

DEPARTMENT OF THE ARMY SUPPLY BULLETIN

GRENADE, HAND AND RIFLE, SMOKE, WP M34
SERVICEABILITY STANDARD

Headquarters, Department of the Army, Washington, D.C.
23 September 1968

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1. Purpose and Scope. *a. Purpose.* This bulletin when used in conjunction with SB 3-30 provides a method for determining the serviceability of the Grenade, Hand and Rifle, Smoke, WP, M34.

b. Scope. 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.

2. Applicable Document. The following Government document referenced herein, forms a part of this bulletin to the extent specified. SB 3-30 (Serviceability Standard for CB Materiel).

3. Safety Provisions *a. General* Refer to SB 3-30.

b. Special Precautions. Surveillance personnel will exercise extreme caution while performing surveillance on white phosphorous filled munitions, as an exploding grenade will scatter phosphorous particles over a large area. White phosphorous, when exposed to air, will ignite spontaneously and can result in severe burns and fires. One purpose of surveillance is to determine usability of

the item by finding possible hazardous conditions which may be present.

(1) *Barricade.* Barricade will be provided for surveillance personnel at a minimum distance of 50 feet from the point of grenade detonation. Personnel will remain behind barricades during grenade firing.

(2) *Rifle grenade functioning.* Rifle grenades will be tested only with the rifle secured in a rest, or holder, if the grenade is to be activated by a rifle.

(3) *Fire fighting equipment.* Fire fighting equipment will be readily available while performing surveillance inspection and functional testing of WP grenades.

(4) *Grenade pull ring (safety pin).* The grenade pull ring will not be used for lifting or for handling grenade. Insure that the grenade safety pin is in place, and that the legs are open (spread) prior to removing a grenade from its container. A grenade having the safety pin missing, partially extracted (withdrawn) or unspread legs will not be removed from its container but will be disposed of as a hazardous munition. If the safety pin is removed and the

*This bulletin supersedes SB 3-1330-2, 10 October 1966.

safety lever relapsed accidentally, throw the grenade a far away from personnel as possible, and take cover immediately.

(5) *Striking grenade.* The grenade will not be struck with any object nor will it be used as a hammer, is the blow may activate the fuze.

(6) *Leaking grenade.* If a white phosphorous grenade is leaking it will be submerged completely in a container filled with water until it can be disposed of safely.

4. Surveillance a. *Surveillance Interval.*

(1) *Initial receipt and prestorage inspection.* Initial receipt and prestorage inspection will be conducted in accordance with SB 3-30.

(2) *Periodic cycle.* Surveillance will be performed at periodic cycles of one year. The first scheduled surveillance will be conducted within six months from the date of receipt at the depot.

(3) *Pressure.* Pressure inspection will be conducted in accordance with SB -30. In addition, no item shall be shipped overseas (unless directed by a responsible authority) if less than six months remain in the surveillance cycle.

b. *Basis of Surveillance.* Surveillance is conducted on the basis of depot, grand, manufacturer's, miscellaneous, mixed lots or unit basis. Surveillance for subject item shall be conducted on the basis of manufacturer's or miscellaneous lots.

c. *Formation of Surveillance Lots.*

(1) *Depot lots.* Not applicable to this item.

(2) *Grand lot.* Not applicable to this item.

(3) *Manufacturer's lot.* A manufacturer's lot consists of those items manufactured or assembled by one manufacturing or reconditioning activity and bearing the same manufacturing or reconditioning agency's lot identification number.

(a) *Time of fabrication.* All items shall have been manufactured, fabricated, or reconditioned within a period of 30 days.

(b) *Packing.* All items shall have the same type packing and identification marking.

(c) *Storage.* All items shall be stored under similar conditions at the same depot.

(d) *Serviceability lot status.* All lots shall possess the same serviceability lot status: i.e., serviceability known (based upon prior surveillance) or serviceability unknown. However, when new procurement is involved, serviceability shall be based upon acceptance inspection in lieu of prior surveillance.

(e) *Fuzes.* Fuzes will be of the same type and model.

