TECHNICAL MANUAL

ARMY AMMUNITION DATA SHEETS

FOR

GRENADES

HEADQUARTERS, DEPARTMENT OF THE ARMY

JUNE 1994

CHANGE)
)
NO. 4)

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 22 November 2002

Army Ammunition Data Sheets
for
Grenades

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Army Ammunition Data Sheets for Grenades

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Remove Pages	Insert Pages
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ARMY AMMUNITION DATA SHEETS
FOR
GRENADES

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Remove pages	**Insert pages**
A and B	A and B
i and ii	i and ii
None	4-15 and 4-16
None	5-13 thru 5-16

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No. 1)

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 30 June 1995

ARMY AMMUNITION DATA SHEETS
FOR
GRENADES

TM 43-0001-29, 30 June 1994, is changed as follows:

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Remove pages	Insert pages
A and B	A and B
i and ii	i and ii
2-29 and 2-30	2-29 and 2-30
None	4-13 and 4-14

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LIST OF EFFECTIVE PAGES

NOTE The portion of the text affected by the changes is indicated by a vertical line in the margin of the page. Changes to illustrations are indicated by a vertical line adjacent to the identification number.

Dates of issue for original and changed pages are:

Original ..... 0 ..... 30 June 1994
Change ..... 1 ..... 30 June 1995
Change ..... 2 ..... 28 December 2001
Change ..... 3 ..... 15 March 2002
Change ..... 4 ..... 22 November 2002

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 119, CONSISTING OF THE FOLLOWING:

Page No.	*Change No.	Page No.	*Change No.
Cover	0	3-1 thru 3-12	0
A	4	3-13 and 3-14	4
B	0	4-1 thru 4-12	0
i	1	4-13 and 4-14	1
ii	4	4-15	4
1-1 and 1-2	0	4-16	2
2-1 thru 2-28	0	4-17 and 4-18	4
2-29	1	5-1 thru 5-12	0
2-30 thru 2-58	0	5-13 thru 5-16	2
2-59 thru 2-64	3		

*Zero in this column indicates an original page

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TECHNICAL MANUAL

No. 43-0001-29

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, *30 June 1994*

Army Ammunition Data Sheets for Grenades

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028-2 (Recommended Changes to Equipment Technical Publications) located in the back of this manual directly to Commander, U.S. Army TACOM, Armament Research, Development and Engineering Center, ATTN: AMSTA-AR-WEL-S, Picatinny Arsenal, NJ 07806-5000. You may also send in your recommended changes via electronic mail or by fax. Our e-mail address is LSB@PICA.ARMY.MIL. Our fax number is DSN 880-4633, Commercial (973) 724-4633. A reply will be furnished to you.

*This manual supersedes TM 43-0001-29, 31 October 1977, including all changes.

CHAPTER 2. HAND GRENADES - Continued

CHAPTER 1
INTRODUCTION

1-1. PURPOSE

This manual is a reference handbook published as an aid in training, familiarization and identification of grenades and grenade fuzes.

1-2. SCOPE

a. For each item of materiel, there are illustrations and descriptions together with characteristics and related data. Included in the related data are weight, dimensions, performance data, packing, shipping and storage data, **Type Classification**, and logistics condition codes (LCC).

b. Information concerning supply, operation, and maintenance of the items will be found in the publications referenced for those items. A complete listing of these publications is maintained in DA Pam 310 series indexes.

c. Within this manual, items with the following type classifications are included:

(1) Standard (LCC-A, LCC-B)

(2) Contingency (CON)

(3) Limited Procurement (LP)

(4) Reclassified obsolete (OBS) for regular Army use, but used by National Guard or Reserve Units.

(5) Reclassified OBS for all Army use, but used by Marine Corps, Air Force, or Navy.

(6) Reclassified OBS, no users, but U.S. stocks remain.

d. Items with the following type classification are not included: Reclassified OBS for all U.S. use. No U.S. stocks remain. (Foreign use or stock may remain.)

e. Numerical values, such as weights, dimensions, candlepower, etc., are nominal values, except when specified as maximum or minimum. Actual items may vary slightly from these values. Allowable limits can be obtained from the drawings indicated in the data sheets.

1-3. QUANTITY-DISTANCE CLASSES AND STORAGE COMPATIBILITY GROUPS

Quantity-Distance (QD) classes and Storage Compatibility Groups (SCG) listed in this manual are changed. For conversion to new system see table 1-1.

Table 1-1. Quantity-Distance Classes and Storage Compatibility Groups

Quantity-distance hazard class [1/]		Storage compatibility group [1/3/]
Old	New [2/]	Typical - New
8	6.1	
7	1.1	D
6	1.2(18)	E
5	1.2(12)	
4	1.2(08)	F
3	1.2(04)	G
2	1.3	C
1	1.4	S

Notes:

[1/] New QD and SCG's are compatible with classes used by NATO nations.

[2/] Numbers in parentheses are minimum distances x 100 feet to protect against specific fragment hazards and vary with items and types of ammunition. (Refer to TM 9-1300-206.)

[3/] There is no simple conversion from old SCG's to new system. The SCG groups listed in this column are typical for the majority of items in the corresponding listed QD class but do not apply to every individual item in the class. For SCG of individual items refer to TM 9-1300-206.

1-4. METRIC CONVERSION CHART

For approximate conversions to/from metric measures, see table 1-2.

Table 1-2. Metric Conversion Chart

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in.	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
AREA				
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
WEIGHT				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lbs)	0.9	tonnes	t
VOLUME				
tspl	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3

Symbol	When You Know	Subtract	Multiply by	To Find	Symbol
TEMPERATURE					
°F	Fahrenheit	32	0.55	Celsius	°C

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in.
cm	centimeters	0.4	inches	in.
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
AREA				
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
WEIGHT				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000kg)	1.1	short tons	
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic motels	35	cubic feet	f^3
m^3	cubic meters	1.3	cubic yards	yd^3

Symbol	When You Know	Subtract	Multiply by	To Find	Symbol
TEMPERATURE					
°C	Celsius	1.8	32	Fahrenheit	°F

CHAPTER 2

HAND GRENADES

Section I. FRAGMENTATION

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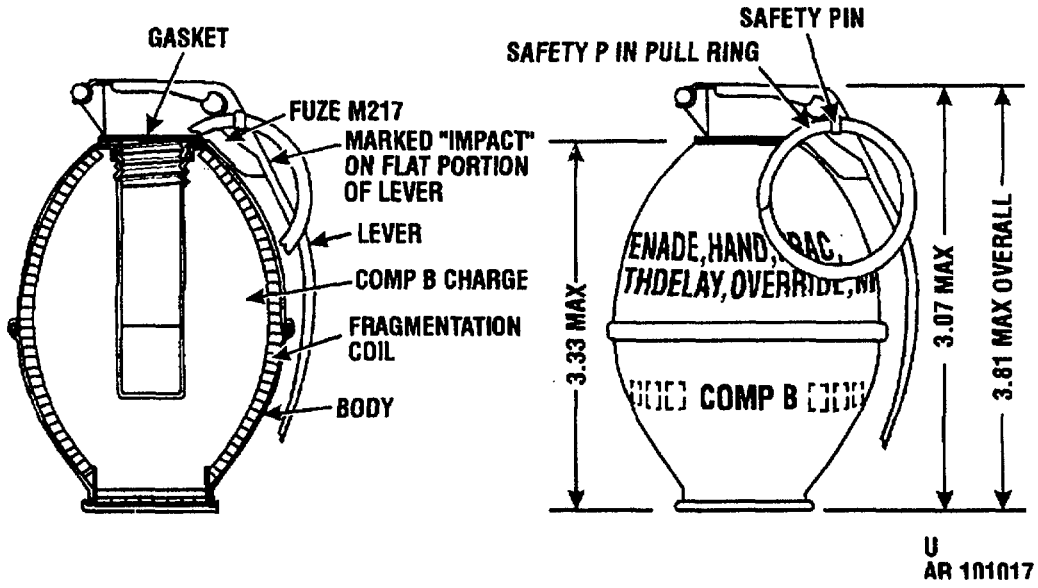
GRENADE, HAND: FRAGMENTATION, IMPACT, M26A2



Type Classification:

Obs. MSR 10826016

Use:

The M26A2 impact fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments.

Description:

Hand grenade M26A2 is assembled with an electrical impact fuze M217 which incorporates a secondary pyrotechnic delay feature which detonates the grenade if it fails to detonate upon impact. The body of the grenade is constructed of two pieces of thin-wall sheet steel, has a notched fragmentation coil liner. Bodies contain a high explosive filler.

Fuze M217 is equipped with a safety pin, the split end of which is either spread or has a diamond crimp, and a pull ring. IMPACT is embossed on the safety lever. (Older models had red safety levers with or without IMPACT painted thereon in black). The major components are as follows: a bouchon assembly, a fuze body assembly (which contains a thermal power supply, an arming delay thermal switch, a delay-detonation terminal switch assembly, an impact switch assembly and an electric detonator), and a booster pellet. The bouchon assembly consists of a striker, striker spring, a striker hinge pin, safety lever and safety pin with pull ring. The fuze body is hermetically sealed.

Tabulated Data:

Grenade (with fuze):

Model(s)	M26A2
Body	Thin-wall sheet steel w/notched fragmentation coil
Weight	16 oz
Length (max)	3.9 in.
Diameter	2.25 in.
Color	Olive drab w/yellow markings

Filler:

Type	Comp B w/tetryl pellets

Weight:

Comp B	5.5 oz
Tetryl pellets	0.3 oz

Fuze:

Model(s)	M217
Type	Electrical impact w/overriding delay function feature
Primer	M42
Detonator	Lead azide, lead styphnate, PETN
Delay time	3 to 7 seconds
Weight	2.7 oz
Length	3.0 in.

Color, safety lever.....Red handle w/IMPACT embossed, in lever; red lever w/or w/o IMPACT stenciled in black on lever.
Safety device(s).....Pull ring and safety pin

Federal Supply Code

NSN.....1330-00-782-5540
DODAC.....1330-G889
See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each packed.....1 per fiber container; 30 per wooden box.

Packing Data:

Packing box:
Weight (with contents) .....51 lb
Dimensions.....19-3/4 in. x 11-9/16 in. x 12-13/32 in.
Cube.....1.60 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group (04) 1.1F
UNO serial number 0292
UNO proper shipping name Grenades
DOT class.....Class A explosive
DOT marking .....HAND GRENADES

Functioning:

Removal of safety pin permits release of the safety lever. When the grenade is thrown, the striker assembly, through action of the striker spring, throws off the safety lever and impacts the percussion primer. The primer initiates the power supply, which causes the fuze to arm within one to two seconds; thereafter, the grenade is subject to detonation upon impact.

NOTE

At high temperature (+125°F), arming time may be as short as 1 second; at low temperature (-40°F), as long as 2 seconds. The secondary pyrotechnic delay feature functions within 3 to 7 seconds throughout the temperature range of -40°F to + 125°F

If the grenade does not detonate on impact (after proper arming time), the grenade will be detonated by the secondary pyrotechnic delay feature. If the fuze fails to function after release of the safety lever, the fuze power supply will become inactive within 30 seconds.

References:
TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

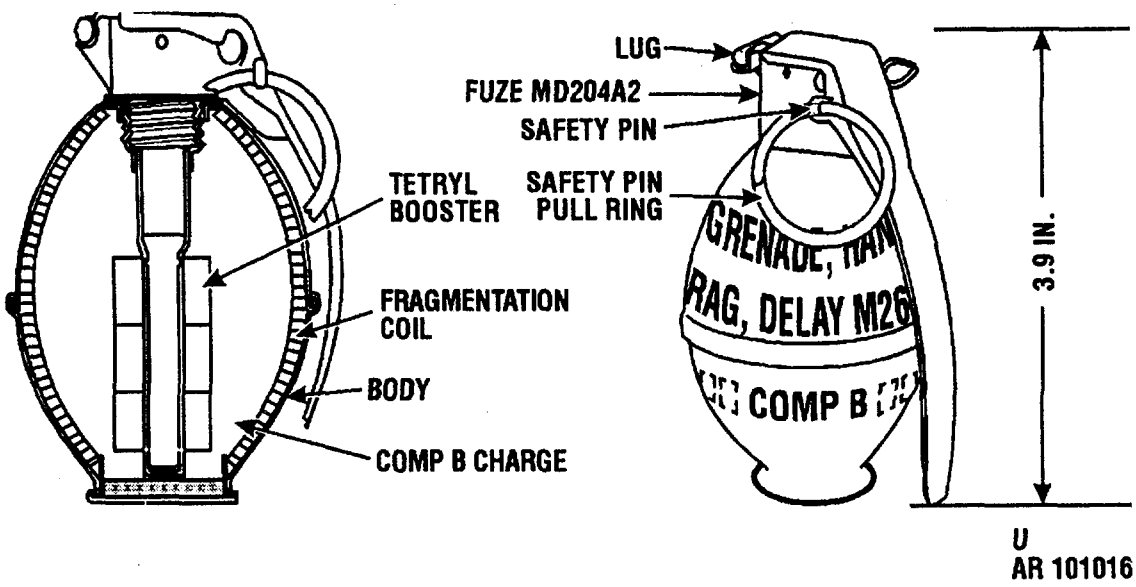
Remarks:
The M26A2 is the same as the M57 but without a safety clip The bodies of the M26, M26A1, and M61 contain booster pellets and are longer and narrower than those of the M26A2 and M57.

The bodies of the M26A2 and M57 do not contain booster pellets.

The M56 was the M26A2 with fuze M215.

The body of the M26A2 (M57 without a safety clip) is identical with the M61, M26A1, and M26, except the fuze thread is different.

GRENADE, HAND: FRAGMENTATION, DELAY, M26A1 AND M26



Type Classification:

Obs. MSR 11756003 (M26)
Std. LCC-A, AMCTC 5666 (M26A1)

Use:

The M26A1 and M26 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments.

Description:

The M26A1 is the M26 with preformed tetryl pellets around the fuze well line. Each grenade is assembled with a fuze that initiates the explosive charge. These grenades detonate 4 to 5 seconds after release of the safety lever.

Bodies of the M26A1 and M26 are identical. The body is constructed of two pieces of thin-wall sheet steel and has a notched fragmentation coil liner.

The fuzes M204A1 and M204A2 are pyrotechnic delay-detonating fuzes. They differ only in body construction. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, and a detonator assembly. The split end of the safety pin has an angular spread or diamond crimp.

Difference Between Models:

Same as M61 but without safety clip.

Tabulated Data:

Grenade (with fuze):

Model(s)	M26A1, M26
Body	Thin-wall sheet steel w/inner fragmentation coil
Weight	16 oz
Length (max)	3.9 in.
Diameter	2.25 in.
Color	Olive drab w/yellow markings

Explosive filler:

Comp B (main charge)	M26, M26A1

Weight:

M26:	
Comp B	5.8 oz
M26A1:	
Comp B	5.5 oz
Tetryl pellets (burster)	0.3 oz

Fuze:

Model(s)	M204A1, M204A2
Type	Pyrotechnic delay-detonating
Primer (percussion)	M42
Detonator	Lead azide, lead styphnate, and RDX

Delay time .....4 to 5 seconds
Weight.....2.6 oz
Length .....4 in.
Color, safety lever.....Olive drab w/black markings
Safety device(s)..... Pull ring and safety pin

Federal Supply Code

NSN.....(M26A1) 1330-00-926-1857
(M26) 1330-00-028-5839
DODAC.....1330-G890

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each packed .....1 per fiber container; 30 per wooden box.

Packing Data:

Packing box:
Weight (with contents) ..... 52.0 lb
Dimensions.....18-15/16 in. x 11-1/4 in. x 11-1/16 in.
Cube.....1.37 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group .....(04) 1.1F
UNO serial number 0292
UNO proper shipping name .....Grenades
DOT class.....Class A explosive
DOT marking .....HAND GRENADES

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame, igniting the delay element. The delay element burns for 4 to 5 seconds, then sets off the detonator. The detonator explodes, thus initiating the explosive charge. The explosive charge explodes, rupturing the body and projecting fragments.

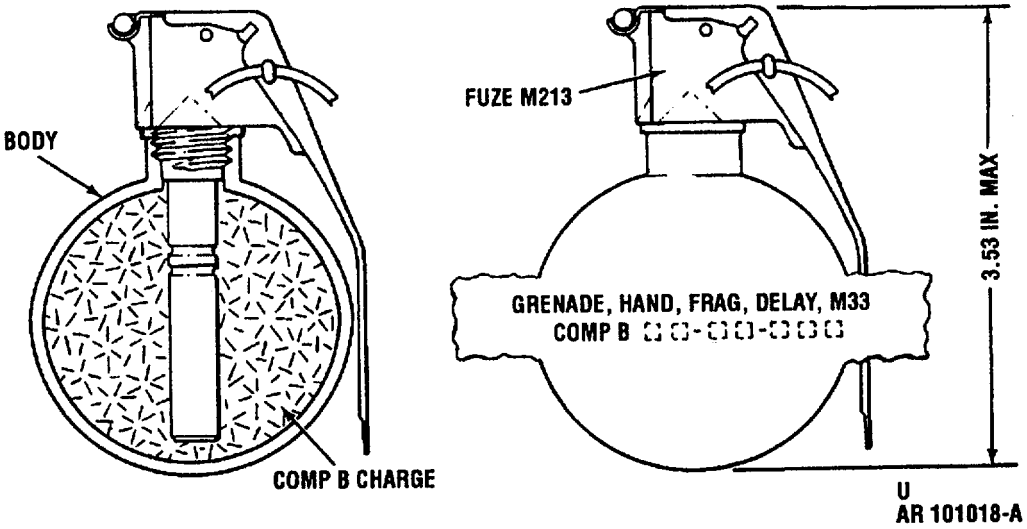
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1300-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Complete assembly M26A1.....9212181
Complete assembly M26 82-0-190
Fuze (M204A1) 82-1-87
Fuze (M204A2) 7548570
Packing M26 and M26A1 (inner).....7548339
Packing M26 and M26A1 (outer).....7548340

GRENADE, HAND: FRAGMENTATION, DELAY, M33



Type Classification:

Obs. MSR 11756003

Use:

The M33 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments in a uniform distribution pattern.

Description:

The grenade body is a 2.5-inch diameter steel sphere which is designed to burst into numerous fragments when detonated. The grenade body contains 6.5 ounces of high-explosive, Composition B. Each grenade is fitted with a fuze that initiates the explosive charge.

The M33 grenade used the M213 fuze which is a pyrotechnic delay-detonating fuze. It will function the grenade 4 to 5 seconds after release of the safety lever. The body of the fuze contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin, pull ring, and a detonator assembly.

The M213 fuze is equipped with a steel safety pin and pull ring. The split end of the safety pin is either spread approximately 40 degrees or diamond-shaped to prevent accidental removal and arming during shipping and handling. The pull ring is provided to facilitate easy removal of the safety pin.

The M33 grenade is the same as the M67 grenade except that it does not have a safety clip.

Tabulated Data:

Grenade (with fuze):

Model	M33
Body	Steel
Weight	14 oz
Length	(max) 3.53 in.
Diameter	2.5 in.
Color	Olive drab w/yellow markings

Explosive filler:

Type	Comp B
Weight	6.5 oz

Fuze:

Model	M213
Type	Pyrotechnic delay-detonating
Primer (percussion)	M42
Detonator	Lead azide, lead styphnate, and RDX
Delay time	4-5 seconds
Weight	2.5 oz
Length	3.33 in.
Color, safety lever	Olive drab w/black markings
Safety device	Pull ring and safety pin

Federal Supply Code

NSN.....1330-00-629-0964
DODAC.....1330-G888
See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each packed .....1 per fiber container; 30 per wooden box.

Packing Data:

Packing box:
Weight (with contents) ..... 52.0 lb
Dimensions.....18-5/16 in. x 11-1/4 in. x 11-1/16 in.
Cube.....1.37 cu ft
Explosive weight.....12.2 lb

Shipping and Storage Data:

Hazard class/division and storage compatibility group .....(04) 1.1F
UNO serial number 0292
UNO proper shipping name.....Grenades
DOT class.....Class A explosive
DOT marking .....HAND GRENADES

Functioning:

Removal of the safety pin permits release of the safety lever. When the grenade is thrown, the striker assembly, through action of the spring, throws off the safety lever and impacts the percussion primer which functions the primer charge. The primer charge ignites the delay composition which will burn approximately 4-5 seconds. Upon completion of burning, the delay composition sets off the detonator which ignites the main explosive charge and detonates the grenade.

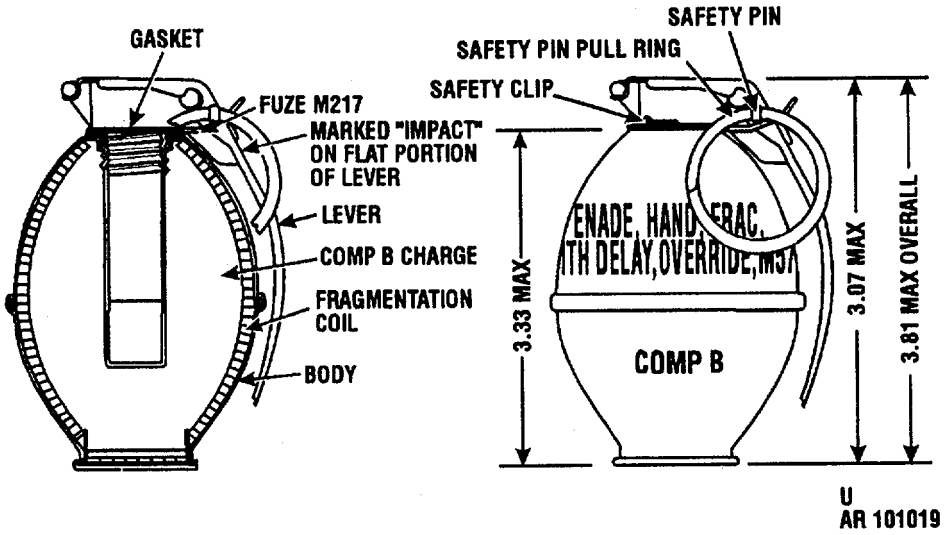
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Top drawing 8810741
Marking drawing.....8810742
Packing box 9288720
Fiber container.....8800493

GRENADE, HAND: FRAGMENTATION, IMPACT, M57



Type Classification:

Obs. MSR 10826016

Use:

The M57 impact fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. the grenade produces casualties by high velocity projection of fragments.

Description:

Hand grenade M57 is assembled with an electrical impact fuze M217 which incorporates a secondary pyrotechnic delay feature which detonates the grenade if it fails to detonate upon impact. The grenade incorporates a safety clip. The body of the grenade is constructed of two pieces of thin-wall sheet steel, and has a notched fragmentation coil liner. The body contains a high explosive filler.

Fuze M217 is equipped with a safety pin, the split end of which is either spread or has a diamond crimp, and a pull ring. IMPACT is embossed on the safety lever. (Older models had red safety levers with or without IMPACT printed thereon in black). The major components are as follows: a bouchon assembly, a fuze body assembly (which contains a thermal power supply, and arming delay thermal switch, a delay detonation terminal switch assembly, an impact switch assembly and an electric detonator), and a booster pellet. The bouchon assembly consists of a striker, striker spring, a striker hinge pin, safety lever and safety pin with pull ring. The fuze body assembly is hermetically sealed.

Tabulated Data:

Grenade (with fuze):

Model(s)	M57
Body	Thin-wall sheet w/notched fragmentation coil
Weight	16 oz
Length (max)	3.9 in.
Diameter	2.25 in.
Color	Olive drab w/yellow markings

Filler:

Type	Comp B w/tetryl pellets

Weight:

Comp B	5.5 oz
Tetryl pellets	0.3 oz

Fuze:

Model(s)	M217
Type	Electrical impact w/ overriding delay function feature
Primer	M42
Detonator	Lead azide, lead styphnate, PETN
Delay time	3 to 7 seconds
Weight	2.7 oz
Length	3.0 in.

Lever, safety (color) ..... Red handle w/IMPACT embossed in lever; red lever w/ or w/o IMPACT stenciled in black on lever
Safety device(s) ..... Pull ring and safety pin, and safety clip

Packing Data:

*Packing ..... 1 per fiber container; 30 containers per wooden box.

*Packing box:
Weight (with contents) ..... 51 lb
Dimensions ..... 19-3/4 in. x 11-9/16 in. x 12-13/32 in.
Cube ..... 1.60 cu ft

NOTE

See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Shipping and Storage Data:

Hazard class/division and storage compatibility group ..... (04) 1.1F
UNO serial number 0292
UNO proper shipping name ..... Grenades
DOT class ..... Class A explosive
DOT marking ..... HAND GRENADES

Functioning:

Release of safety clip and removal of safety pin permit release of safety lever. When grenade is thrown, the striker assembly, through action of striker spring, throws off safety lever and impacts percussion primer. The primer initiates the power supply, which causes fuze to arm within one to two seconds; thereafter, grenade is subject to detonation upon impact.

NOTE

At high temperature (+125°F), arming time may be as short as 1 second; at low temperature (-40°F), as long as 2 seconds. The secondary pyrotechnic delay feature functions within 3 to 7 seconds throughout the temperature range of -40°F to +125°F.

If the grenade does not detonate on impact (after proper arming time), the grenade will be detonated by the secondary pyrotechnic delay feature. If the fuze fails to function after release of the safety lever, the fuze power supply will become inactive within 30 seconds.

Drawings:

Assembly 9210138
Fuze (M217) 10998765
Packing (inner) 7548339
Packing (outer) 7548340

Remarks:

The M57 is the M26A2 with a safety clip. The safety clip hand grenades M57, M61, M67, and M68 are not interchangeable.

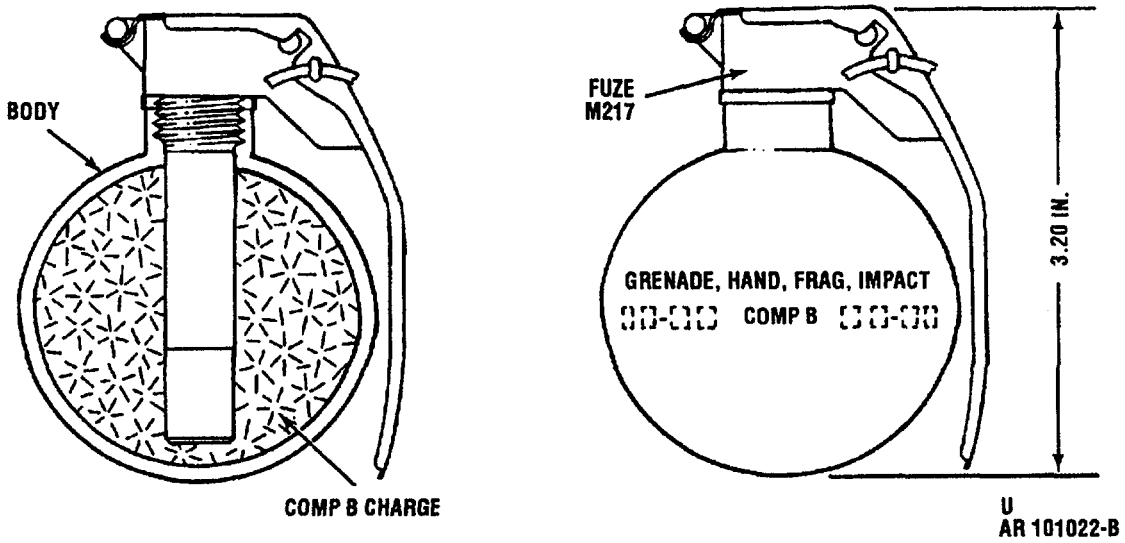
The M56 was the M26A1 with fuze M215.

The body configuration of the M57 (M26A2 with safety clip) is identical with the M61, M26A2, and M26 except the fuze thread is different.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-20
DOD Consolidated Ammo Catalog

GRENADE, HAND: FRAGMENTATION, IMPACT, M59 (M33A1)



Type Classification:

Std. LCC-A, AMCTC 7764

Use:

The M59 (M33A1) fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments in a uniform distribution pattern.

Description:

The grenade body is a 2.5 inch diameter steel sphere which is designed to burst into numerous fragments when detonated. The grenade body contains 6.5 ounces of high-explosive, Composition B. Each grenade is fitted with a fuze that initiates the explosive charge.

