CORRECTED COPY

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S MANUAL
MOUNT, SMOKE GENERATOR, M2
AND
MOUNT, FOG OIL DRUM, M3

Headquarters, Department of the Army, Washington, D.C.
29 May 1969

WARNING

Exercise care while placing a fog oil drum in or removing it from trailer. The trailer has **neither tailgate** nor dropsides, so drum must be lifted over sides or end.

1. Scope

These instructions are for use by the operator. They apply to the M2 smoke generator mount and the M3 fog oil drum mount.

2. Use.

The adjustable M2 and M3 mounts provides a secure base for transporting M3-series smoke generators (TM 3-1040-202-12) in M 100 (TM 9-871A) or M416 (TM 9-2330-251-14P) cargo trailers, and in M38 (TM 9-8014) or M151 (TM 9-2320-218-10) 1/4-ton trucks. The mounts are also used to transport 55-gallon drums of fog oil in M 100 or M416 cargo trailers.

3. Record and Report Forms

The reporting of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commanding Officer, Edgewood Arsenal, ATTN: SMUEA-TSE-TP, Edgewood Arsenal, Md. 21010.

4. Description

a. General. The M2 smoke generator mount (fig. 1) and the M3 fog oil drum mount (fig. 2) are rectangular frames, consisting of two side angles and two end angles that are held together with capscrews. Adjustment slots in the end and side angles are used to lengthen or shorten the mounts.

● This manual supersedes TB 3-431-1, 20 March 1957, including all changes.

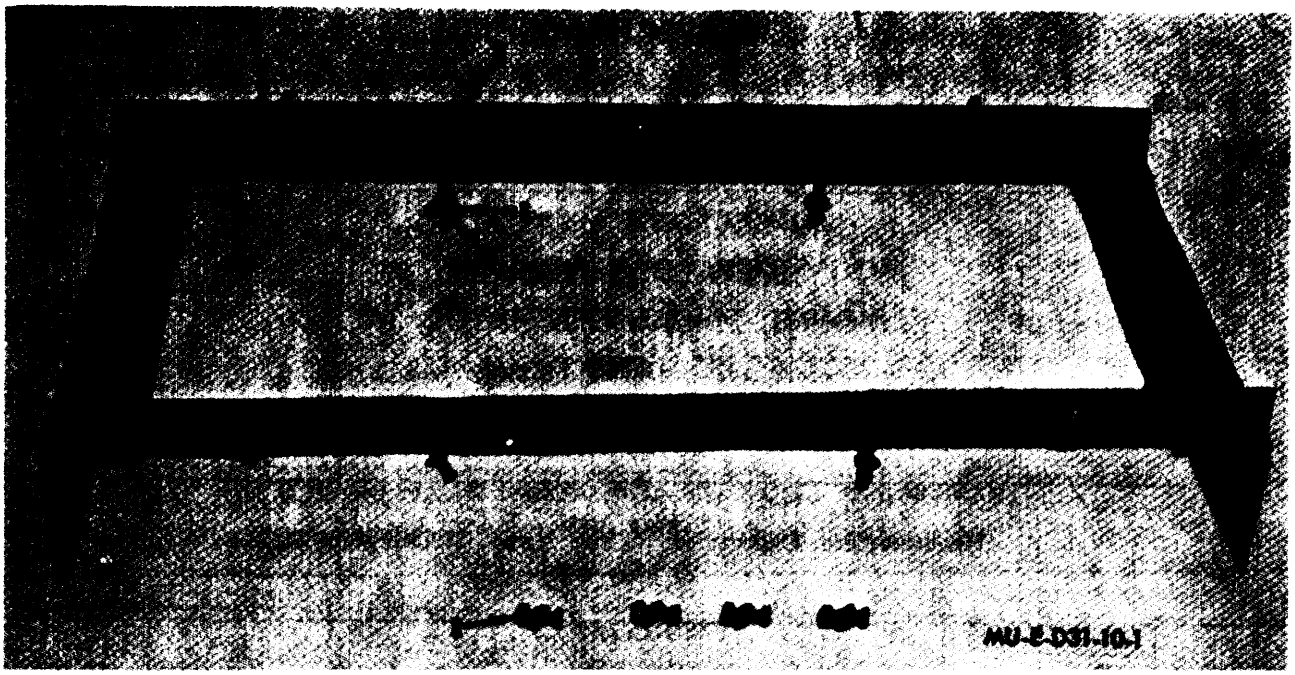

Figure 1. M2 smoke generator mount.

