DEPARTMENT OF THE ARMY SUPPLY BULLETIN

INDICATOR, OUTLET VALVE LEAKAGE, M4A1 and M4A1 MODIFIED STORAGE SERVICEABILITY STANDARD

Headquarters, Department of the Army, Washington, D. C.
18 February 1971

1. Purpose and Scope. *a. Purpose*. This bulletin supplements the provisions of TM 743-200 also TM 743-200-1 and, when used in conjunction with SB 3-30 provides a method for determining the serviceability of the Outlet Valve Leakage Indicator M4A1; and M4A1 Modified.

b. Scope. The provisions of this bulletin are mandato4ry for use in conducting surveillance on the Outlet Valve leakage Indicator and is not intended to be used by organizations having stocks in basic loads.

2. Applicable Documents. The following Government documents referenced herein form a part of this bulletin to the extent specified.

MIL -P-116	- Preservation, Methods
SB 3-30	- Serviceability Standard for CB Materiel
TM 38-750	- The Army Maintenance Management Systems (TAMMS)
TM 743-200	- Storage and Materials Handling (Dept. of Def)
TM 743-200-1	-Storage and Materials Handling (Dept. of Army)
TM 3-6665-209-12	-Indicator, Outlet Valve leakage, M4A1 Operator and Organizational Maintenance Manual
IM 136-300-284	-Instructional Manual for the Installation, Operation, and Maintenance of Indicator Outlet Valve, Leakage, M4A1 (Modified)*

3. Safety Provisions. Refer to SB 3-30 and approved operating procedures.

4. Surveillance. *a. Surveillance Interval*.

(1) *Initial receipt and prestorage inspection*. Initial receipt and prestorage inspection will be conducted in accordance with SB 3-30.

(2) *Periodic cycle*. Surveillance will be performed at periodic cycles of twelve months. The first scheduled

*Obtainable from SMUEA-QA. Edgewood, Arsenal, MD 21010.

surveillance will be conducted within six months from the date of receipt at the depot.

(3) Pressure inspection. Pressure inspection of the subject item will be performed in accordance with SB 3-30 and the provisions of paragraphs 5 and 6 of this bulletin when one half or less of the periodic cycle remains. A visual examination will be performed (in accordance with para 5 of this bulletin) on the subject item if more than one half of the periodic cycle remains prior to shipment of the item. If no initial cycle examination has been performed, a complete examination, as specified in paragraph 5 and 6 of this bulletin, will be performed prior to shipment.

b. Basis of Surveillance. Surveillance for the subject item will be conducted on a unit basis.

c. Unit Basic. Unit basis examination is conducted on those items where a defect is of stitch a serious nature that none can be tolerated, and/or serially numbered major end items considered separately for surveillance purposes. The items comprising the lot will be inspected and tested in accordance with sections 5 and 6.

d. Critical Defects. When examination or testing of an item reveals a critical defect, the unit represented will be declared unserviceable. Units containing a functional critical defect will be immediately suspended from issue and use.

e. Visual Examination. Only a visual examination of packing for a new or reprocessed unit upon receipt at a depot storage area is required. If used units are received unprocessed at a storage area, a complete visual and functional examination will be performed in accordance with the instructions contained in this bulletin when reprocessing and repacking.

f. Testing. Oversea commands and installations other than depots need not perform the tests specified in section 6. Depots that do not possess testing and/or laboratory facilities will request instructions for testing from the Commanding Officer, Edgewood Arsenal, ATTN: SMUEA-QAER, Edgewood Arsenal, Md. 21010.

5. Inspection. a. Visual Examination. The sample will be examined for defects listed in 5b.

b. Classification of Defects. Refer to tables I through VI for classification of Defects. Defects other than those listed in these tables will be reported. Serviceability will be withheld pending investigation by Commanding Officer, Edgewood Arsenal, Quality Assurance Directorate, Engineering Division, Specifications Branch to determine proper defect category into which the unlisted defect belongs.

