D E P A R T M E N T O F T H E A R M Y S U P P L Y B U L L E T I N

GRENADE, HAND: SMOKE, HC, AN-M8
AND
GRENADE, HAND, COLORED SMOKE, M18
AMMUNITION SURVEILLANCE PROCEDURES

Headquarters, Department of the Army, Washington, DC
30 December 1987

SB 742-1330-94-320, 11 May 1982, is changed as follows:

Page 2, paragraph 5. Change "30" to "32."

Page 2, paragraph 8*a*. Change "30" to "32."

Page 2, paragraph 8*d*, line 2. Second line of first sentence is changed to read as follows:
"grenades upright in water for at least 30 minutes to a"

Page 4, paragraph 13*c*(1). Change to read as follows:
"(1) Smoke emission time is greater than 135 seconds."

Page 4, paragraphs 14*a*(1) and 14*a*(2). Change "30" to "32."

Page 4, paragraphs 14*b*(1) and 14*b*(2). Change "30" to "32."

By Order of the Secretary of the Army:

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DISTRIBUTION:
To be distributed in accordance with DA Form 12-34, requirements for Ammunition Surveillance Procedure Hand Grenades.

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DEPARTMENT OF THE ARMY SUPPLY BULLETIN

GRENADE, HAND: SMOKE, HC, AN-M8
AND
GRENADE, HAND: COLORED SMOKE, M18
AMMUNITION SURVEILLANCE PROCEDURES

Headquarters, Department of the Army, Washington, DC
11 May 1982

	Paragraph	Page
Purpose and scope	1	2
Errors, omissions, and recommended changes	2	2
Safety	3	2
Personnel	4	2
Size of sample	5	2
Sample selection	6	2
Surveillance test equipment	7	2
Preparation for inspection and test	8	2
Test procedure	9	2
Observations	10	3
Classification of defects	11	3
Nonfunctioning defects	12	4
Functioning defects	13	4
Evaluation	14	4
Records and reports	15	4

*This bulletin supersedes SB 742-1330-94-3, 22 October 1974, and SB 742-1330-94-7, 4 June 1973.

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

NOMENCLATURE	*DODAC*
Grenade, Hand: Smoke, HC, ABC, AN-M8, w/fuze M201A1	1330-G930
Grenade, Hand: Green Smoke, M18 w/fuze M201A1 or E7R6	1330-G940
Grenade; Hand: Yellow Smoke, M18, w/fuze M201A1 or E7R6	1330-G945
Grenade, Hand: Red Smoke, M18, w/fuze M201A1 or E7R6	1330-G950
Grenade, Hand: Violet Smoke, M18, w/fuze M201A1 or E7R6	1330-G955

The function testing in this procedure will be accomplished under a centralized control program managed by the US Army Armament Materiel Readiness Command (ARRCOM), DRSAR-QAS, Rock Island, IL 61299. This bulletin is to be used in the serviceability assessment of individual grenade lots only. The provisions of this bulletin are mandatory for use by all Department of the Army organizations within CONUS and OCONUS with an ammunition receipt, storage, and distribution 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, records, and reports is 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 encourage. DA Form 2028 (Recommended Changes to Publications and Blank Forms) will be completed and forwarded to Commander, ARRCOM, ATTN.: DRSAR-QAS, Rock Island, IL 61299.

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

4. Personnel. Visual examination and function testing will be conducted under the control of a Quality Assurance Specialist (Ammunition Surveillance) herein after referred to as a QASAS.

5. Size of-Sample. Unless otherwise directed, a sample size of 30 grenades is required to make up a representative sample from a lot for a visual examination and surveillance function test.

6. Sample Section. Sample grenades will be selected in accordance with the provisions of SB 742-1 with the exception that not more than five grenades may be selected from any one box.

7. Surveillance Test Equipment. The following equipment is to be used in testing grenades in accordance with this procedure:

a. Ammunition Peculiar Equipment (APE).

APE 1901	Tank, Immersion
APE 1912	Thermometer, Cup-Cased
APE 1914	Anemometer
	OR
APE 1915	Indicator, Wind Speed
APE 1917	Gage, push-pull
APE 1922M1	Launcher, Pneumatic, Grenade
APE 1937	Shelter, Personnel Protection

b. Additional Test Equipment.

Stopwatches, 2 each, accurate to one-tenth of a second.

Protective mask, M9 or M17.

