DEPARTMENT OF THE ARMY DUPPLY BULLETIN

SMOKE POT, HC, 30-POUND, ABC-M5
AMMUNITION SURVEILLANCE PROCEDURES
(1365-K866)

HEADQUARTERS DEPARTMENT OF THE ARMY, WASHINGTON, D.C.
21 November 1980

1. Purpose and scope. This bulletin, when used in conjunction with SB 742-1, provides a method for determining the serviceability of Smoke Pot: ABC-M5, Ground Type, W, HC Smoke Mixture, 10 Min. minimum to 20 Min. maximum burning time, w/live igniting device. The function testing in this procedure will be accomplished under a centralized control program managed by the Armament Materiel Readiness Command (ARRCOM), DRSAR-QAS, Rock Island, IL 61299. The bulletin is to be used in the serviceability assessment of individual lots of smoke pots only. The provisions of this bulletin are mandatory for use by all Department of the Army organizations within CON'EUS 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, and 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. A 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 the provisions set forth in appropriate safety regulations and implementing instructions, with special attention de- voted 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) hereinafter referred to as QASAS.

5. Size of sample. Unless otherwise directed, a sample size of 30 smoke pots is required to make up a representative sample from a lot for a surveillance function test.

This bulletin supersedes so much of SB 3-30-153, 13 May 1964, including all changes, as pertaining to Smoke Pot, HC, 30-Pound, ABC-M5.

6. Sample selection. Sample smoke pots will be selected in accordance with the provisions of SB 742-1. Boxes should be selected from different positions in a stack.

7. Surveillance test equipment. The following Ammunition Peculiar Equipment (APE) is to be used in testing ABC-M5 Smoke Pots In accordance with this procedure:

a. Ammunition Peculiar Equipment (APE)

APE 1901 Tank Immersion
APE 1912 Thermometer, Cup Cased
APE 1914 Anemometer
APE 1915 Wind Speed Indicator
APE 1937 Shelter, Personnel Protection

b. Additional Test Equipment

Stopwatches, (2 ea) accurate to one-tenth (1/10) of a second.
12-Volt automotive type battery or equivalent.
Firing wires (18 gage, no longer than 10 feet).
Blasting galvanometer or equivalent low voltage circuit continuity test equipment.

8. Preparation for test.

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

b. Temperature condition all the sample smoke pots at 70º ±10ºF (21.1º ±5.6ºC) for 24 hours prior to testing. A room in which the above temperature requirements can be met is acceptable. If Smoke Pots cannot be temperature conditioned, annotate this information on DA Form 984 along with the ambient temperature at time of function test.

c. Immediately after temperature conditioning, immerse -samples 1 through 8 and 16 through 22 in water to a depth of 12 inches =1 inch at a temperature of 77º ±9ºF (25º ±5ºC) for four hours. Remove the Smoke Pots from the water and wipe them dry. Smoke Pots numbered 9 through 15 and 23 through 30 will be tested without immersing in water.

9. Test procedure. The procedure described below is designed to determine the *Ability* of the smoke mixture to ignite; burn completely; and emit a continuous cloud of screening smoke under pressure for a period of not less than 9 minutes or more than 30 minutes. Smoke emission timing will begin with the emission of screening smoke under pressure and end when the smoke is no longer emitted under pressure. Function testing will be conducted only during daylight hours. Testing will not be conducted when the wind velocity exceeds 15 miles 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. EPA, etc.

a. Test each smoke pot as follows within four hours of removal from the temperature conditioning described in paragraph 8 above.

(1) Scratcher Block Ignition. (Samples I through 15).

(a) Remove tear strip from cover.

(b) Remove scratcher block from envelope.

(c) Draw scratcher block rapidly across matchhead. If the smoke pot matchhead is not ignited on the first attempt, make two additional attempts to ignite the matchhead with the scratcher block. If the matchhead fails to ignite on the third attempt, determine the cause of failure, if determined, and continue to test the remaining smoke pots.

(2) Electric Squib Ignition (Samples 16 through 30).

(a) Prior to attaching the firing wires to the squibs, check the voltage produced at the wire ends using a blasting galvanometer or equivalent.