The M59 (M33A1) grenade used the M217 fuze which is an electrical impact functioning fuze with a secondary pyrotechnic delay feature that will detonate the grenade if it does not explode on impact. The major components are as follows: a bouchon assembly, a fuze body assembly (which contains a primer, thermal power supply, an arming delay thermal switch, a delay detonation thermal switch assembly, an impact switch assembly and an electric detonator), and a booster pellet. The bouchon assembly consists of a striker, striker spring, striker hinge pin, safety lever and safety pin with pull ring. The fuze body is hermetically sealed.

The M217 fuze is equipped with a steel safety pin and pull ring. The split end of the safety pin is either spread approximately 40 degrees or diamond-shaped to prevent accidental removal and arming during shipping and handling. The pull ring is provided to facilitate easy removal of the safety pin.

The M59 grenade is the same as the M68 grenade except that it does not have a safety clip.

Tabulated Data:

Grenade (with fuze):

.....	(M33A1)
Body	Steel
Weight	14 oz
Length (max)	3.2 in.
Diameter	2.5 in.
Color	Olive drab w/yellow markings
Packing	1 per fiber container; 30 containers per packing box.

Filler:

Type	Comp B
Weight	6.5 oz

Fuze:

Model	M217
Type	Electrical impact w/ secondary pyrotechnic delay

Primer (percussion)	M42
Detonator	Lead azide, lead styphnate, PETN, and RDX
Delay time	3.7 seconds
Weight	2.7 oz
Length	3.0 in.
Safety lever	Olive drab handle w/IMPACT embossed on lever; red lever w/ or w/o IMPACT stenciled in black on lever
Safety device	Pull ring and safety pin

Packing Data:

*Packing	1 per fiber container; 30 containers per wooden box *Packing box:
Weight (with contents)	52.0 lb
Dimensions	20 x 11-11/16 x 10-31/32 in.
Cube	1.49 cu ft
Explosive weight	12.2 lb

NOTE

See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Shipping and Storage Data:

Hazard class/division and storage compatibility group	(04) 1.1F
UNO serial number	0292
UNO proper shipping name	Grenades
DOT class	Class A explosive
DOT marking	HAND GRENADES
DODAC	1330-G887

Functioning:

Removal of the safety pin permits release of the safety lever. When the grenade is thrown, the striker assembly, through action of the spring, throws off the safety lever and impacts the percussion primer which functions the primer charge. The primer initiates the power supply, which causes the fuze to arm within one to two seconds; thereafter, the grenade is subject to detonation upon impact.

NOTE

At high temperature (+125°F), arming time may be as short as 1 second; at low temperature (-40°F), as long as 2 seconds. The secondary pyrotechnic delay feature functions within 3 to 7 seconds throughout the temperature range of -40°F to + 125°F.

If the grenade does not detonate on impact (after proper arming time), the grenade will be detonated by the secondary pyrotechnic delay feature. If the fuze fails to function after release of the safety lever, the fuze power supply will become inactive within 30 seconds.

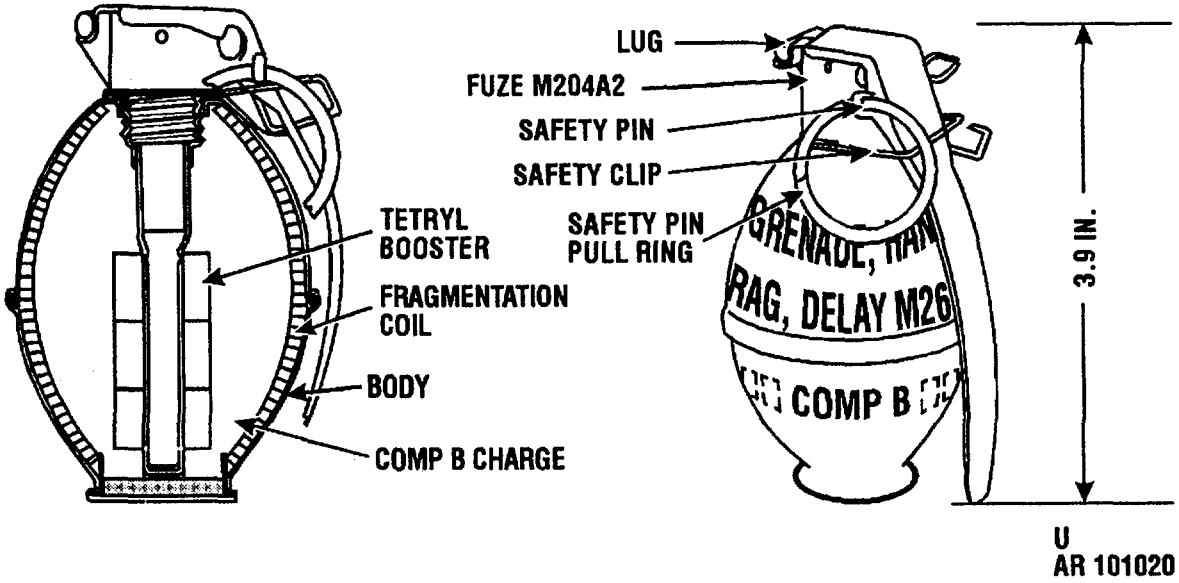
References:

TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Top drawing	8833936
Marking drawing	8810742
Packing box	8836007
Fiber container	8836008

GRENADE, HAND: FRAGMENTATION, DELAY, M61



Type Classification:

Std. LCC-A, AMCTC 6446

Use:

The M61 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments.

Description:

Each grenade is assembled with a fuze that initiates the explosive charge. These grenades detonate 4 to 5 seconds after release of the safety lever.

Hand grenade M61 incorporates a safety clip. The body is constructed of two pieces of thin-wall sheet steel and has a notched fragmentation coil liner; M61 hand grenade uses M204A1 or M204A2 fuzes. They are pyrotechnic delay detonation fuzes. They differ only in body construction.

The body contains a primer and a pyrotechnic delay column. Assembled to the body. are a striker, striker spring, safety lever, safety pin with pull ring, and a detonator assembly. The split end of the safety pin has an angular spread.

The hand grenade safety clip is designed to keep the safety lever in place should the safety pin be unintentionally removed from the grenade. It is an additional safety device used in conjunction with the safety pin.

The safety clip, of spring steel wire, consists of a loop which fits around the fuze body and a clamp which fits over the safety lever.

Tabulated Data:

Grenade (with fuze):

Model	M61
Body	Thin-wall sheet steel w/inner fragmentation coil
Weight	16 oz
Length (max)	3.9 in.
Diameter	2.25 in.
Color	Olive drab w/yellow markings
Packing	1 per fiber container; 30 per packing box

Explosive Filler:

Type	Comp B w/tetryl pellets
Weight:	
Comp B	5.5 oz
Tetryl pellets	0.3 oz

Fuze:

Model(s)	M204A1, M204A2
Type	Pyrotechnic delay-detonating
Primer (percussion)	M42
Detonator	Lead azide, lead styphnate, and RDX
Delay time	4-5 seconds
Weight	2.6 oz

Length .....4 in.
Color, safety lever.....Olive drab w/black markings
Packing .....Not issued separately

Federal Supply Code

NSN 1330-00-935-6064
DODAC 1330-G880

See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Unit of Issue:

Each packed .....1 per fiber container; 30 per packing box.

Packing Data:

Packing box:
Weight (with contents) - 53.0 lb
Dimensions .....19-7/16 in. x 11-3/8 in. x 12-23/32 in.
Cube .....1.60 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group .....(04) 1.1F
UNO serial number 0292
UNO proper shipping name .....Grenades
DOT class.....Class A explosive
DOT marking .....HAND GRENADES

Functioning:

Release of the safety clip and removal of the safety pin permit release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame, igniting the delay element. The delay element burns for 4 to 5 seconds, then sets off the detonator. The detonator explodes, thus initiating the explosive charge. The explosive charge explodes, rupturing the body and projecting fragments.

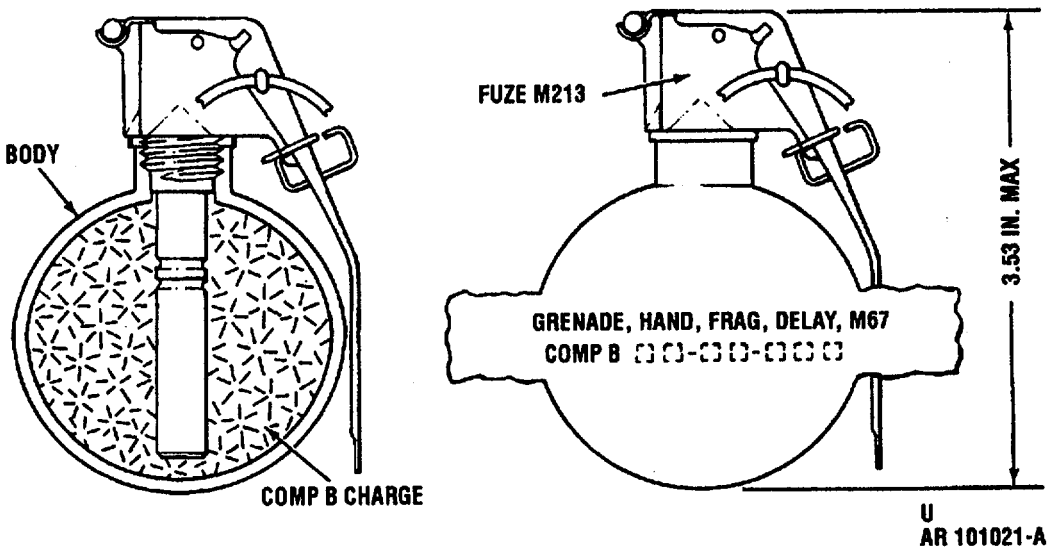
References:

TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly 9231594
Fuze:
M204A1 82-1-87
M204A2 7548570
Packing (inner).....7548339
Packing (outer).....7548340

GRENADE, HAND: FRAGMENTATION, DELAY, M67



Type Classification:

Std. LCC-A, AMCTC 7764

Use:

The M67 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments in a uniform distribution pattern.

Description:

The grenade body is a 2.5-inch diameter steel sphere which is designed to burst into numerous fragments when detonated. The grenade body contains 6.5 ounces of high-explosive, Composition B. Each grenade is fitted with a fuze that initiates the explosive charge.

The M67 grenade uses the M213 fuze which is a pyrotechnic delay-detonating fuze. It will function the grenade 4 to 5 seconds after release of the safety lever. The body of the fuze contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin and pull ring, safety clip, and a detonator assembly.

The M213 fuze is equipped with a steel safety pin and pull ring. The split end of the safety pin is either spread approximately 40 degrees or diamond-shaped to prevent accidental removal and arming during shipping and handling. The pull ring is provided to facilitate easy removal of the safety pin.

A second safety feature is the steel safety clip. The safety clip's purpose is to prevent the safety lever from snapping upward into a triggered position, in the event the safety pin is accidentally dislodged from the fuze.

Tabulated Data:

Grenade (with fuze):
- Model M67
- Body ..... Steel
- Weight ..... 14 oz
- Length (max). ..... 3.53 in.
- Diameter ..... 2.5 in.
- Color ..... Olive drab w/yellow markings

Explosive filler:
- Type ..... Comp B
- Weight ..... 6.5 oz

Fuze:
- Model M213
- Type ..... Pyrotechnic delay-detonating
- Primer (percussion)..... M42
- Detonator ..... Lead azide, lead styphnate, and RDX
- Delay time ..... 4-5 seconds
- Weight ..... 2.5 oz
- Length ..... 3.33 in.

Color, safety lever .....Olive drab w/black markings
Safety device(s) .....Pull ring and safety pin, and safety clip.

Federal Supply Code

NSN 1330-00-133-8244
DODAC.....1330-G881

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each packed .....1 per fiber container; 30 per wooden box.

Packing Data:

Packing box:
Weight (with contents)- 52.0 lb
Dimensions .....18-15/16 in. x 11-1/4 in. x 11-1/6 in.
Cube .....1.37 cu ft
Explosive weight.....12.2 lb

Shipping and Storage Data:

Hazard class/division and storage compatibility group .....(04) 1.1F
UNO serial number 0292
UNO proper shipping name .....Grenades
DOT class.....Class A explosive
DOT marking .....HAND GRENADES

Functioning:

Release of the safety clip and removal of the safety pin permits release of the safety lever. When the grenade is thrown, the striker assembly, through action of the spring, throws off the safety lever and impacts the percussion primer which functions the primer charge. The primer charge ignites the delay composition which will burn approximately 4-5 seconds. Upon completion of burning, the delay composition sets off the detonator which ignites the main explosive charge and detonates the grenade.

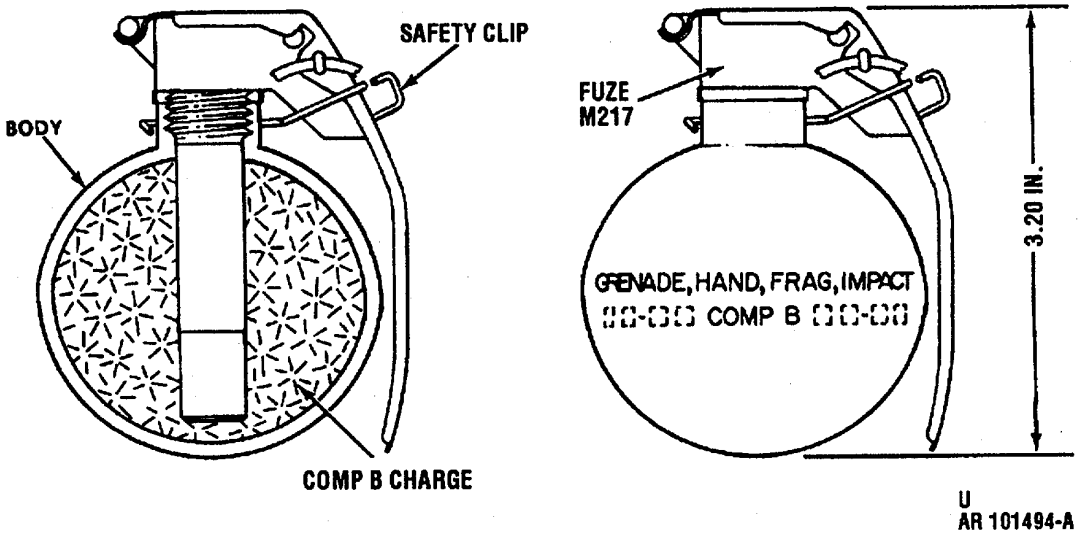
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Top drawing 9235492
Marking drawing.....8810742
Packing box 9288720
Fiber container.....8800493

GRENADE, HAND: FRAGMENTATION, IMPACT, M68



Type Classification:

Obs. MSR 08846004

Use:

The M68 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments in a uniform distribution pattern.

Description:

The grenade body is a 2.5-inch diameter steel sphere which is designed to burst into numerous fragments when detonated. The grenade body contains 6.5 ounces of high-explosive, Composition B. Each grenade is fitted with a fuze that initiates the explosive charge.

The M68 grenade uses the M217 fuze which is an electrical impact functioning fuze with a secondary pyrotechnic delay feature that will detonate the grenade if it does not explode on impact. The major components are as follows: a bouchon assembly, a fuze body assembly (which contains a primer, thermal power supply, an arming delay thermal switch, a delay-detonation thermal switch assembly, an impact switch assembly and an electric detonator), and a booster pellet. The bouchon assembly consists of a striker, striker spring, striker hinge pin, safety lever and safety pin with pull ring. The fuze body is hermetically sealed.

The M217 fuze is equipped with a steel safety pin and pull ring. The split end of the safety pin is either spread approximately 40 degrees or diamond-shaped to prevent accidental removal and arming during shipping and handling. The pull ring is provided to facilitate easy removal of the safety pin.

A safety feature is the steel safety clip. The safety clip's purpose is to prevent the safety lever from snapping upward into a triggered position, in the event the safety pin is accidentally dislodged from the fuze.

Tabulated Data:

Grenade (with fuze):

Model	M68
Body	Steel
Weight	14 oz
Length (max)	3.2 in.
Diameter	2.5 in.
Color	Olive drab w/yellow markings

Explosive filler:

Type	Comp B
Weight	6.5 oz

Fuze:

Model	M217
Type	Electrical impact w/secondary pyro-technic delay
Primer (percussion)	M42
Detonator	Lead azide, lead styphnate, PETN, and RDX
Delay time	3-7 seconds
Weight	2.7 oz

Length .....3.0 in.
Color, safety lever-. .....Olive drab w/IMPACT embossed on lever
Safety device(s) .....Pull ring and safety pin, and safety clip

Federal Supply Code

NSN 1330-00-133-8243
DODAC.....1330-G882

Unit of Issue:

Each packed .....1 per fiber container; 30 per wooden box.

Packing Data:

Packing box:
Weight (with contents) ..... 52.0 lb
Dimensions .....20-0 in. x 11-11/16 in. x 10-31/32 in.
Cube .....1.49 cu ft
Explosive weight.....12.2 lb

Shipping and Storage Data:

Hazard class/division and storage compatibility group .....(04) 1.1F
UNO serial number 0292
UNO proper shipping name.....Grenades
DOT class.....Class A explosive
DOT marking .....HAND GRENADES

Functioning:

Release of the safety clip and removal of the safety pin permits release of the safety lever. When the grenade is thrown, the striker assembly, through action of the spring, throws off the safety lever and impacts the percussion primer which functions the primer charge. The primer initiates the power supply, which causes the fuze to arm within one to two seconds; thereafter, the grenade is subject to detonation upon impact.

NOTE

- **At high temperature (+125°F), arming time may be as short as 1 second; at low temperature (-40°F), as long as 2 seconds. The secondary pyrotechnic delay feature functions within 3 to 7 seconds throughout the temperature range of -40°F to +125°E.**

- **If the grenade does not detonate on impact (after proper arming time), the grenade will be detonated by the secondary pyrotechnic delay feature. If the fuse fails to function after release of the safety lever, the fuze power supply will become inactive within 30 seconds.**

References:

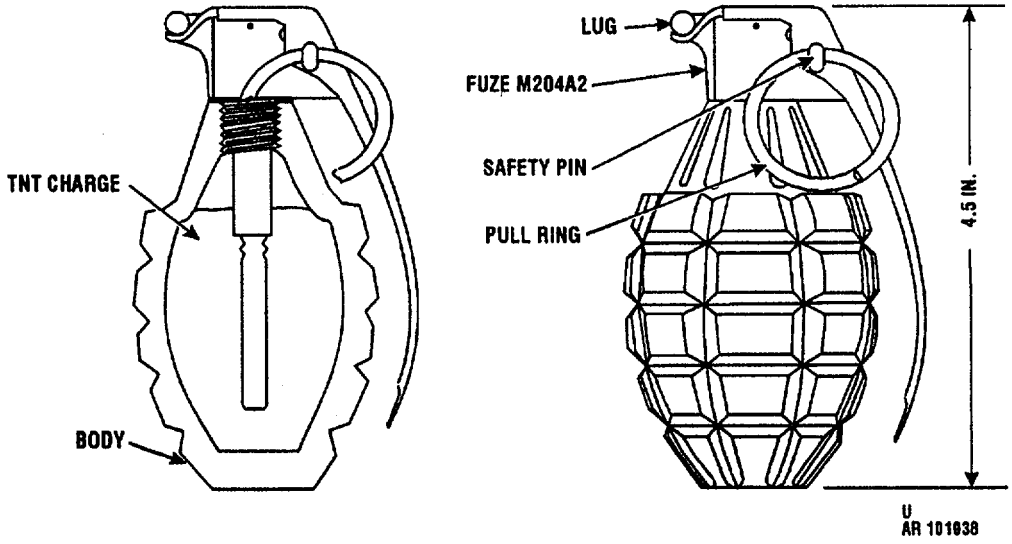
TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Top drawing 9235493
Marking drawing.....8810742
Packing box 8836007
Fiber container.....8836008

Remarks:

Hand grenade M68 is the M59 with a safety clip.



Type Classification:

Obs. AMCTC 6558

Use:

The MK2 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projections of fragments.

Description:

The MK2 grenade is pineapple shaped with deep serrations of its body. These serrations delineate fragmentation of the body when the grenade explodes. No safety clip is authorized for use with this grenade.

The grenade body is of cast iron and contains a high-explosive filler.

Grenade fuzes M204A1 and M204A2 are pyrotechnic delay-detonating fuzes. They differ only in body construction. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, and detonator assembly. The split end of the safety pin has an angular spread or diamond crimp.

Tabulated Data:

Grenade (with fuze):

Model(s)	MK2
Body	Cast iron
Weight	21 oz
Length (max)	4.5 in.
Diameter	2.25 in.
Color	Olive drab, or olive drab w/yellow band around top of fuze well

Explosive Filler:

Type	TNT (flaked or granular)
Weight	2 oz

Fuze:

Model(s)	M204A1, M204A2
Type	Pyro delay-detonating
Primer	M42
Detonator	Lead azide, lead styphnate, and RDX
Delay time	4-5 seconds
Weight	2.6 oz
Length	4 in.
Color, safety lever	Olive drab w/black markings
Packing	Not issued separately
Safety device	Pull ring and safety pin (Grenade MK2)

Federal Supply Code

NSN 1330-00-028-5841
DODAC.....1330-G890

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each packed .....1 per fiber container; 25 per packing box.

Packing Data:

Packing box:
- Weight (with contents) .....57.6 lb
- Dimensions .....17-3/4 in. x 16-1/4 in. x 11-5/8 in.
- Cube .....1.27 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group .....(04) 1.1F
UNO serial number 0292
UNO proper shipping name .....Grenades
DOT class.....Class A explosive
DOT marking .....HAND GRENADES

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame, igniting the delay element. The delay element burns for 4 to 5 seconds, then sets off the detonator. The detonator explodes, thus initiating the explosive charge. The explosive charge explodes, rupturing the body and projecting fragments.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly 82-0-143
Fuzes:
- M204A1 82-1-87
- M204A2 7548570

Packing (inner) 76-1-1154
Packing (outer) 76-1-1266

CHAPTER 2

HAND GRENADES

Section II. SMOKE

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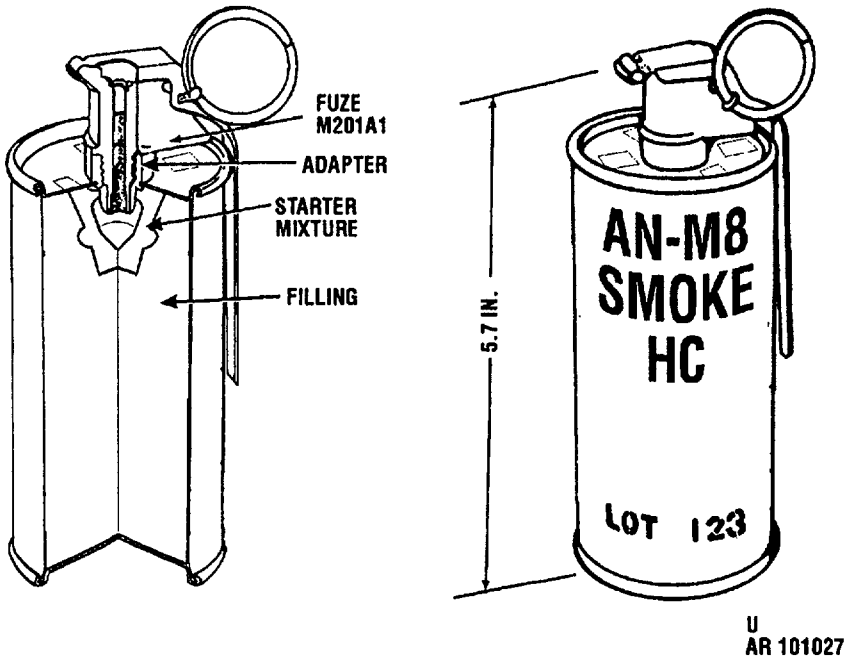
GRENADE, HAND: SMOKE, HC, AN-M8



Type Classification:

Std. LCC-A, AMCTC 3408

Use:

The HC Smoke Hand Grenade AN-M8 is a burning type grenade used to generate white smoke for screening activities of small units. It is also used for ground-to-air signaling.

Description:

The grenade body is a cylinder of thin sheet metal. It is filled with HC smoke mixture topped with a starter mixture directly under the fuze opening. The duration of smoke screen or signal is 105 to 150 seconds.

Hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mixture, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	AN-M8
Body	Sheet metal
Weight	24 oz
Length	5.7 in.
Diameter	2.5 in.
Color	Light green w/black markings
Packing	1 per container; 16 per packing box

Filler:

Type	HC (type C)
Weight	19 oz

Fuze:

Model(s)	M201A1
Type	Pyrotechnic delay-igniting
Primer	M39A1
Ignition mixture	Iron oxide, titanium, zirconium
Delay time	0.7-2 seconds
Weight	1.5 oz
Length	3.9 in.
Color (safety lever)	Gray or olive drab w/black markings
Packing	Not separately issued
Safety device	Pull ring and safety pin

Federal Supply Code

NSN 1330-00-219-8511
DODAC.....1330-G930
See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed .....1 per container; 16 per packing box

Packing Data:

Packing box:
Weight (with contents) .....41.0 lb
Dimensions .....14.0 in. x 14.0 in. x 8.0 in.
Cube .....0.90 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.3G
UNO serial number 0016
UNO proper shipping name .....Primers, cap type
DOT class.....Class C explosive
DOT marking .....SMOKE GRENADES, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The primer initiates the first fire mixture. The fuze delay element, ignition mixture, and grenade starter mixture and filler are initiated in turn by the preceding component. The pressure sensitive tape is blown off the emission holes and smoke is emitted for 105 to 150 seconds.

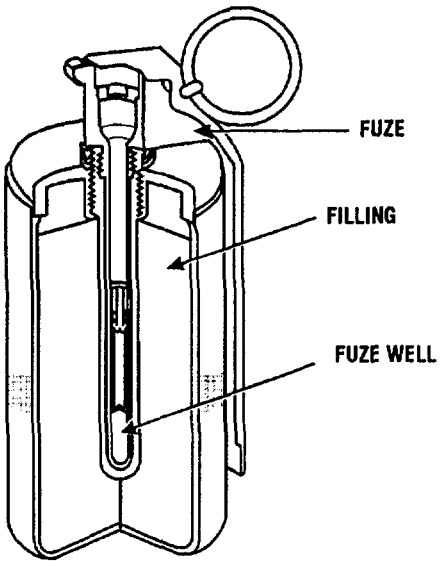
References:

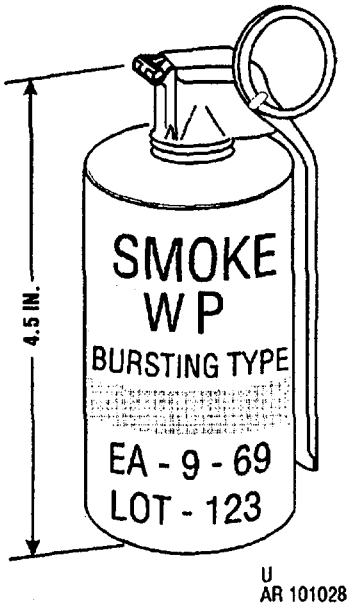
TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly 13-19-32
Fuze 13-10-22
Packing (inner) 13-9-44
Packing (outer) 13-19-83

GRENADE, HAND: SMOKE, WP, M15





Type Classification:

Obs. MSR 11756003

Use:

WP smoke hand grenade M15 is a bursting type grenade used for signaling, screening and incendiary purposes.

Description:

The grenade body is of sheet steel and is cylindrical in shape. The body has a fuze well liner and is filled with WP.