1 End angle
2 Spacer
3 Capscrew
4 Side angle
5 Hook bolt
6 Wingnut
7 Cotter pin
8 Capscrew

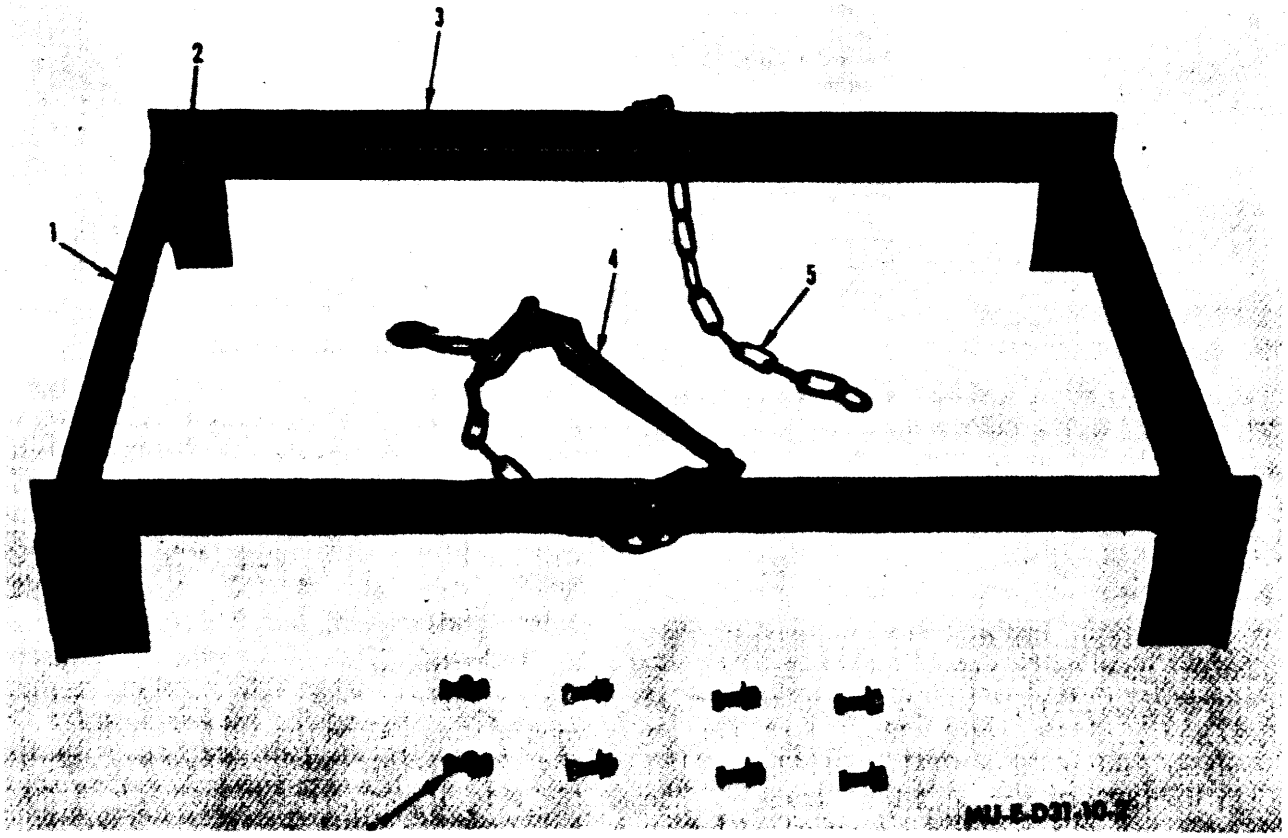

Figure 2. M3 fog oil drum mount.

