DEPARTMENT OF THE ARMY SUPPLY BULLETIN

FUZE, HAND GRENADE: M205 SERIES (1330-G870), M10 SERIES (1330-G870), AND M228 (1330-G878) AMMUNITION SURVEILLANCE PROCEDURES

Headquarters, Department of the Army, Washington, DC
9 December 1988

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. Comments should pertain to suggested procedural changes, functioning characteristics, defects, cause of failures, remedial action, etc. A DA Form 2028 (Recommended Changes to Publications and Blank Forms) should be completed and forwarded to the Commander, AMCCOM, ATTN: AMSMC-QAS-P, Rock Island, IL 61299-6000.

Section I. INTRODUCTION

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

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

b. Provisions of this bulletin are mandatory for all Department of Army organizations within continental United States (CONUS) and outside 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. Subject items are pyrotechnic delay-igniting fuzes. Bodies contain a primer

*This supply bulletin supersedes SB 742-1S392, dated

and a pyrotechnic delay column. Assembled to body are a striker, striker spring, safety level, safety pin with pull ring, and an igniter assembly Split end of safety pin has an angular spread or a diamond crimp. Fuzes differ in size and body construction

3. References. a. The following publications will provide more information of 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 43-0001-29, Army Ammunition Data Sheets for Grenades

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

4. Safety. a. Inspection and surveillance function testing must be conducted according to provisions set forth in appropriate safety regulations and implementing instructions, with special attention given to technical manuals describing items. 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. Dud fuzes will be recovered and destroyed according to all applicable safety regulations and an approved SOP. Protective equipment includes heat-resistant gloves, full-face shield, flame resistant clothing, etc. A waiting time of 15 minutes minimum will be observed before approaching dud fuzes.

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

Section II. SURVEILLANCE

6. Sample size. Unless otherwise directed, a sample size of 50 fuzes is required for a surveillance function test. To satisfy requirements of a periodic inspection prescribed in conjunction with surveillance function test, additional sampling of the lot may be required according to SB 742-1.

7. Sample selection. Sample fuzes will be selected per provisions of SB 742-1 except that no more than ten fuzes may be selected from any one box. 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 be inspected. The appropriate part of DA Form 984 (Munitions Surveillance Record) will be completed prior to shipment. Samples that are shipped must be packed and marked according to SB 742-1. During sample selection, number fuzes 1 through 50.

8. Surveillance test equipment. The following equipment is to be used in testing fuzes in accordance with this procedures:

a. Tank, immersion, APE 1901.
b. Thermometer.
c. Table, testing, APE 1903.
d. Kit, function testing, APE 1903-E002.
e. Tester, grenade fuze, APE 1955.
f Device, grenade fuze holding, APE 1903-8M1.
g. Gage, push-pull, APE 1917 or equivalent.

9. Preparation for test. a. Assure fuzes have been numbered 1 through 50.

b. Immerse fuzes in water at 70 degrees +/-10 degrees F (21 +/-5 degrees C) for 25 minutes. Position fuzes upright, with tops of fuzes 6 in. below surface of water. Test fuzes within 1 hour after removal from water.

10. Test procedures. This test is divided into four separate tests.

a. Safety clip and pin pull test without aligning holes. This test will be performed on all 50 fuzes. Secure each fuze into APE 19038M1 holding fixture so that safety lever will not disengage if safety pin is withdrawn. Attach a tension recording scale to safety clip, and pull until clip disengages ,i.e., moves to a position that will allow lever to function when fuze safety pin is removed. Record tension scale reading. Next, attach tension scale to pull ring of safety pin. Without aligning mating holes, gradually apply a pull along axis of safety pin until either a tension of 10-lb is reached or safety pin is withdrawn. If safety pin has been withdrawn, record actual tension required to withdraw it. Reinsert safety pin and re-spread ends.

b. Safety pin pull test with holes aligned. This test will be performed on all fuzes which passed test in paragraph 10aa above (pins did not withdraw at a tension of 10-lb or less). Using holding fixture, apply tension to fuze lever until holes in safety lever align with holes in fuze body. Attach a tension recording scale to pull ring of safety pin. With mating holes aligned, gradually apply a pull along axis of safety pin until pin is withdrawn. Record tension reading. Re-insert safety pin and re-spread ends.