The screening effect of the smoke is limited because WP burns with such intense heat, the smoke tends to rise rapidly. Pieces of WP will burn for about 60 seconds, igniting any flammable substance contacted. The hand grenade M206A1 and M206A2 are pyrotechnic delay-detonating fuzes. They differ only in body construction. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, and a detonator assembly. The split end of the safety pin has an angular spread or a diamond crimp.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	M15
Body	Sheet metal
Weight	31 oz
Length (max)	4.5 in.
Diameter	2-3/8 in.
Color	Grey w/yellow band and yellow markings

Filler:

Type	WP
Weight	15 oz

Fuze:

Model(s)	M206A1, M206A2
Type	Pyrotechnic delay-detonating
Primer	M42
Detonator	Lead azide, lead styphnate, RDX
Delay time	4-5 seconds
Weight	2.6 oz
Length	4.3 in.
Color	Olive drab w/black markings
Packing	N/A
Safety device	Pull ring and safety pin

Federal Supply Code

NSN.....1330-00-219-8510
DODAC.....1330-G935

Unit of Issue:

Each grenade packed .....1 per container

Packing Data:

*Packing box:
Weight (with contents) .....46.0 lb
Dimensions .....14.0 in. x 12.5 in. x 8.0 in.
Cube .....0.80 cu ft

NOTE
See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Shipping and Storage Data:

Hazard class/division and storage compatibility group .....(04) 1.2H
UNO serial number 0245
UNO proper shipping name .....Ammunition, smoke, white phosphorus
DOT class.....Class A explosive
DOT marking .....HAND GRENADES

Functioning:

Removal of the safety pin permits release of the safety lever. When safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame, igniting the delay element. The delay element burns for 4 to 5 seconds, then sets off the detonator. The detonator explodes rupturing the body and exposing the WP filler to air. The WP will burn approximately 60 seconds.

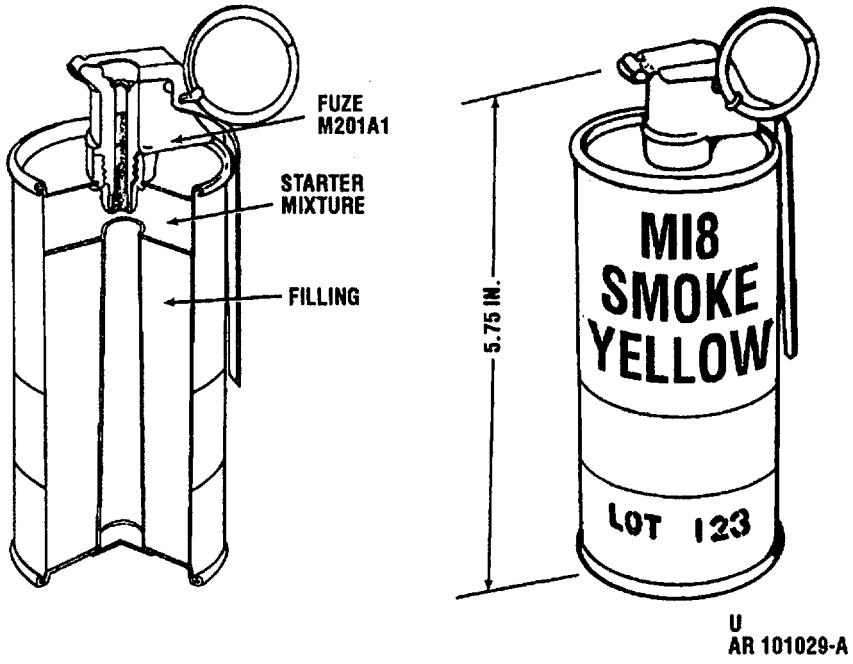
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

Drawings:

Assembly 13-19-18
Fuze (M206A1) 82-1-104
Fuze (M206A2) 7548570
Packing (inner).....13-9-44
Packing (outer).....13-9-96

GRENADE, HAND: SMOKE, M18



Type Classification:

Std. LCC-A, AMCTC 3450

Use:

Colored Smoke Hand Grenade M18 is used for ground-to-air or ground-to-ground signaling.

Description:

The grenades may be filled with any one of four smoke colors: red, green, yellow or violet. Each grenade will emit smoke for 50 to 90 seconds. The grenade body is of thin sheet metal and is filled with red, green, yellow or violet smoke composition. The filler is topped with a starter mixture.

The hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mixture, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever, and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	M18
Body	Sheet metal
Weight	19 oz
Length	5.75 in.
Diameter	2.5 in.
Color	Light green w/black markings
Packing	1 per container; 16 per packing box.

Filler:

Type	Smoke composition
Weight	11-1/2 oz

Fuze:

Model(s)	M201A1
Type	Pyrotechnic delay-igniting
Primer	M39A1
Ignition mixture	Iron oxide, titanium, zirconium
Delay time	0.7-2 seconds
Weight	1.5 oz
Length	3.9 in.
Color	Gray or olive drab w/ black markings
Packing	Not separately issued
Safety device	Pull ring and safety pin

Federal Supply Code

DODACs:
- Red 1330-G950
- Green 1330-G940
- Yellow.....1330-G945
- Violet 1330-G955

Unit of Issue:

Each grenade packed .....1 per container; 16 per packing box.

Packing Data:

*Packing:
- Weight (with contents) .....34.0 lb
- Dimensions .....15.5 in. x 14.0 in. x 9.0 in.
- Cube .....1.1 cu ft

NOTE
See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.4G
UNO serial number 0303
UNO proper shipping name .....Ammunition, smoke
DOT class.....Class C explosive
DOT marking .....SMOKE GRENADES, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The primer initiates the first fire mixture. The fuze delay element, ignition mixture, and grenade starter mixture and filler are initiated in turn by the preceding component. The pressure sensitive tape is blown off the emission holes and the colored smoke emits from these holes.

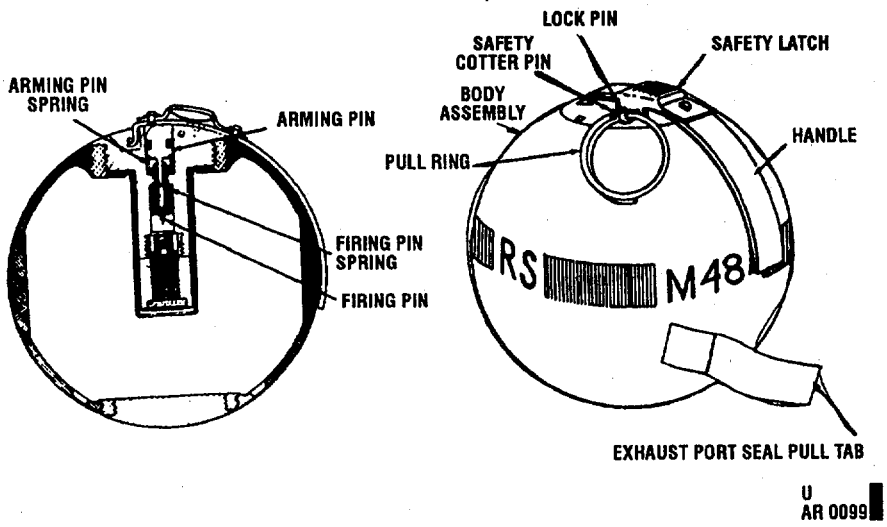
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

Drawings:

Assembly 13-19-37
Fuze.....13-10-22
Packing (inner).....13-9-44
Packing (outer).....13-19-83

GRENADE, HAND: SMOKE, RED, M48



Type Classification:

Std. LCC-A, MSR 08746046

Use:

The M48 grenade is a special-purpose, burning-type munition used for training. This grenade is a nonlethal-type munition that contains red smoke mixture.

Description:

The M48 grenade consists of rubber body assembly, an XM227E1 fuze, and a filling of RS red smoke mixture. The grenade weighs 390 grams (approximately 1 lb), and is 3-1/2 inches in diameter. The grey grenade body is made of two rubber hemispheres vulcanized together. The top half of the grenade contains the fuze, and the bottom half of the grenade contains the filling hole and the exhaust port. The grenade is filled with approximately 165 grams of RS mixture.

Tabulated Data:

Grenade (with fuze):
- Model M48
- Body ..... Spherical rubber casting
- Weight ..... 390 grams
- Diameter ..... 3.5 in.
- Color ..... Light green w/black band and black markings
- Packing ..... 20 per box

Filler:
- Type ..... Red smoke mixture RS
- Weight ..... Approximately 165 grams
- Burning time ..... 5 - 25 seconds

Fuze:
- Model M227
- Type ..... Pyrotechnic time delay-detonating
- Primer ..... 0.11 gram of lead styphnate, antimony sulfide, tetracene and barium nitrate
- Starter mixture ..... 0.35 gram of silicon, red lead, and titanium in a nitrocellulose acetone binder
- Delay charge ..... 1.6 grams of silicon, red lead, and dialomaceous earth in a nitrocellulose acetone binder

Ignition mix ..... 0.3 gram of iron oxide, titanium, and zirconium in a nitrocellulose acetone binder
Delay time ..... 2.5-3.5 seconds
Weight ..... NA
Length ..... NA
Color (safety lever) ..... NA
Safety device ..... Safety pin and safety latch

Federal Supply Code

NSN 1330-00-477-6719
DODAC 1330-G932

Unit of Issue:

Each grenade packed ..... 20 per box

Packing Data:

*Packing box:
Box of 20. ..... Pallet (33 boxes)
Length ..... 50 in.
Width ..... 48 in.
Depth ..... 52 in.
Weight ..... 1200 lb

NOTE

See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Shipping and Storage Data:

Hazard class division and storage compatibility group 1.4G
UNO serial number 0303
UNO proper shipping name ..... Ammunition, smoke
DOT class ..... Class C explosive
DOT marking ..... SMOKE GRENADES, HANDLE CARFULLY - KEEP FIRE AWAY

Functioning:

First, the tape over the emission port will be removed. The safety pin will be pulled and then the safety latch is slid into the armed position. The arming handle is then free to separate from the grenade body. The firing pin initiates a primer which in turn initiates a starting mixture. The starting mixture initiates the delay charge which lights the ignition mix. The built-up pressure forces the RS mixture through the emission port dispersing the agent.

References:

TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

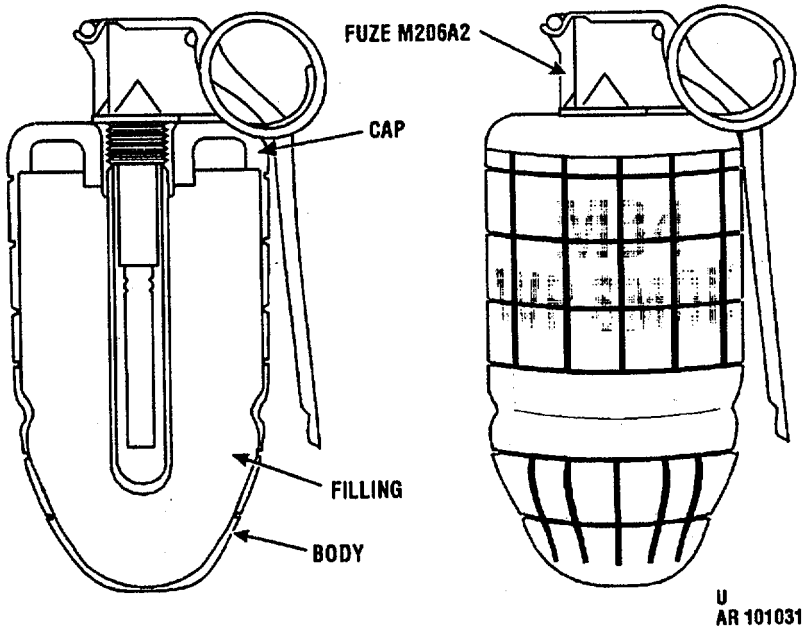
Drawings:

Assembly D13-25-71
Fuze D13-10-40
Packing D13-25-75

Remarks:

The M48 red smoke grenade is used as the training aid for the M47 grenade.

GRENADE, HAND-RIFLE: SMOKE, WP, M34



Type Classification:

Obs. MSR 11756003

Use:

The M34 grenade is used for signaling, screening, and incendiary purposes. It may be thrown by hand or launched from a rifle, using the M1A1 or M1A2 grenade projection adapter.

Description:

The M34 grenade body is of serrated steel and is cylindrical in shape. The body has a fuze well liner and is filled with WP.

The M34 hand-rifle grenade has a safety pin which must be removed, and a safety lever which is released to cause the grenade to function. Newer models also contain a safety clip to keep the safety lever in place, should the safety pin be unintentionally removed from the grenade.

The M34 hand-rifle grenade uses the M206A2 fuze. It is a pyrotechnic delay detonating fuze. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, spring, safety lever, safety pin with pull ring, and a detonator assembly. The split end of the safety pin has an angular spread or diamond crimp.

Tabulated Data:

Grenade (with fuze):

Model	M34
Body	Steel
Weight	24 oz
Length	5.2 in.
Diameter	2.375 in.
Color	Light green w/1 yellow band; light red markings
Packing	1 per can; 16 cans per packing box

Filler:

Type	WP
eight	15 oz

Fuze:

Model	M206A2
Type	Pyrotechnic delay detonating
Primer	M42
Detonator	Lead azide, lead styphnate, and RDX
Delay time	4-5 seconds
Weight	2.6 oz
Length	4.3 in.
Color (safety lever)	Olive drab w/black markings
Safety device	Pull ring and safety pin; safety clip (newer models only)
Packing	Not separately issued

Federal Supply Code:

DODAC 1330-G937

Unit of Issue:

Each grenade packed ..... 1 per can; 16 cans packing box

Packing Data:

*Packing box:
Weight (with contents)..... 42.0 lb
Dimensions..... 14-5/8 in. x 3-18 in. x 9-1/8 in.
Cube..... 0.7 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Shipping and Storage Data:

Hazard class/division and storage compatibility group ..... (04) 1.2H
UNO serial number 0245
UNO proper shipping name ..... Ammunition, smoke, white phosphorus
DOT class ..... Class A explosive
DOT marking ..... HAND GRENADES

Functioning:

Release of the safety clip (on newer models only) and removal of the safety pin permit release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame which ignites the delay element. The delay element burns for 4 to 5 seconds, then sets off the detonator. The detonator explodes, rupturing the body and exposing the WP filler to the air. The WP will burn for approximately 60 seconds.

NOTE

When provided without a safety clip, the functioning is the same as above except for release of the safety clip.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

Drawings:

Assembly and marking..... 13-7-4
Packaging assembly 13-9-98
Inert components 13-7-11

CHAPTER 2

HAND GRENADES

Section III. INCENDIARY

2-33

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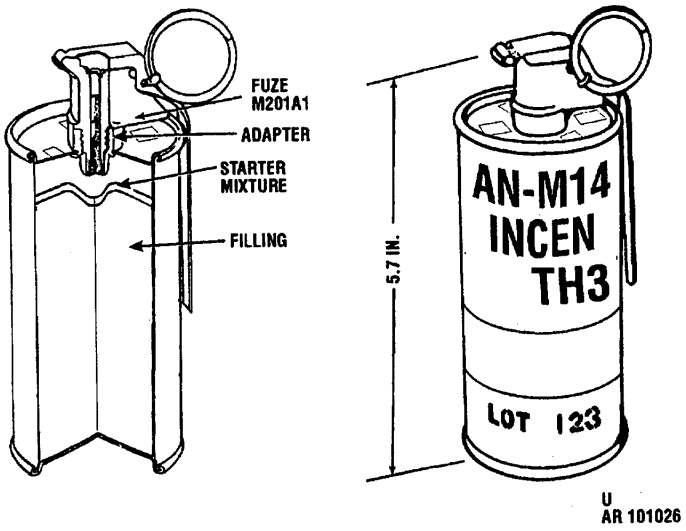
GRENADE, HAND: INCENDIARY, TH3, AN-M14



Type Classification:

STD. LCC-A, AMCTC 3408

Use:

The TH3 incendiary hand grenade AN-M14 is used primarily to provide a source for intense heat to destroy equipment.

Description:

The TH3 incendiary hand grenade generates heat to 4000°F. The grenade filler will burn from 30 to 45 seconds. The grenade body is of thin sheet metal and is cylindrical in shape. It is filled with an incendiary mixture, Thermite TH3 and First-Fire Mixture VII.

Hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer first-fire mixture. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):	
Model(s)	AN-M14
Body	Sheet metal
Weight	32 oz
Length	5.7 in.
Diameter	2.5 in.
Color	Light red w/black markings
Filler:	
Type	Igniter mixture III, delay mixture V, FF mixture VII, incendiary mixture, Thermite, TH3 and thermite, plain
Weight	26-1/2 oz
Fuze:	
Model(s)	M201A1
Type	Pyrotechnic delay-igniting
Primer	M39A1
Ignition mixture	Iron oxide, titanium, zirconium
Delay time	0.7-2 seconds
Weight	1.5 oz
Length	3.9 in.
Color	Gray or olive drab w/black markings
Packing	Not separately issued
Safety device	Pull ring and safety pin

Federal Supply Code:

NSN 1330-00-219-8557
DODAC 1330-G900

Unit of Issue:

Each grenade packed ..... 1 per fiber container; 16 per packing box

Packing Data:

*Packing box:
Weight (with contents) ..... 47 lb
Dimensions ..... 14.0 in. x 12.5 in. x 8.0 in.
Cube ..... 0.80 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.3G
UNO serial number 0010
UNO proper shipping name ..... Ammunition, incendiary
DOT class ..... Class B explosive
DOT marking ..... SPECIAL FIREWORKS - HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The primer initiates the first fire mixture. The fuze delay element, ignition mixture, and grenade starter mixture and filler are initiated in turn by the preceding component.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly 13-17-3
Fuze 13-10-22
Packing (inner) 13-9-98
Packing (outer) 13-17-30

CHAPTER 2

HAND GRENADES

Section IV. OFFENSIVE

2-37

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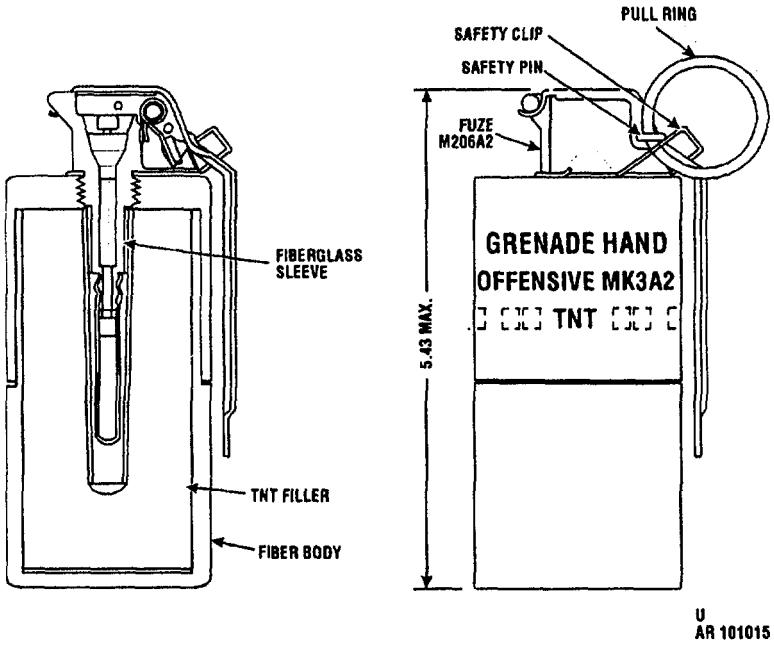
GRENADE, HAND: OFFENSIVE, MK3A2



Type Classification:

Obs. MSR 11756003

Use:

An offensive hand grenade similar to hand grenade used for blast effect or demolition purposes.

Description:

Hand grenade MK32A2 is about the same size as the fragmentation hand grenade, but has a cylindrical body made of pressed fiber.

The shape of the fuze safety lever is slightly different from that of a fragmentation grenade and conforms to the shape of the body of the grenade. The MK3A2 may be issued fuzed with or without safety clips, or unfuzed. The grenade body is a cylinder made of pressed fiber and contains high explosive TNT.

Hand grenade fuzes M206A1 or M206A2 are pyrotechnic delay detonating fuzes. They differ only in body construction. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, spring, safety lever, safety pin with pull ring, and a detonator assembly. The split end of the safety pin has an angular spread or diamond crimp.

NOTE

This grenade is furnished with or without a safety clip.

The hand grenade safety clip is designed to keep the safety lever in place, should the safety pin be unintentionally removed from the grenade. It is an additional safety device used in conjunction with the safety pin.

Safety clips, of spring steel wire, consist of a loop, which fits around the threaded section of the fuze, and a clamp, which fits over the safety lever. Because the loop fits around the threaded section of the fuze, the clip must be assembled to the grenade when the fuze is assembled to the grenade.

Tabulated Data:

Grenade (with fuze):

Model(s)	MK3A2
Body	Asphalt-impregnated fiber
Weight	15.6 oz
Length (max)	5.275 in.
Color	Black w/yellow markings

Explosive Filler:

Type	TNT (flaked)
Weight	8 oz

Fuze:

Model	M206A2
Type	Pyrotechnic delay-detonating
Primer	M42
Detonator	Lead azide, lead styphnate, and RDX
Delay time	4-5 seconds
Weight	2.6 oz
Length	4.3 in.
Color	Olive drab w/black markings
*Safety device(s)	Pull ring and safety pin (fuzed grenades). Pull ring and safety pin and safety clip (fuzed grenades).

*NOTE: Unfuzed grenades have no safety devices.

Federal Supply Code:

Grenade Assembly:

NSN	1330-00-143-6807
DODAC	1330-G911

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each packed	1 per carton; 20 cartons per wooden box.

Fuze Packing Data:

Packed	25 per cartons; 8 cartons per wooden box.

Packing box:

Weight (w/contents)	65.8 lb
Dimensions	17-5/8 in. x 13-1/4 in. x 8-1/2 in.
Cube	2.74 cu ft

Grenade Packing Data:

Packing box:

Weight (w/contents)	45.1 lb
Dimensions	17-5/8 in. x 13-1/4 in. x 8-1/2 in.
Cube	1.06 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group	1.1F
UNO serial number	0292
UNO proper shipping name	Grenades
DOT class	Class A explosive
DOT marking	HAND GRENADES

Functioning:

Release of the safety clip and removal of the safety pin permit release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame, igniting the delay element. The delay element burns 4 to 5 seconds, then sets off the detonator. The detonator explodes, thus initiating the explosive charge. When the filler detonates the force of the explosion is dissipated mainly in the form of shock waves rather than high velocity.

NOTE

When provided without a safety clip, the functioning is the same as above except for release of the safety clip.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM-23
DOD Consolidated Ammo Catalog

Drawings:

Assembly drawing	9215459
Fuze M206A2	7548570
Packing:	
Inner	9215731
Outer	9215732

CHAPTER 2

HAND GRENADES

Section V. RIOT CONTROL

2-41

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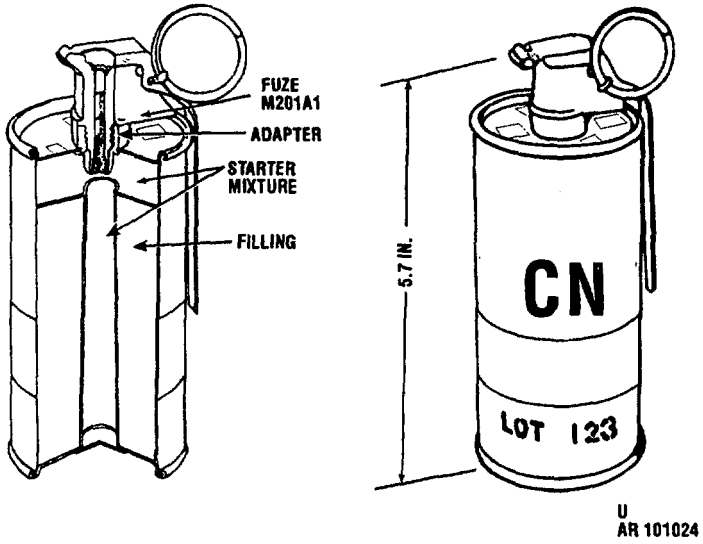
GRENADE, HAND: RIOT, CN, M7 AND M7A1



Type Classification:

Obs. MSR 08746046 (M7)
Obs. MSR 08746046 (M7A1)

Use:

The M7 and M7A1 are used to control counterinsurgencies and for other tactical missions. They also may be used to simulate casualty agents during training.

Description:

Grenade M7 and Grenade M7A1 are burning type riot control agent grenades. CN has a powerful lachrymal effect and is irritating to the upper respiratory passages. In higher concentrations it is irritating to the skin, causing a burning and itching sensation. The onset of incapacitation is 15 to 30 seconds and duration from 5 to 20 minutes depending upon dosage concentration.

The grenade bodies of these grenades are of thin sheet metal and are cylindrical in shape. The filling is compressed into the grenade body, a tapered hole being formed through the body of the filling. The top surface of the filling and the tapered walls of the hole are coated with starter mixture (to aid ignition of the fuel by the fuze).

Hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mixture, pyrotechnic delay column and igniter mixture. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Difference Between Models:

The M7 and M7A1 have different filler weights, location and number of emission holes.

M7 18 holes in side.
M7A1 - 4 holes in top. 1 hole in bottom.

Tabulated Data:

Grenade (with fuze):

Model(s)	M7, M7A1
Body	Sheet metal
Weight (M7)	17 oz; (M7A1) 18-1/2 oz
Length	5.7 in.
Diameter	2.5 in.
Color	Gray w/1 red band and red markings
Packing	1 per container; 16 per packing box

Filler:

Type	CN - Pyrotechnic composition
Weight	(M7) 10-1/4 oz; (M7A1) 12-1/2 oz

Fuze:

Model(s)	M201A1
Type	Pyrotechnic delay igniting
Primer	M39A1

Ignition mixture	Iron oxide, titanium, zirconium
Delay time	0.7-2 seconds
Weight	1.5 oz
Length	3.9 in.
Color	Gray or olive drab w/black markings
Packing	Not issued separately
Safety device	Pull ring and safety pin

Federal Supply Code:

NSN	1330-00-219-8577
DODAC	1330-G960

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed	1 per container; 16 per packing box.

Packing Data:

Packing box:

Weight (with contents)	35.0 lb
Dimensions	14 in. x 12.5 in. x 8.0 in.
Cube	0.80 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group	1.4 G
UNO serial number	0301
UNO proper shipping name	Ammunition, tear producing
DOT class	Irritating material
DOT marking	GRENADE, TEAR GAS

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The fuze delay element, ignition mixture, and grenade starter mixture and filler are initiated in turn by the preceding component. The pressure sensitive tape is blown off the emission holes and the CN agent is emitted for 15 to 30 seconds.

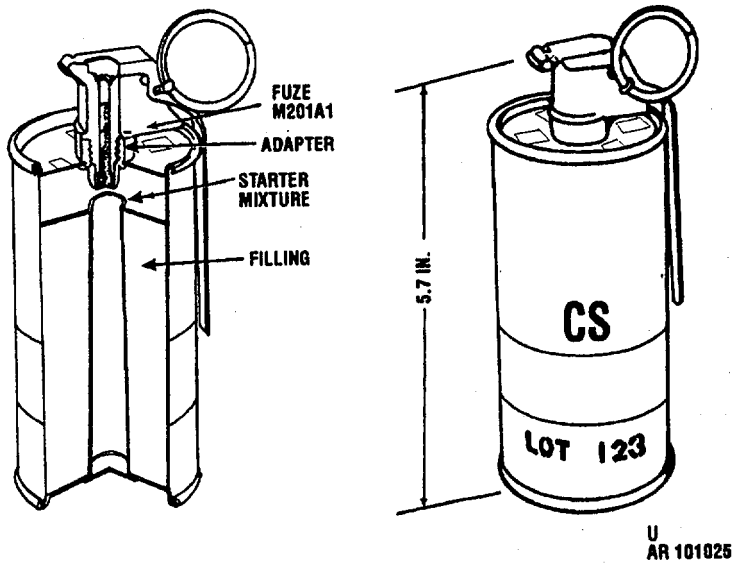
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammunition Catalog

Drawings:

Assembly	M7	13-21-3
	M7A1	13-21-7
Fuze		13-10-22
Packing (inner)	M7	13-9-102
	M7A1	13-9-44
Packing (outer)	M7	13-9-89
	M7A1	13-9-96

GRENADE, HAND: RIOT, CS, M73A



Type Classification:

Std. LCC-A MSR 08746046

Use:

The M7A3 grenade is used to control counterinsurgencies and for other tactical missions. It is a burning type riot control grenade and may be used to simulate casualty agents during training.

Description:

The M7A3 is a CS filled burning type grenade. CS has a powerful lachrymal effect and is irritating to the upper respiratory passages causing coughing, difficulty in breathing and chest tightness. Heavy concentrations will cause nausea and vomiting as well. The onset of incapacitation and vomiting as well. The onset of incapacitation is 15 to 30 seconds and duration is less than 10 minutes after personnel are removed to fresh air.

The grenade body is a cylinder of thin sheet metal. The filler is compressed into the grenade body with a starter mix.

Hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mixture pyrotechnic delay column and ignition mixture. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	M7A3
Body	Sheet metal
Weight	15-1/2 oz
Length (max)	5.7 in.
Diameter	2.5 in.
Color	Gray w/l red band; red markings
Packing	1 per container; 16 per packing box

Filler:

Type	CS
Weight	7.35 oz burning mixture and 4.5 oz pelletized CS agent

Fuze:

Model(s)	M201A1
Type	Pyrotechnic delay-igniting
Primer	M39A1
Ignition mixture	Iron oxide, titanium, zirconium
Delay time	0.7 - 2 seconds
Weight	1.5 oz
Length	3.9 in.
Color	Gray or olive drab, w/black markings
Packing	Not issued separately
Safety device	Pull ring and safety pin

Federal Supply Code:

NSN 1330-00-965-0802
DODAC 1330-G963

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed..... 1 per fiber container; 15 per wooden box

Packing Data:

Packing box:
- Weight (with contents) ..... 30.0 lb
- Dimensions..... 14.0 in. x 14.0 in. x 8.0 in.
- Cube ..... 0.90 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.4G
UNO serial number 0301
UNO proper shipping name ..... Ammunition, tear producing
DOT class ..... Irritating material
DOT marking ..... GRENADE, TEAR GAS

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The primer initiates the first-fire mixture. The fuze delay element, ignition mixture, and grenades starter mixture and filler are initiated in turn by the preceding components. The pressure sensitive tape is blown off the emission holes and CS agent is emitted for 15 to 35 seconds.

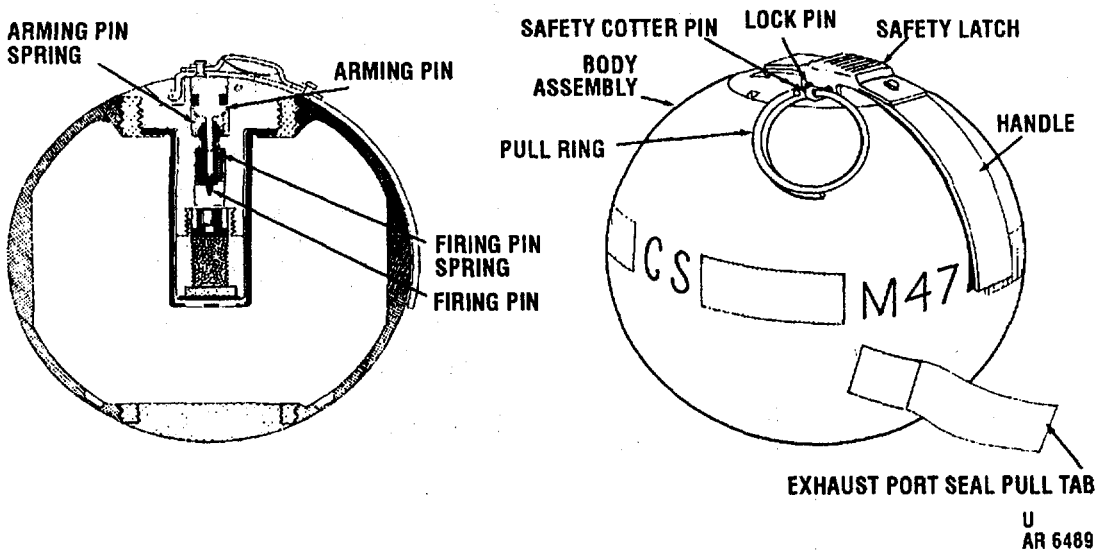
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly 13-22-35
Fuze 13-10-22
Packing (inner) 13-9-44
Packing (outer) 13-22-46

GRENADE, HAND: RIOT, CS, M47



Type Classification:

Std. LCC-A, MSR 08746046

Use:

The M47 grenade is a special-purpose, burning-type munition used for control of riots and counterinsurgencies. This grenade is a nonlethal, incapacitating-type munition that contains nonpersistent CS agent.

Description:

The M47 grenade consists of rubber body assembly, an M227 fuze, and a filling of CS pyrotechnic mixture. The grenade weighs 410 grams (approximately 1 lb), and is 3-1/2 inches in diameter. The grey grenade body is made of two rubber hemispheres vulcanized together. The top half of the grenade contains the fuze, and the bottom half contains the filling hole and the exhaust port. The grenade is filled with approximately 185 grams of CS pyrotechnic granulated mix.

Tabulated Data:

Grenade (with fuze):

Model	M47
Body	Spherical rubber casting
Weight	410 grams
Diameter	3.5 in.
Color	Gray w/red band and red markings
Packing	20 per box

Filler:

Type	CS pyrotechnic mix
Weight	Approximately 155 grams
Burning time	5 - 25 seconds

Fuze:

Model	M227
Type	Pyrotechnic time delay-detonating
Primer	0.11 gram of lead styphnate, antimony sulfide, tetracene and barium nitrate
Starter mixture	0.35 gram of silicon, red lead, and titanium in a nitrocellulose acetone binder
Delay charge	1.6 grams of silicon, red lead, and dialomaceous earth in a nitrocellulose acetone binder
Ignition mix	0.3 gram of iron oxide, titanium, and zirconium in a nitrocellulose acetone binder
Delay time	2.5 - 3.5 seconds
Weight	N/A
Length	N/A
Color (safety lever)	N/A
Safety device	Safety pin and safety latch

Federal Supply Code:

NSN 1330-00-143-7146
DODAC 1330-G922

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed ..... 20 per box

Packing Data:

Packing box:
- Box of 20 ..... Pallet (33 boxes)
- Length ..... 50 in.
- Width ..... 48 in.
- Depth ..... 52 in.
- Weight ..... 1200 lb

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.4G
UNO serial number 0301
UNO proper shipping name ..... Ammunition, tear producing
DOT class ..... Irritating material
DOT marking ..... GRENADE, TEAR GAS

Functioning:

First the tape over the emission port will be removed. The safety pin will be pulled and then the safety latch is slid into the armed position. The arming handle is then free to separate from the grenade body. The firing pin initiates a primer which in turn initiates the delay charge which lights the ignition mix. The builtup pressure forces the CS mixtures through the emission port dispersing the agent.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

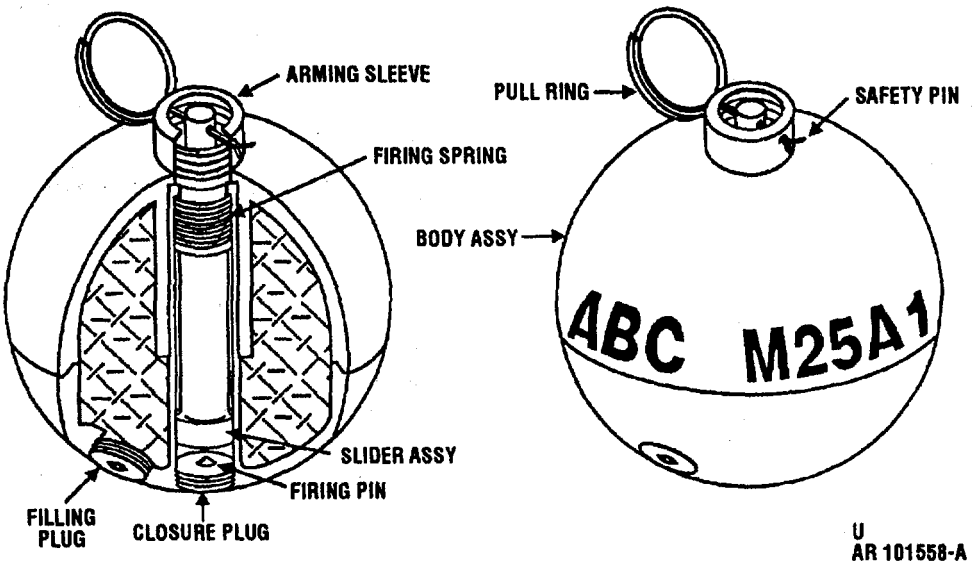
Drawings:

Assembly D13-25-70
Fuze D13-10-40
Packing D13-25-75

Remarks:

The M48 red smoke grenade is used as the training aid for the M47 grenade.

GRENADE, HAND: RIOT, CN1, ABC-M25A1



Type Classification:

Obs. MSR 08746046

Use:

The CN1 Hand Grenade Riot ABC-M25A1 is a bursting type grenade used for riot control and to simulate casualty agents during training.

Description:

The grenade body is spherical. It is made of two plastic hemispheres cemented together. The two pieces together form a burster well and slider housing.

The fuze is a pyrotechnic delay-detonating type integral with the grenade body. The fuzing components consist of an arming sleeve, firing spring, slider assembly, and firing pin. The slider assembly contains a primer, pyrotechnic delay column, and a detonator. The grenade is assembled with a safety pin and pull ring.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):
- Model ABC-M25A1
- Body ..... Plastic hemispheres (2)
- Weight ..... 7.5 oz
- Length (max) ..... 3.4 in.
- Diameter ..... 2.93 in.
- Color ..... Gray w/red band and red markings

Filler:
- Type CN1
- Weight ..... 3.2 oz

Fuze:
- Model(s) ..... Integral
- Type ..... Pyrotechnic delay-detonating
- Primer ..... 2926a (Olin)
- Detonator Lead azide, lead styphnate and tetryl
- Delay time ..... 1.4 - 3 seconds
- Weight ..... N/A
- Length ..... N/A
- Color ..... (safety lever)- N/A Packing N/A
- Safety device ..... Pull ring and safety pin

Federal Supply Code:

NSN 8140-00-345-9022
DODAC 1330-G927

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed ..... 1 per container; 50 per packing box

Packing Data:

Packing box:
- Weight (w/contents) ..... 50.0 lb
- Dimensions ..... 20-7/8 in. x 18-7/8 in. x 8-3/4 in.
- Cube ..... 1.80 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.4G
UNO serial number 0301
UNO proper shipping name ..... Ammunition, tear producing
DOT class ..... Irritating material
DOT marking ..... GRENADE, TEAR GAS

Functioning:

The safety pin locks the arming sleeve to the grenade body through the slider assembly. It also retains the arming pin in a horizontal position. When the safety pin is removed, the arming sleeve is free to separate from the grenade body. The slider assembly is released and is driven against the firing pin. The firing pin initiates a primer in the end of the slider. The primer initiates the delay column which, in turn, initiates the detonator. The detonator shatters the grenade body, dispersing the agent.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

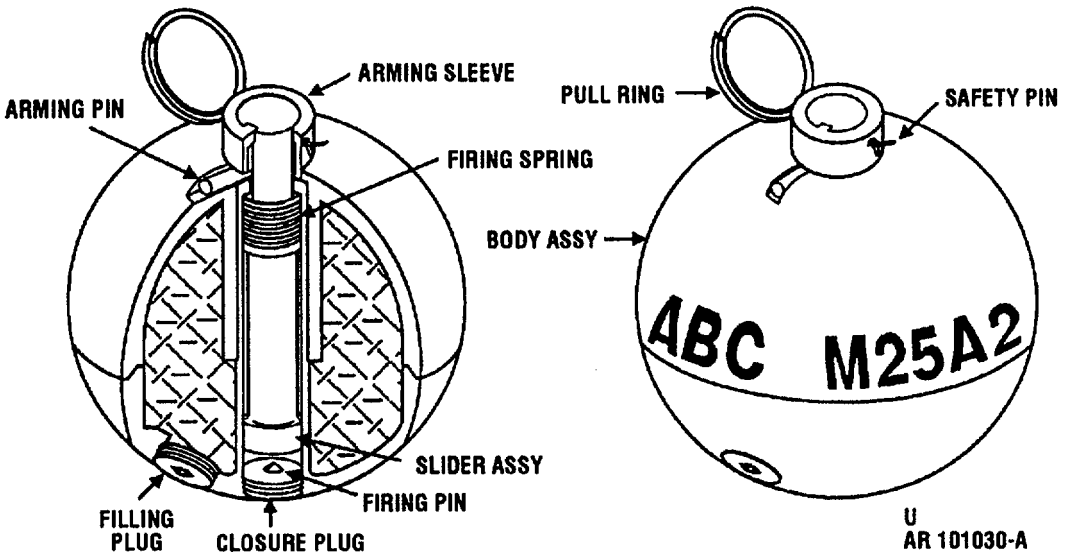
Drawings:

Assembly M25A1 13-25-27
Packing (inner) (M25A1) 13-9-103
Packing (outer) (M25A1) 13-9-89

Remarks:

The CN1 produces a powerful lachrymal effect and is irritating to the upper respiratory passages. In higher concentrations, it is irritating to the skin, causing a burning and itching sensation. The onset of incapacitation is from 15 to 30 seconds and the duration from 5 to 20 minutes depending upon dosage concentration.

GRENADE, HAND: RIOT, CS1, ABC-M25A2



Type Classification:

Obs. MSR 0874606

Use:

Hand grenade riot CS1, ABC-M25A2 is a bursting-type riot control agent grenade and may be used to simulate casualty agents during training.

Description:

Hand grenade riot CS1, ABC-M25A2 has a powerful lachrymal effect and is irritating to the upper respiratory passages, causing coughing, difficulty in breathing and chest tightness. Heavy concentrations will cause nausea and vomiting as well. The onset of incapacitation is 15 to 30 seconds and duration from 30 minutes to several hours depending upon the dosage concentration. CS is more persistent and has a more severe reaction than CN.

The grenade body is spherical. It is made of two plastic hemispheres cemented together. The two pieces together form a burster well and slider housing.

The fuze is a pyrotechnic delay-detonating type integral with the grenade body. The fuzing components consist of an arming sleeve, arming pin, firing spring, slider assembly, and firing pin. The slider assembly contains a primer, pyrotechnic delay column, and a detonator. The grenade is assembled with a safety pin and pull ring.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	ABC-M25A2
Body	Plastic hemi-spheres (2)
Weight	8 oz
Length (max)	3.4 in.
Diameter	2.93 in.
Color	Gray w/red band and red markings
Packing	1 per can; 50 per packing box

Filler:

Type	CS-1, CN-1, DM-1 eight (approx) 2 oz

Fuze:

Model(s)	Integral
Type	Pyrotechnic delay-detonating
Primer	2926a (Olin)
Detonator	Lead azide, lead styphanate and tetryl
Delay time	1.4 - 3 seconds
Weight	N/A
Length	N/A
Color (safety lever)	N/A
Safety device	Pull ring and safety pin

Federal Supply Code:

NSN 1330-00-645-6211
DODAC 1330-G924

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed..... 1 per can; 50 per packing box

Packing Data:

Packing box:
Weight (with contents) ..... 50.0 lb
Dimensions ..... 20-7/8 in. x 18-7/8 in. x 8-3/4 in.
Cube 1.80 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.4G
UNO serial number 0301
UNO proper shipping name ..... Ammunition, tear producing
DOT class ..... Irritating material
DOT marking ..... GRENADE, TEAR GAS

Functioning:

The safety pin locks the arming sleeve to the grenade body through the slider assembly. It also retains the arming pin in a horizontal position. When the safety pin is removed, the arming sleeve is free to separate from the grenade body. The slider assembly is released and is driven against the firing pin. The firing pin initiates a primer in the end of the slider. The primer initiates the delay column which, in turn, initiates the detonator. The detonator shatters the grenade body, dispersing the agent.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

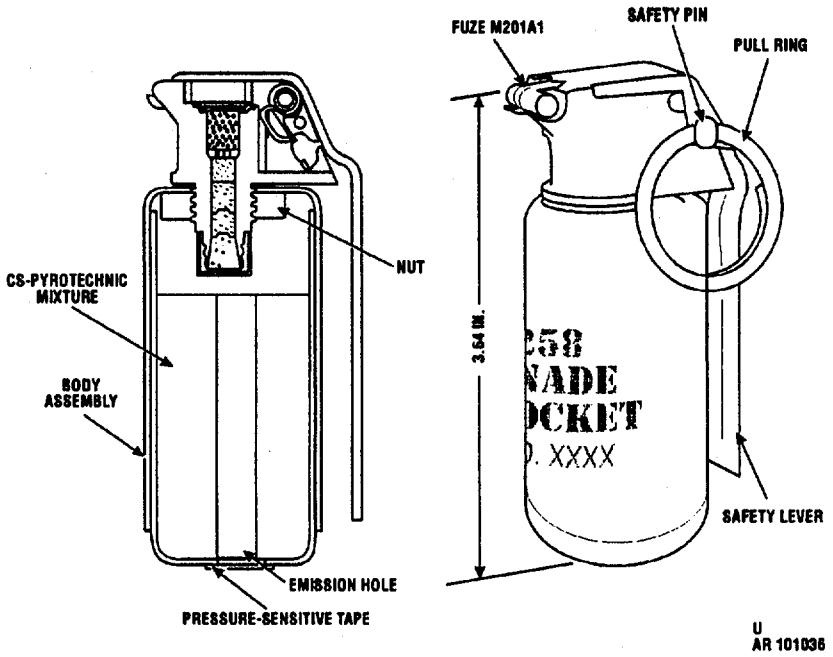
Drawings:

Assembly 13-25-55
Fuze ..... Integral with grenade assembly
Packing (inner) ..... 13-9-103 and 13-9-90
Packing (outer) 13-9-89

Remarks:

Grenade CS1, ABC-M25A2 is similar to Grenade CN1, ABC-M25A2.

GRENADE, HAND: RIOT, POCKET, CS, M58



Type Classification:

Obs. MSR 08746046

Use:

CS pocket riot hand grenade M58 is burning type riot control agent grenade and may be used to simulate casualty agents during training.

Description:

The body is a thin-walled, two piece aluminum cylinder. It contains a CS-pyrotechnic composition. There is a hole in the base of the body which is used for agent emission after functioning.

Hand grenade M201A1E1 fuze is similar to the fuze, M201A1. Hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, fire mixture, pyrotechnic delay column and ignition mixture. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	M58
Body	Aluminum
Weight (approx)	4 oz
Length (max)	3.26 in.
Diameter	1.31 in.
Color	Gray w/red band and red markings
Packing	10 per fiberboard box; 10 per packing box

Filler:

Type	CS pyrotechnic composition
Weight	1.4 oz

Fuze:

Model(s)	M201A1E1
Type	Pyrotechnic delay-igniting
Primer	M39A1
Igniter mixture	Iron oxide, titanium, and zirconium
Delay time	0.7 - 2 seconds
Weight	1.5 oz
Length	3 in.
Color	Olive drab w/black markings
Safety device	Pull ring and safety pin

Federal Supply Code:

NSN 1330-00-143-7003
DODAC 1330-G933

Unit of Issue:

Each grenade packed ..... 10 per fiberboard box; 10 per packing box

Packing Data:

*Packing box:
Weight (w/contents) ..... 45.0 lb
Dimensions ..... 26.15 in. x 12.75 in.
Cube ..... 2.4 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSNs.

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.4G
UNO serial number 0301
UNO proper shipping name ..... Ammunition, tear producing
DOT class ..... Irritating material
DOT marking ..... GRENADE, TEAR GAS

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The primer initiates the first-fire mixture. The fire train, fuze delay element, ignition mixture, grenade starter mixture and filler are initiated in turn by the preceding component. The pressure sensitive tape is blown off the emission holes and CS agent is emitted for 8 to 28 seconds.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

Drawings:

Assembly 13-21-16
Fuze 13-21-23
Packing (inner) 13-9-44
Packing (outer)..... 13-9-96

Remarks:

CS has a powerful lachrymal effect and is irritating to the upper respiratory passages, causing coughing, difficulty in breathing and chest tightness. Heavy concentrations will cause nausea and vomiting as well. The onset of incapacitation is 15 to 30 seconds and duration is less than 10 minutes after personnel is removed to fresh air. CS is more persistent and has a more severe reaction than CN.

CHAPTER 2

HAND GRENADES

Section VI. ILLUMINATING

2-55

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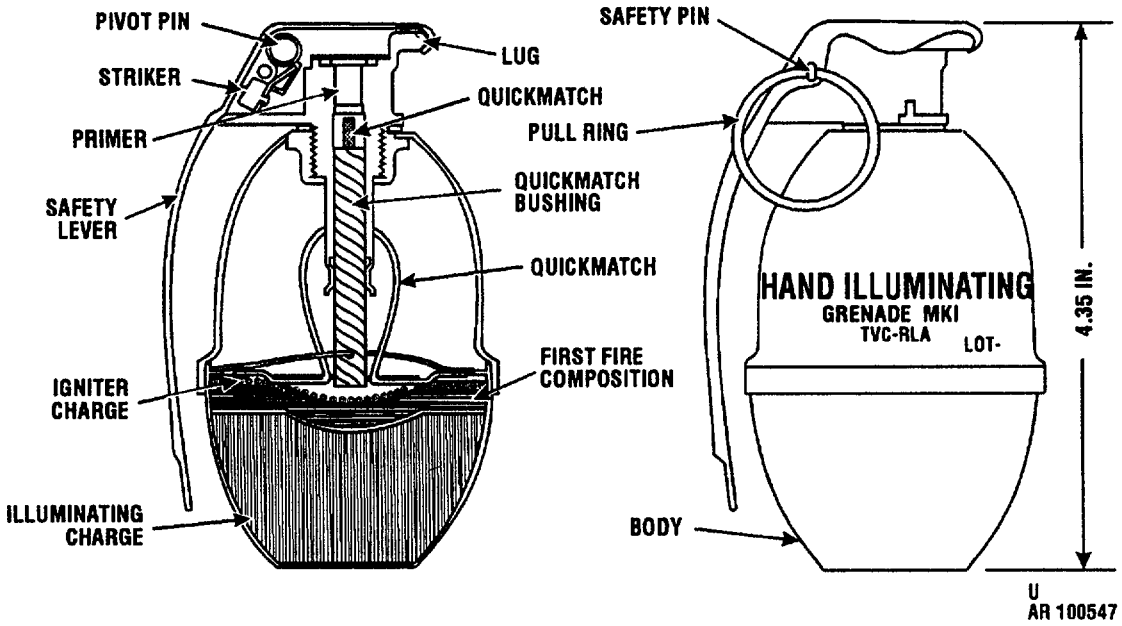
GRENADE, HAND: ILLUMINATING, MK1



Type Classification:

Obs.

Use:

Illuminating hand grenades are used primarily for illumination and signaling. Because of high temperature generated by the pyrotechnic illuminating composition, these grenades may be used for incendiary purposes against flammable targets.

Description:

In outward appearance, the illuminating hand grenade MK1 resembles fragmentation hand grenades of the M26 series. The grenade body is made in two pieces. The illuminating charge is pressed into the lower half of the body and covered with a lever of first-fire composition. This, in turn, is covered with an igniter charge.

The fuze is an integral part of the grenade. The body contains a primer and quick-match bushing. Assembled to the body of the fuze are a striker, striker spring, safety lever, and safety pin with pull ring. The split end of the safety pin has an angular spread.

The safety clips are not required with illuminating hand grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	MK1
Body	Thin-sheet steel
Weight	10 oz
Length (max)	4.35 in.
Diameter	2.19 in.
Color	All white or unpainted w/white band w/black markings
Packing	1 per fiber container; 25 containers per wooden box

Filler:

Type	Pyrotechnic composition
Weight	3.5 oz

Fuze:

Model(s)	Integral
Type	Pyrotechnic delay-igniting
Primer	Percussion
Igniter charge	Quickmatch
Delay time	7 seconds
Weight	N/A
Length	N/A
Color, safety lever	White or olive drab w/black markings
Packing	N/A
Safety device	Pull ring and safety pin

Federal Supply Code:

NSN 1330-00-309-5013
DODAC 1330-G895

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed..... 1 per fiber container; 25 containers per wooden box

Packing Data:

Packing box:
Weight (w/contents)- 51.0 lb
Dimensions 1..... 9-3/4 in. x 11-9/16 in. x 12-1/32 in.
Cube ..... 1.45 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.3G
UNO serial number 0245
UNO proper shipping name ..... Ammunition, smoke, white phosphorus
DOT class ..... Class B explosive
DOT marking ..... SPECIAL FIREWORKS, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer initiates the quick-match, which burns for seven seconds, and then ignites the igniter charge. The igniter charge ignites the first-fire composition which, in turn, ignites the illuminating charge. Gas pressure produced by burning of the illuminating composition causes the upper half of the grenade body to separate from the lower half. This exposes the burning illuminating charge. The grenade will burn for 25 seconds with approximately 55,000 candlepower and will illuminate an area of 200 meters (656 feet) in diameter.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly 344573
Fuze 344577

CHAPTER 2

HAND GRENADES

Section VII. NON-LETHAL

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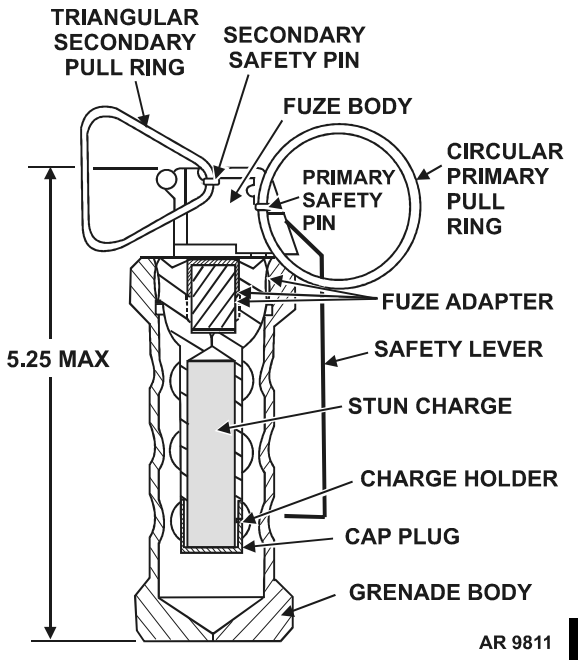
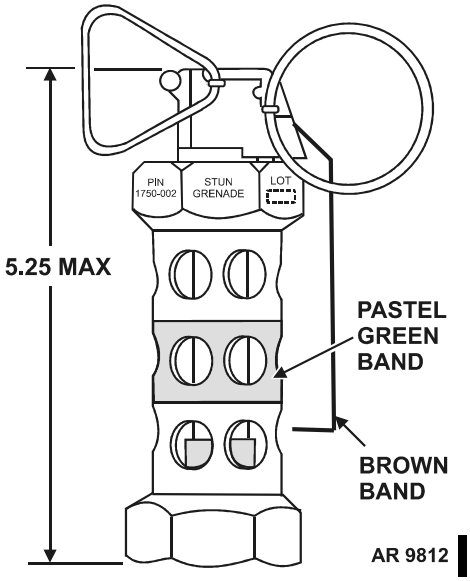
GRENADE, HAND: NON-LETHAL (STUN), M84





Type Classification:

Std. Dec 1998

Use:

The M84 Stun Grenade is a pyrotechnic device for diversionary purposes. The Stun Grenade is a low hazard, non-shrapnel producing explosive device which produces an intense light and sound display with a minimum amount of smoke. It is a one-time use item.

Description:

The M84 Stun Grenade is 5.25 inches in length and 1.73 inches at the corners of the hexagon location. The grenade design consists of a steel hexagon body and fuze adapter, fuze with primary and secondary safety pin assembly, a charge holder with a cap plug, the stun charge and epoxy sealant material. In addition, it consists of 12 vent holes, pastel green band around the middle of the body and a brown band on the tip end of the safety lever.

The charge assembly containing the stun charge is a stand-alone sealed assembly achieved by the application of epoxy material at the charge holder joint between the plug and the metal fuze adapter. The fuze is also sealed with epoxy at its thread location with the fuze adapter.

NOTE

The M84 Stun Grenade comes assembled with the fuze. The fuze has a primary safety pin installed with a circular pull ring attached and a secondary safety pin installed with a triangular pull ring attached.

Functioning:

WARNING

ALL PERSONNEL MUST WEAR HEARING PROTECTION DURING TRAINING EXERCISES.

DO NOT ATTEMPT TO THROW THE GRENADE THROUGH GLASS OR WINDOW. IT MAY NOT BREAK THE GLASS OR WINDOW AND COULD BOUNCE BACK TOWARD THE USER.

DO NOT PRACTICE "COOK-OFF" WITH THIS GRENADE. IT HAS A SHORT FUZE DELAY TIME OF 1.0 TO 2.3 SECONDS.

THE M84 IS A ONE-TIME USE ITEM.

HUMAN TARGET PARTICIPATION IS NOT ALLOWED DURING TRAINING.

