

DEPARTMENT OF THE ARMY SUPPLY BU LLETIN

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SIGNAL, ILLUMINATION, AIRCRAFT:  
 DOUBLE STAR, RED-RED, AN-M37 SERIES:

DOUBLE STAR, YELLOW-YELLOW, AN-M38 SERIES:  
 DOUBLE STAR, GREEN-GREEN, AN-M30. SERIES:  
 DOUBLE STAR, RED-YELLOW, AN-M40 SERIES:  
 DOUBLE STAR, RED-GREEN, AN-M41 SERIES:  
 DOUBLE STAR, GREEN-YELLOW, AN-M42 SERIES:

SURVEILLANCE FUNCTION TEST

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Headquarters, Department of the Army, Washington, D. C.

6 August 1971

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**1. Purpose and Scope.** This bulletin when used in 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 the serviceability of individual signals and their containers when the signals are packed one per container. When more than one signal is packed per container, this bulletin applies to the individual signals only. The provisions of this bulletin are mandatory for use by all Department of the Army organizations within CONUS and overseas with a receipt, storage, and issue mission. This bulletin is not intended for use by organizations with stocks in basic loads. Additional information pertaining to frequency of test, sample selection, defect standards, reports and records are contained in SB 742-1.

**2. Errors, Omissions, and Recommended Changes.**

Direct reporting of errors, omissions, and recommendations for improving this bulletin is authorized and encouraged. DA Form 2028 (Recommended Changes to Publications) will be completed and forwarded direct to Commanding Officer, US Army Aberdeen Research and Development Center, ATITN: AMXRD-ARW, Aberdeen Proving Ground, Md. 21005.

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

**4. Size of Sample.** The number of signals required to make up a representative sample from a lot for a surveillance function test is as follows: For check investigation . as directed For classification investigation 40 For confirmation investigation . as directed

**5. Sample Selection.** Sample signals will be selected in accordance with the provisions of SB 742-1 with the exception that not more than ten signals may be selected from any one box.

**6. Preparation for Test.** a. Number the signals 1 through 40 and identify them as to the box from which they were drawn.

b. Immerse signals 1 through 20 with their lead foil bags, if present, in water at  $70^{\circ} \pm 10^{\circ}\text{F}$  for two hours. Position signals horizontally 6 to 9 inches below the water surface. APE1901 should be used for this purpose. Signals will be wiped dry and tested as outlined in paragraph 7 within 2 hours after removal from the water.

c. Signals 21 through 40 will receive no treatment prior to testing.

**7. Test Procedure.** The signals will be fired from a

\*These signals *may* be used from aircraft or by ground forces, hence time above ground only is consider. Stars which hit the ground burning should be noted for "information only."

pyrotechnic pistol AN-M8 mounted in a vertical position on Holding Device APE 1902. Signals will not be fired when the wind velocity exceeds 15 mph. Signals with cracked, bent, or otherwise distorted bodies will not be fired but will be reported by type of defect as outlined in paragraph 10.

**8. Observations.** All observations of nonstandard conditions and malfunctions, especially those not included among the defects listed in paragraphs 10 and 11, should be described in full detail. Pictorial evidence of nonstandard conditions, whenever pertinent and practical, should be included. The observations to be recorded are as follows:

a. Burning time (to the nearest tenth of a second) of first star in air\*.

b. Burning time (to the nearest tenth of a second) of second star in air\*.

c. Light intensity of stars (good, fair, poor).

d. Maximum altitude of the lower of the 2 stars. (In instances in which the case is projected, the altitude reached by either the signal case or stars, whichever is lowest, should be recorded to the nearest foot.) APE 1908 should be used for this purpose.

e. All instances of any of the following.

(1) Nonstandard marking. State whether misleading, incomplete, or unidentifiable.

(2) Rust or corrosion. Give location and extent.

(3) The occurrence of any of the nonstandard conditions or malfunctions classified as defects in paragraphs 10 and 11.

(4) The occurrence of any nonstandard conditions or malfunctions not classified as defects in paragraphs 10 and 11, but which in the opinion of responsible personnel merits consideration.

**9. Classification of Defects.** Defects observed during inspection and testing will be classified in accordance with paragraphs 10 and 11, and SB 742-1. Any defects observed which are not listed in paragraphs 10 and 11 will be fully described and reported with the ammunition inspector's recommendation as to classification.

**10. Nonfunctioning Defects.** a. Major.

(1) Major damage to components, such as-

(a) Case bulged.

(b) Case split.

(c) Case otherwise damaged.

(2) Closing cap loose to the extent that it can be removed by applying light finger pressure.

- (3) Major rust.
- (4) Major corrosion.
- b. Minor.
  - (1) Improper marking.
  - (2) Illegible marking.
  - (3) Lead foil bag (if so packed) or signal not properly sealed (punctured, cracked foil bag, loose closing cap, etc.).
  - (4) Minor rust.
  - (5) Minor corrosion.

**11. Functioning Defects.** a. Critical.

- (1) Signal fires and remains in pistol.
- (2) Color of one or both stars is incorrect.
- (3) One star fails to ignite or burns less than 1.5 seconds (total burning time in the air and on the ground).
- (4) Maximum altitude reached by a star or case (if projected) is less than 25 feet.

b. Major.

- (1) Primer fails.
- (2) Hangfire.
- (3) Both stars fail to ignite or burn less than 1.5 seconds in air (from time of ignition until star makes contact with the ground).
- (4) Difference in burning time between the stars exceeds 6 seconds.
- (5) Stars cannot be distinguished up to 5 miles at night and 1 or 2 miles in daylight.
- (6) Both stars fail to expel.
- (7) Maximum altitude reached by a star or case (if projected) is less than 50 feet but not less than 25 feet.

c. Minor.

- (1) Signal case splits or ruptures upon firing.
- (2) Maximum altitude reached by a star or case (if projected) is less than 100 feet but not less than 50 feet.

(3) Stars burn with abnormal quantities of burning composition becoming detached.\*

(4) Signal case "freezes" in pistol due to defective signal.

**12. Evaluation.** Functional and nonfunctional codes will be recommended in accordance with the following criteria and the interim condition code will be assigned in accordance with SB 700-1300-1. A lot will be classified Condition Code J and reported if one critical defect is 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 signals 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 signals 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 signals.

- (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 signals.

- (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.

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

\*"Abnormal quantities of burning composition becoming detached is defined as pieces dropping from the star or stars which burn longer than 3 seconds.

**By Order of the Secretary of the Army:**

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

**Official:**

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

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**NG: None.**

**USAR: None.**

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