1 End angle
2 Capscrew
3 Side angle
4 Load binder
5 Chain
6 Capscrew

Change No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D. C., 24 August 1973

Operator's Manual
MOUNT, SMOKE GENERATOR, M2
AND
MOUNT, FOG OIL DRUM, M3

TM 3-1040-255-10,29 May 1969, is changed as follows:

Page 3. Paragraph 4b is superseded as follows:

b. *M2* Smoke Generator Mount. The M2 smoke generator mount consists of a frame assembly, four hook bolts, and four spacers. The frame assembly is made up of four angles bolted together at the corners. A hook bolt assembly (5, fig. 1) Consists of a bent bolt, split metal tubing welded to the inside of the hook, and attaching hardware. A spacer (2) consists of a capscrew, bushing, lockwasher, and nut. Two hook bolts are attached to each side angle (4) and secure the smoke generator to the M2 mount. Two spacers are attached to each end angle (1) and are used to help position the smoke generator on the mount. The M2 mount is approximately 37½ inches long and 17½ inches wide, and 7 inches high when not expanded.

NOTE

Latest versions of the M2 smoke generator mount do not have spacers (2, fig. 1) or holes for their installation.

Page 3. Paragraph 5b, M2 smoke generator mount list is superseded as follows:

M2 Smoke Generator Mount

Part	Quantity
end angle	2
side angle	2
*capscrew, 3/8 x 13/4	4
capscrew, 3/8 x 1 1/4	4
capscrew, 3/8 x 1	4
flatwasher	8
*lockwasher	16
*nut	12
•bushing	4
hook bolt	4
wing nut	4
cotter pin	4

*These parts and quantities are required when spacers are used on the M2 smoke generator mount.

Page 3. Add the following note between paragraph 6a(1) and 6a(2).

NOTE

The following step (2) is omitted for latest versions of the M2 smoke generator mounts which do not have spacers.

Page 4. Paragraph 7b(5) is superseded as follows

(5) Position the smoke generator on the mount between the spacers or locate centrally on mounts without spacers. Place the hook bolts on the frame of the smoke generator and tighten wing nuts (fig. 4).

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:
To be distributed in accordance with DA Form 12-28, (qty rqr block no. 125) Operator maintenance requirements for Smoke Generators.

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b. M2 Smoke Generator Mount. Four hook-bolt assemblies (5, fig. 1), two attached to each M2 mount side angle (4), secure a smoke generator to the mount. A hook-bolt assembly consists of a bent bolt that has a short length of split metal tubing welded to the inside of the hook Fours spacers (2), two installed on each M2 mount end angle, prevent a smoke generator from shifting within the mount. A spacer consists of a bushing and a 1-3/4- inch capscrew. The capscrew passes through the bushing and attaches it to the end angle. The M2 mount is approximately 37-1/2 inches long 17-1/2 inches wide, and 7 inches high when not expanded.

c. M3 Fog Oil Drum Mount. A chain (5, fig. 2) and a load binder (4) are attached to the M3 mount side angles (3). The chain and load binder stretch over the center of a fog oil drum and secure the drum to the mount. The M3 mount is approximately 37-1/2 inches long, 22-1/2 inches long, 22-1/4 inches wide, and 7 inches high when not expanded.

5. Service Upon Receipt of Mounts

a. Unpacking. Cut the steel straps, pry the top off the packing box, and remove exposed nails. Remove the two nuts and washers from the bolts that hold the angles to the bottom of the box. Lift the side angles up off the bolts. Then remove the end angles from the box. Replace the washers and nuts on the bolts for use in repacking. Unstrap the side angles and remove the package of hardware. open the package and remove the hardware. Clean the hardware with drycleaning solvent.

b. Contents of Packing Box. Check the contents of the box with the appropriate list below.

M2 Smoke Generator Mount

Part	Quantity
End angle	2
Side angle	2
Capscrew, 3/8 x 1-3/4	4
Capscrew, 3/8 x 1-1/4	4
Capscrew, 3/8 x l	4
Flat washer	8
Lockwasher	16
Nut	12
Mount spacer	4
Hook bolt	4
Wingnut.	4
Cotter pin	4

M3 Fog Oil Drum Mount

Part	Quantity
End angle	2
Side angle	2
Capscrew, 3/8 x 1-1/4	4
Capscrew, 3/8 x 1	8
Flat washer	4
Lockwasher	12
Nut	12
Load binder	1
Chain	2
Connecting link	3

6. **Assembly**

a. M2 Smoke Generator Mount.