8. Preparation for Inspection and Test.

a. Number the grenades 1 through 30 and identify them as to the box from which they were drawn.

b. Conduct visual inspection and record observations noted in paragraph 10*h* and classify defects in accordance with paragraph 12 and SB 742-1. Grenades exhibiting defects such as leaking filler, uncovered emission holes or loose fuzes will, if possible, have these defects corrected prior to water conditioning, i.e., fuzes tightened and emission holes properly covered with pressure sensitive tape. However, before such defects are corrected, they should be noted on the inpection sheet and on DA Form 984 as major defects (see para 12*b*).

c. Temperature condition the grenades at 70°± 10°F. (21.1 ° ±5.6°C.) for at least twelve hours.

d. Using the APE 1901, Immersion Tank, submerge the grenades upright in water for at least 30 minutes to a depth of 1 to 2 inches (2 to 5 cm) measured from the top surface of the grenades. The temperature of the water shall be at least equal to but no greater than 10°F. (5.60C.) above the temperature of the grenades at the time of submersion.

e. Remove the grenades from the water and wipe them dry. The grenades will be functioned within one hour after removal from the water.

WARNING

In high concentrations or on prolonged exposures, HC Smoke (AN-M8 Grenade) irritates the nose and throat and may be quite dangerous when inhaled. Personnel shall remain upwind from the impact area. If it becomes necessary for personnel to be in the smoke cloud, a protective mask must be worn both in the open and in the shelter. If HC smoke enters the shelter, personnel must remain masked until the smoke is removed.

9. Test Procedure. This test is to determine the amount of pull required to extract the safety pin, the fuze lag time, and the ability of the smoke mixture to ignite

and emit an effective smoke continuously under pressure for the required period of time. Function testing will be conducted during daylight hours only and in an area that is clear of mud, water, and flammable material such as grass, weeds, etc.. Testing will not be conducted when the wind velocity exceeds 15 miles (25 Km) per hour; during an electrical, rain or snow storm; or during any other conditions that might adversely affect the test results. Testing should also be in accordance with any other applicable regulations, i.e., US Environmental Protection Agency (EPA), etc.. The test shall be performed using the pneumatic grenade launcher, APE 1922M1.

a. Set up APE 1922M1, Grenade Launcher, in accordance with APE Operational Manual and regulate air pressure to obtain desired trajectory for grenades.

b. Lock the firing lanyard in the lanyard control box of APE 1937, Shelter, Personnel Protection. The person assigned to function the launcher will carry the key at all times to prevent unauthorized access to the lanyard.

c. Place the grenade in the launcher and attach APE1917 Gage to the safety pin pull ring.

d. Position the arm of the support bracket alongside the fuze body.

e. Attach lanyards to the launcher as shown in the Operational Manual and take cover in APE 1937, Shelter, Personnel Protection.

f. From inside the shelter, unlock the lanyard control box and pull on the lanyard attached to the pull gage until the safety pin is withdrawn.

g. Observe the grenade from the shelter to assure that the safety pin has been withdrawn.

h. Continue pulling on the lanyard to open the quick-release valve and launch the grenade.

i. Record the observations as instructed in paragraph 10.

j. In the event of a dud, personnel shall remain inside the protective shelter for 15 minutes. After waiting period has lapsed, the dud will be carefully checked to assure that the primer has been struck. If the primer has not been struck, the grenade will be removed to a controlled burning area for destruction. If the primer has been struck, the grenade will be recovered and examined to determine the cause of malfunction. If the starter mix has not ignited, or if the foil located on the ignition end of the fuze is not ruptured, refuze the grenade and retest. Record all information pertinent to the cause of malfunction and the lot number of both the fuze that failed initially and the fuze used in the retest. Record the retest results. Refuzing and retesting shall be accomplished to determine the feasibility of reworking the lot; not for determining serviceability.

WARNING

The recovery, examination, defuzing, refuzing, and destruction of dud grenades shall be accomplished in accordance with applicable safety regulations and standing operating procedures. All necessary protective equipment will be used; i.e., asbestos gloves, full face shield, flame resistant clothing, etc..

