

U.S.
HAND
&
RIFLE
GRENADES

INTRODUCTION

The hand and rifle grenades used by the armed forces of the United States are of many and diverse types. Specific grenades are used for anti-personnel, anti-tank, smoke, gas, signal, and incendiary effects.

All hand grenades of the United States, with the exception of the frangible grenades, use fuzes which are similar in operation. The action of the fuse is to ignite a pyrotechnic delay which functions the grenade after the delay has expired. There are no impact fuzes in the hand grenades of present use.

The regular rifle grenades are functioned by a simple impact fuse which is armed before the grenade is shot from the spigot launcher. In addition to the rifle grenades constructed as such, the United States forces use special projection adapters which enable them to project hand grenades by rifle.

U. S. NAVY BOMB DISPOSAL SCHOOL
Washington, D.C.

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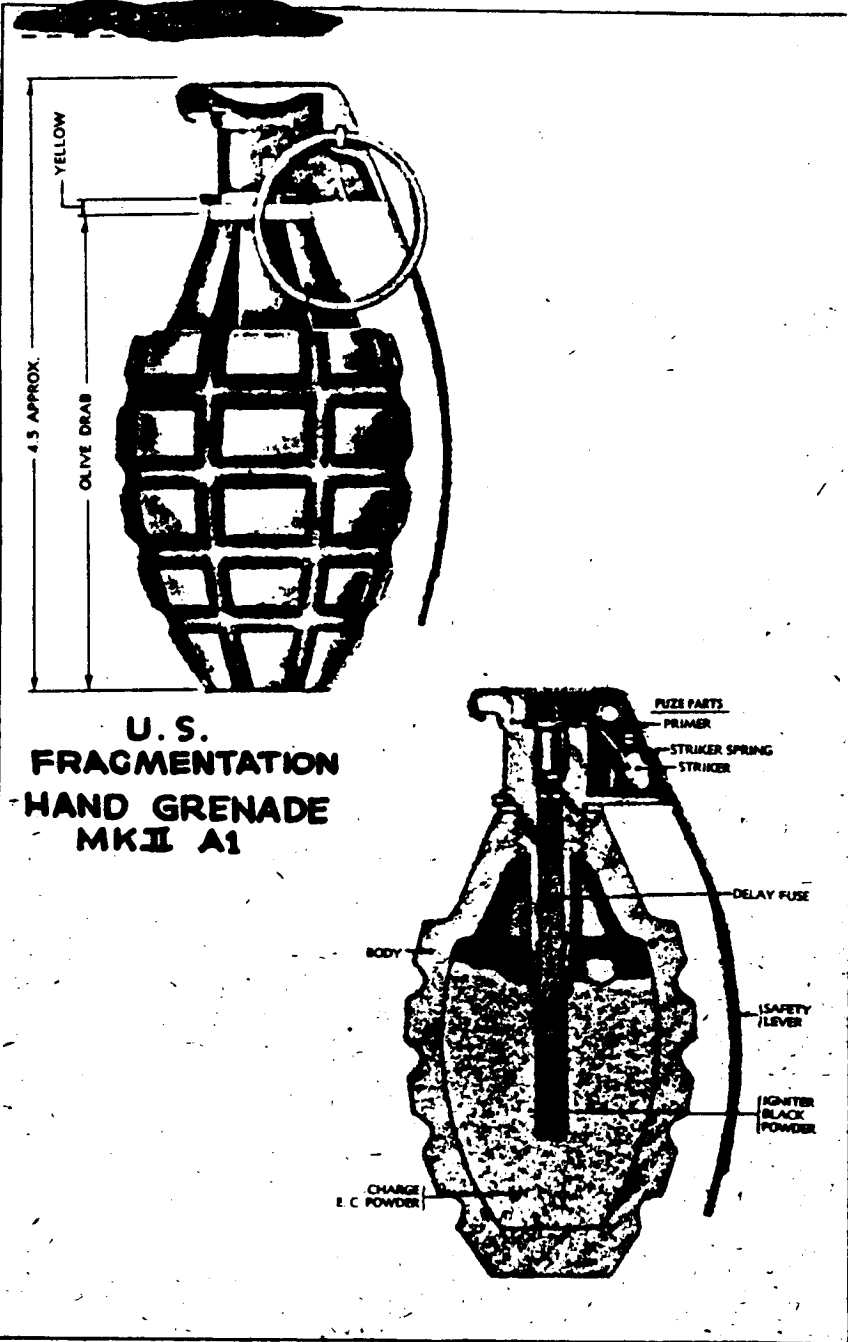
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This publication is designed to be inserted in the binder for "Land, Rifle & Mortar Exercises" as an addition following "U. S. Land Rifle Exercises".

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**U. S.
 FRAGMENTATION
 HAND GRENADE
 MK II A1**

Data

Overall length 4.5 inches.
Maximum diameter 2.25 inches.
Color Olive drab.
Markings Yellow band around top
of grenade, fuze model,
mfg's symbol, and lot
number stamped on top of
lever.
Total weight 1.31 lbs.
Filling E.C. powder.
Weight of filling 0.74 ounce.
Fuze M 10 A3.
Delay 4.0 to 4.8 seconds.

U.S.
FRAGMENTATION
HAND GRENADE
Mk. I A-1

Description

The body is a cast iron shell in the shape of a large lemon, and is grooved horizontally and vertically to assist in the formation of uniform fragments of effective size.

This grenade is issued loaded and fuzed with the M 10 A3 igniting fuze. The fuze consists of a body, striker, safety lever, and safety pin. The body of the fuze is cylindrical in shape and is threaded for assembly to the grenade. It contains the primer, a length of delay fuze sufficient to give an average delay of 4.5 seconds, and an igniter cup containing 7 grains of black powder. At the top of the body one side is extended to form a lip for the attachment of the safety lever, the other side forms a hinge to carry the spring-loaded striker. The striker is restrained by the safety lever. The lever is hooked over the lip of the fuze body, extends across the head of the fuze, over the striker, and curves downward in an arc that conforms to the shape of the grenade. The lever is held in position for shipping and handling by a split safety pin which passes through the safety lever, through the fuze body, and over the striker to protrude on the other side where it is spread so that a pull of between 20 and 30 lbs. is required to withdraw it.

Operation

When the safety pin is removed preparatory to throwing the lever is held in place by the hand holding the grenade. When the grenade is thrown, the lever is released. The striker, driven by its spring, throws off the lever and rotates about its pivot to strike the primer. The primer ignites the delay element which takes about 4.5 seconds to burn through to the igniter. When ignited by the delay element, the igniter bursts the cup and explodes the main charge of the grenade.

Effective fragmentation covers an area of 30 yards radius, but fragments may fly as far as 200 yards.

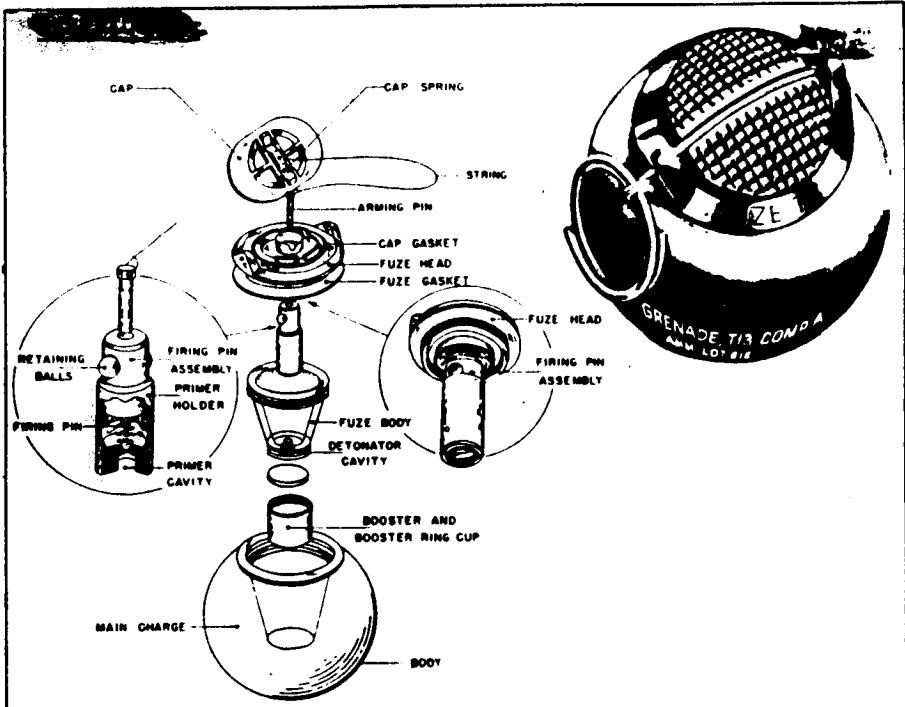
Earlier Models

This grenade replaces an earlier model, the Mk II which was identical to this one except that it was designed with a filling hole in the bottom which was pipe-threaded and closed with a metal plug.

World War I fragmentation grenades (Hand Grenade, Fragmentation, HE, Mk II) were loaded with granular T.N.T. and fired by a detonating fuze. This grenade was stored and issued unfuzed and was fuzed in the field.

