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**DEPARTMENT OF THE ARMY SUPPLY BULLETIN**

# MINE, ANTIPERSONNEL: M18A1 AND ACCESSORIES AMMUNITION SURVEILLANCE PROCEDURES

**Headquarters, Department of the Army, Washington, DC**

**29 September 1982**

SB 742-1345-94-521, 20 March 1981, is changed follows:

*Page 2,* paragraph 9. Subparagraph *b* is superseded follows:

*b.* Unscrew the shipping plug priming adapt' Hold the M4 blasting cap while unwinding approximately three meters of the firing wire. Secure firing wire to a stake located about one meter behind the mine with a half hitch knot so that a pull on the firing wire will not dislodge the prepositioned mine. Slide the slotted end of the shipping lug priming adapter onto the firing wires of the blasting cap between the crimped connections and the blasting cap, making certain that the combination shorting plug and dust cover are assembled to the connector of the blasting cap assembly before placing the blasting cap in the detonator well. Unwind the remaining firing wire to the firing position. The firing position (inside the personnel protection shelter, APE 1937, with the operational shield, APE 1920, installed) must be a minimum of 25 meters to the rear of the mine as a safety precaution against secondary missiles. Continuity test and firing will be conducted from inside AP 1937.

By Order of the Secretary of the Army:

Official:

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

ROBERT M. JOYCE
*Major General, United States Army*
*The Adjutant General*

To be distributed in accordance with DA Form 12-34B, Ammunition Handling Transportation and Storage.

**DEPARTMENT OF THE ARMY SUPPLY BULLETIN**

# MINE, ANTIPERSONNEL: M18A1 AND ACCESSORIES AMMUNITION SURVEILLANCE PROCEDURES

**Headquarters, Department of the Army, Washington, DC**
**20 March 1981**



**1. Purpose and Scope.** This bulletin when used conjunction with SB 742-1 provides a method for determining the serviceability of the subject item. The bulletin is to be used in the assessment of t serviceability of individual mines only. The provisions of this bulletin are mandatory for use by Department of the Army organizations with CONUS and OCONUS with a receipt, storage, al distribution mission. This bulletin is not intend for use by organizations with stocks in basic load Additional information pertaining to frequency test, sample selection, defect standards, reports and records are contained in SB 742-1.

**2. Errors. Omissions and Recommended Changes.** Reporting of errors, omissions and recommendations for improving this bulletin by the individual user is authorized and encouraged. D Form 2028 (Recommended Changes to Publications and Blank Forms) will be completed are forwarded to Commander, ARRCOM, ATT! DRSAR-QAS, Rock Island, IL 61299.

**3. Safety.** The surveillance function testing must 1 conducted in accordance with the provisions s forth in appropriate safety regulations and implementing instructions, with special attention d voted to technical manuals describing the item

**4. Personnel.** Function testing will be conducted under the supervision of a Quality-Assurance Specialist (Ammunition Surveillance) herein after referred to as QASAS.

**5. Size of Sample.** The number of mines and accessories required to make up a representative sample from a lot for surveillance function test is as follows:

For check investigations - as directed
For classification investigation - 40
For confirmation investigation - as directed

**6. Sample Selection.** Sample mine units (mine with accessories in the bandoleer) will be selected in accordance with the provisions of SB 742-1 with the exception that not more than four bandoleers may be selected from any one box. In addition, ten of the bandoleers selected should be those containing the M40 test set.

**7. Surveillance Test Equipment.** The following Ammunition Peculiar Equipment (APE) is to be used in testing the mines in accordance with the procedures described herein.

APE 1920 Shield, Operational
AP 1937 Shelter, Personnel Protection
APE 1938 Chamber, Low Temperature

*This bulletin supersedes SB 742-1345-94-458, 29 July 1980

**8. Preparation For Test**. *a.* Number the sample mine units 1 through 40 and identify them as to t box from which they were drawn. Ensure that five bandoleers containing the M40 test set are contained in the sample units numbered 1 through and the remaining five are contained in sample units numbered 21 through 40.

*b.* Sample units 1 through 20 will be temperature conditioned at 21.10 ± 2.80 C. (700 ± 50 F.) for at lea 24 hours immediately prior to firing.

*c.* Sample units 21 through 40 will be temperature conditioned at -400 ± 1.10C (-40° ± 20F.) for least 24 hours immediately prior to firing. It mandatory that all mines in this phase be fir within fifteen (15) minutes after removal from t temperature conditioning chamber. appropriate transfer boxes should be used for transporting items to the test site.