10. Observation. All observations of nonstandard conditions and malfunctions, especially those not included among the defects listed in paragraphs 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. Tension to The Nearest Half Pound (225 gm). This is the pull required to extract the safety pin.

b. Lag Time to The Nearest Tenth of a Second. This is the interval between the release of the fuze lever and the start of smoke emission under pressure including fuze delay time (see Fig. 1).

c. Smoke Emission Time to The Nearest Second. This is the period, or periods, of time during the burning of the smoke mixture when smoke is emitted under pressure. Smoke emission time is determined by subtracting total flaming time from total burning time (see Fig. 1).

d. Total Flaming Time to The Nearest Second. This is the total time in which the smoke emission of the grenade is interrupted by the presence of flame, black smoke, or other gross reduction of the desired smoke (see Fig. 1).

e. Incorrect Color. A grenade which emits an entirely different color smoke than the one marked on the grenade.

f. Dud. A grenade in which the smoke mixture fails to ignite for any reason.

g. Deflagration. A sudden and violent increase in the rate of burning which causes the grenade to rupture or separate, or which causes the violent expulsion of the solid contents or the metal components of the grenade.

h. All instances of the following:

(1) Marking misleading, incomplete, or unidentifiable.

(2) Rust or corrosion; give location and extent.

(3) The occurrence of any nonstandard conditions or malfunctions classified as defects in paragraphs 12 and 13 or SB 742-1.

(4) The occurrence of any nonstandard conditions or malfunctions not classified as defects in paragraphs 12 and 13 or SB 742-1; but which, in the opinion of 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 SB 742-1. Any defects observed which are not listed in paragraphs 12 and 13 or SB 742-1, will be described fully and reported with the recommendations of the QASAS as to classification.

12. Nonfunctioning Defects.

a. Critical

(1) Unauthorized fuze installed (other than M201A1 fuze for AN-MS, and other than M201A1 or E7R6 fuze for M18).

(2) Safety pin missing.

(3) Safety pin broken or insecurely assembled to the extent-that it endangers the user.

b. Major.

(1) Split seams or swollen body.

(2) Tape missing, loose, or does not completely cover emission hole.

(3) Grenade contents loose (Shake manually), M18 Grenade only.

(4) Grenade contents leaking.

(5) Fuze loose; not in full 360° contact with gasket.

(6) Marking incorrect.

(7) Major rust.

(8) Major corrosion.

c. Minor.

(1) Marking missing or illegible.

(2) Minor rust.

(3) Minor corrosion.

13. Functioning Defects.

a. Critical.

(1) Smoke incorrect color.

(2) Conflagration occurs.

b. Major.

(1) Smoke mixture fails to ignite (dud).

(2) Lag time greater than 20 seconds (AN-M8 Grenade) or 15 seconds (M18 Grenade).

(3) Smoke emission time less than 50 seconds (M-18 Grenade) or 90 seconds (AN-M8 Grenade).

(4) Total flaming time exceeds 20 percent of total burning time.

(5) Pull required to remove safety pin is less than 5 pounds, (25kg).

c. Minor.

(1) Smoke emission time is greater than 90 seconds forth M18 Grenade or 135 seconds for the AN-M8 Grenade.

(2) Pulled required to remove safety pin is greater than 35 pound (16kg).

14. Evaluation. Using the following criteria, and considering functional codes and nonfunctional characteristics separately, an interim condition code will be assigned in accordance with SB 742-1. A lot will be classified Condition Code J and reported in accordance with SB 742-1 if one or more critical defects are observed.

a. Nonfunctional Characteristics.

(1) *Serviceable for unrestricted issue and use.* A lot not classified as Condition Code J shall qualify as serviceable for unrestricted issue and use if it meets the following requirements on inspection of 30 grenades by attributes:

(a) Not more than 1 major defective.

(b) Not more than 2 minor defectives.

(2) *Serviceable for priority of issue.* A lot not classified as Condition Code J or serviceable for unrestricted issue and use shall qualify as serviceable for priority of issue if it meets the following requirements on inspection of 30 grenades by attributes:

(a) Not more than 4 major defectives.

(b) Not more than 6 minor defectives.

(3) *Unserviceable.* A lot not classified as serviceable for unrestricted issue and use or for priority of issue shall be classified unserviceable.

b. Functional Codes.

(1) *Code A.* A lot not classified as Condition Code J shall qualify for Functional Code A if it meets the following requirements in the test of 30 grenades:

(a) Not more than 1 major defective.

(b) Not more than 2 minor defectives.