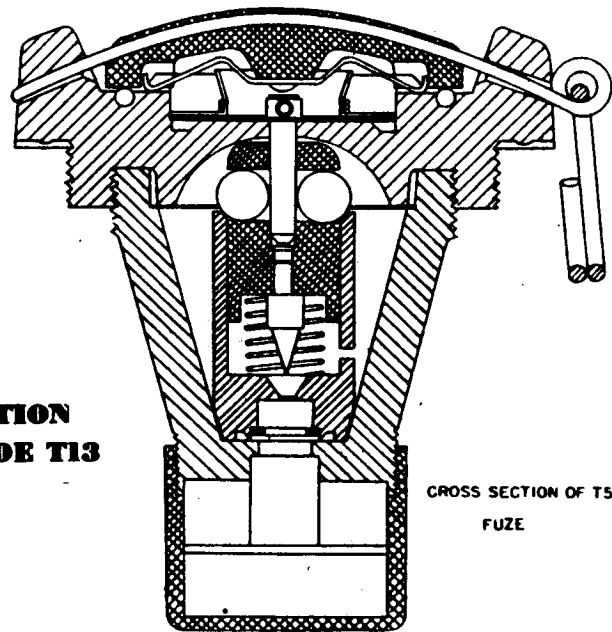
An earlier model of the fuze is the M 10 A2 which is identical to the M 10 A3, described above, except for the details of the delay element which gave a delay of about 5 seconds (4.3 to 5.5 seconds).

E.C. powder is the abbreviation for Explosive Company, and refers to the main filler which consists of nitro cellulose, potassium nitrate, barium nitrate, and a de-sensitizer. The explosive is pink colored and is sensitive to friction, shock, and heat. It burns readily and explodes when confined.



DISASSEMBLED VIEW OF T13 & T5 FUZE

**FRAGMENTATION
HAND GRENADE T13**



CROSS SECTION OF T5
FUZE

U. S.

FRAGMENTATION
HAND GRENADE
T-13

Data

Outside Diameter (spherical) . . . 2.86 in.
Thickness of wall04 in.
Color Olive drab.
Total Weight 11.9 oz.
Weight of Filling 4.6 oz.
Type of filling Comp. A
Fuse T 5
Functioning Instantaneous

Description

The T 13, popularly known as the "Beano", is about the shape and size of a baseball. The body is very thin and the grenade is used for fragmentation in a small area with the danger area for unprotected personnel being approximately 20 yards.

The T 5 is an all-ways impact type fuse designed to detonate the grenade regardless of the position on impact.

Operation

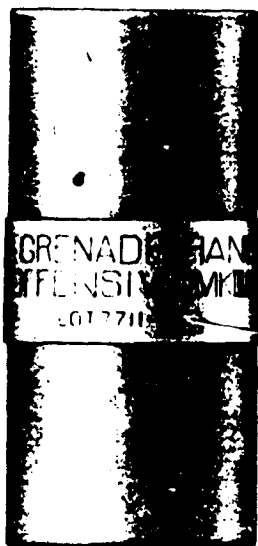
(a) When the grenade is thrown, after removal of the safety pin, the cap is forced away from the fuse body by a cap spring. The cap acts as a parachute, unwinding a string and pulling out the arming pin from the grenade. The fuse is now armed, because of the 2 retaining balls which prevented movement of the firing pin assembly toward the primer can now recede into the firing pin assembly, permitting functioning upon impact. With an average throw, arming should occur at a distance of about 20 feet.

(b) Impact in either direction along the axis of the firing pin causes functioning because the firing pin assembly and the primer holder are forced together. Impact at right angles to the axis of the firing pin causes functioning because the top of the firing pin assembly is forced to follow the spherical surface of the underside of the fuse head, thus forcing the firing pin into the primer.

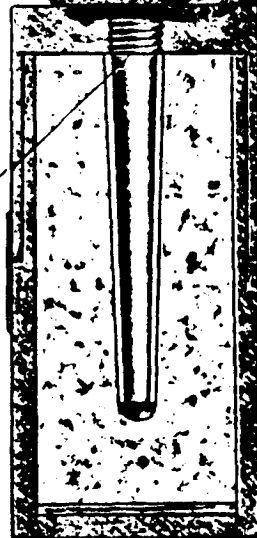
(c) The M 26 primer functions the M 17 detonator, which in turn sets off a booster ring, booster pellet and finally the main bursting charge.

Remarks

Do not attempt to replace the arming pin once the grenade has been armed.



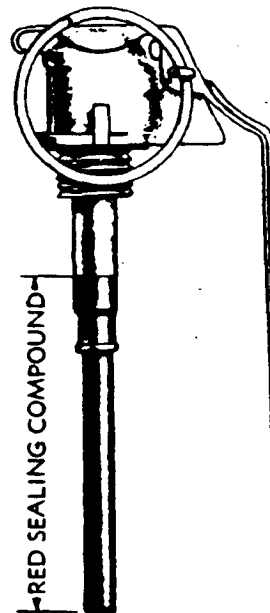
PAPER SEAL
LABEL YELLOW
(MARKING IN BLACK)
MODEL OF GRENADE
LOT NUMBER AND
YEAR LOADED



MK III A2



MK III A1



RED SEALING COMPOUND

M6A3 FUZE

U.S. OFFENSE HAND GRENADES

U.S.

OFFENSIVE
HAND GRENADE

Mk. III A2

Date

Overall length (fuzed) . . . 5.36 inches.
Length of body 4 1/2 inches.
Diameter of body 2-1/8 inches.
Color Black.
Markings Yellow band around body
with type, model, lot
number, year loaded,
written on band in
black letters.
Total weight 0.84 lb.
Filling T.N.T.
Weight of filling 0.4 lb.
Fuze M6 A3
Delay 4.5 seconds.

Description

This grenade consists of a cylindrical pressed fiber body and a charge of pressed T.N.T. The head contains a threaded fuze hole which is sealed by a waterproof paper disc.

It is fuzed with the M6 A3 detonating fuze which has a delay varying between 4.3 and 4.8 seconds. The fuze consists of a threaded metal body which contains the primer, delay element, and detonator, and to which a spring driven striker is attached. The striker is restrained by the safety lever which hooks over the lip of the body, passes across the head of the body, over the striker, and down the side of the grenade. The lever is held in place during shipping and handling by a split safety pin which passes through the safety lever, through the fuze body, and over the striker to protrude on the other side where it is spread so that a pull of between 10 and 30 lbs. is required to withdraw it. This fuze is distinguished from igniting fuzes by the red sealing compound (instead of green) used to aid in sealing the detonator into the fuze. It differs from the M10 A3 in that the safety lever is straight, while that of the M10 A3 is curved. It differs from the M 200 A1 in that the length of the body is approximately four inches as compared with a body length of 2 inches for the M200 A1. The detonator consists of a seven-grain primer charge and a 13.5 grain tetryl charge.

The principle use of this grenade is for demolition, and though no protection is needed from fragments of the grenade, care should be exercised to have cover available against fragments of the structure demolished.

Operation

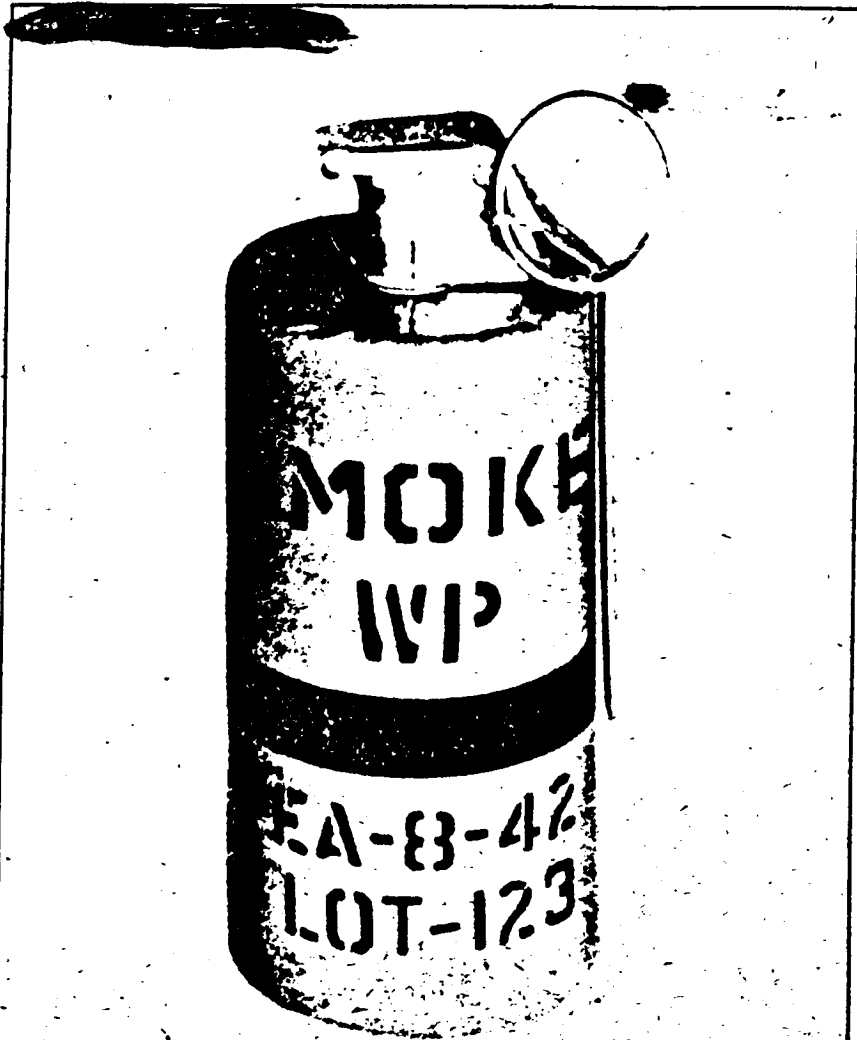
When the safety pin is removed, preparatory to throwing the lever is held in place by the hand holding the grenade. When the grenade is thrown, the lever is released. The striker, driven by its spring, throws off the lever and rotates about its pivot to strike the primer. The primer ignites the delay element which takes about 4.5 seconds to burn through to the detonator.