(1) Fasten the two end angles (1, fig. 1) and two side angles (4) together at each of the four corners with 1-1/4-inch capscrews (3), flat washers, lockwashers, and nuts.

(2) Install two spacers (2) in each end angle in the holes provided. To install a spacer, pass the capscrew downward through the bushing and the end angle, slip a lockwasher over the end of the capscrew, and secure with a nut.

(3) Install two hook bolts (5) in each side angle in the holes provided. Insert the threaded end of the hook bolt down through the hole in the side angle. Slip a flat washer and then a lockwasher over the end of the hook bolt and secure with a wingnut (6). Turn the wingnut until it passes the hole in the hook bolt. Insert a cotter pin (7) through the hole and bend both ends of the pin back around the bolt.

b. M3 *Fog Oil Drum Mount.*

(1) Fasten the two end angles (1, fig. 2) and two side angles (3) together at each of the four corners with 1-1/4-inch capscrews (2), flat washers, lock-washers, and nuts.

(2) Using the connecting links, fasten the chain (5) to the center lug of one side angle. Fasten the load binder (4) and chain to the center lug on the other side angle.

(3) Close the connecting links.

7. Installation of M2 and M3 Mounts in 1/4-Ton ‘hailer

a. General. The M2 and M3 mounts must be positioned in the trailer as described in *b* and **c** below, so the weight will be distributed properly (fig. 3).