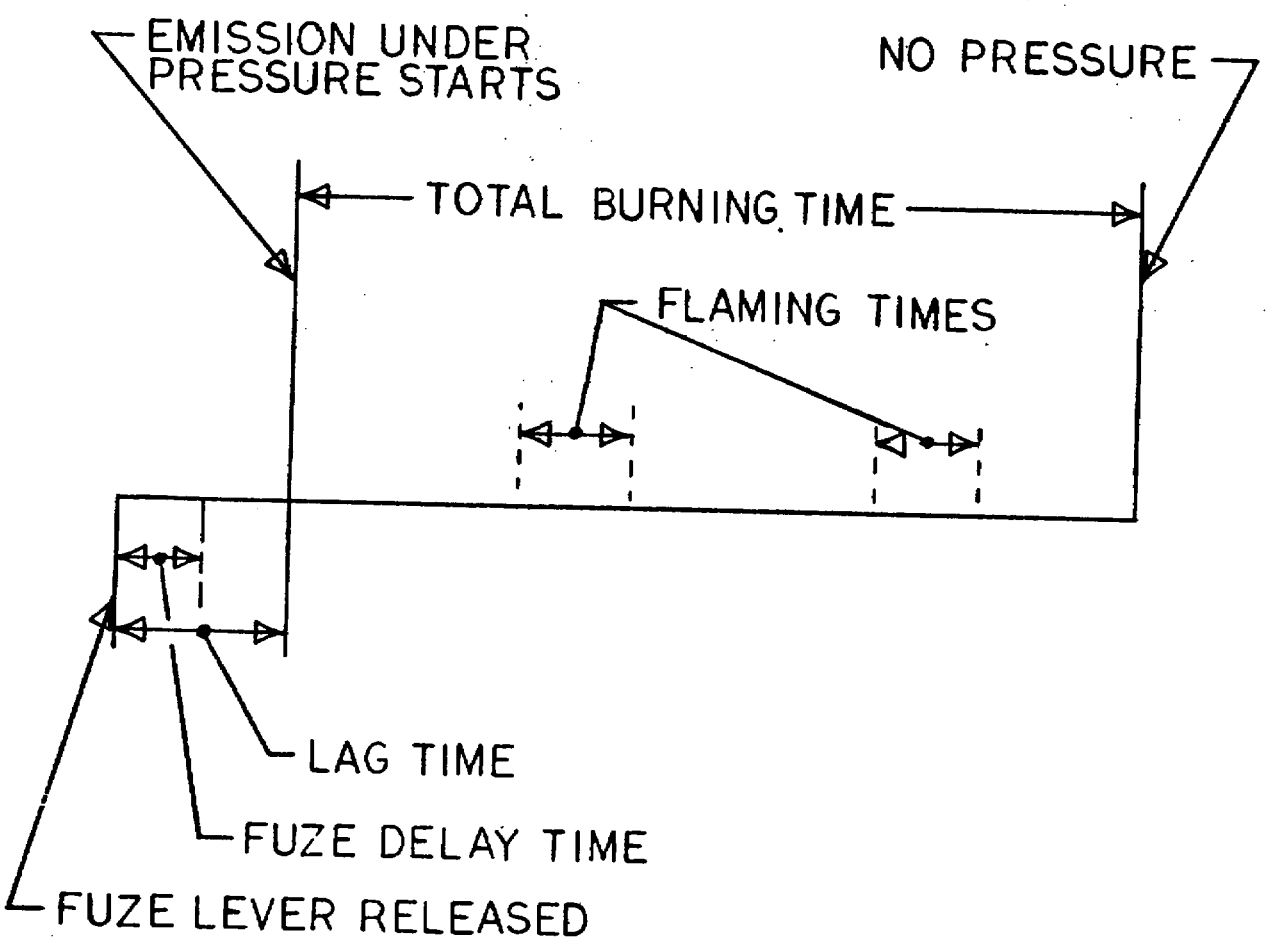
(2) *Code B.* A lot not classified as Condition Code J or Functional Code A shall qualify for Functional Code B if it meets the following requirements in the test of 30 grenades:

(a) Not more than 4 major defectives.

(b) Not more than 6 minor defectives.

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

15. Records and Reports. Function test results will be recorded and reported on DA Form 984 as outlined in SB 742-1.



NOTE:
SMOKE EMISSION TIME EQUALS TOTAL BURNING TIME MINUS TOTAL FLAMING TIMES

Figure 1.

By Order of the Secretary of the Army:

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Brigadier General, United States Army
The Adjutant General

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