Table I. Cabinet Assembly

Categories	Defects	Inspection methods
Critical:	None-defined	
Major:		
101	Corrosion (heavy scale or pitting)	Visual
102	Damage (rips, tears, holes or other than corrosion)	
103	Components inoperable	
Minor:		
201	Components missing	Visual
202	Components loose	Visual
203	Wiring diagram incorrect	Visual
204	Markings incorrect	Visual

Table II. Panel Cover Assembly

Categories	Defects	Inspection methods
Critical:	None Defined	
Major:		
101	Component missing	Visual
102	Component damage	Visual
103	Glass component	Visual
Minor:		
201	Vacuum diagram incorrect	Visual
202	Components not secured	Visual

Table III. Chassis Base and Assembly

Categories	Defects	Inspection methods
1	Electric wiring shorted to frame	Visual
2	Electric shock through frame	Manual
3	Electric wiring deteriorated	Visual
Major:		
101	Terminal board cracked	Visual
102	Terminal board corroded	Visual
103	Component loose	Visual
104	Component missing	Visual
105	Component inoperative	Visual
106	Marking incorrect	Visual
Minor:		
201	Damage not affecting serviceability	Visual

Table IV. Test Probe Assembly

Categories	Defects	Inspection methods
Critical:	None defined	
Major:		
101	Leakage	6
102	Test probe inoperative	6
103	Component deteriorated	Visual
104	Commitment missing	Visual
Minor		
201	Damage not affecting serviceability	Visual

Table V. Indicator Accessories

Categories	Defects	Inspection methods
Critical:	None defined	
Major:		
101	Component deteriorated	Visual
102	Component broken	Visual
103	Pyrex orifice containment	Visual
104	Component missing	Visual
Minor:		
201	Damage not affecting serviceability	Visual

Table VI. Packaging, Packing, Marking and Preservation

Categories	Defects	Inspection methods
Critical: None defined		
Major:		
101	Damage --affecting usability	Visual
102	Interior packing mildewed	Visual
103	Interior wet	Visual
104	Waterproof barrier missing	Visual
105	Waterproof barrier torn	Visual
106	Marking incorrect	Visual
Minor:		
201	Date of manufacture incorrect	Visual
202	Manual missing	Visual
203	Permanent history log missing	Visual

6. Functional Test. *a. Requirement*. An indicator classified acceptable following visual examination will be subjected to a functional test. Any component failure, air leakage of the inlet or outlet valves, or any other malfunction will be cause for rejection of unit.

b. Equipment Required.

(1) Work bench or table of standard dimensions.

(2) Electric power source 115 volt, 60 cycle single phase alternating current.

(3) Room or enclosure--Well lighted, relatively dust free, and having a minimum of moisture.

c. Procedure.

WARNING

Exercise care around and inside unit if unit is connected to electric power source. High voltage is present within unit.

Conduct functional test in accordance with instructions contained in TM 3-6665-209-12.

d. Upon completion of functional test, serviceability units shall be repackaged in the same manner as unit prior to surveillance examination. Refer to MIL-P-116 for requirements..

7. Documentation. *a. Report Forms*. When reporting data, the following forms will be used:

DA Form 984	Munitions Surveillance Report.
DA Form 985	Data Sheet for Grand Lots, Miscellaneous, Lots or Depot Lots.

b. Permanent History. Forms as required by TM 38-750 for specific item.

c. Reporting.

(1) Data. When reporting data, forms specified in 7a and 7b will be prepared in accordance with instructions contained in SB 3 30 and TM 38-750.

(2) Submission. Reports required by this document will be submitted as follows:

(*a*) Original and one Copy to the Commanding Officer, Edgewood Arsenal, ATTN: SMUEA-QAER, Edgewood Arsenal, Md. 21010.

(*b*) One copy to the Commanding General, U.S. Army Ammunition Procurement and Supply Agency, ATTN: SMUAP-QA-LM, Joliet, Ill. 60436.

8. Special Instructions. *a. Equipment Calibration*. Prior to an inspection operation or test, all measuring devices that require calibration will be inspected to verify that the calibration interval and equipment limits have not been exceeded.

b. Errors or Omissions. Comments regarding errors or omissions will be forwarded on DA Form 2028 to Commanding Officer, Edgewood Arsenal, ATTN: SMUEA-QAES--B, Edgewood Arsenal, Md. 21010.

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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Corps (2)
Div (5)
Bde (2)
Regt/gp/bat gp (2)
Bn (1)
Instl (2)
PMS Sr Div Units (1)
Gen Dep (5)
Dep (5)
Army Dep (5)
Arsenals (2) except
Edgewood (75)
PG (5)
USAAPSA (60)
ARNG: State AG (3); Div (1).
USAR. None.

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

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PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

PIN: 022488-000