The explosion of the detonator sets off the main charge producing a blast effect. This blast is not effective against personnel except at very short ranges or in enclosed spaces.

Earlier Models: Hand Grenade, offensive, Mk III A1.

This grenade differs from the Mk III A2 in that the ends of the grenade body are of sheet metal and the grenade weighs .875 pound fuzed. The Mk III had metal ends and contained only 0.27 lb. of T.N.T. It was shipped with a wooden plug in the fuze well.

Fuze: The M6 A2 and M6 A1, models of this fuze may be encountered. These modifications have been declared unsafe for use and should be destroyed.



WHITE PHOSPHORUS M15
SMOKE GRENADE

U.S.

**SMOKE
HAND GRENADE
SMOKE (W.P.) M 15**

Data

Overall length 5 inches.
Maximum diameter 2 $\frac{1}{2}$ inches.
Color Blue grey.
Markings In yellow on body -
one band, "SMOKE WP",
lot number, loaders'
initials, date of
filling.
Filling White phosphorus.
Fuse M6 A3.
Delay 4.5 seconds.

Description

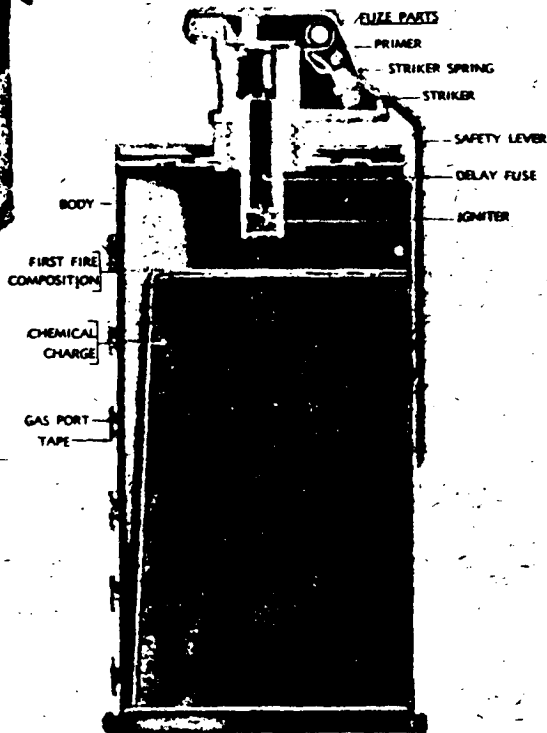
This grenade is of the bursting type and contains white phosphorus in a sealed cylindrical container. The body is notable because the corners are rounded. It is fused with the M6 A3 detonating fuse which has a delay varying between 4.3 and 4.5 seconds. The fuse consists of a threaded metal body which contains the primer, delay element, and detonator, and to which a spring driven striker is attached. The striker is restrained by the safety lever which hooks over the lip of the body, passes across the head of the body, over the striker, and down the side of the grenade. The lever is held in place during shipping and handling by a split safety pin which passes through the safety lever, through the fuse body, and over the striker to protrude on the other side where it is spread so that a pull of between 10 and 30 lbs. is required to withdraw it. This fuse is distinguished from igniting fuses by the red sealing compound (instead of green) used to aid in sealing the detonator into the fuse. It differs from the M 10 A3 in that the safety lever is straight, while that of the M 10 A3 is curved. It differs from the M 200 A1, in that the length of the body is approximately four inches as compared with a body length of 2 inches for the M 200 A1. The detonator consists of a seven-grain primer charge and a 13.5 grain tetryl charge.

Operation

When the safety pin is removed preparatory to throwing the lever is held in place by the hand holding the grenade. When the grenade is thrown, the lever is released. The striker, driven by its spring, throws off the lever and rotates about its pivot to strike the primer. The primer ignites the delay element which takes about 4.5 seconds to burn through to the detonator.

When ignited by the delay element, the detonator bursts the case and scatters the phosphorus over an area about 25 yards in diameter. The phosphorus ignites spontaneously and the scattered pieces will burn for about 30 seconds.

U.S. M-7
GAS (CN)
HAND
GRENADE



Data

Length of body 5 inches.
Maximum diameter 2 1/2 inches.
Color Blue grey.
Markings In red on body, one band, type of gas, word "GAS", lot number, loader initial, date of filling.
Filling M6 - Chloracetophenone, Diphenylamine, chloraisine, burning mixture.
M7 - Chloracetophenone, burning mixture.
Fuze M200A1.
Delay 2 seconds.

Description

These grenades are of the burning type. They do not explode. They have a cylindrical body made of tin plate. There are three lines of 6 gas ports in the body and four ports in the head. These are covered by small squares of adhesive tape.

The M200A1 fuze threads into the top of these grenades. It is essentially the same as the M 10 A3 used in the fragmentation hand grenade. However, there is only a 2-second delay element, an igniter, and no detonator. This results in a fuze with a much shorter body. At the top of the body one side is extended to form a lip for the attachment of the safety lever, the other side forms a hinge to carry the spring loaded striker. The striker is restrained by the safety lever. The lever is hooked over the lip of the fuze body, extends across the head of the fuze, over the striker, and down the side of the grenade. The lever is held in position for shipping and handling by a split safety pin which passes through the safety lever, through the fuze body, and over the striker to protrude on the other side where it is spread so that a pull of between 20 and 30 lbs. is required to withdraw it.

Operation

When the safety pin is removed preparatory to throwing, the lever is held in place by the hand holding the grenade. When the grenade is thrown, the lever is released. The striker, driven by its spring, throws off the safety lever and rotates about its pivot to strike the primer. The primer ignites the delay element which takes about 2 seconds to burn through to the igniter. The igniter ignites the starter mixture which creates enough heat to vaporize the chemical ingredients. The pieces of adhesive tape covering the gas ports are blown or burned off and gas is emitted. The gas generation reaches full volume three seconds after the safety lever is released and gas is emitted for from 25 to 35 seconds.

U.S.

GAS
HAND GRENADES
CN-DM, M6 & CN, M7



U.S.

SMOKE HAND GRENADES

WHITE, H.C., AN-M8

COLORED, M18, M-16

Data

Length of body 5 inches
Maximum diameter 2 1/4 inches
Color Blue gray.
Markings In yellow on body -
one yellow band and
AN-M8 "HC-SMOKE"
M18 - Color of smoke
and SMOKE on both, lot
number, mfg's initial,
date of filling.
Filling AN-M8 Hexachlorethane-
zinc. M18 - colored smoke
mixture.
Fuze M 200 Al.
Delay 2 seconds.

Description

These grenades are of the burning type. They do not explode. They have a cylindrical body made of tin plate. They differ from the gas grenades in that they do not have the 18 gas ports in the body, but they have four smoke ports in the head. These are covered by small squares of adhesive tape. The M 18 grenades produce seven colors of smoke: red, orange, blue, green, black, violet and yellow. The M 16 is a limited standard colored smoke grenade and differs from the M 18 in that it produces smoke for 2 1/2 minutes while the M 18 produces smoke for 1 minute, and the AN-M8 produces a white smoke for 3 minutes.

The M 200 Al fuze threads into the top of these grenades. It is essentially the same as the M 10 A3 used in the fragmentation hand grenades. However, there is only a 2 second delay element, an igniter, and no detonator. This results in a fuze with a much shorter body. At the top of the body one side is extended to form a lip for the attachment of the safety lever, the other side forms a hinge to carry the spring loaded striker. The striker is restrained by the safety lever. The lever is hooked over the lip of the fuze body, extends across the head of the fuze, over the striker, and down the side of the grenade. The lever is held in position for shipping and handling by a split safety pin which passes through the safety lever, through the fuze body, and over the striker to protrude on the other side where it is spread so that a pull of between 20 and 30 lbs. is required to withdraw it.

