

DEPARTMENT OF THE ARMY SUPPLY BULLETIN

FIRING DEVICE, DEMOLITION: DELAY TYPE, M1
AMMUNITION SURVEILLANCE PROCEDURES

Headquarters, Department of The Army, Washington, DC
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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 following items:

<i>Nomenclature</i>	<i>DODAC</i>
Firing Device, Demolition, M1, 6 to 14 Min. Delay, Black,	1375-M616;
Firing Device, Demolition, M1, 12 to 32 Min. Delay, Red,	1375-M619;
Firing Device, Demolition, M1, 45 to 115 Min. Delay, White,	1375-M620;
Firing Device, Demolition, M1, 100 to 280 Min. Delay, Green,	1375-M621;
Firing Device, Demolition, M1, 210 to 570 Min. Delay, Yellow,	1375-M622;
Firing Device, Demolition, M1, 610 to 1130 Min. Delay, Blue,	1375-M623.

The visual inspection and function test 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 separate lots of firing

devices based on an inspection and function test of individual firing devices 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. SB 742- 1 contains additional information pertaining to frequency of test, sample selection, defect standards, reports, and records.

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) should 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 devoted to technical manuals describing the item. A Standing Operating Pro-

*This bulletin supersedes SB 742- 1375-21, 18 October 1971.

cedure (SOP) is also required for this operation and will delineate specific safety requirements.

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

5. Size of Sample. Unless otherwise directed, a sample size of fifty (SO) firing devices is required to make up a representative sample from each lot for a visual examination and surveillance function test. To satisfy requirements of the periodic inspection prescribed in conjunction with the surveillance function test, additional sampling and inspection of inner and outer packing is required in accordance with SB 742-1.

6. Sample Selection. Sample firing devices will be selected in accordance with the provisions of SB 742-1 with the exception that not more than ten firing devices may be selected from any one box. If the samples are to be function tested at an installation other than the one at which the parent lot is stored, the packing boxes and containers which are not shipped will be inspected and the appropriate part of DA Form 984 (Munition Surveillance Report) completed prior to shipment. Samples which are shipped must be packed and marked in accordance with SB 742-1.

7. Surveillance Test Equipment. The following Ammunition Peculiar Equipment (APE) is to be used in testing firing devices in accordance with this procedure:
APE 1912, Thermometer, Cup-Cased;
APE 1916, Oven, Preconditioning;
APE 1949, Automatic Timing Device For Firing Device, Demolition, Delay Type, MI (with tabulating machine paper).

8. Preparation for Test. a. Number the sample firing devices 1 through 50 and identify them as to the box from which they were drawn.

b. All firing devices will be conditioned at $70^{\circ} \pm 10^{\circ}\text{F}$ ($21.1^{\circ} \pm 5.6^{\circ}\text{C}$) for 24 hours prior to testing. The APE 1916 may be used for this purpose. This temperature range also should be maintained throughout the actual testing.

c. Complete the periodic inspection in accordance with SB 742-1 and record the appropriate observations described in paragraphs 10 and 12 below.

9. Test Procedure. This test is to determine the time required to function the firing device. Testing will not be conducted during any conditions that might adversely affect the test results. Testing should also be in accordance with any other applicable regulation, i.e., US Environmental Protection Agency (EPA), etc. The test shall be performed using the APE 1949, Automatic Timing Device.

a. Prepare the Automatic Timing Device for operation in accordance with the APE 1949 Operational

Manual, and feed the paper into the equipment. This device requires one-ply tabulating machine paper, continuous flat feed, NSN 7530-00-145-0414 or equivalent (see the parts list in the APE 1949 Manual).

b. Assure that the power switch is in the OFF position, then remove the latch pin and open the initiator door.

c. Remove the celluloid protective shipping cup from the firing device and straighten out the safety strip.

CAUTION

Observe through inspection hole to assure that firing pin has not been released and is not resting on safety strip.

d. Screw the firing device into a mounting hole in the firing device holder and remove the safety strip. Similarly, insert the remaining firing devices one row at a time until all samples are in place.