(4) *Miscellaneous lot.* A miscellaneous lot containing not more than 3,000 items, may be created by combining small manufacturer's lots or lot fragments possessing the same technical history; i.e., manufactured by the same technical procedure (indicated by the same lot series number).

(a) *Kind, type, and model.* All items will be of the same kind, type, and model; i.e., Grenade, Hand and Rifle, Smoke, WP, M34.

(b) *Manufacturer.* All items will be the product of the same manufacturer or reconditioning agency.

(c) *Time of fabrication.* All items will have been manufactured, fabricated, or reconditioned within a period of 12 months.

(d) *Packing.* All items will have the same type packing and identification marking.

(e) *Storage.* All items will be stored under similar conditions at the same depot.

(f) *Serviceability lot status.* All items will possess the same serviceability status; i.e., serviceability known (based upon prior surveillance) or serviceability unknown. However, when new procurement is involved, serviceability will be based upon acceptance inspection in lieu of prior surveillance.

(g) *Fuzes.* Fuses will be of the same type and model.

(5) *Mixed lot.* Not applicable to this item.

(6) *Unit basis.* Not applicable to this item.

d. *Sampling.* A sample quantity of grenades will be selected as indicated in table 1 and a visual examination will be performed. The sample will be subjected to the test specified in section 6. A sample quantity of containers will be selected from table 1 in accordance with the following example and a visual examination will be made of the packaging, packing, and marking and preservation as specified in table 3.

Example: A lot consists of 150 outer containers: each outer container has within it 10 containers holding 20 end items. Table 1 would be referred to as follows:

150 outer containers n samples
 1,500 inner containers n samples
 30,000 end items n samples

Where n = quantities shown in columns 1, 5, or 6 Each selection requires a different sample size, however, the values specified in table 1 are valid for each selection.

Table 1. Sampling Plan

Lot size	1	2	3	4	5	6	7	8	9
Up to 150	9	0	1	2	*	9	0	1	2
151 to 500	14	0	1	3	7	2	1	3	5
501 to 2,000	9	1	3	6	23	52	3	7	12
2001 to 5,000	44	2	4	9	39	83	5	11	19
5,001 to 30,000	58	3	6	12	58	116	7	16	26
000 and over	68	4	7	14	108	171	10	23	39

Explanation of columns and symbols:

- 1 First sample size (visual and test)
- 2 Acceptance number - major defectives (visual), short delays (test) and duds (test), all considered separately (first sample)
- 3 Acceptance number - long delays (test) and dispersion failures (test) considered separately (first sample)
- 4 Acceptance number - minor defects (first sample)
- 5 Second sample size (visual and test)
- 6 Combined sample size (visual and test)
- 7 Acceptance number - major defective (visual), short delays (test) and duds (test) all considered separately (first and second samples combined)
- 8 Acceptance number - long delay (test) and dispersion failure (test) considered separately (first and second samples combined)
- 9 Acceptance number - minor defects (combined samples)
- * No second sample taken for lot this size

(1) *Second sample size.* When the number of major defectives, duds, or short delays exceeds the quantity specified in column 2, but does not exceed the quantity specified in column 7, a second sample in size to that specified in column 5, will be taken, and the acceptance number specified in column 7 will be used for acceptance. Likewise, when the number of long delays or dispersion failures exceeds the quantity specified in column 3, but does not exceed the acceptance number specified in column 8, a second sample equal in size to that specified in column 5, will be taken, and the acceptance numbers specified in columns 7 and 8, respectively, will be used for evaluation whenever a second sample is selected. A second sample is never taken for a minor defect (2) Combined sample size. When the surveillance has been exceeded by 6 months, or when the approximate date of the last inspection is unknown, the combined sample plan specified in columns 6, 7, 8 and 9 will be used. The combined sample plan may also be used when additional assurance of quality is desired; e.g., after rework of an item where component quality is unknown. If, during the inspection, a leaking munition is found, the entire lot will

be screened for this defect. In addition, the stack containing the leaker will be examined for leakage and contamination. Leaking munition will be removed and disposed of in accordance with current directives.

