECH	(6) 5TH ECH	(7) TOOL CODE	(8) REMARKS
AN/GMM-1; AN/GMM-1A (continued)							
TOOL EQUIPMENT TE-113		†	†	†	†	1	TE-113 currently on tables for support of the AN/GMD-1, therefore additional issue is not required
MULTIMETER TS-352/U		†	†	†	†	2	TS-352/U currently on tables for support of the AN/GMD-1, therefore additional issue is not required
SHOP SUPPORT				†	†	3	

APPENDIX III

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. General

This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

2. Columns

a. Source, Maintenance, and Recoverability Code. Not used.

b. Federal Stock Number. This column lists the 11-digit Federal stock number.

c. Designation by Model. Not used.

d. Description. This column lists nomenclature or the standard item name and brief identifying data for each item. When requisitioning, enter the nomenclature and description.

e. Unit of Issue. Not used.

f. Expendability. Nonexpendable items are indicated by NX.

g. Quantity Authorized. Under "Items Comprising an Operable Equipment," the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spares and Accessory Items ," the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

h. Illustrations. The "Item No." column lists the reference designations that appear on the part in the equipment. These same designations are also used on any illustrations of the equipment. The numbers in the "Figure No." column refer to the illustrations where the part is shown.

Section II. FUNTIONAL PARTS LIST

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPENDABILITY	(7) QUANTITY AUTHORIZED	(8) ILLUSTRATIONS FIGURE NO	(9) ILLUSTRATIONS ITEM NO
	6660-356-5059		RADIOSONDE BASELINE CHECK SET AN/GMM-1; AN/GMM-1A					
			ITEMS COMPRISING AN OPERABLE EQUIPMENT					
	6660-356-5059		RADIOSONDE BASELINE CHECK SET AN/GMM-1: For making complete base line check of temperature and humidity elements of radiosonde prior to its release; portable; floor mounted on legs and wall mounted on bracket; 115v, 60 cyc, ac 1 ph; SPEC MIL-C-10879		NX			
	6660-527-8392		RADIOSONDE BASELINE CHECK SET AN/GMM-1A: For making complete base line check of radiosonde prior to its release; portable; floor mounted on legs and wall mounted on bracket; 115v, 60 cyc, ac 1 ph; SPEC MIL-C-10879		NX			
	Ord thru AGC		TECHNICAL MANUAL TM 11-6660-219-12			2		
	6635-408-4818		BOOK, REFERENCE: U.S. Dept of Commerce Weather Bureau Psychrometer Tables			1	8	1
	6660-265-6329		CABLE ASSEMBLY, POWER, ELECTRICAL: 12 cond, No. 14 AWG, stranded; 15 ft lg o/a; SigC dwg SC-B-21403			1	8	2
	5995-356-0202		CABLE ASSEMBLY, ELECTRICAL: 8 cond; No. 18 AWG, stranded; 102 ft lg o/a; SigC dwg SC-D-21356			1	8	3
	6660-614-8175		CASE, CARRYING: For carrying components; wood; 35-23/32 in lg x 26-1/4 in wd x 17-1/8 in h		NX	1	9	
			CHAMBER, TEMPERATURE-HUMIDITY: Less control unit psychrometer case and legs 7A794-12 (SigC Stk No.)		NX	1	1	1
	6660-503-3963		CONTROL-POWER SUPPLY: For chamber; 7 in lg x 6 in wd x 5-1/8 in h approx; SigC dwg SC-D-21343		NX	1	1	2
	6635-309-5693		CUP: supplies water to wet bulb thermometer; transparent plastic; cylindrical shape; 1-5/8 in lg x 1-1/8 in dia o/a; SigC dwg SC-B-21274			1	8	6
	6660-356-5150		POST, SUPPORTING: 22-3/4 in lg x 1-3/4 in wd x 1-1/2 in thk o/a; SigC dwg SC-B-21275			2	8	5
	6660-356-5151		POST, SUPPORTING: 22-3/4 in lg x 1-3/4 in wd x 1-1/2 in thk o/a; SigC dwg SC-B-21276			2	8	5
	6685-223-5084		PSYCHROMETER ML-224: SigC dwg SC-DL-20624		NX	1	8	10
	8130-351-8217		REEL, WIRE: 12-3/4 in lg x 2-3/4 in wd; Monmouth Electric dwg No. ME-D-10083			1	8	4
	8310-253-5854		THREAD, COTTON: No. 40; 100 yd to spool; Fed Spec: No.V-T-276; Type 1A1			1	8	9
	6740-291-5834		TRAY, PROCESSING, PHOTOGRAPHIC: 5-1/2 in wd x 7-1/2 in lg x 1-3/8 in d; hard rubber			1	8	7

SOURCE MAINTENANCE AND RECOVERABILITY CODE	FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATIONS	
							FIGURE NO	ITEM NO
			AN/GMM-1; AN/GMM-1A (continued)					
	9390-264-6158		WICK: for psychrometer; bleached muslin; 3/8 in wd x 3 in lg; United Lace and Braid Co. No. 109			1	8	8
			RUNNING SPARES AND ACCESSORY ITEMS					
			RADIOSONDE BASELINE CHECK SET AN/GMM-1; AN/GMM-1A					
	6635-408-4818		BOOK, REFERENCE: U.S. Dept of Commerce Weather Bureau Psychrometer Tables			1	8	1
	6685-223-5084		PSYCHROMETER ML-224: SigC dwg SC-DL-20624		XX	1	2	1
	6685-533-5971		THERMOMETER, SELF-INDICATING LIQUID IN GLASS: general observation type; mercury thermal element; SigC dwg SC-DL-20627			3	2	2
	9390-264-6158		WICK: For psychrometer; bleached muslin; 3/8 in wd x 3 in lg; United Lace and Braid Co. No. 109			99	2	5
			CHAMBER, TEMPERATURE-HUMIDITY (SigC Stk No. 7A794-1Z)					
	6240-057-2887		LAMP LM-27: 6-8v, 0.25 amp; 1.5-2w; clear bulb; T-3-1/4; miniature bayonet base			4	2	4
			CONTROL-POWER SUPPLY (FSN 6660-503-3963)					
	5920-010-6652		FUSE, CARTRIDGE: 3 amp; 250v; Littlefuse part No. 312003			5	2	3
	6240-057-2887		LAMP LM-27: 6-8v; 0.25 amp; 1.5-2w; Clear bulb; T-3/4; miniature bayonet base			2	2	4

By Order of Secretary of the Army:

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General. United States Army,
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NG: State AG (3): Units-Same as Active Army except allowance is one copy to each unit.
USAR: None.
For explanation of abbreviations used, see AR 320-50.

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