GRENADES SHOULD REMAIN IN SHIPPING/STORAGE CONTAINERS WHEN TRANSPORTED BY VEHICLE.

AVOID PROLONGED EXPOSURE, SINCE THERE IS A POTENTIAL FOR TOXIC FUME HAZARDS BUILDING UP IN ENCLOSED SPACES DURING TRAINING.

The M84 Stun Grenade is functioned by first removing the secondary safety pin assembly and then the primary safety pin assembly, and then by releasing the safety lever which allows the spring-loaded striker to hit the primer igniting the primer. After release of the safety lever, there is a delay of 1.0 to 2.3 seconds before initiation of the stun charge which produces the flash and sound report.

Tabulated Data:

Grenade (w/fuze):
- Model ..... M84 Stun Grenade
- Body ..... Steel
- Weight ..... 15 oz. (approx)
- Length (max) ..... 5.25 in.
- Color ..... Olive drab w/white markings and pastel green band (#34540)

Explosive Filler:
- Type ..... Pyrotechnic Charge System
- Weight ..... 3.5 g

Fuze:
- Model ..... P/N 1750-037
- Type ..... Pyrotechnic delay-igniting
- Primer M39A1
- Delay time ..... 1.0 - 2.3 sec
- Weight ..... 5 oz. (approx)
- Length ..... 3.875 in.
- Color ..... Olive drab with brown band at tip end of safety lever
- Safety device(s) ..... Primary safety pin with circular pull ring and secondary safety pin with triangular pull ring

Federal Supply Code:
- Grenade Assembly:
  - NSN 1330-01-459-8141
  - DODAC 1330-GG09

(See DOD Consolidated Ammunition Catalog for additional data.)

Drawings:

Assembly drawing P1750-002
Fuze ..... P/N 1750-037
Packing:
  M19A1 Container 7553315
  Wood wirebound box 5581378

Unit of Issue:

Each packed ..... 3 grenades packaged in M19A1 Ammunition Container; 4 containers in wood wirebound box
Packing Box (M19A1 Container):
  Weight (w/contents) ..... 5.5 lb (approx)
  Dimensions ..... 11 x 3-3/16 x 7-1/4 in.
  Cube ..... 0.17 cu ft
Grenade Packing Data (Wirebound Box):
  Packing Box:
    Weight (w/contents) ..... 30 lb (approx)
    Dimensions ..... 14-1/2 x 12-3/4 x 8-3/8 in.
    Cube ..... 0.89 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group 1.4G
DOT hazard class 1.4G
UN serial number 0297
DOT container marking:
  PSN ..... Ammunition, Illuminating
  UN 0297
  Part number/NSN P1750-002/1330-01-459-8141
DOT label ..... Explosive 1.4G
Packaging method ..... PI 130
Explosive weight for QD determination ..... 0.009405 lb (0.004266 kg)

References:

TM 9-1330-200-12
TM 9-1330-200-34
FM 3-23.30
DOD Consolidated Ammo Catalog

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CHAPTER 3

RIFLE GRENADES

Section I. HEAT

3-1

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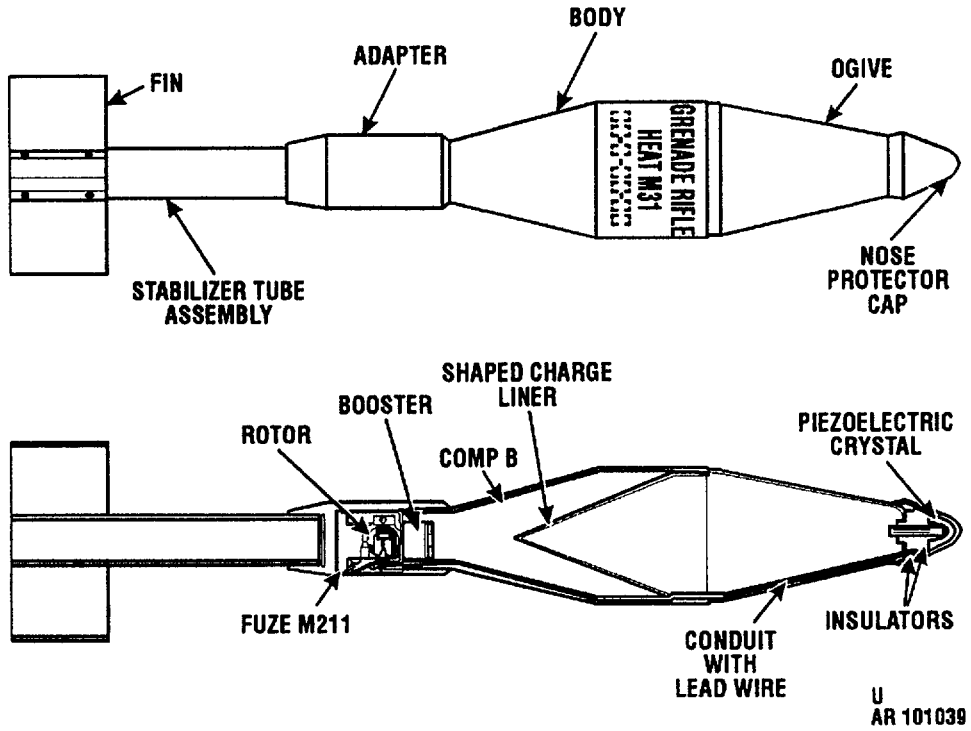
GRENADE, RIFLE: HEAT, M31



Type Classification:

Obs. MSR 11756003

Use:

To defeat armored targets, against personnel, for screening, signaling or for incendiary effect against flammable targets.

Description:

The rifle grenade HEAT, M31 is a point-initiated, base-detonated (PIBD), high-explosive, antitank (HEAT) grenade. It employs a shaped charge to defeat armor plate or concrete, and will function against targets at all angles of obliquity up to 65°. The grenade uses a piezoelectric assembly which generates an electric current when crushed on impact with the target. This action initiates the explosive train. Only rifle grenades M31, which are assembled with modified nose assemblies, are authorized for uses. The modified nose assembly has a positive ground between the piezoelectric crystal and the metal nose protector cap.

Rifle grenade M31 consists of three basic parts: the cylindrical body with conical ogive and conical rear section; the fuze; and the stabilizer. The ogive contains a piezoelectric assembly in the nose. A lead wire (in conduit) connects this assembly to the fuze, in the base of the body. The body contains Comp B molded against a copper shaped charge liner. A booster is contained in the fuze at the base of the body.

Fuze M211 consists of a base, spring-driven detonator rotor and a cover. The detonator rotor contains an electric detonator. The base contains a setback leaf assembly. The cover contains a booster pellet. The aluminum stabilizer consists of a stabilizer tube, with an adapter at its forward end (for connection to the body), and a fin assembly at the other end. When assembled, the fuze is held within the adapter.

Tabulated Data:

Model	M31
Type	HEAT
Weight (as issued)	1.56 lb
Explosive charge	
(Comp B)	9.92 oz
Dimensions:	
Diameter	2.61 in.
Height	16.96 in.

Body	Steel
Fuze	M211
Type	PIBD
Color	Olive drab w/yellow markings

Federal Supply Code:

NSN	1330-00-541-9848
DODAC	1330-G970

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each packed	1 per container; 10 containers per box with 20 Ctgs rifle grenade CAL. 30 M3

Packing Data:

Packing box:	
Weight 69.5 1b	
Dimensions	18.5 in. x 8.375 in. x 20.875 in.
Cube	2.9 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group	1.1D
UNO serial number	0284
UNO proper shipping name	Grenades
DOT class	Class A explosive
DOT marking	RIFLE GRENADE

Functioning:

An inertia-actuated setback leaf assembly prevents alinement of the detonator with the booster in the fuze until the rifle grenade is launched. Prior to arming, the detonating circuit within the fuze is grounded. Thus, current cannot pass through the detonating circuit, and current from an accidentally crushed or stressed crystal is short circuited to the body of the grenade. The detonating switch is contained within a small rotor which is locked into the short-circuit position by a set-back leaf assembly. When the grenade is launched, the set-back leaf assembly releases the rotor. The rotor turns 90°, opening the shorting switch and closing the firing switch. Upon launching, the grenade functions as follows:

Inertia setback causes the first of the three setback leaves in the setback leaf assembly to overcome the tension of its spring. This releases the second leaf.

The second leaf rotates, releasing the third leaf.

The third leaf rotates, releasing a rotor assembly containing the firing circuit.

The rotor assembly turns 90° to close the firing circuit, thus arming the grenade.

Upon impact with the target, the crystal is crushed and generates an electrical impulse.

The electrical impulse is conducted through a lead wire in the conduit to the electric fuze.

The electrical impulse passes through a resistance wire in the detonator, initiating the explosive train.

The detonator detonates the booster and, in turn, the shaped charge.

The principal explosive force of the shaped charge is directed forward to penetrate the target.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly	82-0-195
Fuze	82-2-54
Packing (inner)	7548996
Packing (outer)	7548997

CHAPTER 3

RIFLE GRENADES

Section II. SMOKE

3-5

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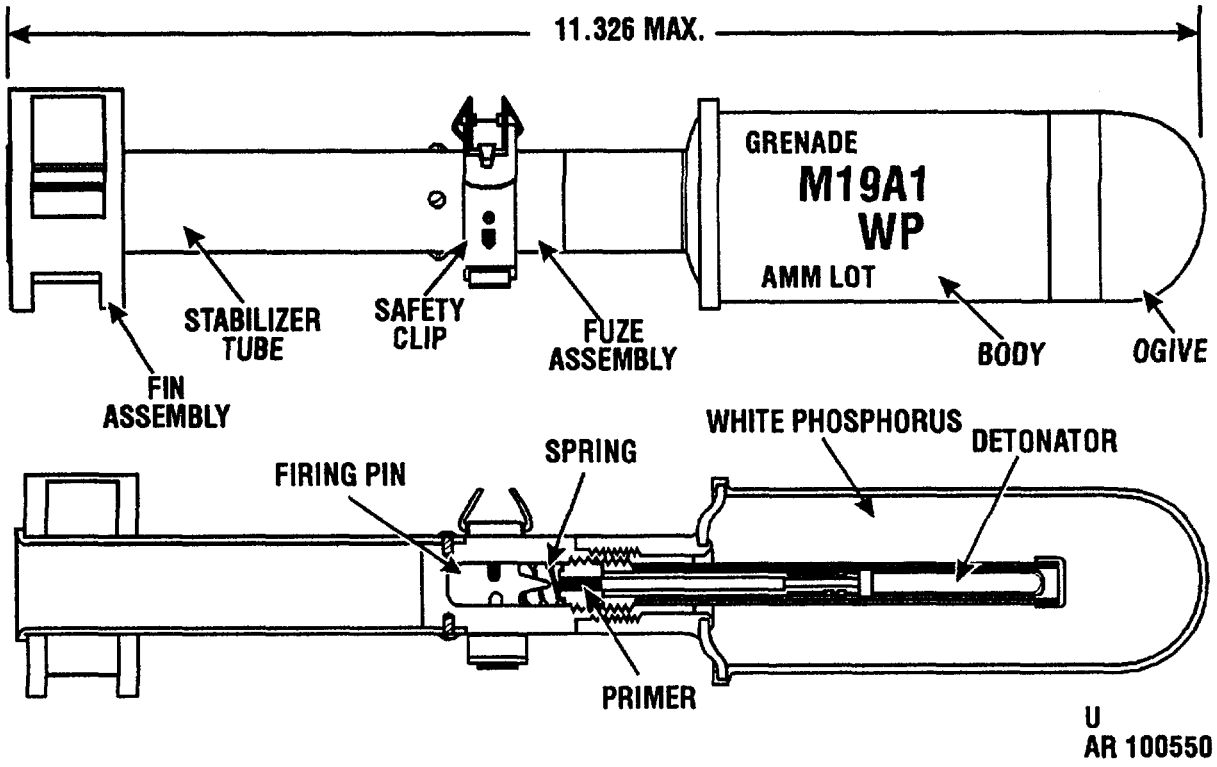
GRENADE, RIFLE: SMOKE, WP, M19A1



Type Classification:

Obs. MSR 11756003

Use:

For screening, signaling, or for incendiary effect against flammable targets.

Description:

WP smoke rifle grenade M19A1 is filled with WP This chemical agent ignites spontaneously when exposed to air, producing a yellow-white flame and firing off a dense cloud of white smoke. When used as an antipersonnel weapon, grenade M19A1 has an effective casualty radius of 10 meters. Grenade M19A1 has a maximum range of approximately 195 meters.

WP smoke rifle grenade M19A1 consists of three basic parts: a steel stabilizer tube assembly, an integral fuze and a body.

Tabulated Data:

Model M19A1
Type ..... Smoke (WP)
Weight ..... 1.5 lb
Dimensions:
  Diameter ..... 2.0 in.
  Height ..... 11.31 in.
Charge (WP) ..... 8.5 oz
Body ..... Sheet steel
Fuze:
  Type ..... Mechanical impact detonating
  Color ..... Light green w/yellow band; red marking
  Packing ..... 1 per container; 10 containers per packing box

Federal Supply Code:

NSN 1330-00-542-0715
DODAC 1330-H030

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed..... 1 per container; 10
..... containers per
..... packing box

Packing Data:

Loaded packing box:

Weight	40.9 lb
Dimensions	19.75 in. x 7.875 in. x 16.75 in.
Cube	1.51 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group	(04) 1.2H
UNO serial number	0245
UNO proper shipping name	Ammunition, smoke, white phosphorus
DOT class	Class A explosive
DOT marking	RIFLE GRENADE

Functioning:

After the grenade is launched, the fuze functions on impact. It bursts the body and scatters particles of burning WP over a large area.

Grenade and fuze functions as follows: The grenade ogive strikes the ground or other resistant object.

Inertia of the firing pin overcomes spring tension and the firing pin strikes the primer.

The primer emits a small, intense spit of flame.

Flame from the primer explodes the detonator.

Explosion of the detonator ruptures the body. Fragments of the body and particles of WP scatter over an area with a radius of approximately 10 meters.

Particles of WP ignite upon coming into contact with air and produce a dense cloud of white smoke.

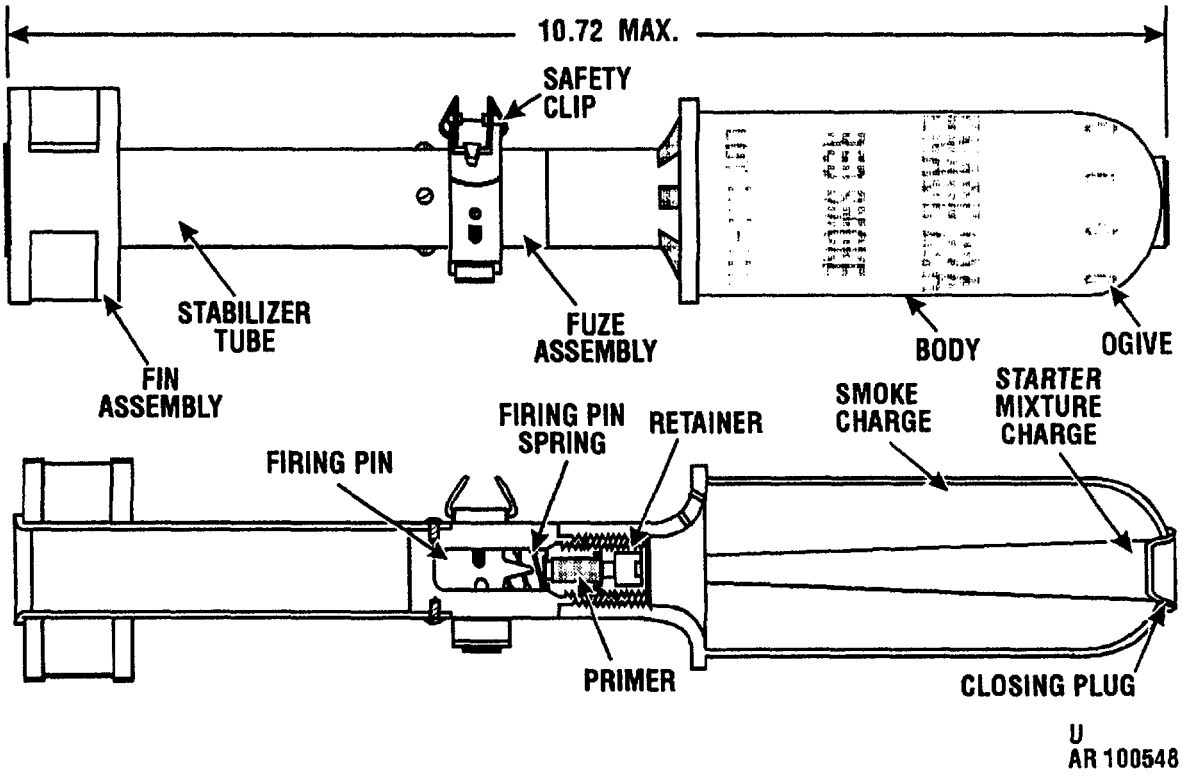
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly	82-0-109
Fuze (integral with fuze)	82-2-42
Packing (inner)	9207902
Packing (outer)	9207902

GRENADES, RIFLE: SMOKE, GREEN, RED, VIOLET OR YELLOW, M22 AND M22A2



Type Classification:

Obs. MSR 11756003

Use:

For signaling and for laying smoke screens. Produces green, red, violet or yellow smoke.

Description:

The M22 and M22A2 consist of three basic parts: a steel stabilizer assembly, an integral fuze and a body. The fuze is a mechanical impact-igniting type. The body is filled with a burning-type smoke charge which contains a dye to color the smoke. The surfaces of the smoke charge within the body are coated with a starter mixture charge to facilitate ignition. A small opening or air hole in the nose of the ogive is covered by a nose closing plug.

Difference Between Models:

The M22 and M22A2 grenades differ only in minor features.

Tabulated Data:

Model(s)	M22 or M22A2
Type	Smoke (colored)
Weight	1.26 lb
Dimensions:	
Diameter	1.8 in.
Height	10.72 in.
Charge (a mixture of baking soda, potassium perchlorate, sugar and a dye to color the smoke)	0.4 lb
Body	Sheet steel
Fuze	Integral
Type	Mechanical impact igniting
Color	Light green w/color of smoke produced painted on body union; black marking
Packing	1 per container; 10 containers per packing box

Federal Supply Code:

NSNs:

Green	1330-00-935-6122
Red	1330-00-541-9884
Violet	1330-00-618-5779
Yellow	1330-00-541-9883

DODACs:

Green	1330-G995
Red	1330-H010
Violet	1330-H020
Yellow	1330-H035

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed	1 per container, 10 containers per packing box.

Packing Data:

Loaded packing box:

Weight	31.5 lb
Dimensions	19.0 in. x 6.5 in. x 14.625 in.
Cube	1.05 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group	1.4G
UNO serial number	0303
UNO proper shipping name	Ammunition, smoke
DOT class	Class C explosive
DOT marking	SMOKE GRENADES, HANDLE CAREFULLY KEEP FIRE AWAY

Functioning:

Colored smoke rifle grenades M22 and M22A2 function on impact, emitting a cloud of colored smoke for approximately one minute.

After being fired from a rifle equipped with a grenade launcher, these grenades function as follows: The grenade ogive strikes the ground or other resistant object.

Inertia of the firing pin overcomes spring tension and the firing pin strikes the primer.

The primer emits a small, intense spit of flame.

Flame from the primer ignites the starter mixture charge.

The burning starter mixture charge ignites the smoke charge.

The smoke charge burns for approximately 1 minute, emitting a dense cloud of colored smoke through holes in the base of the body.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

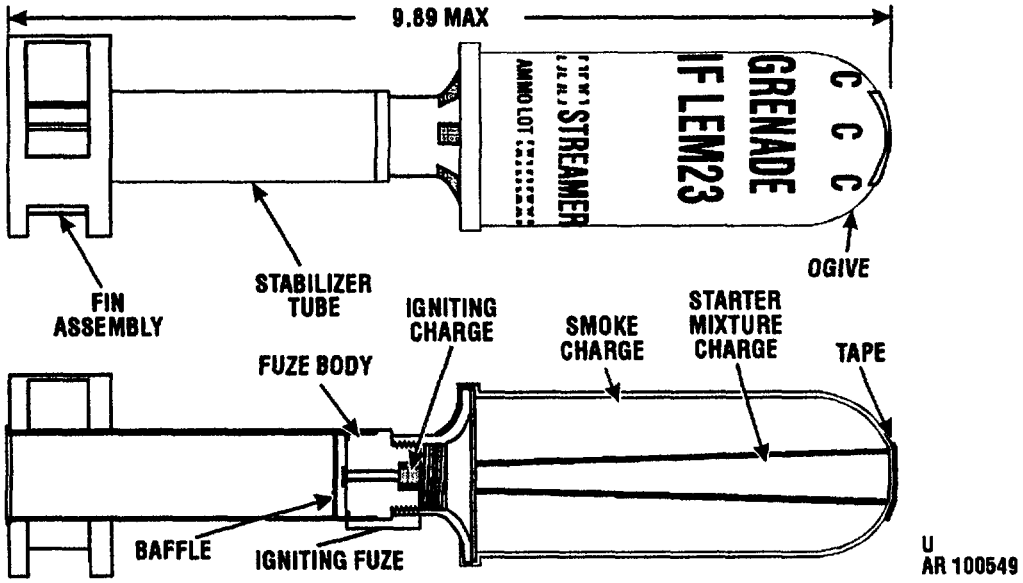
Drawings:

Assembly	82-0-117
Fuze (integral with body	82-2-41
Packing (inner)	9227347
Packing (outer)	9227348

Remarks:

Colored smoke rifle grenades M22 and M22A2 have a range of over 200 meters. Colored smoke rifle grenades M22 and M22A2 are similar to appearance to WP smoke rifle grenade M19A1 but are somewhat smaller.

GRENADES, RIFLE: SMOKE, GREEN, RED, VIOLET OR YELLOW, STREAMER, M23 AND M23A1



Type Classification:

Obs. MSR 11756003

Use:

These grenades are used only for signaling purposes. They produce green, red, violet or yellow smoke streamers.

Description:

The M23 and M23A1 consist of three basic parts: a steel stabilizer tube assembly, a fuze and a body. The body is filled with a burning type smoke charge which contains a dye to color the smoke. The surfaces of the smoke charge within the body are coated with a starter mixture charge (to facilitate ignition).

A small air hole opening in the nose of the ogive is covered by a piece of tape (to protect the filler against moisture). The tape must be removed prior to firing.

Difference Between Models:

The M23 and M23A1 differ only in minor features.

Tabulated Data:

Model(s)	M23, M23A1
Type	Colored smoke streamer
Weight	1.16 lb
Dimensions:	
Diameter	1.8 in.
Height	9.89 in.
Charge (a mixture of baking soda, potassium perchlorate, sugar and a dye to color the smoke)	0.4 lb
Body	Sheet steel
Fuze	Integral
Type	Igniting
Color	Light green w/color of smoke produced painted on body union; black marking
Packing	1 per container; 10 containers per packing box

Federal Supply Code:

NSNs:

Green	1330-00-540-9148
Red	1330-00-935-6119
Violet	1330-00-529-8532
Yellow	1330-00-935-6121

DODACs:

Green	1330-H000
Red	1330-H015
Violet	1330-H025
Yellow	1330-H040

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed	1 per container; 10 containers per packing box '

Packing Data:

Loaded packing box:	
Weight	31.5 lb
Dimensions	19.0 in. x 6.5 in. x 14.625 in.
Cube	1.05 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group	1.4G
UNO serial number	0303
UNO proper shipping name	Ammunition, smoke
DOT class	Class C explosive
DOT marking	SMOKE GRENADES, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

Colored smoke streamer rifle grenades M23 and M23A1 function on firing, emitting a stream of colored smoke over the entire trajectory. Upon firing the grenade cartridge in the rifle, these grenades are launched and function as follows:

Flash from the grenade cartridge passes from the rifle through orifices in the fuze to ignite the igniting charge in the fuze.

The igniting charge ignites the starter mixture charge.

The starter mixture charge ignites the smoke charge.

The smoke charge begins to burn, generating colored smoke.

Air entering the air hole in the nose of the grenade forces smoke out of holes in the base of the body, producing streamers of colored smoke.

The smoke charge continues to burn, producing smoke over the entire trajectory of the grenade, and for a few seconds after striking the ground. (Total burning time: approximately 12 seconds).

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

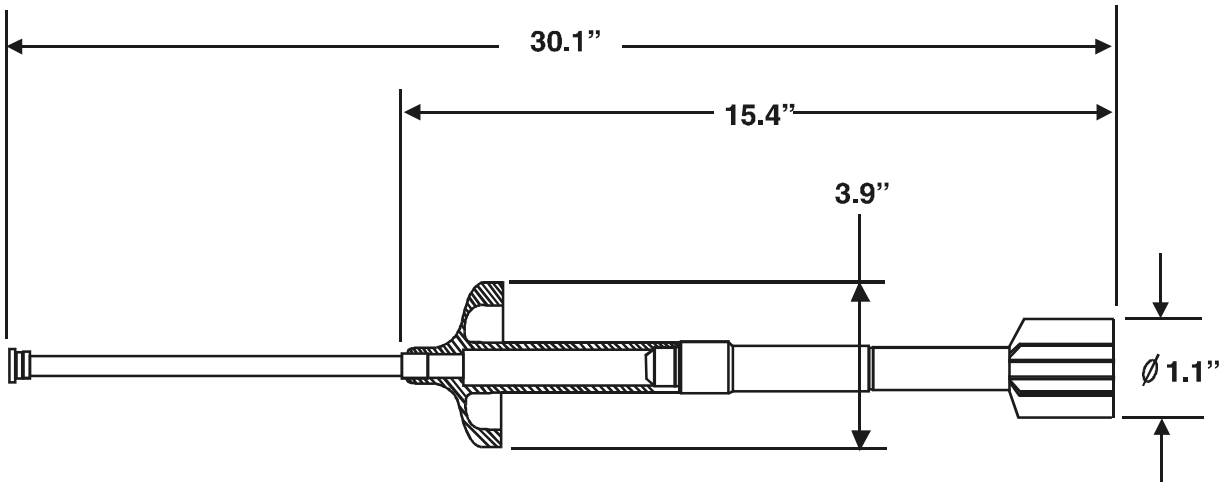
Drawings:

Assembly	82-0-139
Fuze (integral with body)	82-2-47
Packing (inner)	9227349
Packing (outer)	9227350

Remarks:

Colored smoke streamer rifle grenades M23 and M23A1 have a range of over 200 meters. Colored smoke streamer rifle grenades M23 and M23A1 are fabricated from the same metal parts (except for the fuze) as colored smoke rifle grenades M22 and M22A2.

GRENADE, RIFLE, ENTRY MUNITION, M100



Type Classification:

STD, Jul 02.

Use:

The Grenade, Rifle, Entry Munition (GREM), is a lightweight muzzle fired standoff breaching munition fired from the M16/M4 series weapons. This round can defeat most entry targets to include locked doors with minimal hazard to the gunner. The GREM will be supplied with bullet traps allowing the use of 5.56mm M855 ball and M856 tracer rounds.

Description:

The GREM is delivered in two pieces - main body and the standoff rod. When the standoff rod is screwed in to the munitions body, the overall length is 765mm (30.1 in.). A rear facing liner contributes to an overall OD close to 4 inches.

Functioning:

A 5.56 service ball round is fired into the M100 where it is retained by the bullet trap. The forward motion against the bullet trap launches the GREM. Upon hitting the target, the standoff rod allows sufficient room for the shaped charge to form completely providing the maximum force wave against the target area. Since the shaped charge is inverted, the force wave is generated over a broad surface area such as a door.

WARNING

DO NOT FIRE THE GREM CLOSER THAN 15M FROM THE TARGET.

ALL PERSONNEL FROM 15 TO 535M OF TARGET MUST WEAR SINGLE HEARING PROTECTION.

THE GUNNER AND ALL PERSONNEL WITHIN 40M OF TARGET MUST WEAR EYE PROTECTION EITHER BLEPS OR SPECS, HELMET, FLAK JACKET, LONG SLEEVES, AND GLOVES.

THE STANDOFF ROD MUST BE ATTACHED TO THE GREM BEFORE FIRING.

A FULLY LOADED MAGAZINE SHOULD BE USED TO LESSEN RECOIL FORCE.