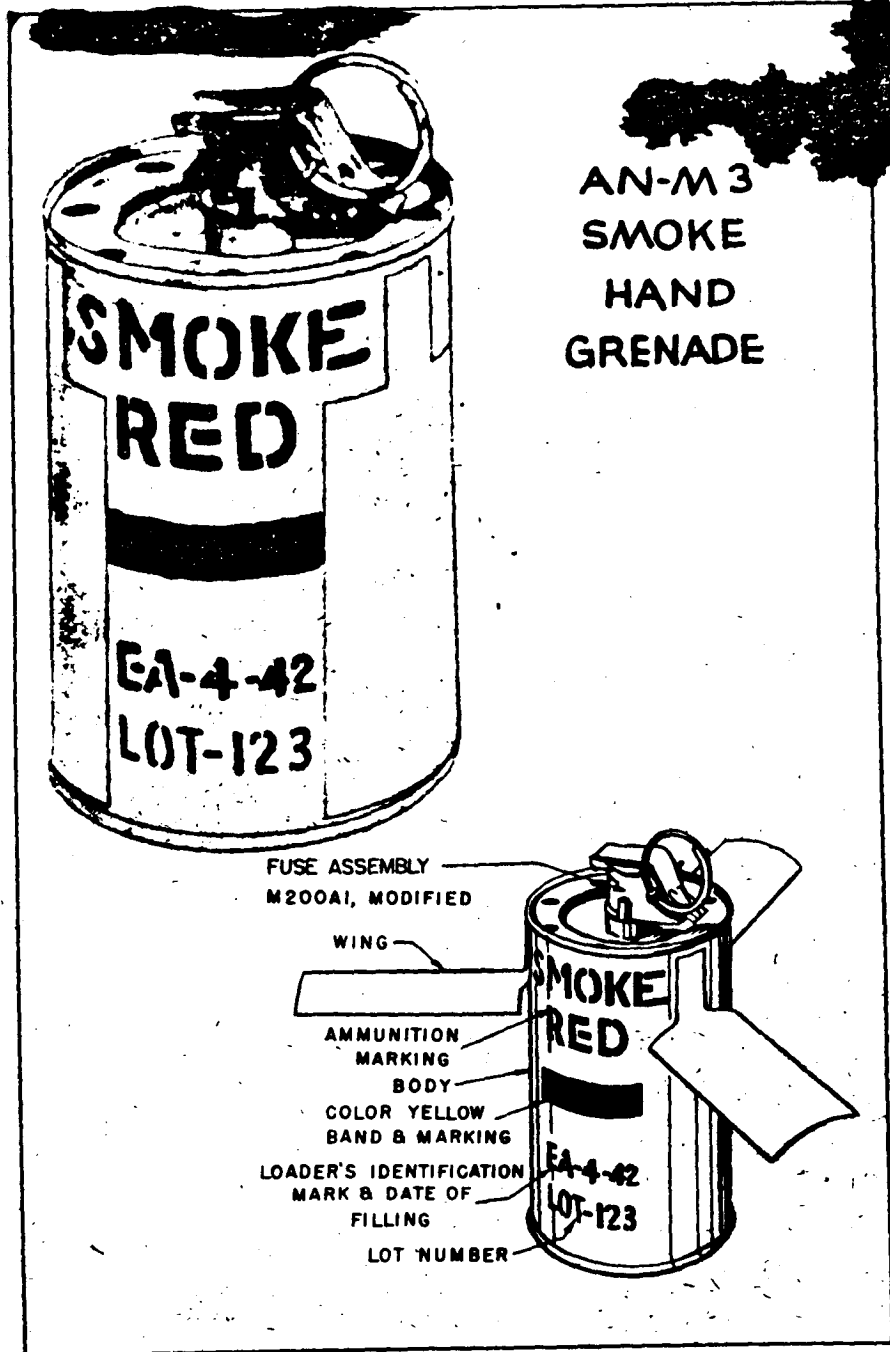
Operation

When the safety pin is removed preparatory to throwing, the lever is held in place by the hand holding the grenade. When the grenade is thrown, the lever is released. The striker, driven by its spring, throws off the safety lever and rotates about its pivot to strike the primer. The primer ignites the delay element which takes about 2 seconds to burn through to the igniter.

The igniter ignites the starter mixture which initiates the smoke mixture. The pieces of adhesive tape covering the smoke ports are blown or burned off and smoke is emitted for approximately 3 1/2 minutes.

The volume of smoke generated by a grenade is generally too small for screening purposes. Although they may be used to patch gaps in a larger screen, the authorization is that they be used for signals.

CAUTION: The presence of moisture will cause these grenades to ignite spontaneously. If a fire should occur in such munitions, an attempt should be made to remove and segregate the burning items. Neither water nor the usual chemical extinguishers should be used in an attempt to extinguish such fire.



Length of body 5 1/2 inches.
 Maximum diameter 3 inches.
 Color Blue grey.
 Markings In yellow on body - one
 band, "SMOKE RED", lot
 number, filler's initial,
 and date of filling.
 Filling Red smoke mixture.
 Fuze Modified M 200 Al.
 Delay 2 seconds.

U.S.

SMOKE
HAND GRENADE
RED, AN-M 3

Description

This grenade differs from the other smoke grenades in that the grenade body is assembled in a cylindrical outer container. This container has eight smoke emission ports in its top. It also has three light metal flaps welded to the side which may be bent outward at right angles to furnish bearing for supporting the grenade in snow, mud, or other soft surface. With the outer container this grenade is slightly larger than the ordinary smoke grenade.

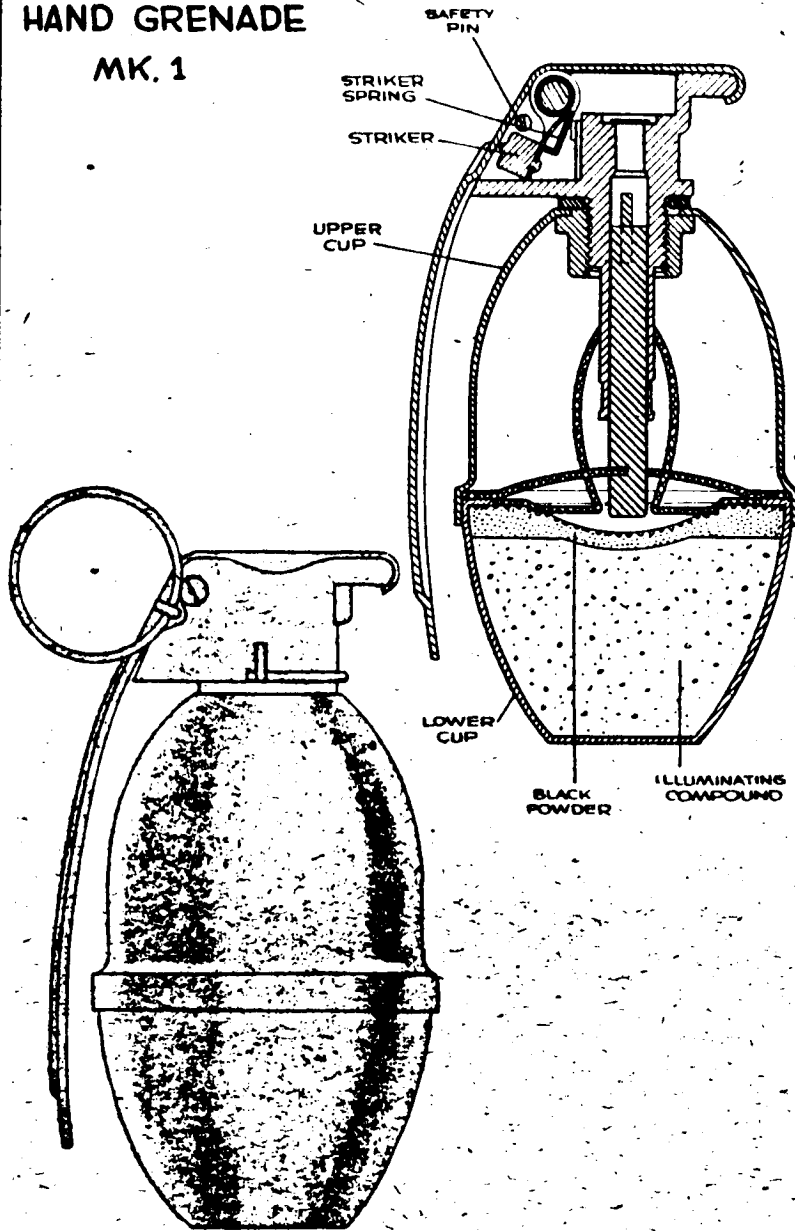
The M 200 Al fuze has been modified by shortening the safety lever so that it does not protrude down the side of the grenade. At the top of the body one side is extended to form a lip for the attachment of the safety lever, the other side forms a hinge to carry the spring loaded striker. The striker is restrained by the safety lever. The lever is hooked over the lip of the fuze body, extends across the head of the fuze, over the striker, and down the side of the grenade. The lever is held in position for shipping and handling by a split safety pin which passes through the safety lever, through the fuze body, and over the striker to protrude on the other side where it is spread so that a pull of between 20 and 30 lbs is required to withdraw it. This grenade is made to be placed in position and not thrown.

Operation

When the safety pin is removed preparatory to placing, the lever is held in place by the hand holding the grenade. When the grenade is placed, the lever is released. The striker, driven by its spring, throws off the safety lever and rotates about its pivot to strike the primer. The primer ignites the delay element which takes about 2 seconds to burn through to the igniter.

The igniter ignites the starter mixture which initiates the smoke mixture. Smoke is then emitted through the smoke ports. This grenade is used for signaling, especially in snow.

**U. S. ILLUMINATING
HAND GRENADE
MK. 1**



Data

Overall length 4.4 inches.
Maximum diameter 2.1 inches
Total weight 9 1/2 ounces.
Delay time 7 seconds.
Burning time 25 seconds.
Candle power 50,000.

115
ILLUMINATING
HAND GRENADE

Mk.1

Description

This grenade is approximately the same size and shape as the fragmentation hand grenade. It consists of two sheet steel cups joined together by a force fit, and sealed with Putnam Cement which results in a moisture-proof joint. The lower half contains the illuminating compound and a charge of black powder, which, when ignited by the fuse blows the grenade apart and ignites the pyrotechnic. The upper half contains the fuse assembly which is similar in appearance and in operation to that of the fragmentation hand grenade.

The grenade may be thrown as a hand grenade, or fired from a rifle using the Grenade Launcher, the Grenade Projection Adapter M-1, and the blank ammunition provided for each weapon for that purpose.