**9. Test Procedure**. a. Immediately upon removal from the temperature conditioning and prior firing of the mine, each M57 firing device will connected to an M40 test set and observation recorded concerning type of circuit (strong medium, or weak) as indicated by the flash of t lamp.

**NOTE**

Upon development of appropriate APE, there will be an additional quantitative test of the M57 Firing Device. Until such time, the above subjective evaluation will suffice.

b. Unscrew the shipping plug priming adapt Hold the M4 blasting cap while unwinding E proximately three meters of the firing wire. With the firing wire around the rear leg of the mine t' or three times. Slide the slotted end of the shipping lug priming adapter onto the firing wires of t blasting cap between the crimped connections a the blasting cap, making certain that the combination shorting plug and dust cover are assembled the connector of the blasting cap assembly before placing the blasting cap in the detonator well. Unwind the remaining firing wire to the fire position. The firing position should be a minimum of 100 meters to the rear of the mine as a safe precaution against secondary missiles. Continue test and firing will be conducted from inside i 1937.

c. From a sheltered position, remove shorting plug from firing wire. Insert plug of firing into the set. Insert plug of test set into firing device. Swing safety bail to fire position and from cover position depress firing handle. Light in window test set indicates good circuit. If no light, firing wire or cap may be defective. Check and repair wire or replace cap.

*d.* After performing the continuity test above, the mine is ready to fire. Insert plug of firing wire directly into firing device (safety on). Fire the mine by positioning the firing device bail in the "armed" position and actuating the firing device handle with a firm quick squeeze and release. In the event of a dud, the mine should be destroyed in place with a demolition block.

**NOTE**

This mine is a directional mine with a pattern of spherical steel fragments being projected in a 60-degree arc.

e. At the conclusion of the test, serviceable accessories (M40 test sets and M57 firing devices) should be retained at the storage facility so that equipment is available to test the M18Al mines that are packed without accessories.

**10. Observations.** All observations of nonstandard conditions and malfunctions, especially those not included among the defects listed in paragraph 12 and 13, should be described in full detail. Pictorial evidence of nonstandard conditions, whenever pertinent and practical, should be included. The observations to be reported are as follows:

*a.* Type of circuit as indicated by the flash from the M40 test set (strong, medium or weak).

*b.* Type of mine functioning (high order, low order, or dud).

*c.* All instances of any of the following: (1) In nonstandard marking, state whether marking is misleading, incomplete or unidentifiable.

(2) Where rust or corrosion appear, give location and extent.

(3) The occurrence of any of the nonstandard conditions or malfunctions classified as defects in paragraphs 12 and 13 below.

(4) The occurrence of any nonstandard conditions or malfunctions not classified as defects in paragraphs 12 and 13 below, but which in the opinion of the responsible personnel merits consideration.

**11. Classification of Defects.** Defects observed during inspection and testing will be classified in accordance with paragraphs 12 and 13 and with SB 742-1. Any defects observed which are not listed in paragraphs 12 and 13 will be fully described and reported with the recommendations of the QASAS as to classification.

**12. Nonfunctioning Defects.**

*a. Major.*

(1) Mine leg assembly twisted, bent or otherwise damaged.

(2) Any of the following missing or damaged.

(a) Mine
(b) Firing Device
(c) Test Set (if appropriate)
(d) Electric blasting cap
(e) Tag from bandoleer containing test set
(f) Shipping plug primary adapter

*b.* Minor. Marking misleading, incomplete 01 unidentifiable.

**13. Functioning Defects.** *a. Critical.* Mine function during continuity test.

*b. Major*

(1) Mine fails to function
(2) Mine functions low order
(3) Blasting cap found defective during continuity test.

*c. Minor.* Firing wire requires repair during continuity test.

**14. Evaluation**. Functioning and nonfunctional codes will be recommended in accordance with the following criteria and the interim condition code will be assigned. A lot will be classified Condition Code J and reported if one critical defect i observed.

*a. Nonfunctional Codes.*

(1) *Code A.* A lot not classified as Code J shall qualify for Code A if it meets the following requirements on inspection of 40 mines by attributes.

(a) Not more than 2 major defectives
(b) Not more than 3 minor defectives

(2) *Code B.* A lot not classified as Code J or Code A shall qualify for Code B if it meets the following requirements on inspection of 40 mines by attributes.

(a) Not more than 5 major defectives.
(b) Not more than 8 minor defectives.

(3) *Code D.* A lot not classified as Code J, Code A, or Code B shall be Code D.

