

DEPARTMENT OF THE ARMY SUPPLY BULLETIN

SIGNAL, ILLUMINATION,
AIRCRAFT, SINGLE STAR:

RED-AN-M43A1/A2

(1370-L231)

YELLOW-AN-M44A1/A2

(1370-L232)

GREEN-AN-M45A1/A2

(1370-L233)

AMMUNITION
SURVEILLANCE
PROCEDURES

HEADQUARTERS, DEPARTMENT OF THE ARMY

SEPTEMBER 1988

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 30 September 1988

SUPPLY BULLETIN

No. 742-1370-94-704 J

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AMMUNITION SURVEILLANCE PROCEDURES**

The proponent agency of this supply bulletin is the U.S. Army Armament, Munitions and Chemical Command (AMCCOM). Direct reporting of errors, omissions, and recommendations for improving this bulletin is authorized and encouraged. DA Form 2028 (Recommended Changes to Publications and Blank Forms) should be completed and forwarded to Commander, AMCCOM AMSMC-QAS-P, Rock Island, IL 61299-6000.

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*This bulletin supersedes SB 742-137010, dated 22 October 1971.

SECTION I. INTRODUCTION

1. Purpose and scope. This bulletin, when used in conjunction with SB 742-1, provides a method for determining the serviceability of subject items.

a The visual inspection and function testing criteria in this procedure will be accomplished under a centralized control program managed by the U.S. Army Armament, Munitions and Chemical Command (AMCCOM), AMSMC-QAS, Rock Island, IL 61299-6000. This procedure is to be used in the serviceability assessment of specified lots based on inspection and testing of individual items.

b. The provisions of this bulletin are mandatory for all Department of the Army organizations within the continental United States (CONUS) and outside the continental United States (OCONUS) with an ammunition receipt, storage, and distribution mission. This bulletin is not intended for use by organizations with stocks in basic loads.

c. SB 742-1 contains additional information pertaining to frequency of test, sample selection, defect standards and records and reports.

2. Item description.

a These signals are used to signal from air-to-air, air-to-surface, surface-to-surface, and surface-to-air.

b. The signals have a one-piece aluminum case with an extracting rim. The signals resemble large shotgun shells and are approximately 3.85 inches long and 1.57 inches in diameter.

c Signals are fired from the pyrotechnic pistol AN-M8 or hard pyrotechnic projector M9. In both cases the firing pin strikes the primer, igniting the propelling charge. The propelling charge expels the self-contained star charge and, at the same time, ignites the quickmatch that extends through the center of the star charge. Within 2 seconds after expulsion of the star charge, the quickmatch ignites the first-fire composition at either end of the star charge which ignites the entire star charge. Burning time is 7 to 13 seconds depending upon the composition of the illuminant.

3. References.

a The following publications will provide more information on the surveillance of subject items. This list is not to be considered all inclusive.

(1) AR 75-1, Malfunctions Involving Ammunition and Explosives.

(2) SB 742-1, Ammunition Surveillance Procedures.

(3) TM 43-0001-37, Army Data Sheets for Military Pyrotechnics.

b. Each item of ammunition peculiar equipment (APE) has an operational manual that would be consulted prior to and during use of that item. Each manual is titled with APE number and nomenclature of APE item.

4. Safety.

a. The inspection and surveillance function testing must be conducted according to the provisions set forth in appropriate safety regulations and implementing instructions. Special attention must be given to the technical manuals describing the item. A standing operating procedure (SOP) for this operation is required and will delineate specific safety requirements. Absence of a safety requirement in this or any other publication is not to be construed as meaning that precaution is unnecessary.

b. Function testing will be conducted during daylight hours only and only in an area that is clear of flammable material such as grass, weeds, etc. Testing will not be conducted during electrical, rain, or snow storms or during any other conditions that might create a hazardous condition or adversely affect test results. Testing must be conducted according to any other applicable regulations; i.e., U.S. Environmental Protection Agency (EPA), local regulations, etc.

c. Signals will not be fired when the wind velocity exceeds 15 mi/h.

d In event of a misfire, personnel must remain inside the protective shelter for 5 minutes.

e. The recovery or destruction of duds will be accomplished according to all applicable safety regulations and an approved SOP, including protective equipment such as heat-resistant gloves, full-face shield, flame-resistant clothing, etc.

5. Personnel. Visual examination and function testing will be conducted under the direct control of a Quality Assurance Specialist (Ammunition Surveillance) (QASAS).

6. Sample size. Unless otherwise directed, a representative sample size of 40 is required for a surveillance function test. To satisfy requirements of a periodic inspection prescribed in conjunction with a surveillance function test, additional sampling of item, inner and outer packing may be required according to SB 742-1.

SECTION II. SURVEILLANCE

7. Sample selection. Sample items will be selected according to the provisions of SB 742-1 except that no more than eight items may be selected from anyone box.

a. If samples are to be function tested at an installation other than one at which parent lot is stored, packing boxes and containers that are not shipped will also be inspected. The appropriate part of DA Form 984 (Munitions Surveillance Report) will be completed prior to shipment.

b. Samples that are shipped must be packed and marked according to SB 742-1. During sample selection, number signals 1 through 40.

8. Surveillance test equipment. The following equipment is to be used in testing items according to this procedure:

- a. Tank, immersion, APE 1901.
- b. Device, holding, APE 1902 M1/M2.
- c. Measuring device, altitude and drift, APE 1908.
- d. Pistol, pyrotechnic, AN-M8.
- e. Thermometer.
- f. Stopwatch.
- g. Shelter, personnel, APE 1937.