(b) Attach wires to the binding post on the cover.

(c) Fire the squibs using a power source (12-volt automotive type battery or equivalent). Should the squib fail to ignite, follow the procedure in paragraph *a(1)* above to ignite the smoke pot and record smoke ignition time for information.

b. A smoke pot which has misfired after three attempts with scratcher block, may be disposed of, after waiting an interval of at least five minutes, by laying it on its side, end-to-end with another sample which then is ignited to accomplish a chain ignition. Only one misfired smoke pot at a time will be disposed of using the chain ignition method.

10. Observations. 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. Delay time in seconds, to the nearest 1/10 of a second. This is the time from ignition of the matchhead to the emission of smoke under pressure from the pot.

b. Smoke emission time to the nearest 1/4 minute. This is the time that a continuous effective cloud of smoke-was emitted under pressure.

c. All instances of any 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 below, or SB 742-1.

(4) The occurrence of any nonstandard conditions or malfunctions not classified as defects in paragraphs 12 or 13 below, or SB 742-1V, 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 OASAS as to classification.

12. Nonfunctioning defects.

a. Critical. None.

b. Major

(1) Advanced rust or corrosion (pitting or rust scale) on exterior of pot.

*(2) Matchhead missing, broken, or deteriorated.

*(3) Squib or firing wire missing, broken, or deteriorated.

(4) Tape covering smoke emission hole missing, deteriorated, or incomplete coverage caused by loose or curling tape that exposes any portion of the smoke emission hole.

(5) Body with dents on crimped edges exposing filler.

(6) Body damaged or dented exposing filler.

(7) Marking incorrect.

c. Minor.

*(1) Scratcher missing, broken, or deteriorated.

(2) Light corrosion on exterior surface (no pitting or rust scale).

(3) Body with dents on crimped edges but not exposing filler.

(4) Body damaged or dented on surface deeper than 1/4 inch but not exposing filler.

(5) Bent or damaged edges that will not permit nesting.

(6) Binding post damaged or deteriorated.

(7) Dent damaging tear strip.

*To be checked after removal of tear strip.

13. Functioning defects.

a. Critical.

(1) Smoke Pot explodes.

(2) Delay time is less than 3 seconds.

b. Major.

(1) Matchhead fails to ignite in three attempts.

(2) Starter mixture fails to ignite. Ignition of starter mixture is indicated by a small flame, usually from two to six inches in height, issuing from the Smoke Pot top. This flame will be accompanied by a white-grey smoke.

(3) Smoke mixture fails to ignite.

(4) Squib fails to ignite. Record as such; then function with scratcher block for smoke emission time information.

(5) Emission time that the smoke is emitted under pressure is less than 9 minutes.

(6) Incomplete Burner. A Smoke Pot in which the smoke mixture is not fully consumed, even though the burning time requirement is met, is an incomplete burner. (To determine if smoke mixture is fully burned, observe the condition of the lacquer on the lower exterior surface of Smoke Pot. On a Smoke Pot which is not completely burned, the lacquer on the bottom and the bottom, of the sides .will show no evidence of over-heating.)

c. Minor

(1) Matchhead requires 2 or 3 attempts before igniting.

(2) Delay time from ignition of the matchhead to emission of smoke from the pot is greater than 30 seconds.

(3) Emission time that the smoke is emitted under pressure is more than 30 minutes.

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. A lot not classified as Condition Code J shall qualify as serviceable if it meets the following requirements on inspection of 30 Smoke Pots by attribute:

(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 serviceable shall qualify for priority of issue if it meets the following requirements on inspection of 30 Smoke Pots by attribute:

(a) Not more than 4 major defectives.

(b) Not more than 7 minor defectives.

(3) Unserviceable. A lot not classified service- able or 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 Smoke Pots:

(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 shall qualify. for Functional Code B if it meets the following requirements in the test of 30 Smoke Pots:

(a) Not more than 4 major defectives.

(b) Not more than 7 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 SB742-1.

By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

J. C. PENNINGTON
Major General, United States Army
The Adjutant General

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