CAUTION

The initiator handle cover must be in place at all times when initiator door is closed except when operator is ready to initiate the firing devices.

e. Close the initiator door and replace the latch pin and the initiator handle cover. Draw a reference line across the paper using the top of the firing device holder as a guide.

f. Set the selector switch to the appropriate setting for the particular color of firing device being tested.

NOTE

Once the firing devices are initiated, do not turn the selector switch to any other position as this will void the firing record.

g. Turn the power switch to ON to start the drive motor. Remove the initiator handle cover and crush the ampoules using a pair of initiators for each row of firing devices. Install initiator handle cover. Observe the function test from a safe distance, at least ten feet (three meters) from the automatic timing device (APE 1949).

h. Turn the power switch to OFF after all firing devices have functioned and remove the paper from the timing device.

i. Determine the functioning times using the reading board and template as instructed in the APE 1949 Operational Manual. Record the appropriate observations as instructed in paragraphs 10 and 13 below.

10. Observations. All observations of nonstandard conditions and malfunctions, especially those not included among the defects listed in paragraphs 12 and 13 below, should be described in full detail. Pictorial evidence of nonstandard conditions should be included whenever pertinent and practical. The observations to be reported are as follows:

a. The time delay, to the nearest minute, is the time from the crushing of the ampoule to the release of the firing pin.

b. Record the temperature at the test site to the nearest degree (and state whether Fahrenheit or Celsius).

c. Note any marking (on packing) which is misleading, incomplete, or unidentifiable.

d. Give the location and extent of rust or corrosion.

e. Record the occurrence of all nonstandard conditions or malfunctions listed as defects in paragraphs 12 and 13 below or in SB 742-1; and record the occurrence of any nonstandard condition or malfunction not specifically classified as a defect in paragraphs 12 and 13 or in 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 below and with SB 742-1. Any defects observed which are not listed in paragraphs 12 and 13 or in SB 742-1 will be described fully and reported with the recommendations of the QASAS as to classification.

12. Nonfunctioning Defects.

a. Critical.

- (1) The safety strip is missing.
- (2) The color of the safety strip is incorrect.

b. Major.

(1) Marking (on packing) is incorrect or misleading.

(2) Firing pin is visible through inspection hole (released).

(3) Any component is missing which precludes the use of the firing device.

(4) Any component (such as threads) is damaged which precludes the use of the firing device.

(5) Protective cup is not removable by hand tools (such as crimpers or pliers).

(6) Major rust or corrosion is evident.

c. Minor.

(1) Threads are fouled.

(2) Any component (such as the protective cup) is missing or damaged which does not preclude the use of the firing device.

(3) Minor rust or corrosion is evident.

13. Functioning Defects.

a. Critical.

Firing pin releases before time indicated in column A of chart below.

b. Major.

(1) Firing pin is not released by the time indicated in column D of chart below.

(2) Firing pin releases but primer fails to fire.

(3) Primer fires low order which would have resulted in a dud.

NOTE

Whenever the frequency of "low order primers" is such that classifying "low

order" as a major defect would place the lot in Condition Code D, the lot should be retested with blasting caps of known good quality assembled to the coupling base to determine whether these "low order primers" can or cannot detonate blasting caps. The automatic timing device (APE 1949) will NOT be used for such tests.

c. Minor.

(1) Copper sleeve splits, cracks, or tears when ampoule is broken.

(2) Firing pin releases between times indicated in column A and column B of chart below.

(3) Firing pin releases between times indicated in column C and column D or chart below.

Firing Device	Minutes			
	A	B	C	D
Black	3	5	15	20
Red	6	9	38	45
White	30	42	120	135
Green	60	85	285	310
Yellow	120	190	580	650
Blue	240	400	1800	2300

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 as Condition Code J and reported in accordance with SB 742-1 if any 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 50 firing devices by attributes.

(a) *Not more than 2 major defectives.*

(b) *Not more than 4 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 50 firing devices by attributes:

(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 priority of issue shall be classified as 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 50 firing devices:

(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 50 firing devices:

(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, Functional Code A, or Functional Code B shall be Functional Code D.

15. 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:

Official:

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General, United States Army
Chief of Staff

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Major General, United States Army
The Adjutant General

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