9. Preparation for test.

a. Immerse signals (removed from their inner containers) 1-20 to a depth of 6 to 9 inches below surface of water for two hours. The water temperature should be 70 degrees +/- 10 degrees F (20 +/- 5 degrees C).

b. Remove signals from the water, wipe dry, and function within 1 hour.

c. Signals 21 through 40 will receive no conditioning prior to test.

10. Test procedure.

a. Fire signals from pyrotechnic pistol AN-M8 mounted in a vertical position on holding device. (Signals with bulged, split, or otherwise damaged cases will not be fired but will be reported by type of defect.)

b. Signals must be fired by use of a lanyard or other remote control device. The lanyard must be locked in lanyard control box of the personnel shelter, APE 1937. The person installing the item in the pistol will carry the key to the control box at all times to prevent authorized access to the lanyard.

c. Personnel should remain in the personnel shelter during firing.

11. Observations. All observations of nonstandard conditions and malfunctions, especially those not included among defects listed in paragraphs 14 and 15 below or in SB 742-1, should be included whenever

pertinent and practical. The following observations, as a minimum, must be reported.

a. Report any markings which are incorrect, misleading, incomplete, or unidentifiable.

b. Give the location and extent of any rust, corrosion, damage, or deterioration.

c. Give the burning time of star IN AIR to nearest tenth of a second.

d. Give the light intensity categorized as good, fair, or poor.

e. Give the maximum altitude of the star to nearest foot. Any instances where case is projected, record whichever altitude is lower (star or signal case).

f. State if stars strike ground while still burning.

12. Definitions.

a. *Abnormal quantities of burning composition become detached* (Pieces that drop from star and burn longer than three seconds.)

b. *Signal freezes in pistol* (Signal cannot be readily removed from pistol, preventing further use of pistol.)

13. Classification of defects. Defects observed during inspection and testing will be classified and reported according to paragraphs 14 and 15 and SB 742-1. Any defects or nonstandard conditions observed that are not listed below or in SB 742-1 will be described fully and reported with the recommendations of the QASAS as to classification.

14. Non-functioning defects.

a. Critical-markings incorrect as to color and/or type of signal.

b. Major-

(1) Major damage to case which would preclude functioning.

(2) Case bulged.

(3) Case split.

(4) Closing cap loose (can be removed by light finger pressure).

(5) Major rust or corrosion.

c. Minor-

(1) Markings partially incorrect or illegible but not misleading as to type of signal.

(2) Minor rust or corrosion.

15. Functioning defects:

a. Critical-

(1) Signal fires and remains in pistol (FA001).

(2) Signal the incorrect color (FA002).

(3) Maximum altitude of star or case (if projected) is less than 25 feet (FA003).

b. Major-

(1) Primer fails (CA021).

(2) Hangfire (CC021).

- (3) Star fails to ignite (BA024).
 - (4) Star fails to expel (FA021).
 - (5) Star burns less than 1.5 seconds in the air (measured from the time of ignition until the star makes contact with the ground) (FA022).
 - (6) Maximum altitude reached by the star or case (if projected) is less than 50 feet but not less than 25 feet (FA023).
 - (7) Signal case "freezes" in pistol due to defective signal (FA024).
- c. Minor-
- (1) Signal case splits or ruptures upon firing (FA050).
 - (2) Maximum altitude reached by the star or case (if projected) is less than 100 feet but not less than 50 feet (FA051).
 - (3) Star burns with abnormal quantities of burning composition becoming detached (FA052).

NOTE

The codes following each functioning defect are for use by testing facility personnel only.

16. Evaluation. Using the following criteria and considering nonfunctional and functional characteristics separately, an interim condition code will be assigned per SB 742-1. A lot will be classified condition code J and reported per SB 742-1 if any critical defect is observed.

a. Nonfunctional characteristics.

(1) *Serviceable for unrestricted issue and use* A lot not classified as condition code J will qualify as serviceable for unrestricted issue and use if following requirements are met on the inspection of 40 items:

- (a) Not more than 2 major defectives.
 - (b) Not more than 3 minor defectives.
- (2) *Priority of issue.* A lot not classified as condition code J or as serviceable for unrestricted issue and use will qualify as serviceable for priority of issue if following requirements are met on inspection of 40 items:
- (a) Not more than 5 major defectives.
 - (b) Not more than 8 minor defectives.
- (3) *Unserviceable.* A lot not classified as condition code J or as serviceable for unrestricted issue and use or for priority of issue will be classified as unserviceable.
- b. Functional codes.*
- (1) *Code A.* A lot not classified as condition code J will qualify for functional code A if following requirements are met in test of 40 items:
- (a) Not more than 2 major defectives.
 - (b) Not more than 3 minor defectives.
- (2) *Code B.* A lot not classified as condition code J or functional code A will qualify for functional code B if following requirements are met in test of 40 items:
- (a) Not more than 5 major defectives.
 - (b) Not more than 8 minor defectives.
- (3) *Code D.* A lot not classified as condition code J, functional code A or functional code B will be classified functional code D.

17. Records and reports. Inspection and function test results will be recorded and reported on DA Form 984 and other appropriate forms as outlined in SB 742-1.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

WILLIAM J. MEEHAN II
Brigadier General, United States Army
The Adjutant General

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