c. Static functioning of grenade fuze. This test will be performed on fuze samples 1 through 25. Secure each fuze into APE 1955 grenade fuze

tester. Assure toggle valve is set to "HOLD." Actuate test button to remove safety pin and function fuze. Record time delay from APE electronic timer.

d. Dynamic functioning of grenade fuze. This test will be performed on fuze samples 26 through 50. Secure each fuze into APE 1955 grenade fuze tester so that when functioned fuze drops onto a horizontal steel plate within tester's drop tube. Assure toggle valve is set to "DROP." Actuate start button to remove safety pin and function fuze. Record time delay from APE electronic timer

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 that are incorrect, misleading, incomplete, or unidentifiable.

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

c. Report tension to nearest half-pound required to withdraw safety pin with holes aligned per paragraph 10b. (If pin withdraws at less than 5-lb tension per paragraph 10a, record that measurement.)

d. Report fuze delay time to nearest tenth of a second.

e. Report whether fuze safety pin is diamond-shaped or V-shaped.

f. Report tension to nearest half-pound required to withdraw safety clip.

12. Definitions. a. Delay time. Time between withdrawal of safety pin and functioning of fuze.

b. Dud. Fuze fails to function**.**

13. Classification of defects Defects observed during inspection and testing will be classified and reported according to paragraphs 14 and 15 and with 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 recommendations of QASAS as to classification.

14. Non-functioning defects. a Critical

(1) Safety clip missing (where applicable

(2) Safety pin missing.

(3) Safety pin insecurely assembled to an extent that user is endangered.

(4) Igniter case cracked to extent that pyrotechnic charge is exposed, free to escape, or to be pinched between broken surfaces.

(5) Both fuze lever hinge ears not properly assembled (see figures 1A through ID).

b. Major

(1) Any of following missing or damaged to extent that precludes proper functioning:

(a) Pull ring.

(b) Fuze threads.

(c) Any other item that precludes use of fuze in a hand grenade.

(2) Fuze marking incomplete, inaccurate, or illegible to extent it is misleading as to type of fuze.

(3) Major rust or corrosion.

(4) One fuze lever hinge ear not properly assembled (see figures 1A through ID).

c. Minor

(1) Fuze marking incomplete, inaccurate, or illegible but not misleading as to type of fuze.

(2) Minor rust or corrosion.

15. Functioning defects. *Note*: The code following each functioning defect is for use by testing facility personnel only.

a. Critical

(1) Less than 5-lb tension on pull ring when safety pin is withdrawn (without holes aligned, paragraph 10a) (AAOO1).

(2) Fuze delay time less than 3 seconds (CAOO1).

b. Major

(1) Fuze delay time is greater than 6.5 seconds (CA023).

(2) Striker fails to function (CA020).

(3) Igniter assembly fails to function (CA024).

(4) Primer fails to fire (CA021).

(5) Less than 10-lb tension on pull ring when safety pin is withdrawn (without holes aligned, paragraph 1Oa) (AA020).

(6) Safety clip disengages at 1.5-lb or less tension (CL023).

c. Minor

(1) More than 35-lb required to withdraw safety pin (with holes aligned, paragraph 11b) (AA054).

(2) More than 5-lb tension required to disengage safety clip (CL024).