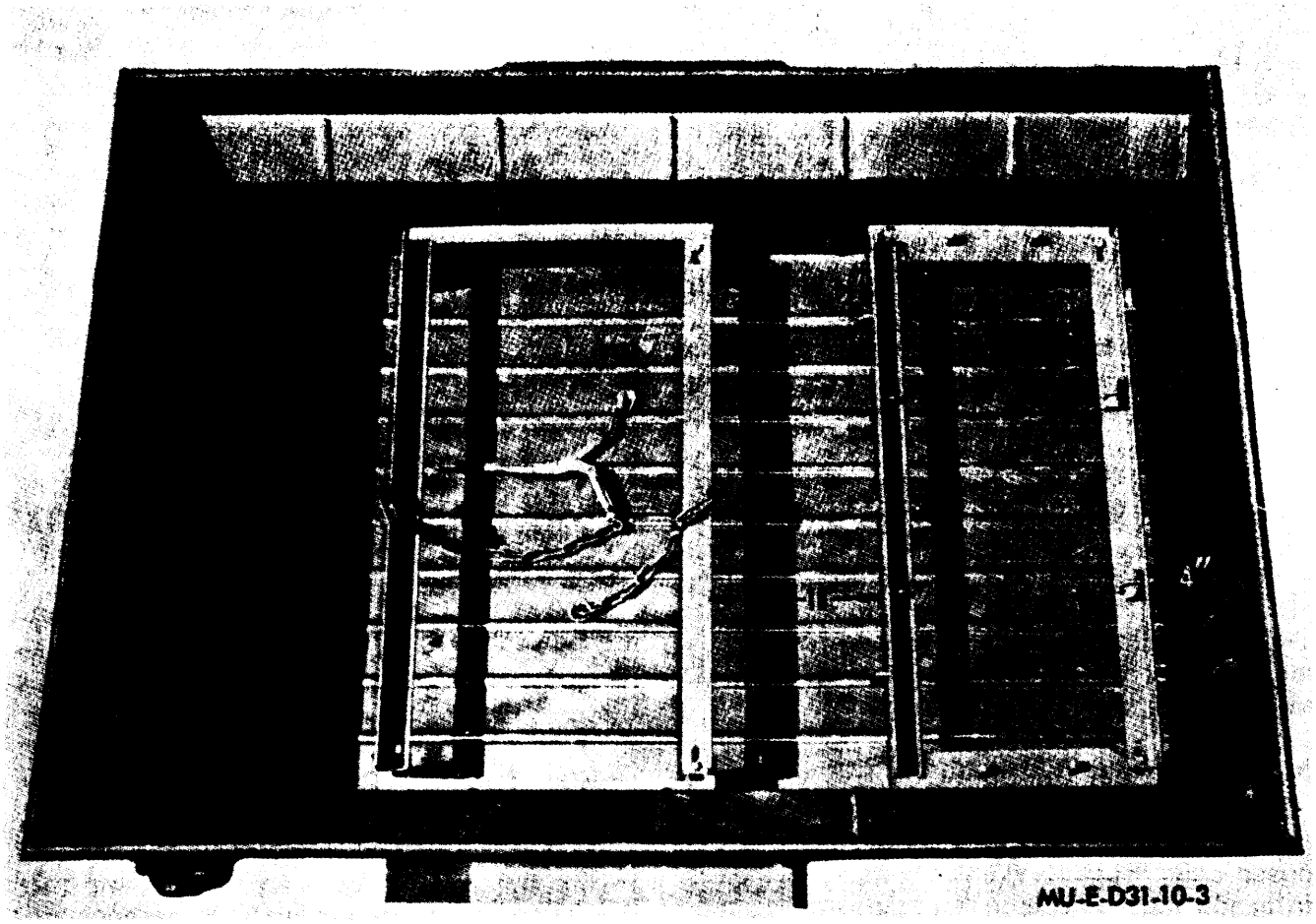

Figure 3. M2 and M3 mounts installed in 1/4-ton trailer

b. M2 Mount.

(1) Position the assembled mount crosswise on the floor of the trailer, 4 inches from the front end (fig. 3). Loosen the four capscrews that hold the angles together. Adjust the end angles so they are snug against the sides of the trailer.

(2) On the sides of the trailer, mark the two screw-hole locations in each end angle.

(3) Remove the mount and drill 7/16-inch holes where marked.

(4) Reposition the mount in the trailer and fasten mount in place with the four 1-inch capscrews (8, fig. 1), lockwashers, and nuts provided. Tighten the four capscrews that hold the angles together.

(5) Position the smoke generator on the mount so that frame is within the spacers. Place the hook bolts on the frame of the smoke generator and tighten the wingnuts (fig.4).

Table 1. Standards Requiring Intercomparison and/or Visual Inspection - continued

Nomenclature	Manufacturer and model number	Identifying number
Converter Set	NBS-TVC	MIS-10389
Thermal Voltage Converter	Holt 84506	MIS-10229
Coaxial Thermal Converter	BAL 1394()	MIS-10221
Tunnel Diode Mount	H-P 1106-A	MIS-10215-1
Micropot Kit	BAL 440	7907350
Ac Shunt Set	HOLT HCS-1	MIS-10235
Current Transformer	Weston 327 Type 18	MIS-10266
Thermistor Mount	H-P 478A	7910461
Thermistor Mount	H-P H75-478A	4931-01-005-3865

4. Capacitance. Intercompare and/or visually inspect capacitance standards with the capacitance measuring system.

a. Equipment. Capacitance Standard, G-R 1404A, 7910530; and Capacitance Measuring System, G-R 1620, 7910842.

b. Procedure. Measure G-R 1404A's (reference and returned standard) with capacitance measuring system. The measured difference will be within test reported difference ± computed CL's.

5. Low Voltage Ratio. Intercompare Kelvin Varley voltage dividers.

a. Equipment. Voltage Divider, ESI RV-726, MIS-10295; Lead Compensator, ESI LC 875B, 7910539; Dc Null Detector, J-F 845AB; and Dc Voltage Standard, J-F 332, 7911393.

b. Procedure. Compensate for connecting leads with lead compensator and intercompare reference and returned standard divider at following settings:

.1111111

.5555555

.8888888

Required balances will be within computed CL's

6. Dc Voltage (Standard Cell). Intercompare saturated standard cell enclosure.

a. Equipment. Saturated Standard Cell Enclosure, GUF 9154B, MIS-10364; Dc Potentiometer System, GUF 9931/9771, MIS-10416; and Voltage Reference Standard, J-F 730AB, MIS-10358.

b. Procedure. Use J-F 730AB for stabilizing GUF 9771 constant current source. Intercompare cells of reference and returned standard enclosures. Compare and calculate as required in TB 750-245-8-3. Computed values will be reported values ± computed CL's.

NOTE

This comparison is necessary only if enclosure(s) is shipped to higher echelon laboratories for calibration support.