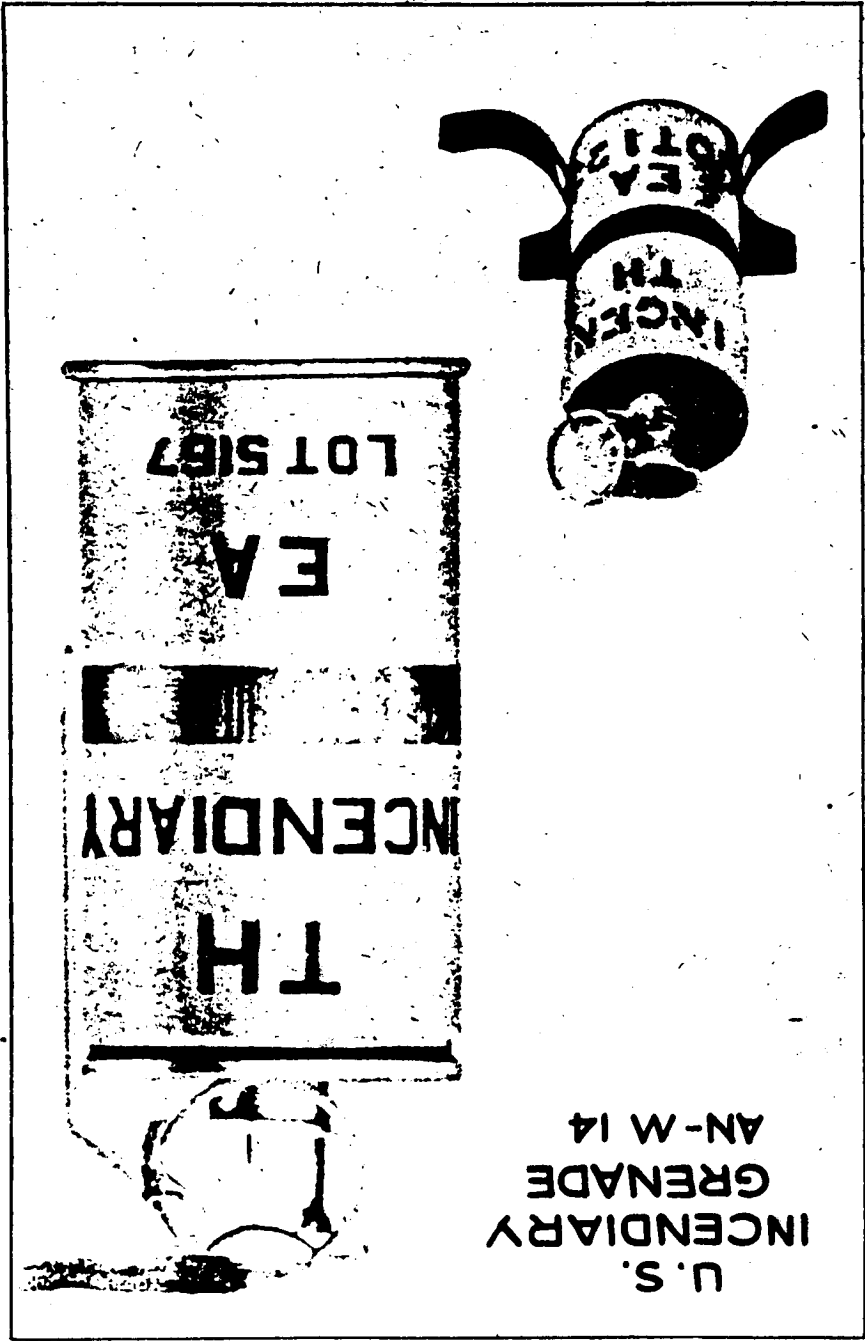
Operation

1. Hand Launching.

For hand launching the grenade is held in one hand with the safety lever against the palm. The safety pin is removed with the other hand. When the grenade is thrown, the safety lever is released, and the striker, driven by its spring, forces the lever off, swings around its pivot, and strikes the primer. The flame from the primer ignites a delay train which burns through to the black powder charge. The black powder charge bursts the case and ignites the pyrotechnic.

2. Rifle Launching.

To assemble the grenade in the M1 adapter, insert the safety lever into the arming clip, and force the grenade into place between the claws so that the claws engage the raised portion of the grenade where the upper and lower halves are formed together. When the grenade is fired, setback will cause the arming clip to come off of the safety lever and the striker will throw the lever off and hit the primer to function the grenade.



U.S.
INCENDIARY
GRENADE
AN-M 14

U.S.

INCENDIARY
HAND GRENADE

AN-M14

Data

Length of body 5 inches.
Maximum diameter 2½ inches.
Color Blue grey.
Markings In purple around body,
one band, "T H Incen-
diary", lot number,
loader's initials,
date of filling.
Filling Thermit, Thermit &
nitrate.
Fuse M 200 A1
Delay 2 seconds.

Description

This grenade is of the burning type. It does not explode. It has a cylindrical body made of tin plate. A clamp of flat steel strapping and a nail are packed in the container with each grenade. This is used to hold the grenade in position as it has a tendency to move upon ignition.

The M 200 A1 fuse threads into the top of this grenade. It is essentially the same as the M 10 A3 used in the fragmentation hand grenade. However, there is only a 2-second delay element, an igniter, and no detonator. This results in a fuse with a much shorter body. At the top of the body one side is extended to form a lip for the attachment of the safety lever, the other side forms a hinge to carry the spring loaded striker. The striker is restrained by the safety lever. The lever is hooked over the lip of the fuse body, extends across the head of the fuse, over the striker, and down the side of the grenade. The lever is held in position for shipping and handling by a split safety pin which passes through the safety lever, through the fuse body, and over the striker to protrude on the other side where it is spread so that a pull of between 20 and 30 lbs. is required to withdraw it.

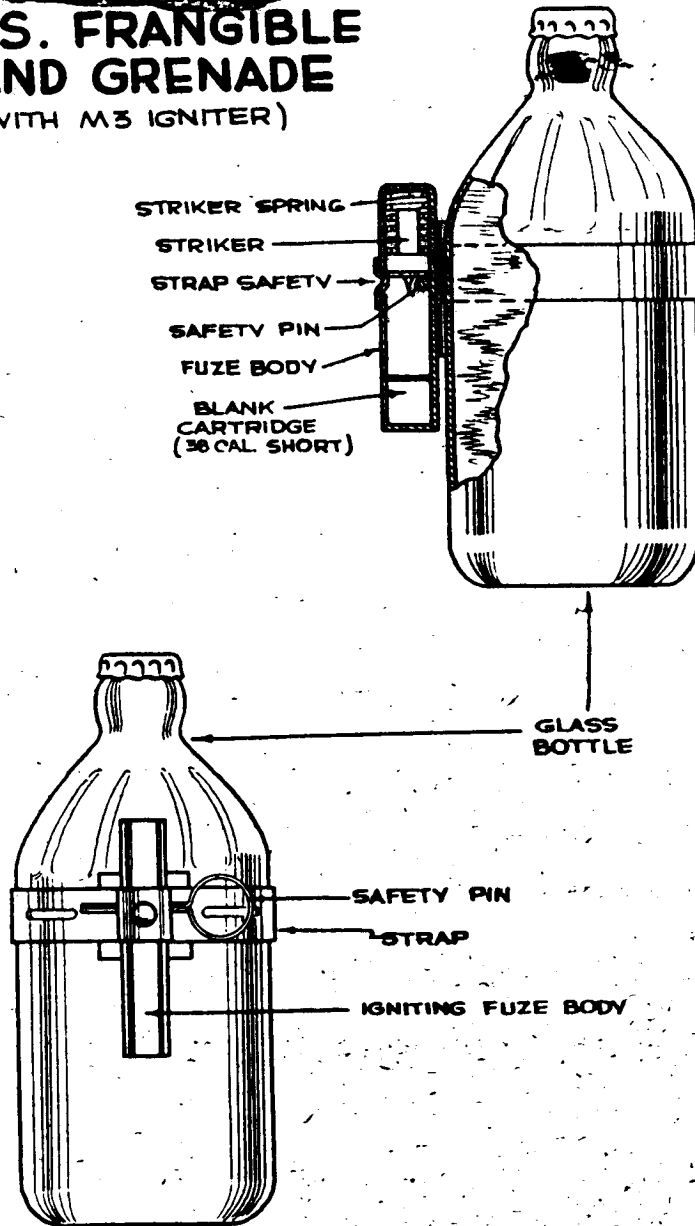
Operation

When the safety pin is removed preparatory to placing, the lever is held in place by the hand holding the grenade. When the grenade is placed, the lever is released. The striker, driven by its spring, throws off the safety lever and rotates about its pivot to strike the primer. The primer ignites the delay element which takes about 2 seconds to burn through to the igniter.

The igniter ignites the thermit which ignites the thermit. The grenade burns with intense heat. It will melt its way through steel. The grenade is used to destroy equipment and start fires.

U. S. FRANGIBLE HAND GRENADE

(WITH M3 IGNITER)



U.S.

FRANGIBLE
HAND GRENADES

Data

Construction These are improvised grenades made up by filling glass bottles, usually obtained locally, with chemical agents. When necessary, an igniter is attached to the bottle.

Igniters M1, M2, or M3

Filler The filler may be one of the following:

- a) Mixture of gasoline and alcohol.
- b) Thickened gasoline.
- c) FS - smoke.
- d) AC - hydrocyanic acid.
- e) HF - mixture of gasoline and napalm.

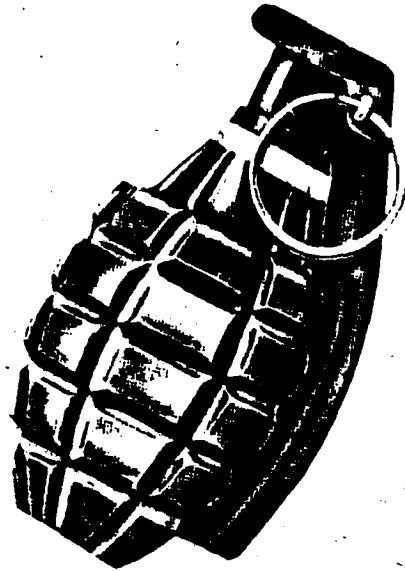
Description

These grenades may or may not have an igniter, depending primarily upon the filling that is used. If the filling is FS or AC no igniter is required, but if the filling is one of the others mentioned above, an igniter is necessary.