*b. Functional Codes*

(1) *Code A.* A lot not classified as Code **J** shall qualify for Code A if it meets the following requirements in the test of 40 mines.

(a) Not more than 2 major defectives.
(b) Not more than 3 minor defectives.

(2) *Code B.* A lot not classified as Code J or Code A shall qualify for Code B if it meets the following requirements in the test of 40 mines.

(a) Not more than 5 major defectives.
(b) Nor more than 8 minor defectives.

(3) *Code D.* A lot not classified as Code J, Code A, or Code B shall be Code D.

**15. Records and Reports.** Function test results will be recorded and reported as outlined in SB 742-1.

By Order of the Secretary of the Army:

J. C. PENNINGTON
*Major* General, United *States Army*
*The* Adjutant General

Official:

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

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# THE METRIC SYSTEM AND EQUIVALENTS

## 'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

## 'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

## LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

## SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

## CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

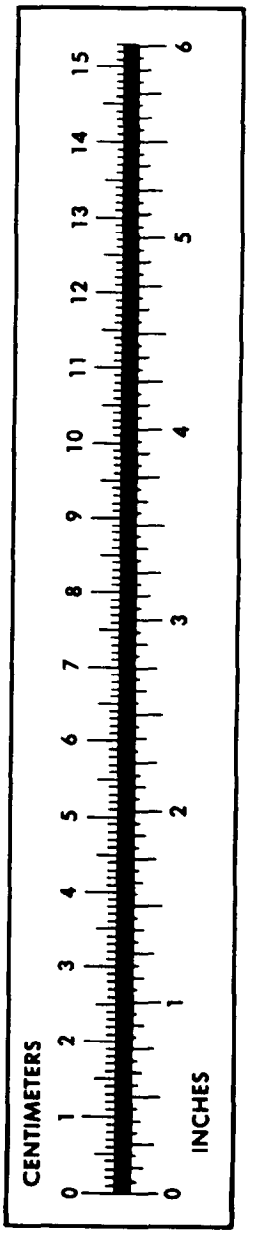
## TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

## APPROXIMATE CONVERSION FACTORS

| TO CHANGE | TO | MULTIPLY BY |
|---|---|---|
| Inches | Centimeters | 2.540 |
| Feet | Meters | 0.305 |
| Yards | Meters | 0.914 |
| Miles | Kilometers | 1.609 |
| Square Inches | Square Centimeters | 6.451 |
| Square Feet | Square Meters | 0.093 |
| Square Yards | Square Meters | 0.836 |
| Square Miles | Square Kilometers | 2.590 |
| Acres | Square Hectometers | 0.405 |
| Cubic Feet | Cubic Meters | 0.028 |
| Cubic Yards | Cubic Meters | 0.765 |
| Fluid Ounces | Milliliters | 29.573 |
| ıts | Liters | 0.473 |
| arts | Liters | 0.946 |
| allons | Liters | 3.785 |
| Ounces | Grams | 28.349 |
| Pounds | Kilograms | 0.454 |
| Short Tons | Metric Tons | 0.907 |
| Pound-Feet | Newton-Meters | 1.356 |
| Pounds per Square Inch | Kilopascals | 6.895 |
| Miles per Gallon | Kilometers per Liter | 0.425 |
| Miles per Hour | Kilometers per Hour | 1.609 |

| TO CHANGE | TO | MULTIPLY BY |
|---|---|---|
| Centimeters | Inches | 0.394 |
| Meters | Feet | 3.280 |
| Meters | Yards | 1.094 |
| Kilometers | Miles | 0.621 |
| Square Centimeters | Square Inches | 0.155 |
| Square Meters | Square Feet | 10.764 |
| Square Meters | Square Yards | 1.196 |
| Square Kilometers | Square Miles | 0.386 |
| Square Hectometers | Acres | 2.471 |
| Cubic Meters | Cubic Feet | 35.315 |
| Cubic Meters | Cubic Yards | 1.308 |
| Milliliters | Fluid Ounces | 0.034 |
| Liters | Pints | 2.113 |
| Liters | Quarts | 1.057 |
| ers | Gallons | 0.264 |
| ms | Ounces | 0.035 |
| ograms | Pounds | 2.205 |
| Metric Tons | Short Tons | 1.102 |
| Newton-Meters | Pounds-Feet | 0.738 |
| Kilopascals | Pounds per Square Inch | 0.145 |
| lometers per Liter | Miles per Gallon | 2.354 |
| meters per Hour | Miles per Hour | 0.621 |



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