ONLY M855 OR M856 AMMUNITION MUST BE USED AND THE WEAPON MUST BE IN SINGLE-SHOT MODE.

Tabulated Data:

NSN	1330-01-493-8597
Complete round:	
Type	Breaching
Weight	620g (1.37 lb)
Length	765mm (30.1 in.)
Weapons used with	M16 series Rifles M4 Carbines
Projectile:	
Body material	Warhead case - Plastic; Tail - Steel
Standoff rod	Aluminum
Color	Brown (tail)
Filler and weight	PBXN-109 120g (0.26 lb)
Initiating pellet	PBXN-5 (2.7g)
Fuze	Impact fuze
Detonator	M-94
Pellet	Comp A5 (0.8g)
Detonation cord	CH-6 (0.2g)
Detonation cord pellets	PBXN-5 (0.25g)
Performance:	
Maximum range	40m
Muzzle velocity	41 meters/second

Temperature Limits:

Firing:	
Lower limit	-50°F
Upper limit	+124°F
Storage:	
Lower limit	-50°F
Upper limit	+160°F
Packing	6 rounds per M592 metal container
*Packing Box:	
Weight	30 lb
Dimensions	18.59 x 9.50 x 14.62 in.
Cube	1.49 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN's.

Shipping and Storage Data:

UNO serial number	0284
Hazard class/division and storage compatibility group	
DOT class	1.1D
DOT marking	M100 GRENADES
DODAC	1330-GG12
Grenade drawing number	12991208
Packing drawing numbers	12993886

References:
TM 9-1330-200-12/TM 1330-12/1A
TM 9-1330-200-34/TM 1330-34/1
SB 700-20

CHAPTER 4

PRACTICE, INERT, TRAINING GRENADES

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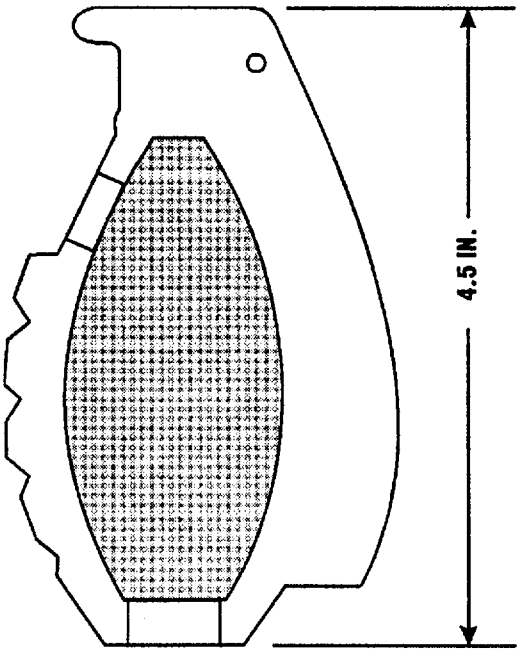
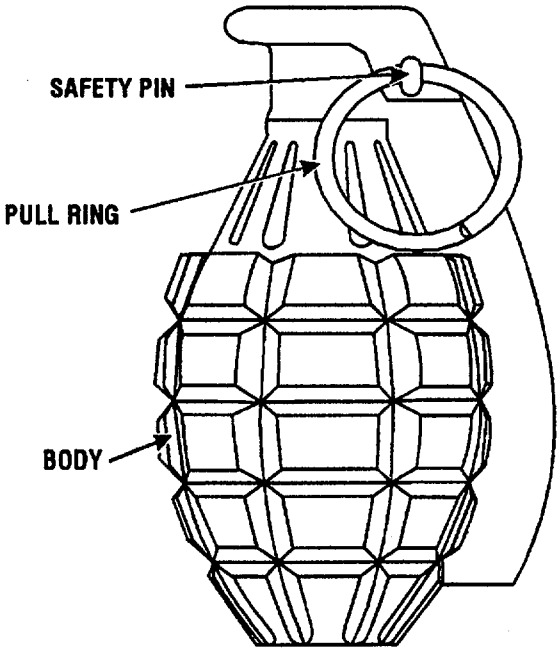
GRENADE, HAND: TRAINING, MK1A1





Type Classification:

Obs. MSR 11756003

Use:

Training hand grenade MK1A1 is a nonfunctioning type used for training in handling and throwing of Fragmentation Hand Grenade MK2. Grenade MKlA1 may be used for practice in throwing hand grenades in small confined areas because it is completely inert. The grenade is used principally to improve techniques in throwing and accuracy.

Description:

The grenade body is of cast iron.

Training hand grenade MK1A1 has no fuze.

Safety clips are not required for these grenades.

Tabulated Data:

Grenade:
- Model(s) ---------- MK1A1
- Body ---------- Cast iron
- Weight---------- 21 oz
- Length (max)---------- 4.5 in.
- Diameter ---------- 2.25 in.
- Color ---------- Black w/no markings
- Packing ---------- 24 per packing box
- Filler ---------- None
- Fuze---------- None
- Safety device ---------- Pull ring and safety pin

Packing Data:

Packing box:
- Weight (w/contents)------- 46.7 lb
- Dimensions ---------- 24.0 in. x 9.375 in. x 7.0 in.

Cube ---------- 0.94 cu ft

Shipping and Storage Data:
- Hazard class/division and storage compatibility group ---------- Not required
- UNO serial number -------- Not required
- UNO proper shipping name---------- ------ Not required
- DOT class---------- Not required
- DOT marking ---------- Not required

Functioning:

Training hand grenade MK1A1 is nonfunctioning.

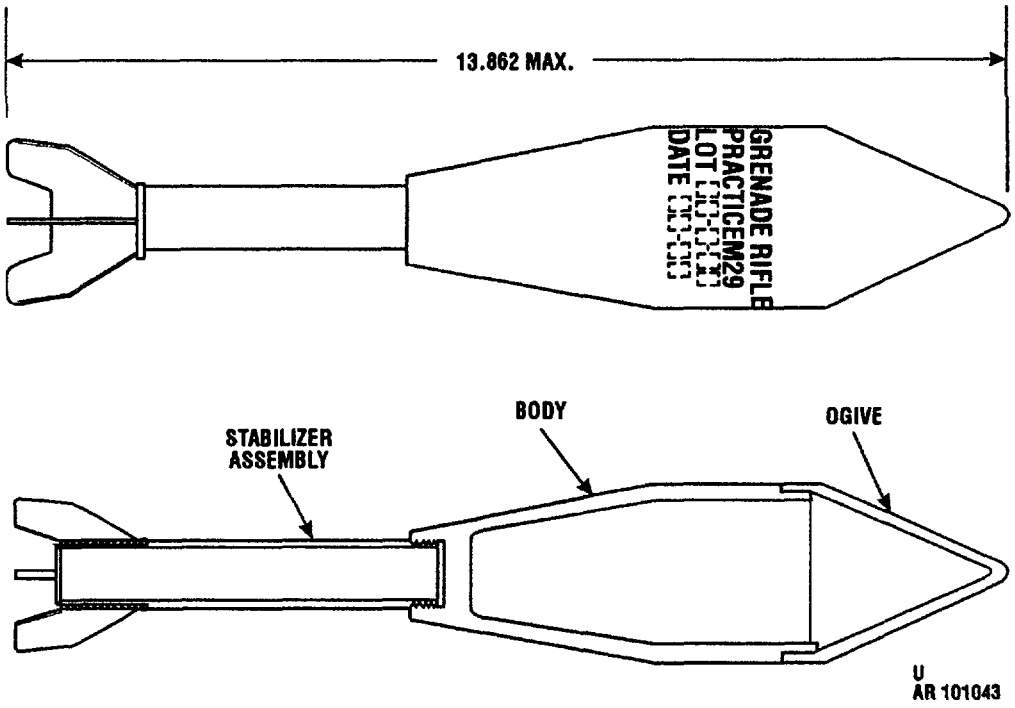
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

Drawings:

Assembly---------- 82-1-7
Fuze ---------- None
Packing (inner) ---------- 76-16-248
Packing (outer) ---------- 76-16-248

PRACTICE, AT RIFLE GRENADE, M29



Type Classification:

Obs. MSR 11756003

Use:

A practice AT rifle grenade.

Description:

Practice AT rifle grenade M29 consists of two parts: a body and a stabilizer tube-fin assembly of steel. A separately issued stabilizer tube-fin assembly is available for replacement purposes.

The M29 grenade may be fired at a target without danger to the target other than from impact.
The grenade has a maximum range of approximately 150 meters.

Tabulated Data:

Model ---------- M29
Type ---------- Practice AT
Weight ---------- 1.5 lb

Dimensions:
  Diameter ---------- 3.0 in.
  Height ---------- 14.5 in.
Charge ---------- None
Body---------- Cast iron
Fuze ---------- None
Color ---------- Black w/white markings or blue w/white markings

Federal Supply Code:

NSN ---------- 1330-00-028-5920
DODAC---------- 1330-G980

Unit of Issue:

Each grenade packed -------- 1 per container; 20 containers per packing box.

Packing Data:

Packing box:
  Weight (w/contents)--------- 66.5 lb
  Dimensions ---------- 20.75 in. x 15.75 in. x 17.15 in.
Cube ---------- 3.3 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- Not required
UNO serial number ---------- Not required
UNO proper shipping name ---------- Not required
DOT class-----.---------- Not required
DOT marking w/o cartridge---------- Not required
DOT marking w/ cartridge---------- SMALL ARMS AMMUNITION

Functioning:

None.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

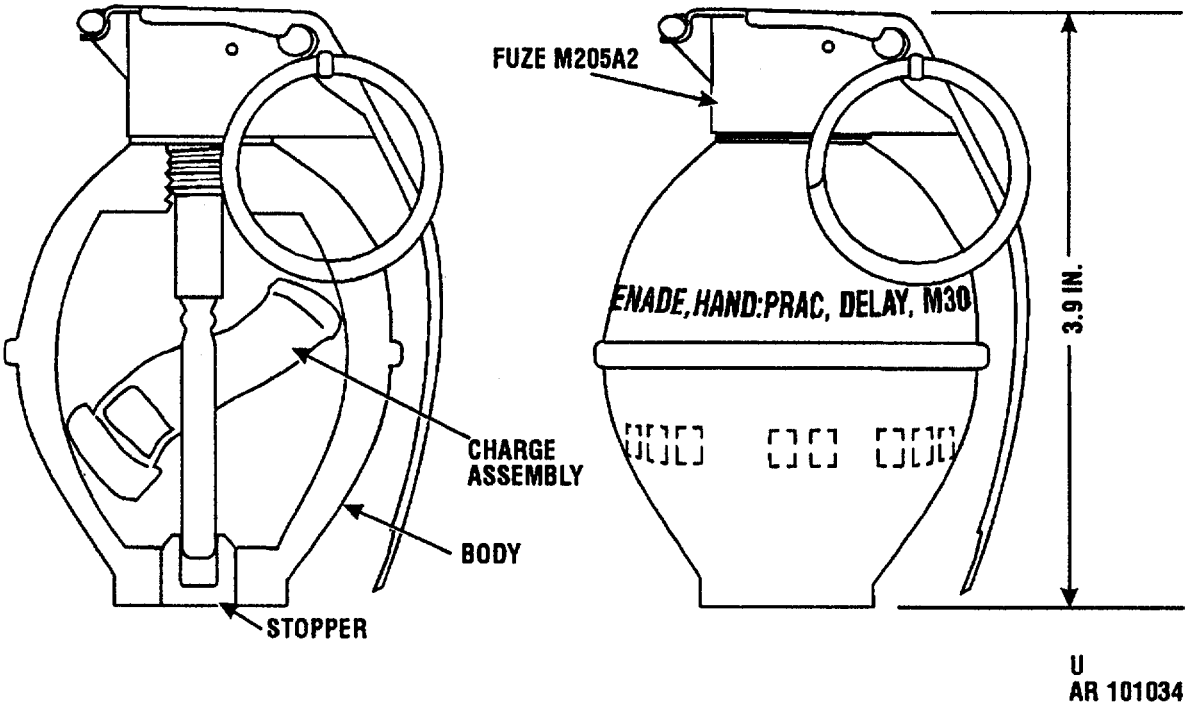
Drawings:

Assembly---------- 8864102
Fuze ---------- None used
Packing (inner) ---------- 8864704
Packing (outer) ---------- 8864705

Remarks:

Grenade M29 may be used repeatedly if the stabilizer tube fin assembly is replaced when it becomes damaged.

GRENADE, HAND: PRACTICE, DELAY, M30



Type Classification:

Obs. MSR 11756003

Use:

Grenade M30 is used for training in care, handling and throwing of fragmentation hand grenades M26A1 and M26.

Description:

The body is not loaded with a high-explosive filler but may have a small, separate black powder charge.

Hand grenade fuzes M205A1 and M205A2 are pyrotechnic delay-igniting fuzes. They differ in body construction only. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, and an igniter assembly. The split end of the safety pin has an angular spread or a diamond crimp.

Tabulated Data:

Grenade (with fuze):
- Model(s) ---------- M30
- Body ---------- Cast iron
- Weight---------- 16 oz
- Length (max)---------- 3.9 in.
- Diameter ---------- 2.25 in.
- Color ---------- Blue w/brown band w/white or no markings

Filler:
- Type ---------- Black powder
- Weight ---------- 21 grains

Fuze:
- Model(s) ---------- M205A1, M205A2
- Type ---------- Pyrotechnic delay-igniting
- Primer---------- M42
- Ignition mixture ---------- Zirconium nickel alloy, potassium perchlorate barium chromate
- Delay time ---------- 4-5 seconds
- Igniter ---------- Black powder
- Weight ---------- 2.6 oz
- Length ---------- 4.0 in.
- Color (safety lever)--------- Blue w/red band, markings in black

Packing ---------- 360 per wooden box
Safety device ---------- Pull ring and safety pin

Federal Supply Code:

NSN ---------- 1330-00-028-5841
DODAC---------- 1330-G915

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed ---------- 1 per container; 30 per packing box

Packing Data:

Packing box:
Weight (with contents)----- 53.0 lb
Dimensions ---------- 19-1/2 in. x 11-1/2 in. x 12-3/4 in.
Cube ---------- 1.65 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- (04) 1.2G
UNO serial number ---------- 0372
UNO proper shipping name ---------- Grenades, practice
DOT class---------- Class C explosive
DOT marking ---------- TIME FUZES - HANDLE CAREFULLY

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame, igniting the delay element. The delay element burns for 4 to 5 seconds, then sets off the igniter. The igniter initiates the black powder charge (when installed). The stopper (when installed) is forced from the base of the body. A loud report, like that of a firecracker, and a puff of white smoke follow.

References:

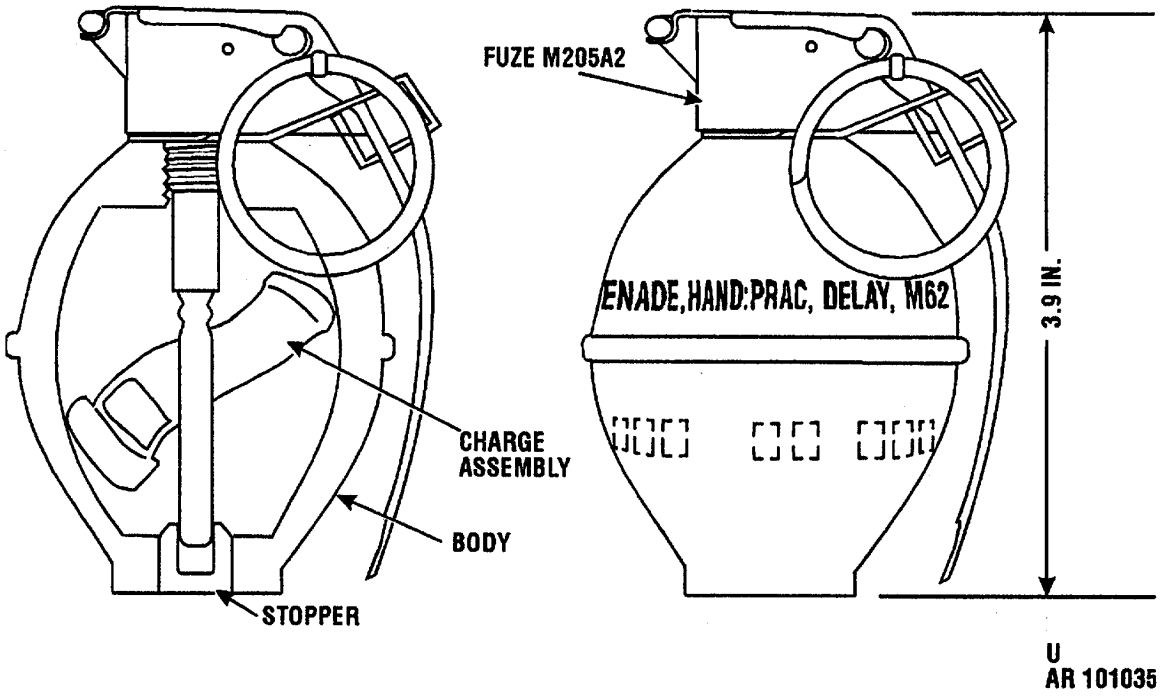
TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

Drawings:

Assembly---------- 8861647
Fuze (M205A1) ---------- 82-1-46
Fuze (M205A2) ---------- 7548570
Packing (inner) ---------- 7548339
Packing (outer) ---------- 7548340
Remarks:

Delay practice hand grenade M30 is the M62 without a safety clip. After use, the grenade body may be recovered, and reloaded with a new fuze, and black powder charge and stopper, if used. The grenade body is of cast iron. The M30 external configuration is identical with that of the M26A1 and M26.

GRENADE, HAND: PRACTICE, DELAY, M62



Type Classification:

Obs. MSR 11756003

Use:

The M62 delay practice grenade is used for training in care, handling and throwing of fragmentation hand grenade M61.

Description:

The grenade body is of cast iron. The body is not loaded with a high-explosive filler but may have a small, separate black powder charge.

The hand grenade fuzes M205A1 and M205A2 are pyrotechnic delay-igniting fuzes.

They differ in body construction only. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, and an igniter assembly. The split end of the safety pin has an angular spread or a diamond crimp.

The hand grenade safety clip is designed to keep the safety lever in place, should the safety pin be unintentionally removed from the grenade. It is an additional safety device used in conjunction with the safety pin. The hand grenade safety clip, of spring-steel wire, is shaped in a special configuration for installation on the grenade. It consists of a clamp, which fits around the fuze body and over the safety lever. It serves to prevent release of the grenade safety lever if the safety pin is accidentally released.

Tabulated Data:

Grenade (with fuze):
- Model(s)---------- M62
- Body ---------- Cast iron
- Weight ---------- 16 oz
- Length (max)---------- 3.9 in.
- Diameter ---------- 2.25 in.
- Color ---------- Blue w/brown band w/white or no markings

Filler:
- Type ---------- Black powder
- Weight ---------- 21 grainms

Fuze:
- Model(s) ---------- M205A1, M205A2
- Type ---------- Pyrotechnic delay-igniting
- Primer---------- M42

Ignition mixture ---------- Zirconium nickel alloy, potassium perchlorate barium chromate
Delay time ---------- 4-5 seconds
Igniter ---------- Black powder
Weight ---------- 2.6 oz
Length ---------- 4.0 in.
Color (safety lever) -------- Blue w/red band, markings in black
Packing ---------- 360 per wooden box
Safety device ---------- Pull ring and safety pin, and safety clip

Federal Supply Code:

NSN ---------- 1330-00-935-6063
DODAC---------- 1330-G914
See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each grenade packed --------- 1 per container; 30 per packing box

Packing Data:

Packing box:
Weight (w/contents)--------- 53.0 lb
Dimensions ---------- 19-1/2 in. x 11-1/2 in. x 12-3/4 in.
Cube ---------- 1.65 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- (04) 1.2G
UNO serial number ---------- 0372
UNO proper shipping name ---------- Grenades, practice
DOT class---------- Class C explosive
DOT marking ---------- TIME FUZES - HANDLE CAREFULLY

Functioning:

Release of the safety clip and removal of the safety pin permit release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame, igniting the delay element. The delay element burns for 4 to 5 seconds, then sets off the igniter. The igniter initiates the black powder charge (when installed). The stopper (when installed) is forced from the base of the body. A loud report, like that of a firecracker, and a puff of white smoke follow.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

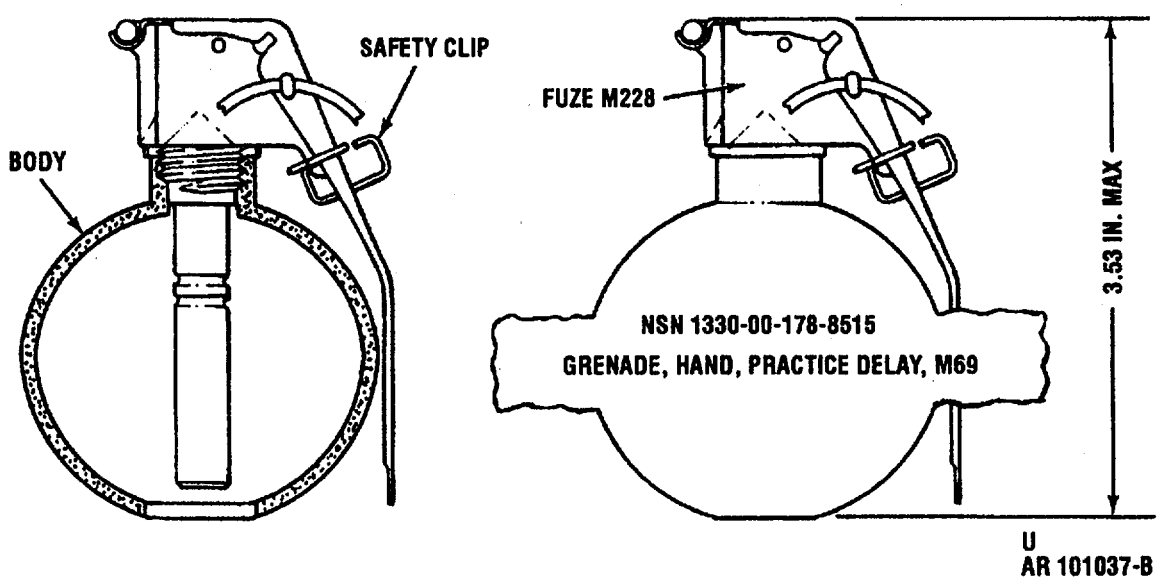
Drawings:

Assembly---------- 9231597
Fuze (M205A1) ---------- 82-1-46
Fuze (M205A2) ---------- 7548570
Packing (inner) ---------- 7548339
Packing (outer) ---------- 7548340

Remarks:

Delay practice hand grenade M62 is the M30 with a safety clip. After use, the M62 grenade body may be recovered, and reloaded with a new fuze, and black powder charge and stopper, if used. The M62 external configuration is identical with that of the M61, M26A1 and M26. Safety clips from expended grenades may be reused, provided that visual examination indicates the clip is not damaged or distorted.

GRENADE, HAND: PRACTICE, DELAY, M69



Type Classification:

Std, LCC-A, AMCTC 8345

Use:

Delay practice hand grenade M69 is the practice version of the M67 fragmentation delay grenade.

Description:

The grenade body of steel is essentially spherical in shape. The body is empty, i.e., without any explosive filler. There is a hole in the base of the body. (This vents the gases generated from the fuze igniter and permits removal of residual metal that remains in the grenade body from the igniter case. The grenade body may be recovered and reloaded with a new fuze and safety clip).

Hand grenade practice fuze M228 is a pyrotechnic delay-igniting fuze. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, safety clip, and igniter assembly. (Older models do not have the safety clip). The split end of the safety pin has an angular spread or a diamond crimp.

The hand grenade safety clip is designed to keep the safety lever in place, should the safety pin be unintentionally removed from the grenade. It is an additional safety device used in conjunction with the safety pin. The. safety clip is assembled to the fuze. (Older models have the safety clip assembled to the grenade and positioned around the safety lever).

Safety clips from expended grenades may be reused, provided that visual examination indicates the clip is not damaged or distorted.

Tabulated Data:

Grenade (with fuze):
- Model ---------- M69
- Body ---------- Steel
- Weight---------- 14 oz
- Length (max)---------- 3.53 in.
- Diameter ---------- 2.5 in.
- Color ---------- Blue w/brown band and white markings

Filler:
- Type---------- None
- Weight ---------- None

Fuze:

Model ---------- M228

Type ---------- Pyrotechnic.delay-igniting
Primer---------- M42
Igniter ---------- Black powder
Delay time ---------- 4.5 seconds
Weight ---------- 2.6 oz
Length ---------- 3.33 in.
Color (safety lever) ---------- Blue w/brown end and black markings
Packing ---------- 360 per box
Safety device ---------- Pull ring and safety pin, and safety clip

***Packing Data:**

Grenade bodies ---------- 50 per carton; 1 carton per barrier bag; 1 barrier bag per wooden box
Grenade fuzes ---------- 45 per tray; 8 trays (360 fuzes) per wooden box

Packing box:

Weight (with grenade bodies) ---------- 68.5 lb
Dimensions ---------- 18 x 15 x 8 in.
Cube ---------- 1.5 cu ft
Explosive weight ---------- None

*NOTE: See DOD Consolidated Ammunition Catalog for additional information including NSNs.

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- 1.4G
UNO serial number ---------- 0372
UNO proper shipping name ---------- Grenades, practice
DOT class---------- Class C explosive
DOT marking ---------- TIME FUZES - HANDLE CAREFULLY
DODAC (Grenade, assembled) ---------- 1330-G918
DODAC (Grenade fuze)---------- 1330-G878

Functioning:

Release of the safety clip and removal of the safety pin permit release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its axis and strikes the percussion primer. The primer emits a small, intense spit of flame, igniting the delay element. The delay element burns for 4 to 5 seconds, then sets off the igniter. A loud report, like that of a firecracker, and a puff of white smoke follows.

References:

TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

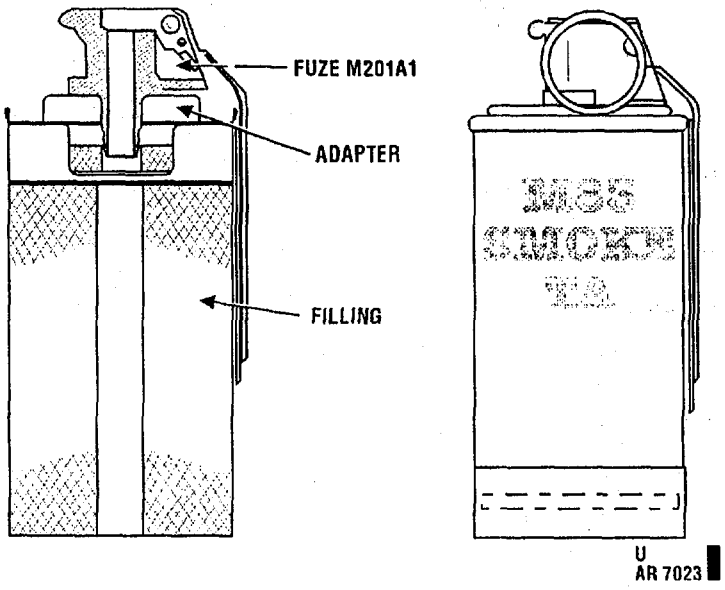
Drawings:

Assembly---------- 9235208
Fuze ---------- 9235210

Remarks:

The M69 practice hand grenade is normally issued as separate components, as required. Component parts consist of a practice hand grenade body and a practice hand grenade fuze.

GRENADE, HAND: SMOKE, TA, PRACTICE, M83



Type Classification:

Std. LCC-A, AMCTC 3408

Use:

The TA Practice Smoke Hand Grenade, M83 is a burning type grenade used to generate white smoke for screening activities of small units. It is also used for ground-to-air signaling.

Description:

The grenade body is a cylinder of thin sheet metal. It is filled with 'TA smoke mixture topped with a starter slug directly under the fuze opening. The duration of smoke screen or signal is 25 to 70 seconds, average burn-time.

Hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire misture, pyrotechnic delay column, and starter slug. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):
- Model(s) ---------- M83
- Body ---------- Sheet metal
- Weight---------- 16 oz
- Length ---------- 5.7 in.
- Diameter ---------- 2.5 in.
- Color---------- Forest green with light green markings, a blue band, and a white top.
- Packing ---------- 1 per container; 16 per packing box

Filler:
- Type ---------- Terephthalic Acid (TA)
- Weight---------- 11 oz

Fuze:
- Model(s) ---------- ------ M201A1
- Type ---------- Pyrotechnic delay-igniting
- Primer---------- M39A1
- Ignition mixture ---------- Iron oxide, titanium, zirconium
- Delay time ---------- 0.7-2 sec
- Weight---------- 1.5 oz
- Length ---------- 3.9 in.
- Color (safety lever) --------- Gray or olive drab w/black markings
- Packing ---------- Not separately issued
- Safety device ---------- Pull ring and safety pin

Federal Supply Code:

NSN ---------- 1330-01-380-0284
DODAC---------- 1330-G982
See DOD Consolidated Ammunition Catalog for additional information.

\Unit of Issue:

Each grenade packed -------- 1 per container; 16 per packing box

Packing Data:

Packing box:
Weight (with contents) ------- 33 lb
Dimensions ---------- 14.0 in. x 14.0 in. x 8.0 in.
Cube ---------- 0.90 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- 1.3 G
UNO serial number ---------- 0016
DOT class---------- Class C explosive
DOT marking ---------- SMOKE GRENADES, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The primer initiates the first fire mixture, The fuze delay element, ignition mixture, and grenade starter mixture and filler are initiated in turn by the preceding component. The pressure sensitive tape is blown off the emission holes and smoke is emitted for 25 to 70 seconds.

References:

FM 3-50
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog
AMC-P 700-3-5

Drawings:

Assembly ---------- 13-1.9-700
Fuze ---------- 13-10-22
Packing (inner) ---------- 13-9-44
Packing (outer) ---------- 13-19-83

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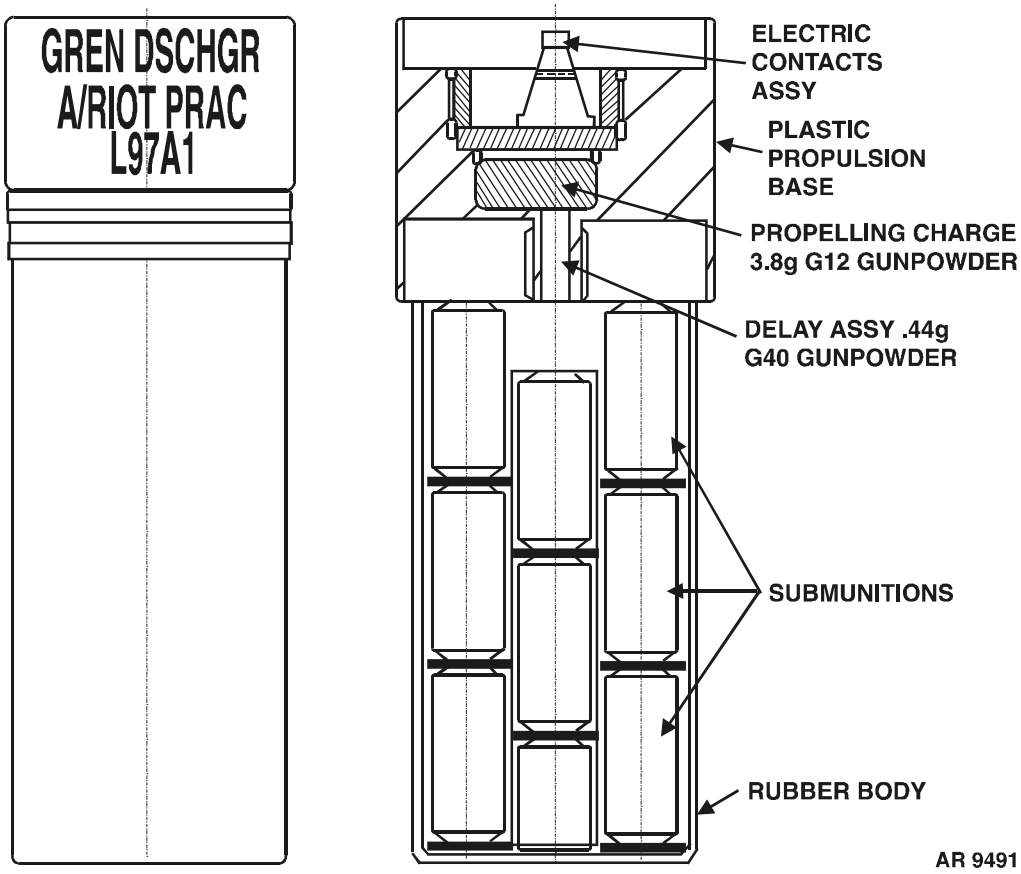
GRENADE, DISCHARGER, ANTI-RIOT; PRACTICE, L97A1



Type Classification:

STD.

Use:

Used primarily with the M7 Discharger, which is a component of the Light Vehicle Obsuration Smoke System (LVOSS), and similar 66mm grenade for the L96A1 Anti-Riot, Irritant, CS Grenade.

Description:

The L97A1 Practice Grenade is comprised of a 66mm fiberglass filed nylon propulsion base and cylindrical rubber body containing the payload, weighing 568 grams. The propulsion base contains a propellant charge, an electric match (fuze), and a delay detonator. The rubber body payload contains 23 individually fuzed, light alloy canister submunitions filled with cinnamic acid, a CS (tear gas) simulant. Each submunition contains a central perforation and is surrounded with cambric cloth (cloth impregnated with gun powder). The cambric cloth is ignited by a piece of igniter cord that is assembled through the central perforation in each submunition and joined to the initiating charge at the base of the grenade. The L97A1 uses the gas produced by the rapid burning of the igniter cord/cambric to burst the rubber body that contains the 23 submunitions. The submunitions will burn for approximately 8 seconds, producing a cloud of cinnamic acid smoke.

Tabulated Data:

Model	L97A1
Body	Fiberglass Filled Nylon and Rubber
Weight	568 g (1.25 lbs)
Length	185mm (7.28 in)
Diameter	66mm (2.60 in)

Filler weight.....174.8 to 179.4 g of Cinammic Acid
Filler type.....Cinnamic Acid
Gun Powder or
Black Powder) .....3.8 g (.008 lbs)
Fuze model .....N32B Electric Match
Fuze type .....Instantaneous Electrical Igniting
Color.....Blue, with a brown band and a green band

Federal Supply Code:

NSN 1330-01-459-4032
DODAC.....1330-FZ15
Line Item Number G23184
Class of Supply.....V
(See DOD Consolidated Ammunition Catalog for additional data.)

Unit of Issue:

Each packed.....4 grenades per metal container
Basic load .....2 grenades

Packing Data:

Metal Container:

Model.....M2A1
Weight w/contents .....10.9 lbs (4.9 kg)
Length.....12-1/32 in.
Width .....6-3/32 in.
Height .....7-1/2 in.
Cube.....32 cu ft
Pallet (96 metal containers):
Weight w/contents .....1208 lb (548 kgs) (approx)
Length.....36-7/8 in.
Width .....30-7/8 in.
Height .....48-1/2 in.
Cube.....42 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility.....1.4G
DOT Class 1.4G
DOT Label.....EXPLOSIVE 1.4g
DOT Marking ..... Ammunition, Smoke UN0303 NSN 1330-01-459-4032
UNO serial number..... 0303

Functioning:

The L97A1 grenade is an electrically launched grenade. The launch system consists of electrical contacts for discharger tube interface, an electric match initiator and a delay detonator in a fiberglass filled nylon propulsion base. The female connector of the propulsion base makes an electrical connection with the firing circuit when pushed onto the male electrical connector at the base of the discharger tube. When the launch system is armed and the firing button is pushed, the firing circuit directs electrical energy from the vehicle's-battery to the electric match, which is housed inside the propulsion base. The hot gases emitted from the ignition of the gun powder/black powder perform several functions simultaneously. They ignite the igniter cord and cambric inside the rubber payload via the delay detonator; and release sufficient energy through the blowout hole in the propulsion base to project the grenade a distance of 65-85 meters from the host vehicle. The delay detonator ensures the grenade functions at lest 6 meters above the target area. The 23 submunitions are then lit by the burning igniter cord and cambric cloth. They fall to the ground covering at least a 5-meter ground level dispersion radius and burn approximately 8 seconds to dispense the cinnamic acid smoke cloud that simulates a CS (tear gas) smoke cloud.

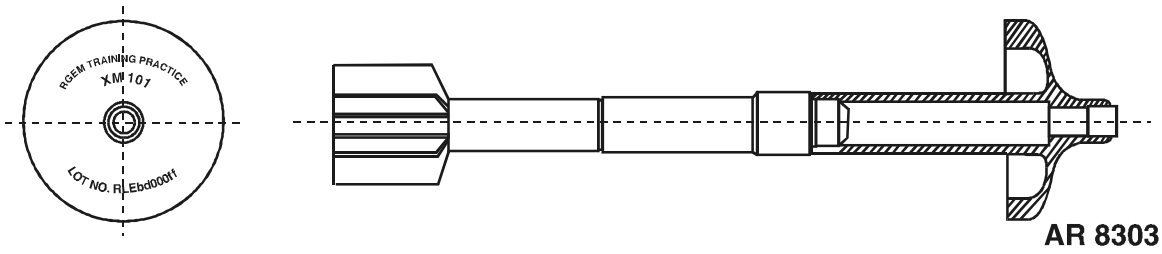
References:

TM 9-1330-200-12
TM 9-1330-200-34
TM 3-1040-286-12&P
TM 3-1055-649-12&P
AMC-P 700 3-5
DOD Consolidated Ammo Catalog

Drawings:

Top Drawing 13-19-880
Marking Drawing..... 9704104A2
Packing Drawing..... 13-19-883
Pallet Drawing 13-19-881
Marking Ammunition
Container Drawing..... 13-19-882

GRENADE, RIFLE, ENTRY MUNITION, TARGET PRACTICE, M101



Type Classification:

TBD.

Use:

Grenade, Rifle, Entry Munition, Target Practice, M101 (GREM-TP), is used to train personnel to breach an opening through the outside doors of a building while providing a safe standoff distance. The GREM-TP will be placed on the muzzle of the M16 series Rifles and M4 Carbines. The TP round for the GREM will be supplied without the bullet traps requiring the use of M195 grenade blank cartridge. This will allow multiple uses of the TP round with replacement standoff rods.

Description:

The GREM-TP is delivered in two pieces - main body and the standoff rod. When the standoff rod is screwed into the munition's body, the overall length of 391mm (15.4 in.) is increased to 765mm (30.1 in.). A simulated liner housing contributes to an overall OD close to 4 inches.

Functioning:

The GREM-TP comes without a bullet trap. The TP round must be used with a blank cartridge which provides sufficient impact force to launch the TP round towards its intended target. The standoff rod will be replaced after each firing to allow for further use of the TP round. Each TP round will come with five standoff rods.

WARNING

DO NOT EXCEED 25 GREM-TP ROUNDS PER DAY PER PERSON.

DO NOT FIRE THE GREM-TP CLOSER THAN 15M FROM THE TARGET.

ALL PERSONNEL WITHIN 30M OF WEAPON MUST WEAR SINGLE HEARING PROTECTION.

THE GUNNER MUST WEAR EYE PROTECTION EITHER BLEPS OR SPECS, HELMET, FLAK JACKET, LONG SLEEVES, AND GLOVES.

THE STANDOFF ROD MUST BE ATTACHED TO THE GREM-TP BEFORE FIRING.

A FULLY LOADED MAGAZINE SHOULD BE USED TO LESSEN RECOIL FORCE.

ONLY M195 BLANK AMMUNITION MUST BE USED AND THE WEAPON MUST BE IN SINGLE-SHOT MODE.

ALL MISFIRES SHOULD BE ADDRESSED PER TM 9-1005-319-23

Tabulated Data:

NSN	1330-01-493-8584
Complete round:	
Type	Training
Weight (w/rod)	590g(1.30 lb)
Weight (w/o rod)	543g (1.20 lb)
Length	765mm (30.1 in.)
Weapons used with	M16 series Rifles M4 Carbines
Projectile:	
Body material	Warhead case - Aluminum; Tail - Steel
Standoff rod	Aluminum
Color	Blue
Filler and weight	None
Fuze	None
Propelling charge:	
Propellant	None
Primer	None
Performance:	
Maximum range	40m
Muzzle velocity	43 meters/second

Temperature Limits:

Firing:	
Lower limit	-50°F
Upper limit	+124°F
Storage:	
Lower limit	-50°F
Upper limit	+160°F
Packing	20 trainers and 5 rods each per wood box
*Packing Box:	
Weight	97 lb
Dimensions	33.46 x 20.28 x 17.72 in.
Cube	6.96 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN's.

Shipping and Storage Data:

UNO serial number	0110
Hazard class/division and storage compatibility group	
DOT class	1.4s
DOT marking	M101 GRENADES, PRACTICE
DODAC	1330-GG11
Grenade drawing number	12991848
Packing drawing numbers	12998607

References:
TM 9-1330-200-12/TM 1330-12/1A
TM 9-1330-200-34/TM 1330-34/1
SB 700-20

CHAPTER 5

SPECIAL TYPE GRENADES

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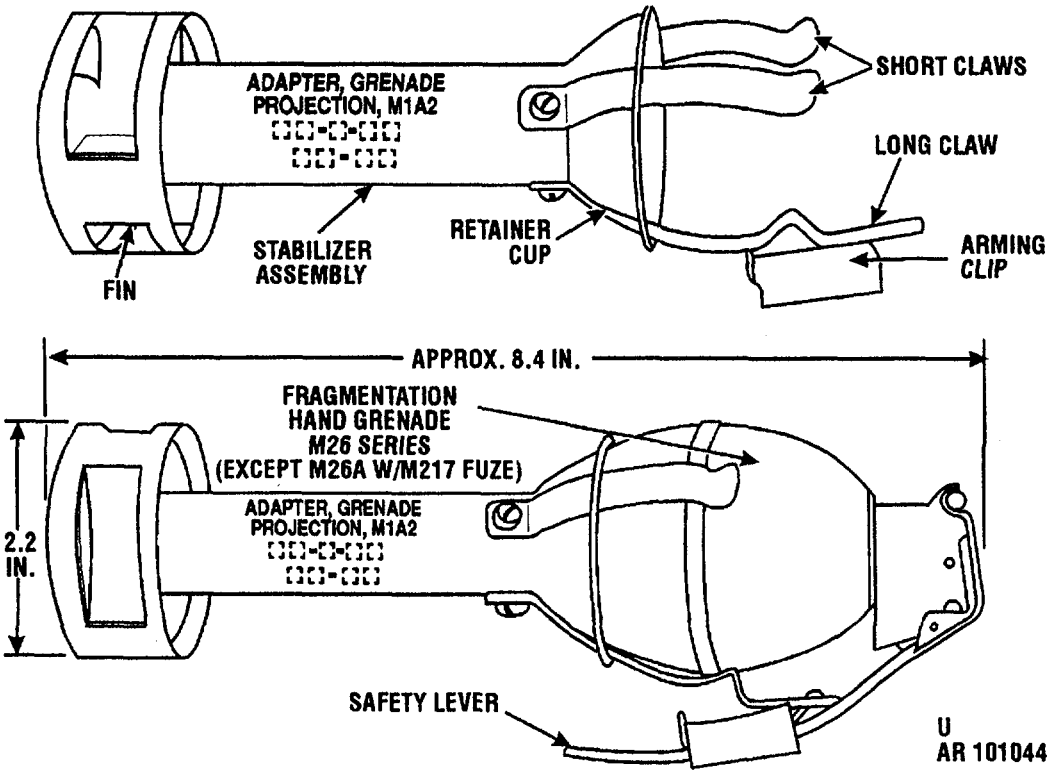
ADAPTERS, GRENADE PROJECTION, M1-SERIES



Type Classification:

Obs. MSR 05776015

Use:

Grenade projection adapters Ml-series adapt fragmentation, practice, illuminating and WP smoke hand grenades for launching from a rifle.

Description:

Three different models are available: the M1, the MlAl and the MlA2. Adapter M1 can be used with fragmentation hand grenade MK2 only.

Adapters M1A1 and M1A2 consist of four parts: a fin assembly, a stabilizer tube, a cup and three claws.

The adapter is fabricated from sheet steel with three spring-steel claws. These grip and hold the grenade in the adapter. The fin assembly is attached to one end of the stabilizer tube. The cup and claws are attached to the other end of the stabilizer tube. An arming clip is attached to the longest of the three claws.

Tabulated Data:

Model(s) ---------- M1, MlAl, M1A2
Weight ---------- 6 oz
Height ---------- 7 in.
Color ---------- Olive drab w/black markings

Federal Supply Code:

NSN ---------- 1330-00-028-5822
DODAC---------- 1330-G801

Unit of Issue:

Each grenade packed -------- 24 per carton; 48 per packing box

Packing Data:

*Packing box:
Weight ---------- 49.0 lb
Dimensions ---------- 30-75 in. x 13.75 in. x 12.0 in.
Cube ---------- 1.75 cu ft
*See DOD Consolidated Ammunition Catalog for additional information.

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- 1.4S
UNO serial number ---------- 0014
UNO proper shipping name ---------- Cartridges for weapons, blank
DOT class---------- Class C explosive
DOT marking ---------- SMALL ARMS AMMUNITION

Functioning:

After placing the grenade in the adapter and releasing the safety clip and removing the safety pin, the hand grenade with adapter is placed on the grenade launcher and is fired. It functions as follows:

The arming clip moves rearward, striking a small extension of the arming clip retainer.

Force of the arming clip's striking the small extension (made of brittle metal) breaks it, allowing the arming clip to fall free, thus releasing the safety lever.

The fuze begins to function (see applicable hand grenade for information on subsequent functioning).

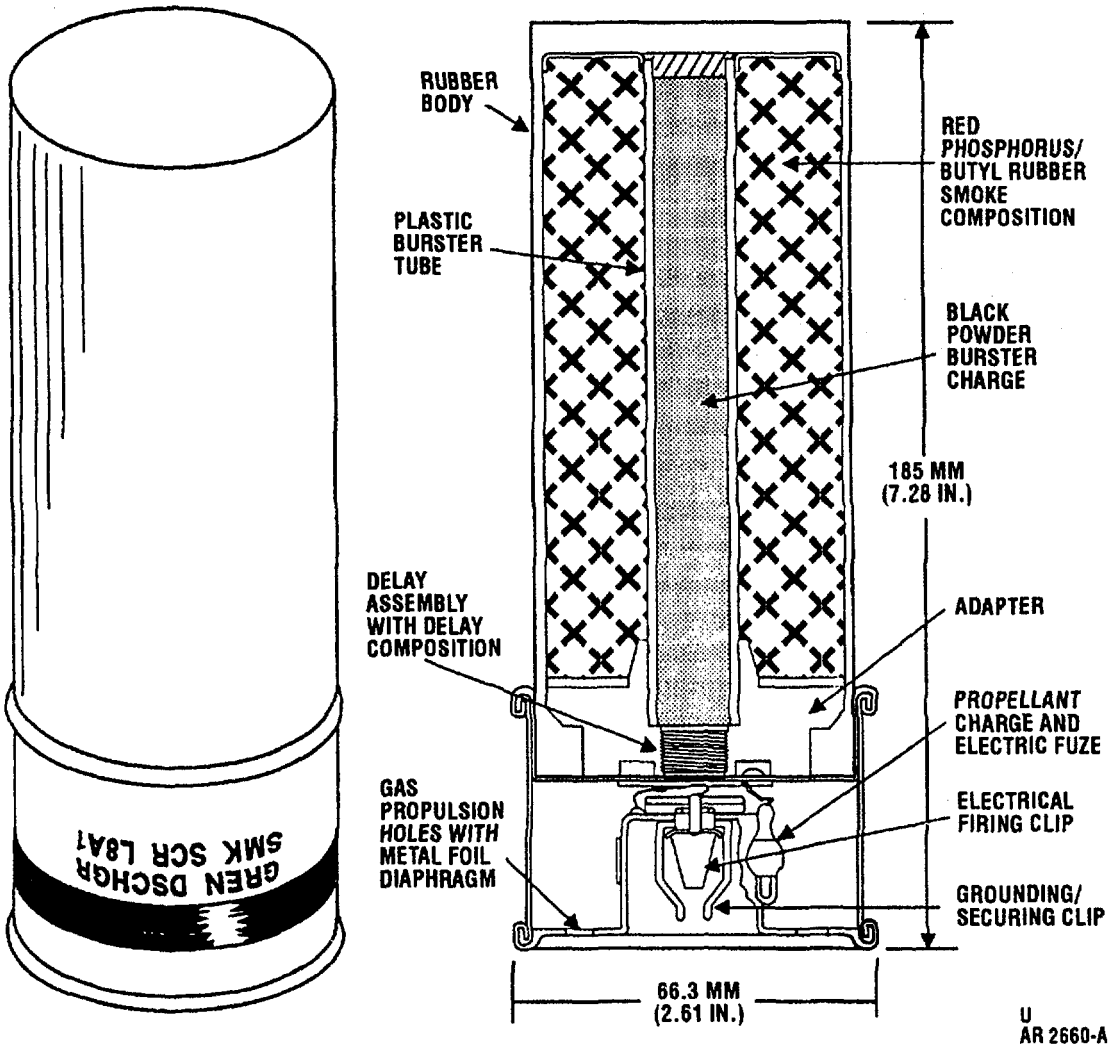
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly---------- 82-1-81
Packing---------- 20-4-369

GRENADE, LAUNCHER, SMOKE: SCREENING, RP, (UK) L8A1



Type Classification:

Std. LCC-A, MSR 07766009

Use:

Used with the M239 and similar Grenade Launchers to provide a self-screening smoke capability for armored/tactical vehicles.

Description:

The grenade consists of a rubber cylindrical body and a metal base. The rubber body contains 360 grams of red phosphorous/butyl rubber in a 95/5 proportion and a central plastic burster tube containing a burster charge of 15 grams of black powder. The metal base contains the electrical clips, F92 squib type electric fuze, propellant charge (3.0 grams of black powder), and the delay assembly with delay composition (0.26 grams of black powder). The metal base contains eight gas propulsion holes covered by a metal foil diaphragm.

Tabulated Data:

Model ---------- (UK) L8A1
Type---------- Smoke (white)
Weight ---------- 1.5 lb
Diameter---------- 2.61 in.
Length ---------- 7.28 in.
Charge ---------- 360 grams

Body ---------- Cylindrical molded rubber
Fuze ---------- Integral
Type ---------- Igniting
Replaced Item ---------- None

Federal Supply Code:

NSN ---------- 1330-01-020-0504
DODAC---------- 1330-G815

Unit of Issue:

Each grenade packed -------- 4 grenades per metal container; 144 metal containers per pallet (576 grenades)

***Packing Data:**

Metal container:
Weight (with contents) -- 13.3 lb
Dimensions ---------- 12.0 in. x 6.1 in. x 7.6 in.
Cube ---------- 0.32 cu ft

Pallet:
Weight (with contents)---- 1974 lb
Dimensions ---------- 48.0 x 40.0 x 52.3 in.
Cube ---------- 57.9 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for additional information.

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- 1.4G
UNO serial number ---------- 0303
UNO proper shipping name ---------- Ammunition, smoke
DOT class---------- Class C explosive
DOT marking ---------- SMOKE GRENADES, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

The L8A1 grenade is propelled from the launching device when electrical current at the firing clip activates the electrical squib type fuze which ignites the propellant charge and simultaneously ignites the delay composition. Pressure builds up in the metal base, escapes through the propulsion holes and propels the grenade from the launching device. During flight of the grenade, the delay composition burns for approximately 3/4 of a second and ignites the burster charge. The burster charge ignites the red phosphorous/butyl rubber smoke composition and ruptures the rubber grenade body. The ignited smoke composition disperses to produce a white smoke cloud within 2 to 6 seconds after firing at approximately 98 feet (30 m) from the launching device.

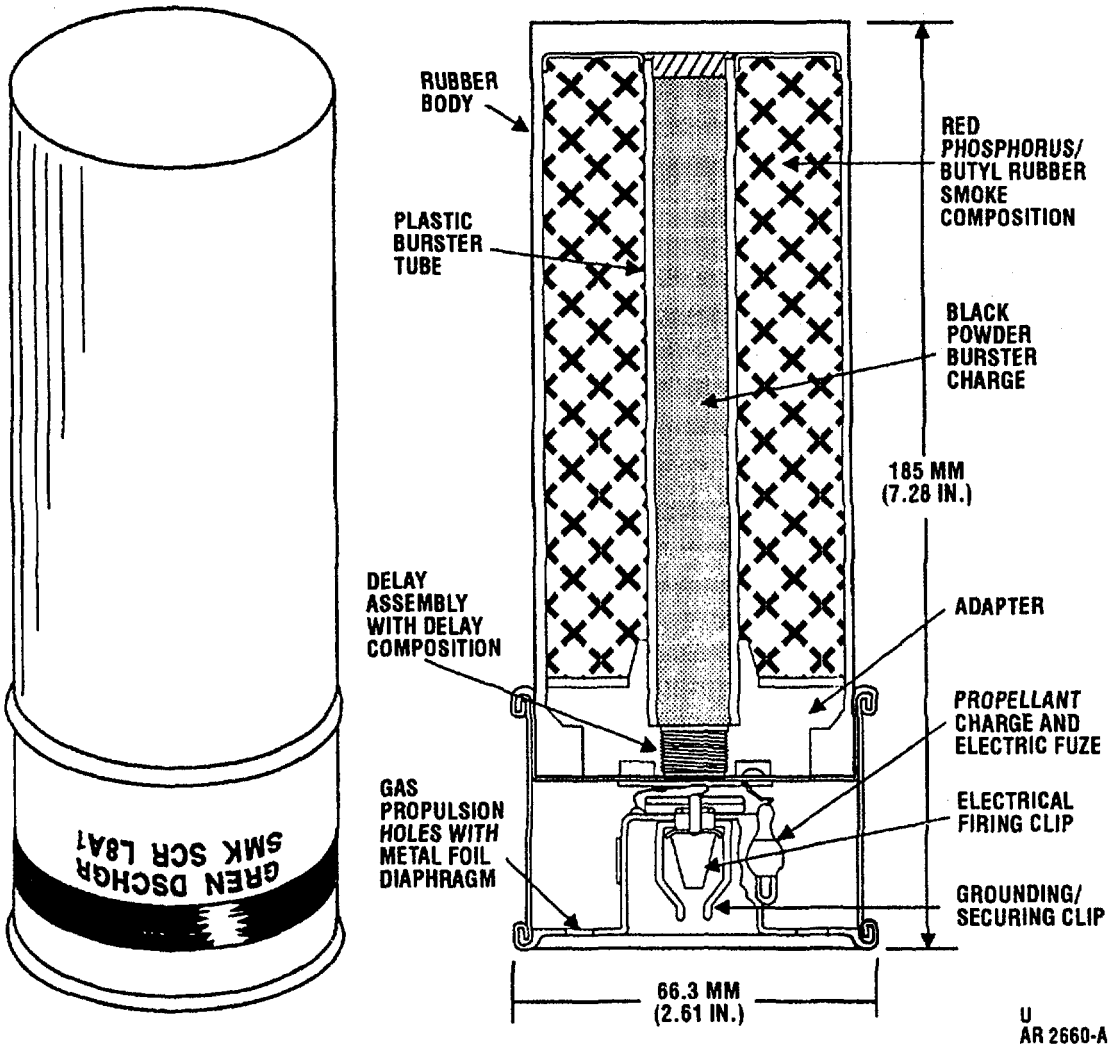
References:

TM 9-1040-266-20&P
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammunition Catalog

Drawings:

Top drawing ---------- TW74GF
Marking drawing---------- AMD 0514
Packing drawing---------- GD/10(P)/100308

GRENADE, LAUNCHER, SMOKE: SCREENING, RP, (UK) L8A1



Type Classification:

Std. LCC-A

Use:

Used with the M239 and similar Grenade Launchers to provide a self-screening smoke capability for armored/tactical vehicles.

Description:

The grenade consists of a rubber cylindrical body and a metal base. The rubber body contains 360 grams of red phosphorous/butyl rubber in a 95/5 proportion and a central plastic burster tube containing a burster charge of 15 grams of black powder. The metal base contains the electrical clips, F92 squib type electric fuze, propellant charge (3.0 grams of black powder), and the delay assembly with delay composition (0.36 grams of black powder). The metal base contains eight gas propulsion holes covered by a metal foil diaphragm.