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

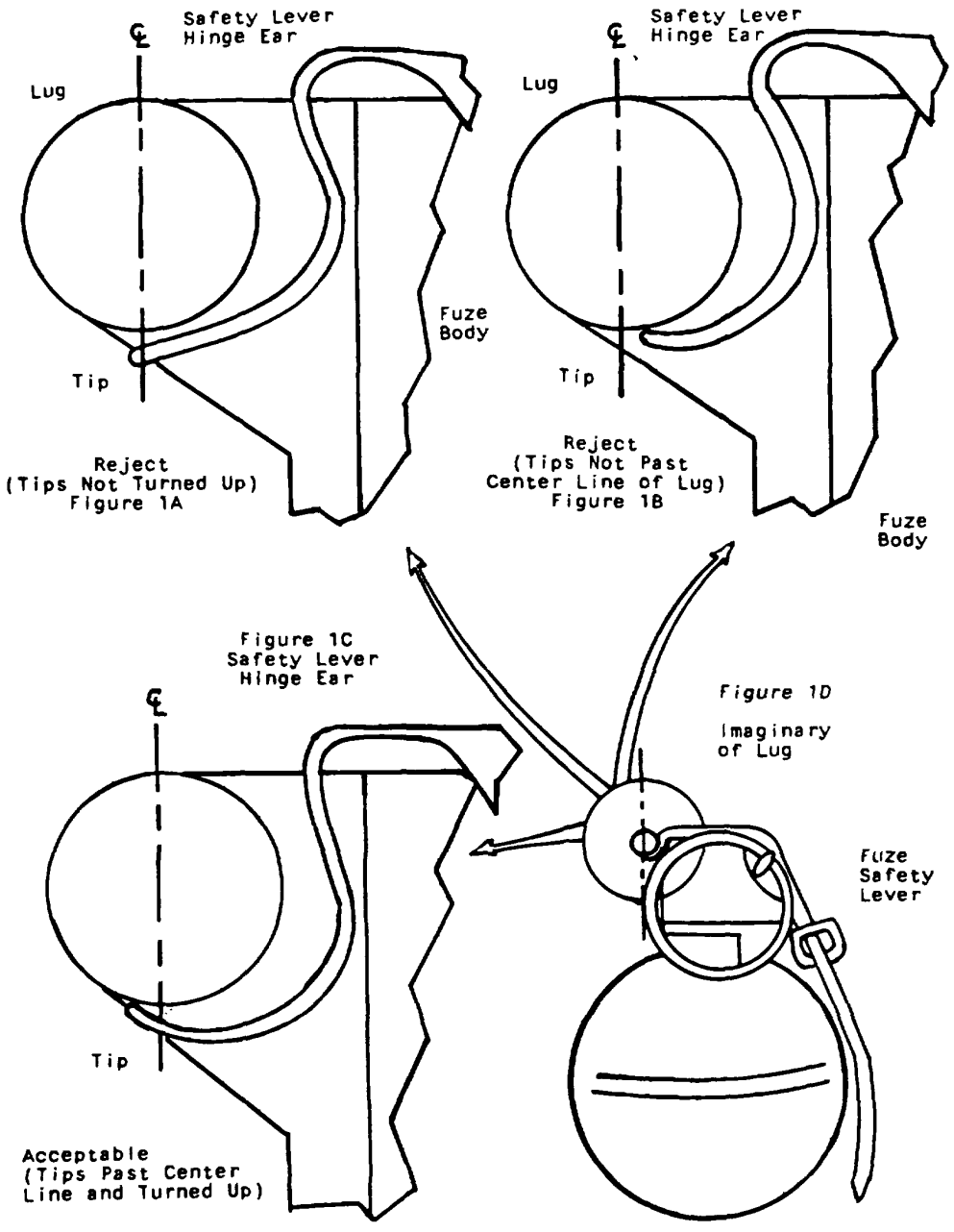
a. Nonfunctional characteristics.

(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 not met on inspection of 50 items:

(a) Not more than 2 major defectives.

(b) Not more than 4 minor defectives.

(2) Priority of issue. A lot not classified as condition code J or as serviceable for unrestricted



Figures 1A-1D. Visual Inspection Criteria for Fuze Hinge Lever.

issue and use will qualify as serviceable for priority of issue if the following requirements are met on inspection of 50 items:

(a) Not more than 7 major defectives.

(b) Not more than 10 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 50 items: (a) Not more than 2 major defectives.

(b) Not more than 4 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 50 items:

(a) Not more than 7 major defectives.

(b) Not more than 10 minor defectives.

(3) Code D. A lot not classified as condition code J or functional code A or 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:

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