7. Inductance. Intercompare GR 1482 Series Standard Inductors.

a. Equipment. Inductance Standard, GR-1482B, E, H, L, P, and Inductance Bridge, GR-1632.

b. Procedure. Measure reference and returned inductance standards, using G-R 1632, Inductance Bridge. Measured difference will be within test reported difference ± computed CL's.

8. Ac Ratio. Intercompare inductive voltage dividers.

a. Equipment. Ac Ratio Standard, GER 1000, 7907060; Phase Compensator, ESI PC 874, MIS-10242; Null Detector and Tuned Amplifier, G-R 1232A, 8616466; and Oscillator, G-R 1311A, 7910432.

b. Procedure. Intercompare reference and returned ratio standards at following settings:

.100000 + Test Report corrections

.500000 + Test Report corrections

.800000 + Test Report corrections

Required balances shall be within computed control limits.

9. Low Value Resistance. Intercompare resistance standard below 100 ohms, using oil bath, GUF 9732VT.

a. Equipment. Resistance Standards (all values below 100 ohms), Bridge, Kelvin Double Ratio, L&N 4398M, 7907131; Portable Oil Bath, GUF 9732 VT, MIS-10273; Detector Galvanometers, GUF 9460/9461, 7907452; and Dc Power Supply, NJE CS36R30, 7907346.

b. Procedure. Intercompare reference and returned resistance standards. Measured difference will be within test reported difference ± computed CL's.

10. Intermediate Value Resistance. Intercompare resistance standards 100 ohms through 100 kilohms.

a. Equipment. Resistance Standard (values of 100 ohms through 100 kilohms), Resistance Measuring System ESI SP2980, MIS-10281.

b. Procedure. Intercompare reference and returned resistance standards with resistance measuring system. Measured difference will be within test reported difference ± computed CL's.

11. High Value Resistance. lntercompare multimegohrn resistance standards MIS-10412.

a. Equipment. Resistance Standard Set, PENN AIRBORNE, and Teraohmmeter, GUF 9520, MIS-10549.

b. Procedure. Intercompare reference and returned resistance standards with teraohmmeter. Measured difference will be within test reported difference ± computed CL's,

12. Ac Voltage. lntercompare thermal transfer standards.

a. Equipment. Thermal Transfer Standard, BAL 1600, MIS-10554; Ac Voltage Standard, HP 745A, MIS-10342; and Dc Voltmeter, J-F 887ABAN, P/O MIS-10216.

b. Procedure. Intercompare reference and returned Thermal Transfer Standards at 50 kHz.

SECTION III

INTERCOMPARISON AND/OR VISUAL INSPECTION TECHNIQUES AND OPERATIONAL CHECKS FOR MICROWAVE STANDARDS

Table 2. Standards Requiring Intercomparison and/or Visual Inspection

Nomenclature	Manufacturer and model number	Identifying number
Variable Attenuator	H-P R382A	7907414
Variable Attenuator	H-P 382A	7910717
Variable Attenuator	Weinschel PA2	7912047-1
Calibration Attenuator	Weinschel VM-4A	4931-01-041-1564
Attenuator	Micro/Lab FXR W-175A	5985-01-081-5564
Variable Attenuator	H-P X382A	7909033
Variable Attenuator	H-P K382A	7910723
Fixed Attenuator	Weinschel 1-10N	7911956
Fixed Attenuator	Weinschel 1-20N	7911955
Assembly Standard	GOVT-SKA4850-60	7916161
Directional Coupler	NARDA 3001-40	5985-01-072-4156

See footnote at end of table.

Table 2. Standards Requiring Intercomparison and/or Visual Inspection - Continued

Nomenclature	Manufacturer and model number	Identifying number
Directional Coupler[1]	DCJ/3410	5985-01-165-3073
Directional Coupler[1]	DCJ/350C	5985-01-165-3072
Mismatch Standard	1402B	7913200-2-2
Mismatch Standard	1406BFI	7913200-3-2
Mismatch Standard	1407BFI	7913200-4-2
Mismatch Standard	1402B	7913200-1-2
Standards Set	GOVT 7912070	7912070
Thermistor Mount	G486A	5985-00-832-5945
Thermistor Mount	HP H486A	6625-00-916-6791
Thermistor Mount	HP K486A	7910710
Thermistor Mount	HP 486A	6625-00-912-8334
Thermistor Mount	HP R486A	7910459
Thermistor Mount	HP X486A	7910460
Thermistor Mount	HP X486A	7910460
Thermistor Mount	HP 479A	7910461
Thermistor Mount	HP 8478B	6625-00-811-2435
Thermistor Mount	Micro-Lab/FRX	5985-01-094-7840
Thermistor Mount	H55-478A	---

[1]Intercomparison check required of these measurement standards.