(3) *Critical defects.* When examination or testing of an item reveals a nonfunctional critical defect, the lot represented will be declared unserviceable. When a lot has been declared unserviceable because of nonfunctional critical defect, the lot will be screened, and those items containing nonfunctional critical defect will be removed from the lot. Lots containing a functional critical defect will be immediately suspended from issue and use.

5. Inspection. *a. Visual Examination.* The sample will be examined for defects listed in b below. Samples selected for visual examination will also be used for functional tests. Grenades selected for visual examination and tests will be numbered 12,3, etc.

b. Classification of Defects. Refer to tables 2 and 3 for classification of defects.

Table 2. Grenade, Hand and Rifle M34

Categories	Defects	Inspection methods
<i>Critical</i>	<i>Functional</i>	
1.....	Daytime 3 seconds	6
2.....	Safety pin pull incorrect (less than 5 pounds)	6
	<i>Nonfunctional</i>	
3.....	Safety pin miming	Visual
4.....	Safety pin partially withdrawn	Visual
5.....	Grenade leaking.....	Visual
6.....	Grenade designation incorrect (i.e.; Grenade identified other than WP Filled).	Visual
<i>Major</i>	<i>Functional</i>	
101.....	Grenade malfunction (Dud)	6
102.....	Dispersion failure	6
103.....	Delay time more than 6.5 seconds	6
104.....	Safety pin pull incorrect (more than 5 pounds but less than 10 pounds)	6
	<i>Nonfunctional</i>	
105.....	Incorrect fuse installed (must be M206 Series)	Visual
106.....	Corroded fuze assembly (Heavy accumulation of white powdery substance to the extent that the fuse striker is inoperative or can result in malfunction;	Visual
107.....	Corroded grenade body (Pitting or scale rut)	Visual
106.....	Fuse body crushed	Visual
109.....	Fuse body racked	Visual
110.....	Fuse lever raked	Visual
111.....	Lot identification marking incorrect	Visual
<i>Minor</i>	<i>Functional</i>	
202.....	Safety pin pull incorrect (More than 30 pounds)	6
	<i>Nonfunctional</i>	
203.....	Corroded grenade body (Light rust)	Visual
204.....	Fuze torque incorrect (Less than 30 inch-pounds for fuse using asbestos washer. Less than 15 inch pounds for fuse using none washer).....	Visual/Torque Wrench Visual
206.....	Fuze incorrectly assembled to grenade (Flange not seated firmly on top of burster well assembly).	Visual
206.....	Date of manufacture incorrect or illegible	Wrench

Note. Functional items require a test as specified in paragraph 6. Nonfunctional items require only a visual examination.

Table 3. Packaging, Packing, Marking and Preservation

Sufficient inspection of the packaging and packing will be made to insure suitability of items for continued storage and subsequent issue.

Categories	Defects	Inspection methods
<i>Critical</i>		
1.....	Marking incorrect (Grenade type identified incorrectly)	Visual
<i>Major</i>		
101.....	Lot identification marking incorrect	Visual
102.....	Grenade not secure in container	Visual
103.....	Case broken (To spill contents)	Visual
104.....	Strap missing	Visual
<i>Minor</i>		
201.....	Strap Hose	Visual

6. Functional Tests. *a. Requirements.* The grenade will meet the following requirements:

(1) The grenade will burst within 2.5 and 6.5 seconds after releasing the fuse lever and will scatter the majority of the WP fill. Timing will be to the tenth of a second.

(2) The grenade will either disintegrate, or the burst will rupture the grenade with a force producing shrapnel effects.

(3) The grenade when functioned will produce an effective smoke cloud.

(4) The pull for the safety pin will be between 10 and 30 pounds.

b. Equipment Required. Launcher Pneumatic APE 1922 (4925-N20-1922-000) Accessory Kit APE 1922-E004, (4925-N20-1922-E004), Watch, Stop 1/100 Sec (6645-6287751).

c. Procedure. The grenade will be tested for functioning as follows:

(1) Place the grenade in launcher.

(2) Attach a spring type weighting scale to the safety pin and pull. The pull required to remove pin shall be as specified. Insure grenade handle is secure prior to pull test. Activate launcher and throw grenade mechanically.

