

DEPARTMENT OF THE ARMY SUPPLY BULLETIN

SIGNAL, ILLUMINATION, GROUND: STAR CLUSTER,
 WHITE, M18 SERIES; GREEN, M20 SERIES;
 AMBER, M22 SERIES; RED, M52 SERIES
 SURVEILLANCE FUNCTION TEST

Headquarters, Department of the Army, Washington, D.C.
 31 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 sig-

nals 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, U. S. Army Aberdeen Research and Development Center, ATTN: 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..... 48
- 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 eight signals may be selected from any one box.

6. Preparation for Test. a. Number the signals 1 through 48 and identify them as to the box from which they were drawn.

b. Immerse signals 1 through 24 (without cartridges and without fiber containers) in water at 70° + 10F for 15 to 20 minutes. Position signals horizontally 6 to 9 inches below the water surface. APE 1901 should be used for this purpose. Signals will be wiped dry and tested as outlined in paragraph 7 below within two hours after removal from the water.

c. Signals 25 through 48 will receive no treatment prior to testing.

7. Test Procedure. a. The signals will be projected from a rifle grenade launcher of the M7 series attached to the muzzle of a service rifle using caliber.30 grenade cartridge M3. The rifle will be fired in a vertical position mounted 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 or stabilizer assemblies will not be fired but will be reported by type of defect as outlined in paragraph 10 below.

b. Cartridges packed with corresponding signals will be used in these tests unless their use is precluded because they are not standard for the rifle being used, in which case, other rifle grenade cartridges that are standard for the rifle being used may be substituted. If substitute cartridges are used, the

code for the lot will not apply to the cartridges packed with the signals.

8. Observations. All observations of nonstandard conditions and malfunctions, especially those not included among the defects listed in paragraph 10 and 11 below, 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. Time (to the nearest tenth of a second) from firing to expulsion of stars from case (for information purposes).
- b. Light intensity of stars (visually-good, fair, poor).
- c. Color of stars (visually-correctness and distinguishability).
- d. Functioning altitude to the nearest foot. APE 1908 should be used for this purpose.
- e. Altitude at extinction to the nearest foot (for information purposes).
- f. Number of stars in cluster which fail to function.
- g. Time (to the nearest tenth of a second) from ignition of the first star to extinction of the last burning star.
- h. Time (to the nearest tenth of a second) from extinction of the first star to extinction of the last star.
- i. 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 below.
 - (4) The occurrence of any nonstandard conditions or malfunctions not classified as defects in paragraphs 10 and 11 below, 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 below, 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) Disk or disk lining missing.
(2) Major damage to components such as:
(a) Container bulges, indicating serious gas formation.

(b) Identification top disassembled to the extent that the waterproof seal is broken.

(c) Identification top damaged to the extent that the waterproof seal is broken.

(d) Either of the following cracked to an extent which precludes use of the signal:

1 Case

2 Stabilizer

(e) Disk and disk lining damaged to the extent that propelling charge can escape.

(3) Major rust.

(4) Major corrosion.

b. *Minor.*

(1) Plug pulled out of assembly.

(2) Identification top not fully seated.

(3) Identification top inadequately lacquered.

(4) Cork plug not removable by hand.

(5) Minor rust.

(6) Minor corrosion.

(7) Incorrect marking on signal.

(8) Incorrect marking on fiber container.

(9) Waterproofing of fiber container broken by damage to container.

11. Functioning defects. a. *Critical.*

(1) Signal bursts on launcher or less than 50 feet from launcher.

(2) Color of one or more stars is incorrect.

b. *Major.*

(1) Misfire.

(2) Hangfire.

(3) Signal functions at less than 150 feet but not less than 50 feet from launcher.

(4) Stabilizer assembly bursts.

(5) Stabilizer assembly ruptures.

(6) Stabilizer assembly separates from body.

(7) Three or more stars fail to ignite.

(8) Color of one or more stars is not clearly distinguishable.

(9) Three or more stars are not expelled.

(10) Total time between extinction of first burning star and extinction of last star exceeds 5 seconds.

(11) Time from ignition of first star to extinction of last burning star is less than 2 seconds.

c. *Minor.*

(1) One or two stars fail to ignite.

(2) One or two stars fail to expel.

(3) Altitude of functioning is less than 500 feet but not less than 150 feet.

(4) Total time between extinction of first burning star and last burning star exceeds 3 seconds but does not exceed 5 seconds.

(5) Time from ignition of first star to extinction of last burning star is less than 4 seconds but not less than 2 seconds.

12. Evaluation. Function and nonfunctional codes will be recommended in accordance with the following criteria and the interim condition codes 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 48 signals by attributes:

(a) Not more than 2 major defectives.

(b) Not more than 4 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 48 signals by attributes:

(a) Not more than 6 major defectives.

(b) Not more than 10 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 48 signals.

(a) Not more than 2 major defectives.

(b) Not more than 4 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 48 signals.

(a) Not more than 6 major defectives.

(b) Not more than 10 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.

By Order of the Secretary of the Army:

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

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ARNG: None.

USAR: None.

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

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