13. Power Standard Assemblies. Operational check of power standard assemblies.

a. Equipment. Power Standard Assemblies, Maury MT9024-20-1, MT9024-20-2, MT9024-20-3, MT9024-20-4, and Thermistor Mount, H-P 478A, 7910461. Power Standard Assembly, Maury MT9024-30-6, SK-D-4850-18-6, and Thermistor Mount, H-P X486A, 7910460. Power Standard Assembly, Maury MT9024-30-7, SK-D-4850-18-7, and Thermistor Mount, H-P P486A, 7910409. Also, see TB 9-6625-1932-35.

b. Procedure. Calibrate thermistor mount with power standard assembly, using TB 9-6625-1932-35 at one frequency. Value determined must agree with value indicated on thermistor mount within ± 4 percent.

14. Directional Couplers. Intercompare Directional Couplers NBS-1 and NBS-2.

a Equipment. Directional Coupler, DC 1/350C-AR, NBS-1 and Directional Coupler, DC1/341D-AR, NBS-2. Additional equipment required: RF Power Generator, MCL 15009 or Microdot M447, MIS-10240; Power Measurement System, NBS Type 11, 6625-531-4331 (2 each); Thermistor Mount, H-P 478A, 7910461 (2 each); and Digital Voltmeter, Dana 5703-S-2127, 792606.

b. Procedure. Compare power output of NBS-1 with power input of NBS-2 at 300 MHz. Agreement must be within ± 2.4 percent. Compare power output of NBS-2 with power input of NBS-1 at 300 MHz. Agreement must be within ± 2.4 percent

SECTION IV

INTERCOMPARISON AND/OR VISUAL TECHNIQUES AND OPERATIONAL CHECKS FOR PHYSICAL STANDARDS

Table 3. Standards Requiring Intercomparison and/or Visual Inspection

Nomenclature	Manufacturer and model number	Identifying number
Assembly Sensing Unit	GOVT	10225810
Calibrator Sound	GR-1562A	MIS-10219A
Gas Flow Rate Calibrator	Brooks Inst 1055	4931-00-152-1973
Gaussmeter[1]	660	MIS-10365
Irradiance Set (Aperture only)	Infrared Ind 921	MIS-10311
Kit Calibrator, TST-D OXY	Nat Instr B22-79	4931-00-152-1972
Load Cell Kit	---	MIS-26331
Load Cell Standard	Baldwin-Lima 8200	MIS-23155
Flow Meter	Schutte-Koert 1	7920851-1
Flow Meter	Schutte-Koert 2	7920851-2
Flow Meter	Schutte-Koert 3	7920851-3
Flow Meter	Schutte-Koert 4	7920851-4
Flow Meter	Schutte-Koert 5	7920852-5
Flow Meter	Schutte-Koert 6	7920852-6
Flow Meter	Schutte-Koert 7	7920924-1

See footnote at end of table.

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.

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USACDCEC (10)
OS Maj Comd (5)
Armies (5)
Corps (3)
USMA (10)
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Br Svc Sch (10) except
USACMLCS (50)
Gen Dep (5)
Dep (5)
A Dep (5)
POE (1)
Instl (2)
USATTC (1)
EAMTMTS (1)
WAMTMTS (1)
MOTBA (1)
MOTBY (1)
MOTKI (1)
MOTSU (1)
USAAPSA (10)
Arsenals (3) except
Edgewood (50)
PG (5)
Ft Knox FLDMS (10)
Units org under fol TOE:
3-266 (5)
3-267 (5)
3-500 (AA-AC) (5)

NG State AG (3), Div (1)

USAR: None

For explanation of abbreviations used, see AR 320-50.

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