Tabulated Data:

Model ---------- (UK) L8A3
Type---------- Smoke (white)
Weight ---------- 1.5 lb
Diameter---------- 2.61 in.
Length ---------- 7.28 in.
Charge ---------- 360 grams

Body ---------- Cylindrical molded rubber
Fuze ---------- Integral
Type ---------- Igniting
Replaced Item ---------- L8A1

Federal Supply Code:

NSN ---------- 1330-01-124-5031
DODAC---------- 1330-G815

Unit of Issue:

Each grenade packed -------- 4 grenades per metal container; 144 metal containers per pallet (576 grenades)

***Packing Data:**

Metal container:
- Weight (with contents) -- 13.3 lb
- Dimensions ---------- 12.0 in. x 6.1 in. x 7.6 in.
- Cube ---------- 0.32 cu ft

Pallet:
- Weight (with contents) -- 1974 lb
- Dimensions ---------- 48.0 x 40.0 x 52.3 in.
- Cube ---------- 57.9 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for additional information.

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- 1.4G
UNO serial number ---------- 0303
UNO proper shipping name ---------- Ammunition,. smoke
DOT class---------- Class C explosive
DOT marking ---------- SMOKE GRENADES, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

The L8A3 grenade is propelled from the launching device when electrical current at the firing clip activates the electrical squib type fuze which ignites the propellant charge and simultaneously ignites the delay composition. Pressure builds up in the metal base, escapes through the propulsion holes and propels the grenade from the launching device. During flight of the grenade, the delay composition burns for approximately 3/4 of a second and ignites the red phosphorous/butyl rubber smoke composition and ruptures the rubber grenade body. The ignited smoke composition disperses to produce a white smoke cloud within 2 to 6 seconds after firing at approximately 98 feet (30 m) from the launching device.

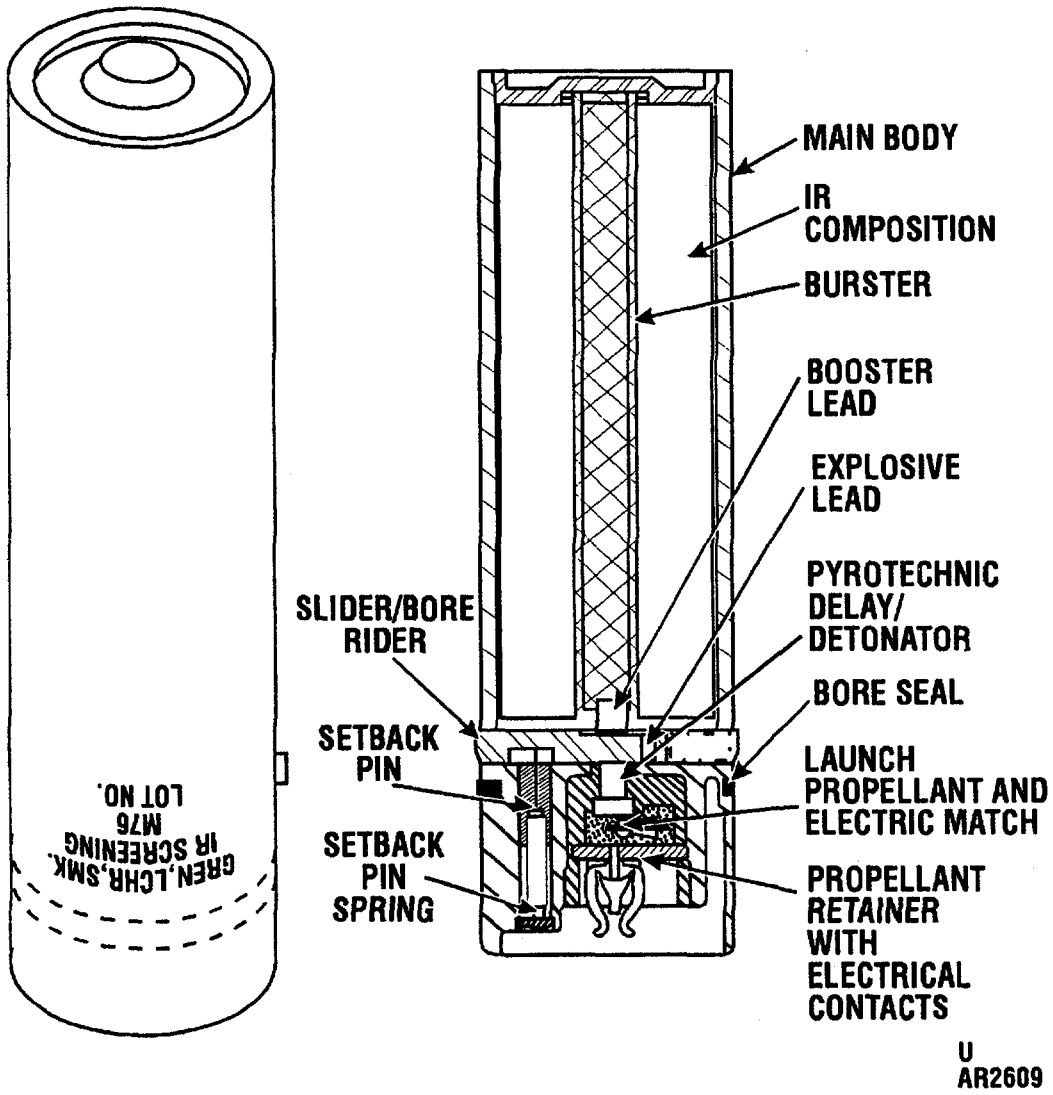
References:

TM 9-1040-266-20&P
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammunition Catalog

Drawings:

Top drawing ---------- TW74GF and D13-19-100
Marking drawing ---------- AMD 0514 and D13-19-131
Packing drawing---------- GD/10(P)/100308 and D13-19-128

GRENADE, LAUNCHER, SMOKE: IR SCREENING, M76



Type Classification:

Std. LCC-A, MSR 05856004

Use:

Used with the M250, M239, M243 and similar grenade launchers to provide an infrared and visual smoke screening capability for armored/tactical vehicles.

Description:

The grenade consists of a plastic cylindrical main body that contains the IR composition, burster, booster lead, and safe and arm (S&A) mechanism. The S&A mechanism consists of a out-of-line spring loaded slider/bore rider containing the explosive lead and a spring loaded setback lock. A propellant assembly is retained in the body forming the complete grenade. The propellant assembly consists of a pyrotechnic delay detonator, launch propellant, an electric match, and a propellant retainer with electrical contacts.

Tabulated Data:

Model ---------- M76
Type ---------- Smoke, IR screening
Weight ---------- 4.0 lb (1.8 kg)
Diameter---------- 2.59 in.

Length ---------- 9.3 in.
Filler ---------- 3.1 lb (1.4 kg) IR composition
Type ---------- Electrical igniting
Replaced item ---------- None

Federal Supply Code:

NSN ---------- 1330-01-171-8869
DODAC---------- 1330-G826
Line item number ---------- G80205
Class of supply ---------- V

See DOD Consolidated Ammunition Catalog for additional data.

Unit of Issue:

Each packed ---------- 4 grenades per metal container
Basic load---------- 6 metal containers (24 grenades)

Packing Data:

Metal container:
Model ---------- M2A1
Weight w/contents ---------- 22.7 lb (10.3 kg)
Length ---------- 12-1/32 in.
Width---------- 6-3/32 in.
Height ---------- 7-1/2 in.
Cube ---------- 0.32 cu ft
Pallet (96 metal containers):
Weight w/contents ---------- 2330 lb (1057 kg)
Length ---------- 36-7/8 in.
Width ---------- 30-7/8 in.
Height ---------- 48-1/2 in.
Cube ---------- 42 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group---------- (02) 1.2
UNO serial number ---------- 0434
UNO proper shipping name ---------- Projectiles
DOT class---------- Class A Explosive
DOT marking ---------- EXPLOSIVE PROJECTILES

Functioning:

The grenades are loaded into the launching device. The electrical system is initiated to activate the electric match. The functioning of the electric match ignites the delay element. Pressure build up in the base and the grenade is ejected from the launcher device. During flight of the grenade, the delay element burns through and ignites the burster charge. The burning time of the delay element is approximately 1.7 seconds. The burster charge ruptures the plastic grenade body and disperses the mixture which forms a smoke screen within 2 seconds after firing. A salvo of grenades produces a smoke cloud approximately 30 meters forward of the launcher, seven meters high, and obscuring a front of over a 110° arc. Cloud duration is approximately 45 seconds depending upon weather conditions.

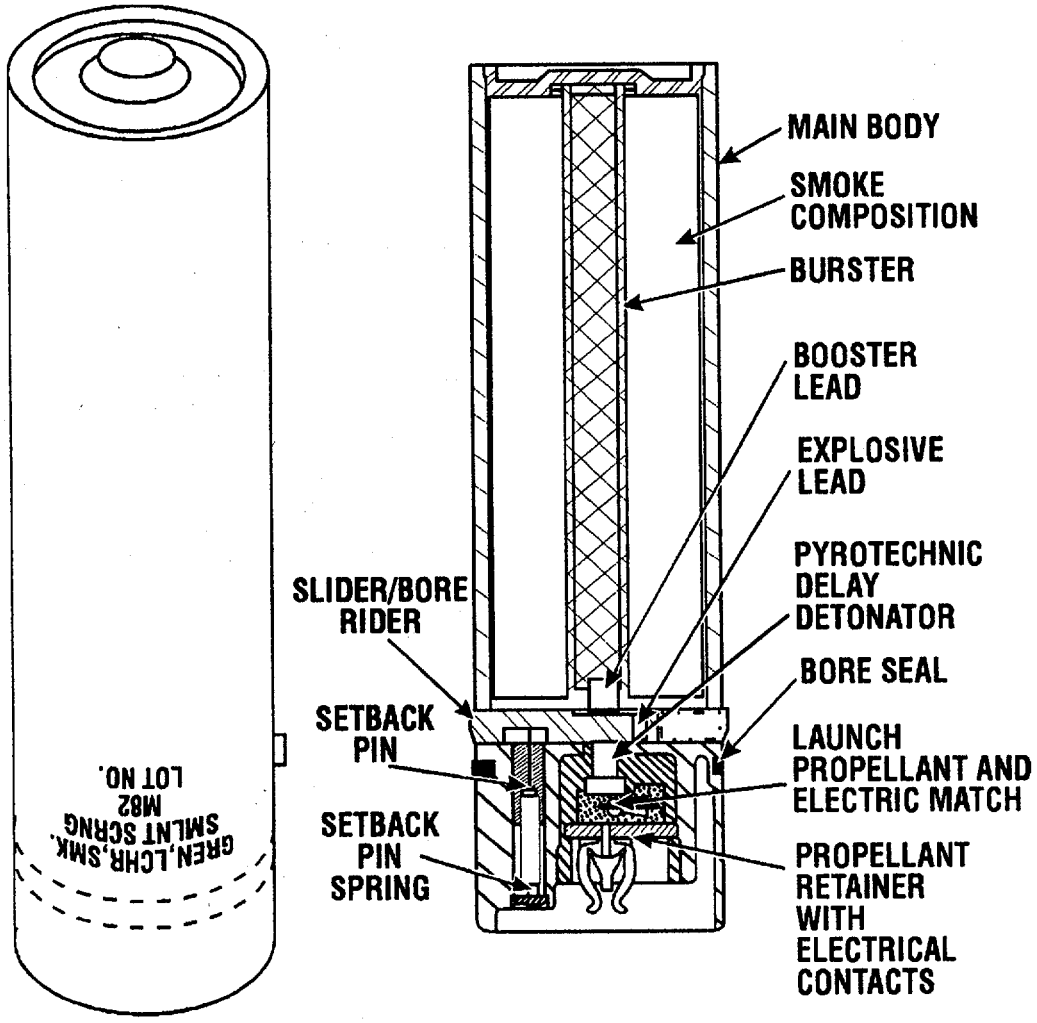
References:

TM 3-1040-268-20&P
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog
DARCOM-P 1700-3-5

Drawings:

Top drawing ---------- 13-19-150
Marking drawing---------- 13-19-180
Packing drawing---------- 13-19-151
Pallet drawing ---------- 13-19-211
Marking ammunition container drawing---------- 13-19-179

GRENADE, LAUNCHER, SMOKE: SIMULANT SCREENING, M82



Type Classification:

Std.

Use:

Used with the M250, M239, M243 and similar grenade launchers to provide means to train armored/tactical vehicle crews to employ smoke grenade launchers.

Description:

The grenade consists of a plastic cylindrical main body that contains a smoke composition, a burster, a booster lead, and a safe and arm (S&A) mechanism. The S&A mechanism consists of an out-of-line spring loaded slider/bore rider containing an explosive lead and a spring loaded setback lock. A propellant assembly is retained in the body forming the complete grenade. The propellant assembly consists of a pyrotechnic delay detonator, a launch propellant, an electric match, and a propellant retainer with electrical contacts.

Tabulated Data:

Model ---------- M82
Type ---------- Smoke, simulant screening
Weight---------- 3.1 lb (1.35 kg)
Diameter---------- 2.59 in.

Length ---------- 9.3 in.
Filler ---------- 1.8 lb (800 g), titanium dioxide
Type ---------- Electrical igniting
Replaced item ---------- None

Federal Supply Code:

NSN ---------- 1330-01-353-3284
DODAC---------- 1330-G978
Line item number---------- G80228
Class of supply ---------- V
See DOD Consolidated Ammunition Catalog for additional data.

Unit of Issue:

Each packed ---------- 4 grenades per metal container
Basic load---------- 6 metal containers (24 grenades)

Packing Data:

Metal container:
Model ---------- M2A1
Weight w/contents ---------- 19.2 lb (8.71 kg)
Length ---------- 12-1/32 in.
Width ---------- 6-3/32 in.
Height ---------- 7-1/2 in.
Cube ---------- 0.32 cu ft

Pallet (96 metal containers):
Weight w/contents ---------- 1994 lb (905 kg)
Length ---------- 36-7/8 in.
Width---------- 30-7/8 in.
Height ---------- 48-1/2 in.
Cube ---------- 42 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group ---------- (02) 1.2G
DOT class---------- Class A explosive
DOT marking ---------- PROJECTILES

Functioning:

The grenades are loaded into the launching device. The electrical system is initiated to activate the electric match. The functioning of the electric match ignites the propellant charge which simultaneously ignites the delay element. Pressure builds up in the base and the grenade is ejected from the launcher device. During flight of the grenade, the delay element burns through and ignites the burster charge. The burning time of the delay element is approximately 1.7 seconds. The burster charge ruptures the plastic grenade body and disperses the mixture which forms a white smoke screen within 2 seconds after firing. A salvo of grenades produces a smoke cloud approximately 30 meters forward of the launcher, seven meters high, and obscuring a front of over a 110 degree arc. Cloud duration is approximately 45 60 seconds depending upon weather conditions.

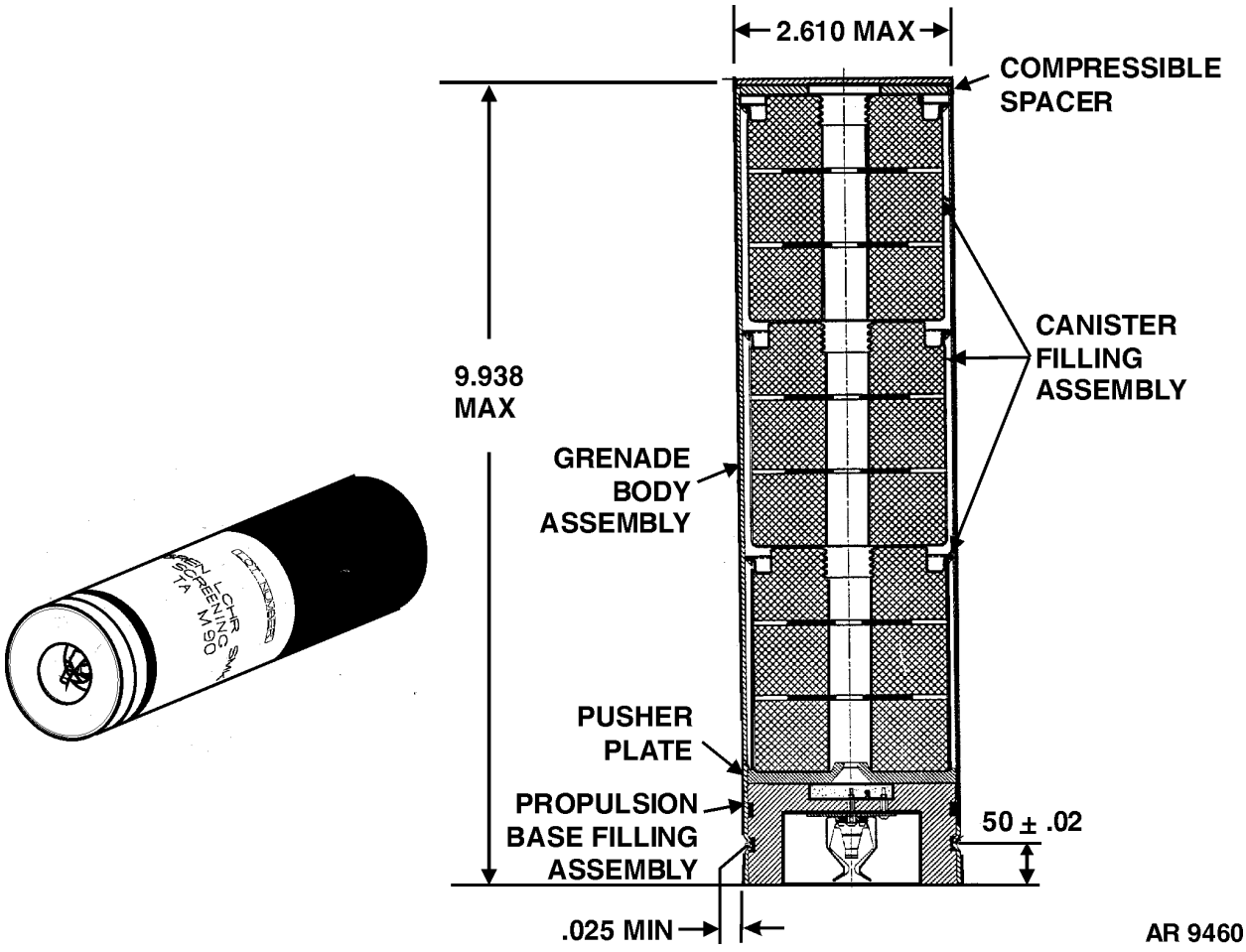
References:

TM 3-1040-268-20&P
TM 9-1330-200-12
TM 9-1330-34
FM 23-30
DOD Consolidated Ammo Catalog
DARCOM-P 1700-3-5

Drawings:

Top drawing ---------- 13-19-290
Marking drawing---------- 13-19-302
Packing drawing---------- 13-19-300
Pallet drawing---------- 13-19-303
Marking ammunition container drawing-------- 13-19-301

GRENADE, LAUNCHER, SMOKE; SCREENING, TA, M90



Type Classification:

STD.

Use:

Used with the M7 and similar 66-mm grenade launchers. The TA Smoke Screening Launcher Grenade, M90 is a burning-type grenade used to generate a cloud of white smoke. It is used basically to screen the presence or activities of light vehicles in a battlefield situation. Although it is designed for combat, it is safe enough to be used in training.

Description:

The grenade body is a cylinder of thin metal. It is filled with a smoke-mixture of Terephthalic Acid (TA) in three stacked cylindrical, individual axial-ported, core burning smoke canisters. Each canister contains two ignition patches. These patches are ignited when the black-powder expulsion charge ignites and flashes up the hollow center core of the grenade. An M103 Electric Match ignites the grenade. A pusher-plate, which sits on top of the black-powder expulsion charge, ejects the three burning smoke-mixture sections to a distance 35 meters from the launcher to form a 2 X 30 meter smoke cloud. The duration of the smoke screen is 20 seconds for a stationary host vehicle and longer if the vehicle is moving. The empty cylindrical grenade body itself remains behind in the launcher tube and must be removed by hand prior to loading another round.

Functioning:

The M90 grenade contains three individual smoke canisters that are ejected out of the grenade body when electric current is applied to the firing contacts, activating the electric match. The electric match ignites the propellant, which burns to create pressure and hot gases inside the grenade body. This

ignites the three individual canisters and propels them out of the grenade body a distance of 35 meters. A salvo of four grenades will produce a white smoke screen (30 meters wide X 2 meters high) within 6 seconds after launch, screening a stationary vehicle for approximately 20 seconds, depending on weather conditions.

Tabulated Data:

Model	M90
Body	Aluminum Tube
Weight	2.86 lb
Length	9.87 in.
Diameter	2.60 in.
Filler weight	600 g (approx)
Filler type	Terephthalic Acid (TA)
Black Powder (Expulsion Charge)	1.38 g
Fuze model	M103 Electric Match
Fuze type	Instantaneous electrical igniting
Color	Top-half black, bottom-half green with one light brown band

Federal Supply Code:

NSN	1330-01-449-9600
DODAC	1330-GG03
Line Item Number	G23048
Class of Supply	II

(See DOD Consolidated Ammunition Catalog for additional data.)

Unit of Issue:

Each packed	4 grenades per metal container
Basic load	l metal container (4 grenades)

Packing Data:

Metal Container:

Model	M2A1
Weight w/contents	15.3 lb
Length	12-1/32 in.
Width	6-3/32 in.
Height	7-1/2 in.
Cube	0.32 cu ft

Pallet (96 metal containers):

Weight w/contents	1558 lb (approx)
Length	50 in.
Width	43 in.
Height	38 in.
Cube	47.8 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility	1.4G
DOT Class	1.4G
DOT Label	EXPLOSIVE 1.4g, CORROSIVE AMMUNITION, SMOKE UN 0303 DWG NO. 13-19-800
UNO serial number	0303

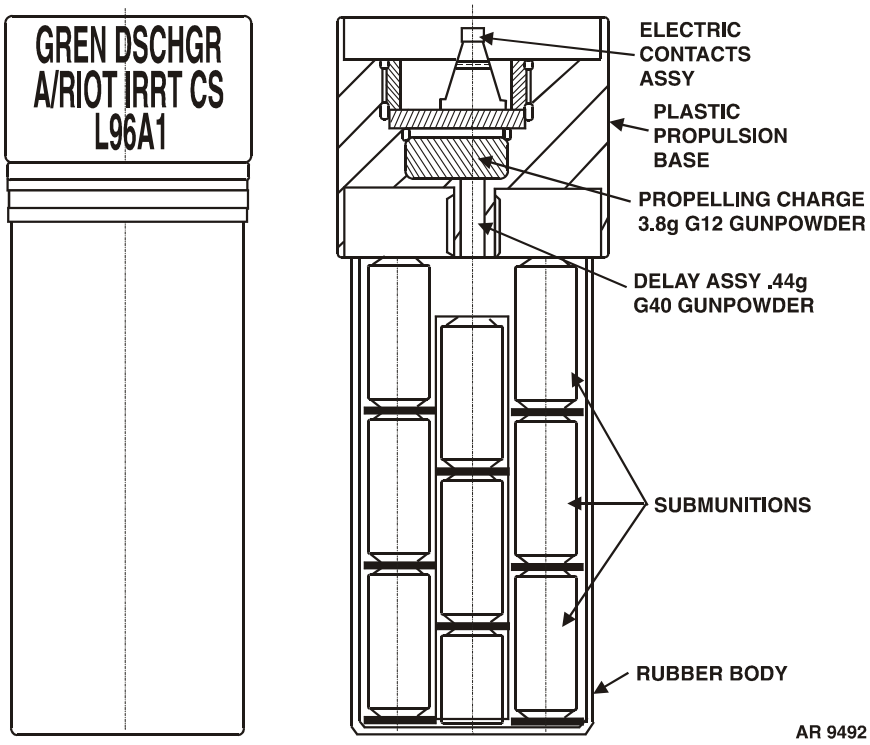
References:

FM3-50
TM 9-1330-200-12
TM 9-1330-200-34
AMC-P 700-3-5
DOD Consolidated Ammo Catalog

Drawings:

Top Drawing	13-19-800
Marking drawing	13-19-801
Packing drawing	13-19-821
Pallet drawing	AMC 19-48-4116/66E and 19-48-116/2
Marking ammunition container drawing	13-19-820

GRENADE, DISCHARGER, ANTI-RIOT, IRRITANT, CS, L96A1



Type Classification:

Std.

Use:

Used primarily with the M7 Discharger, which is a component of the Light Vehicle Obscuration Smoke System (LVO SS), and similar 66-mm grenade dischargers. The Anti-Riot, Irritant, CS Grenade, L96A1, can be used to provide standoff delivery of irritants from a mobile platform for riot/crowd control and protection of convoys in peacekeeping operations.

Description:

The L96A1 Grenade is comprised of a 66-mm fiberglass filled nylon propulsion base and cylindrical rubber body containing the payload, weighing 568 grams. The propulsion base contains a propellant charge, an electric match (fuze), and a delay detonator. The rubber body payload contains 23 individually fuzed, light alloy canister submunitions filled with tear gas, a CS compound. Each submunition contains a central perforation and is surrounded with cambric cloth (cloth impregnated with gun powder). The cambric cloth is ignited by a piece of igniter cord that is assembled through the central perforation in each submunition and joined to the initiating charge at the base of the grenade. The L96A1 uses the gas produced by the rapid burning of the igniter cord/cambric to burst the rubber body that contains the 23 submunitions. The submitions will burn for approximately 8 seconds, producing a cloud of CS irritating smoke.

Tabulated Data:

Model	L96A1
Body	Fiberglass Filled Nylon and Rubber
Weight	568 g (1.25 lbs)
Length	185mm (7.28 in.)
Diameter	66mm (2.60 in.)
Filler weight	174.8 to 179.4 g of CS
Filler type	CS (tear gas)
Gun Powder or Black Powder)	3.8 g (.008 lbs)
Fuze model	N32B Electric Match
Fuze type	Instantaneous Electrical Igniting
Color	Gray, with a brown band and a red band

Federal Supply Code:

NSN 1330-01-459-4018
DODAC.....1330-FZ14
Line Item Number G34777
Class of Supply.....V
See DOD Consoliated Ammunition Catalog for additional data.)

Unit of Issue:

Each Packed.....4 grenades per metal container
Basic Load.....1 metal container (4 grenades)

Packaging Data:

Metal Container:

Model.....M2A1
Weight w/contents .....10.9 lbs (4.9 kg)
Length.....12-1/32 in.
Width .....6-3/32 in.
Height .....7-1/2 in.
Cube.....32 cu ft

Pallet (96 metal containers)

Weight w/contents .....1208 lbs (548 kg) (approx)
Length.....36-7/8 in.
Width .....30-7/8 in.
Height .....48-1/2 in.
Cube.....42 cu ft

Packaging Data:

Hazard class/division and storage compatibility group 1.4G
DOT Class 1.4G
DOT Label.....Explosive 1.4G
DOT Marking.....Ammunition, Tear-Producing UN0301 NSN 1330-01-459-4018
UNO 0301

Functioning:

The L96A1 grenade is an electrically launched grenade. The launch system consists of electrical contacts for discharger tube interface, an electric match initiator and a delay detonator in a fiberglass filled nylon propulsion base. The female connector of the propulsion base makes an electrical connection with the firing circuit when pushed onto the male electrical connector at the base of the discharger tube. When the launch system is armed and the firing button is pushed, the firing circuit directs electrical energy from the vehicles-battery to the electric match, which is housed inside the propulsion base. The hot gases emitted from the ignition of the gun powder/black powder perform several functions simultaneously. They ignite the igniter cord and cambric inside the rubber payload via the delay detonator; and release sufficient energy through the blow-out hole in the propulsion base to project the grenade a distance of 65-85 meters from the host vehicle. The delay detonator ensures the grenade functions at least 6 meters above the target area. The 23 submunitions are then lit by the burning igniter cord and cambric cloth. They fall to the ground covering at least a 5-meter ground level dispersion radius and burn approximately 8 seconds to dispense the irritant smoke (CS compound).

References:

TM 9-1330-200-12
TM 9-1330-200-34
TM 3-1040-286-12&P
TM 3-1055-649-12&P
AMC-P 700 3-5
DOD Consolidated Ammo Catalog

Drawings:

Top Drawing 13-19-870
Marking Drawing..... 9704022A2
Packing Drawing..... 13-19-873
Pallet Drawing 13-19-871
Marking Ammunition Container Drawing..... 13-19-872

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
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