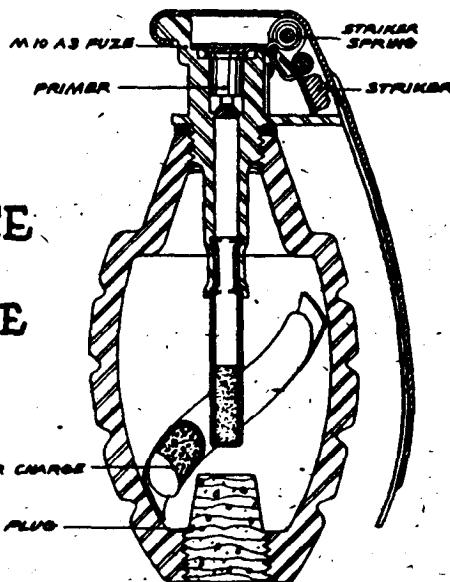
There are three standard igniters used with this type of grenade:

- a) M1 - This igniter is a plastic cylinder containing a chemical powder. It is used with grenades containing a mixture of gasoline and alcohol. When the glass container breaks against the target, the powder and liquid come in contact and ignite spontaneously.
- b) M2 - This igniter is a paper cartridge, filled with powder, assembled to a pull wire igniter. This igniter is taped to a frangible grenade filled with thickened gasoline. To operate the igniter, the wire is pulled, lighting the powder, before the grenade is thrown.
- c) M3 - This igniter is a simple fuse consisting of a spring-loaded firing pin and a blank cartridge contained in a cylinder and a metal clamp to hold the cylinder against the frangible grenade. The clamp has a conical projection which, when the clamp is tightened around the safety pin which passes through the cylinder also restrains the firing pin. When the grenade is used, the safety pin is removed and the grenade is thrown so as to smash against the target. When the bottle breaks, the tension on the clamp is released and the firing pin, driven by its spring, pushes the cone aside and strikes the primer of the cartridge. The flash from the cartridge ignites the grenade filler. This type of igniter is used when the filler is either IH or HF.

Frangible grenades will be filled by, or under the supervision of, Chemical Warfare personnel who will indicate and enforce necessary precautions.



TRAINING
HAND
GRENADE
MK. IAI



PRACTICE
HAND
GRENADE
MK. II

U.S.

HAND GRENADE, PRACTICE, MK. II

Data

Overall length 4.5 inches.
Maximum diameter 2.25 inches.
Color Light blue.
Markings Mgr's, initial in
center and inspector's
at top of grenade body.
Fuse M 10 A3.
Delay 4.0 to 4.8 seconds.

HAND GRENADE PRACTICE
MK. II
HAND GRENADE, TRAINING
MK. IA1

Description

This grenade consists of a fragmentation body with a filling hole in the base, an M 10 A3 igniting fuse, a small charge of black powder, and a cork plug in the filling hole. Extra fuses, charges, and plugs are supplied separately so that the grenade body can be reused.

Operation

When the safety pin is removed preparatory to throwing the lever is held in place by the hand holding the grenade. When the grenade is thrown, the lever is released. The striker, driven by its spring, throws off the lever and rotates about its pivot to strike the primer. The primer ignites the delay element which takes about 4.5 seconds to burn through to the igniter.

When ignited by the delay element, the igniter ignites the small black powder charge which goes off with a loud report and blows the cork plug out of the filling hole.

HAND GRENADE, TRAINING, MK. IA1

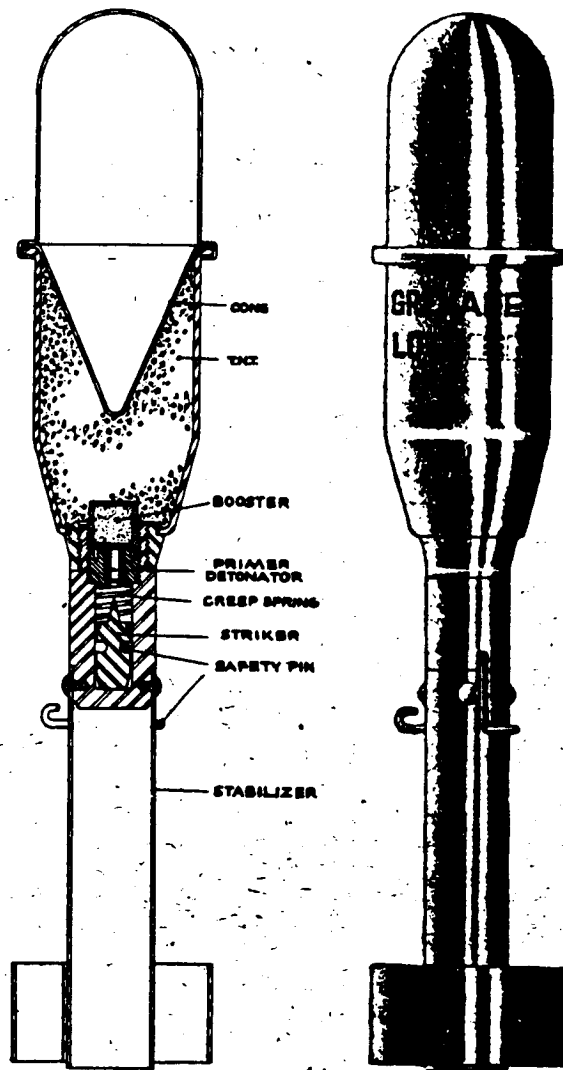
Data

Overall length 4.5 inches.
Maximum diameter 2.25 inches.
Color Black.
Markings White band at top.

Description

This grenade consists of an iron body and simulated fuse all cast in one piece to resemble a Mk II A1 fragmentation grenade. The simulated fuse has a removable safety pin and ring. There is a hole in the bottom of the grenade body. There is no charge whatsoever in either the grenade or the fuse. It is used for training and practice.

ANTI-TANK GRENADE, M9A1



U.S.

ANTI-TANK
RIFLE GRENADE

M9A1

Data

Overall length 11.18 inches.
Maximum diameter 1.25 inches.
Color Olive drab.
Markings In white on body:
Type, model, lot,
Mfg's initials,
date of loading.
Weight 1.23 lbs.
Filling T.N.T.
Weight of filling 4.oz.

Description

This grenade consists of a body, a stabiliser assembly, and a fin. The body is cylindrical in two pieces joined in the middle with rounded ends. The stabiliser is a hollow tube which screws into the base of the body and fits over the launcher. It also carries a wheel shaped fin assembly which aids in stabilising the flight of the grenade. The body is made of cast metal.

The impact fuse, which consists of a striker held away from a detonator by a creep spring and a safety pin, is assembled integrally with the stabiliser assembly. The safety pin projects through the fuse body and clamps around the stabiliser tube. When the pin is withdrawn, a drop of two feet, nose first, to a hard surface will cause the fuse to explode the grenade.

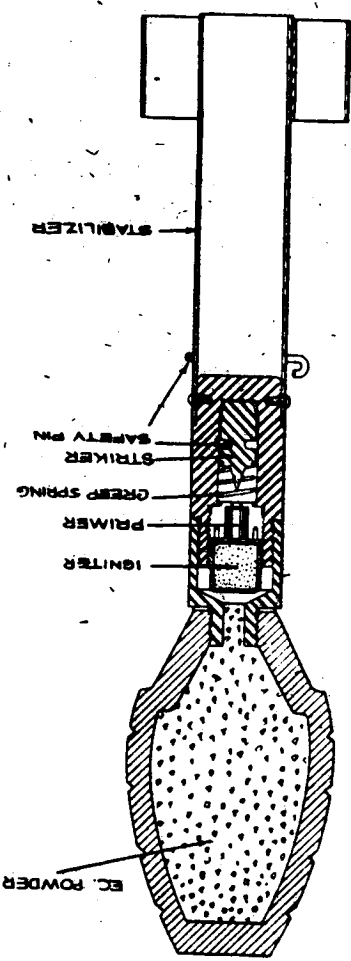
This grenade is designed primarily for use against tanks and other armored or resistant targets. The grenade must strike within 20° of normal to be sure to function. However, the velocity of the grenade itself is not a critical factor, as it incorporates the hollow charge principle. The danger radius from fragments to the rear of the grenade explosion is fifty yards.

Operation

The grenade is fired from a rifle by means of a special launcher attachment. A special cartridge is used for propulsion. The grenade must be placed on the launcher before the safety pin is withdrawn. The safety pin is removed before firing. When the grenade is fired, setback holds the striker away from the detonator. On impact, the striker overcomes the creep spring and hits the detonator.

Remarks

Grenade ATk, M9 is an earlier model of this grenade. It has the same tail assembly but the head is acorn-shaped and is equipped with a point fuse. It is slightly less sensitive than the M9A1. The safety pin of the M9 is located in the base of the grenade body instead of in the stabiliser tube. Its pull ring is taped to the body with adhesive tape.



U.S.
FRAGMENTATION
RIFLE GRENADE M17

U.S.

FRAGMENTATION
RIFLE GRENADE

M-17

Data

Overall length 9.775 inches.
Maximum diameter 2.25 inches.
Color Olive drab.
Weight 1.47 lbs.
Filling E.C. powder.