Warning: Personnel will remain behind barricade and up-wind from the impact are during testing of live grenades. Personnel will not remove duds until authorized. Duds will be destroyed in place after a minimum waiting period of 30 minutes unless prior authorization is received from the Commanding General (Officer) U. S. Army Materiel Command.

(3) Measure, to the nearest 0.1 second, the time lapse from the release of the fuse lever until the instant the grenade burst.

(4) Observe burst and condition of grenade.

(5) Record delay time.

7. Documentation. *a. Report Forms.* When reporting data the following forms shall be used:

DA Form 984-Materiel Serviceability Report.

DA Form 985--Data Sheet for Grand Lots, Miscellaneous Lots or Depot Lots.

DA Form 986-Test Data Sheet, Serviceability of Burning Type Munitions.

DA Form 988-Visual Inspection Sheet, Serviceability of Materiel.

b. Reporting.

(1) *Data.* When reporting data, forms specified in a above will be prepared in accordance with instructions contained in SB 3-30. Record all visual defects and results of functioning of individually numbered sample grenades.

(a) Recording Information. Whenever possible the exact cause of malfunction will be recorded. Any pertinent information regarding failures discovered during tests will be reported in detail.

(b) Data recorded for information. The following characteristics and data will not be used to determine serviceability status but will be recorded for information only:

1. The delay time (interval between the release of the fuse lever and the detonation of the grenade) will be recorded to the nearest *tenth of a second* for each grenade in column 1 of form 986.

2. The ambient temperature and humidity immediately prior to firing will be recorded in column (m) of Form 986. The ambient temperature and humidity for each succeeding hour will be recorded under comments.

3. Samples examined for visual inspection and functional testing will be numbered similarly (i.e., grenade No. 8 on visual inspection will be grenade No. 8 on functional testing).

4. Results of functional testing will be recorded in chronological order.

5. Indicate if more than one individual conducted tests and the samples tested by each.

6. Indicate the time of day testing was begun and ended.

7. Indicate if entire sample was selected at one time, or at different times.

8. Indicate the method of selecting samples (i.e., one grenade from each of nine boxes).

9. Indicate if any mechanical functioning device was used.

(2) *Submission.* Reports required by this document will be submitted as follows:

(a) Original and one copy to the Commanding General (Officer), U.S. Army Edgewood Arsenal, ATTN: SMUEA-QA, Edgewood Arsenal, Md., 21010.

(b) One copy to the Commanding General (Officer), U.S. Army Ammunition Procurement and Supply Agency, ATTN: SMUAP-ROS, Joliet, Ill., 60436.

(3) Leakage report. When a leaking munition is found, a special report (other than the usual serviceability report) will be sent

immediately to the Commanding General (Officer), U.S. Army Ammunition Procurement and Supply Agency, ATTN: SMUAP-ROS, Joliet, Ill., 60436.

(4) *Critical defect report.* When a critical functioning defect is found, it will be immediately reported to the Commanding General (Officer) U.S. Army Ammunition Procurement and Supply Agency, ATTN: SMUAP-ROS, Joliet, Ill., 60436. The incident will be reported via teletype, telephone, or letter giving the nomenclature, the lot number of the item involved and the defect encountered.

8. Special Instructions. *a. Equipment calibration.* Prior to an inspection operation or test, all measuring

devices that require calibration shall be inspected to verify that the calibration interval and equipment limits have not been exceeded.

b. Report of Equipment Publication, Improvements. Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded to Commanding General (Officer), U.S. Army Edgewood Arsenal, ATTN: SMUEA-QAWS-D, Edgewood Arsenal, Md., 21010.

By Order of the Secretary of the Army:

Official:

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

KENNETH G. WICKHAM,
*Major General, United States Army;
The Adjutant General.*

Distribution:

Active Army am NG: To be distributed in accordance with DA Form 12-21 (Qty rqr block 22) requirements for PSC Group 1330-IL.

USAR: None.

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IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 decagram = 10 grams = .35 ounce
 1 hectogram = 10 decagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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PIN: 022447-000