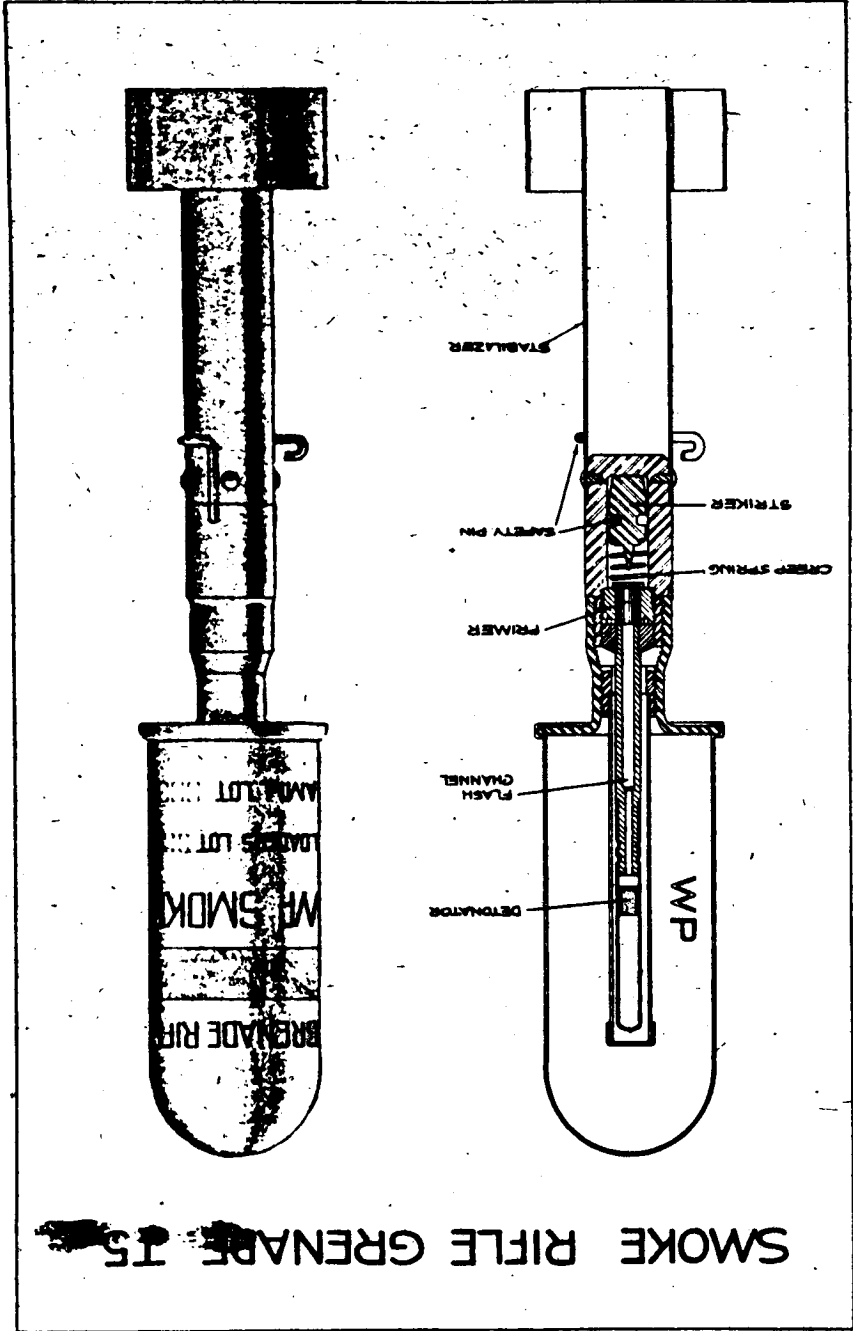
Description

This grenade consists of a fragmentation type body similar to the M1 IIA1 hand grenade assembled to a fuse and stabilizer assembly similar to that for the ATk. and Practice rifle grenades. The stabilizer and fuse assembly threads into the grenade body.

The fuse is a simple impact type. The striker is held away from the detonator by a safety pin and a creep spring. The safety pin projects through the fuse body and clamps around the stabilizer tube. When the pin is withdrawn, a drop of two feet, nose first, to a hard surface will cause the fuse to explode the grenade. Detonation will not occur upon impact with water, mud, or soft sand. This grenade is designed primarily for use against personnel.

Operation

The grenade is fired from a rifle by means of a special launcher attachment. A special cartridge is used for propulsion. The grenade must be placed on the launcher before the safety pin is withdrawn. The safety pin is removed before firing. When the grenade is fired, setback holds the striker away from the detonator. On impact, the striker overcomes the creep spring and hits the detonator.



SMOKE RIFLE GRENADE 15



U.S.

SMOKE
RIFLE GRENADE

T 5

Data

Overall length	10.72 inches.
Maximum diameter	2 inches.
Color	Blue Grey.
Markings	Yellow band around middle and "Smoke (WP)" mfg. date, lot number.
Filling	White phosphorus.

Description

This grenade consists of a body, a stabilizer assembly and a fin. In outward appearance it is similar to the A.Tk. 9A1 grenade except that the body is in one piece and therefore this grenade does not have the joining rib. The body is cylindrical with rounded ends. The stabilizer is a hollow tube which screws into the base of the body and fits over the launcher. It also carries a wheel shaped fin assembly which aids in stabilizing the flight of the grenade.

The impact fuse of the M9A1 grenade has been modified so that a long detonator which extends into the body of the grenade acts as a burster when the fuse operates. The fuse is an impact type with the striker held off of the detonator by a safety pin and a creep spring. The safety pin projects through the fuse body and alamps around the stabilizer tube.

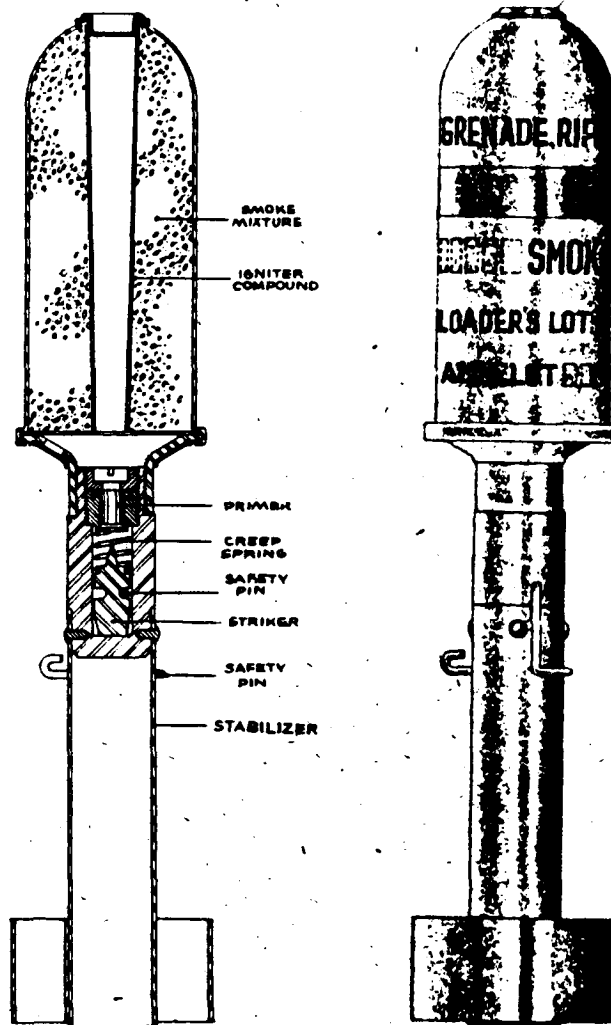
Operation

The grenade is fired from a rifle by means of a special launcher attachment. A special cartridge is used for propulsion. The grenade must be placed on the launcher before the safety pin is withdrawn. The safety pin is removed before firing. When the grenade is fired, setback holds the striker away from the detonator. On impact, the striker overcomes the creep spring and hits the detonator.

The explosion bursts the grenade and scatters burning white phosphorus over an area of 25 sq. yds. The burning phosphorus gives off a dense white smoke. The particles are of incendiary nature and make an excellent anti-personnel weapon. White phosphorus burns are very painful and serious.

A phosphorus fire can be extinguished by water, but will start again unless the water covers the phosphorus completely. A leaking phosphorus grenade should be submerged in a container of water until it can be disposed of safely. Best disposal is to let it burn up in a safe place.

SMOKE RIFLE GRENADE T8E1



Data

Overall length 10.72 in.
Maximum diameter 2 in.
Color Blue grey.
Markings Yellow band around
middle; also "Grenade,
Rifle, Smoke", date &
lot number. Also stamp
ed to indicate color
of smoke produced.
Filling Smoke mixture.

U.S.
SMOKE
RIFLE GRENADE
T8E1

Description

This grenade is one of the type T6E1 and T6 white smoke grenades and T8 colored smoke grenades. It consists of a body, a stabilizer assembly and a fin. In outward appearance it is similar to the A.Tk.9A1 grenade except that this does not have the joining rib. The nose of the body has a small circular opening which is closed with a light metal cover. The stabilizer contains the type M9A1 fuse. This is a simple creep spring impact fuse. The safety pin projects through the fuse body and clamps around the stabilizer tube.

The body is filled through the nose. After filling, a tool is inserted longitudinally through this nose opening and the filling is packed against the sides of the body leaving a central channel. Then this channel is coated with an igniting composition. The smoke emission holes are through the base shoulder of the grenade body.

Five colors are issued: red, green, violet, yellow and orange.

Operation

The grenade is fired from a rifle by means of a special launcher attachment. A special cartridge is used for propulsion. The grenade must be placed on the launcher before the safety pin is withdrawn. The safety pin is removed before firing. When the grenade is fired, setback holds the striker away from the igniter. On impact the striker overcomes the creep spring and fires the igniter. The igniter ignites the igniting mixture which initiates the burning of the smoke mixture. Smoke is then emitted through the emission holes for from 1 to 1½ minutes.

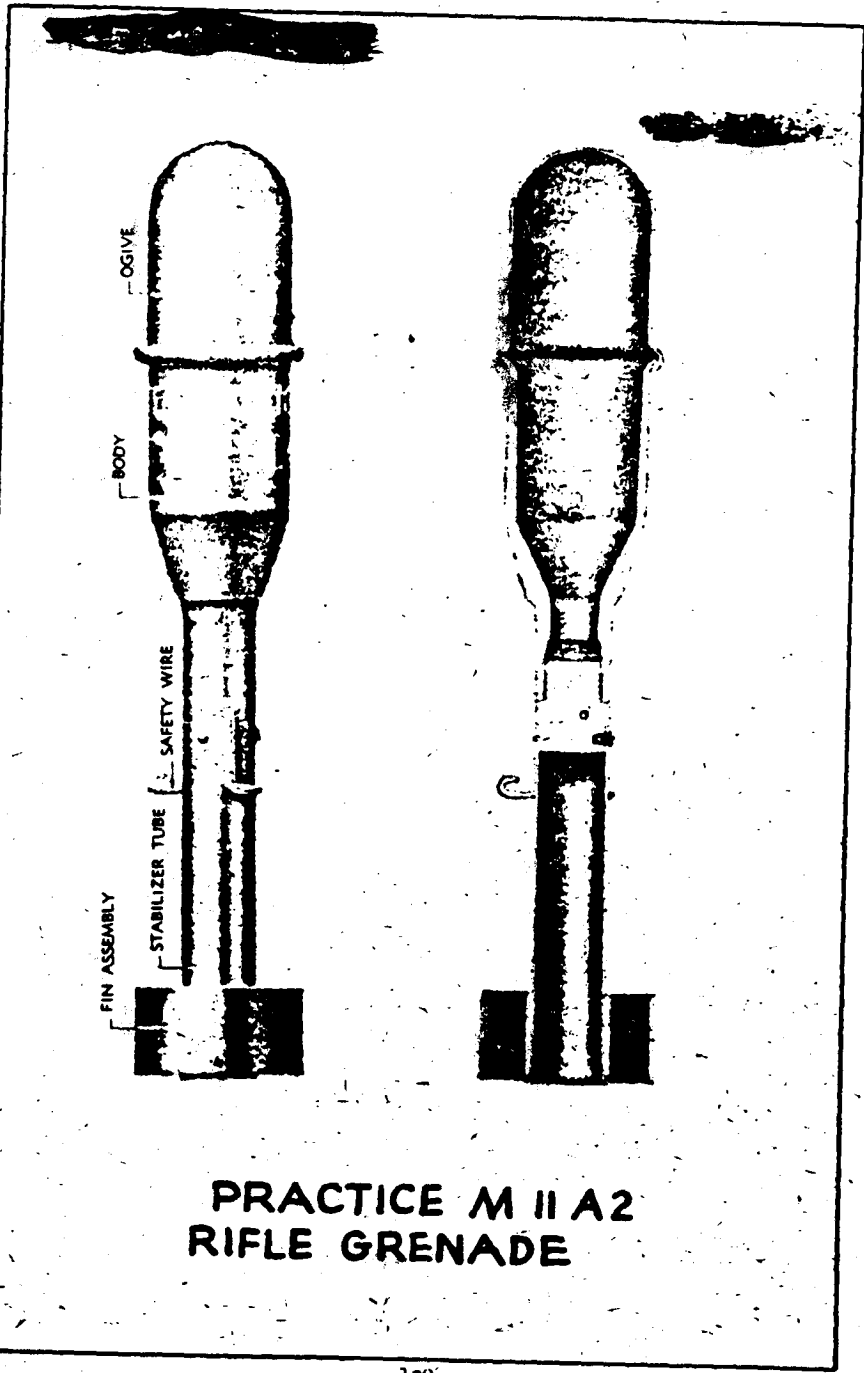
The primary use of the grenade is for signaling.

Remarks

T6, T6E1, & T8 Rifle Smoke Grenades.

The T6 and T6E1 are rifle smoke grenades with a filling that emits white smoke. The T6E1 differs from the T6 by 1/4 inch in length, the T6E1 being the longer. They are identical in construction and operation with the T6E1.

The T8 rifle smoke grenade is identical with the T6E1 except that the T8E1 is 1/4 inch longer than the T6.



**PRACTICE M11A2
RIFLE GRENADE**

U.S.

PRACTICE
RIFLE GRENADE
M11A2

Data

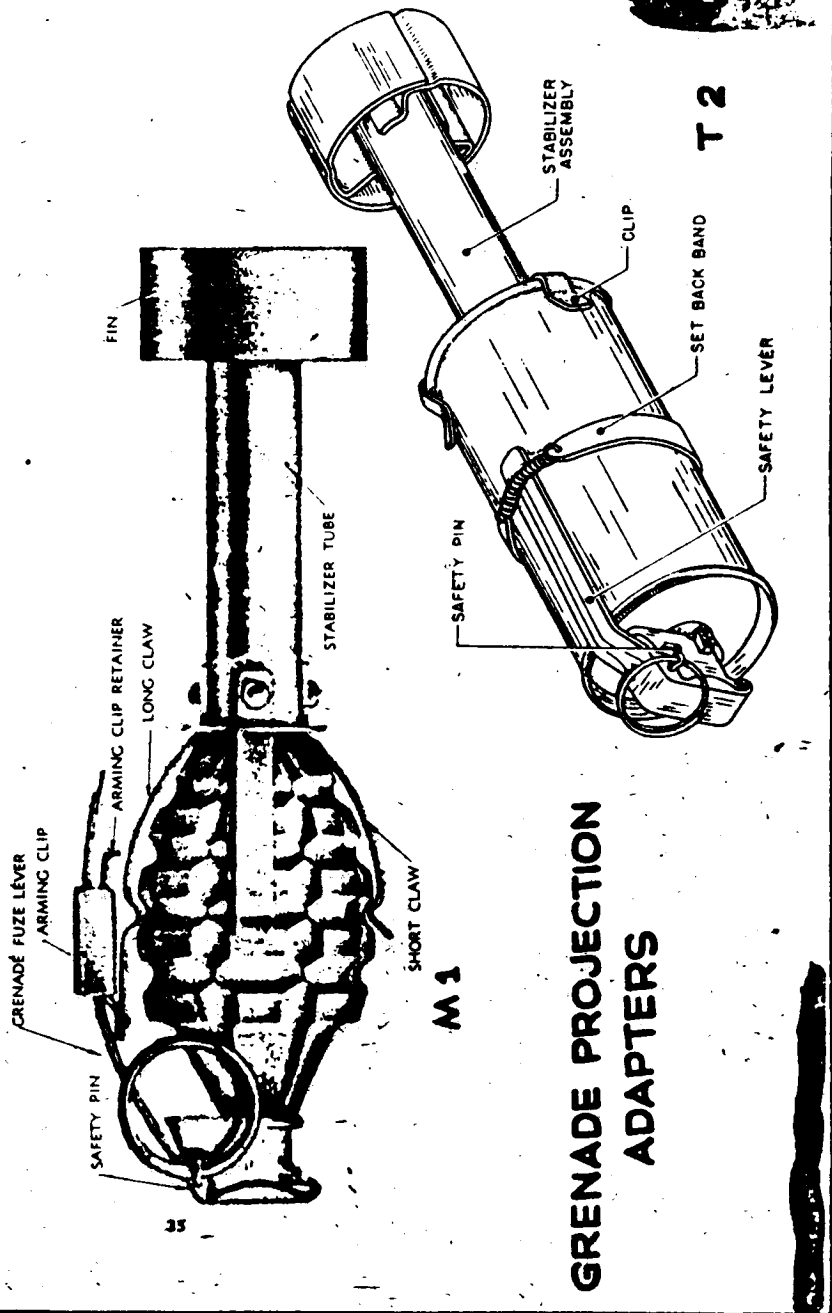
Overall length 11.18 inches.
Maximum diameter 2.25 inches.
Color Black.
Markings Marked in yellow
with: Type, Model,
lot, mfg's initials.

Description

This grenade simulates the M9A1. It consists of a body, a stabilizer assembly, and a fin. The body is cylindrical, in two pieces joined in the middle. The stabilizer is a hollow tube which screws into the base of the body and fits over the launcher. It also carries a wheel shaped fin assembly which aids in stabilizing the flight of the grenade. There is no fuse. The grenade is so constructed that the fin and the ogive assemblies, which are most liable to damage in use, may be replaced and the grenade used repeatedly. It is used for training in marksmanship.

Operation

The grenade is fired from a rifle by means of a special launcher attachment. A special cartridge is used for propulsion.



**GRENADÉ PROJECTION
 ADAPTERS**

U.S.

MISCELLANEOUS
ATTACHMENTS

I. Grenade Projection Adapter M1.

II. Chemical Grenade Projection Adapter T2.

III. Ground Signals.

I. Grenade Projection Adapter M1.

This adapter consists of a stabilizer and fin assembly to which is attached four spring-steel fingers. It is designed to project the standard fragmentation hand grenade by means of the rifle or carbine. The M1 hand grenade is assembled to the adapter with the fingers engaging the grooves in the grenade body. When the grenade is assembled to the adapter, the safety lever of the grenade is inserted in the arming clip. The safety lever is held in place by the arming clip until the grenade is fired. On setback, the clip legs and so is removed from over the safety lever which is then thrown off by the rotating striker. The striker hits the primer igniting the 4-1/2 second delay after which the grenade explodes.

CAUTION: When the grenade is assembled to the adapter and the safety pin removed, the lever bends outward due to pressure from the striker. If the lever is struck on its outer surface, near the striker, while in this condition, it is possible that the lever may spring loose from the fuse and release the striker, allowing the fuse to function. Care should be exercised, once the safety pin is removed, to prevent the lever being struck.

II. Chemical Grenade Projection Adapter T2.

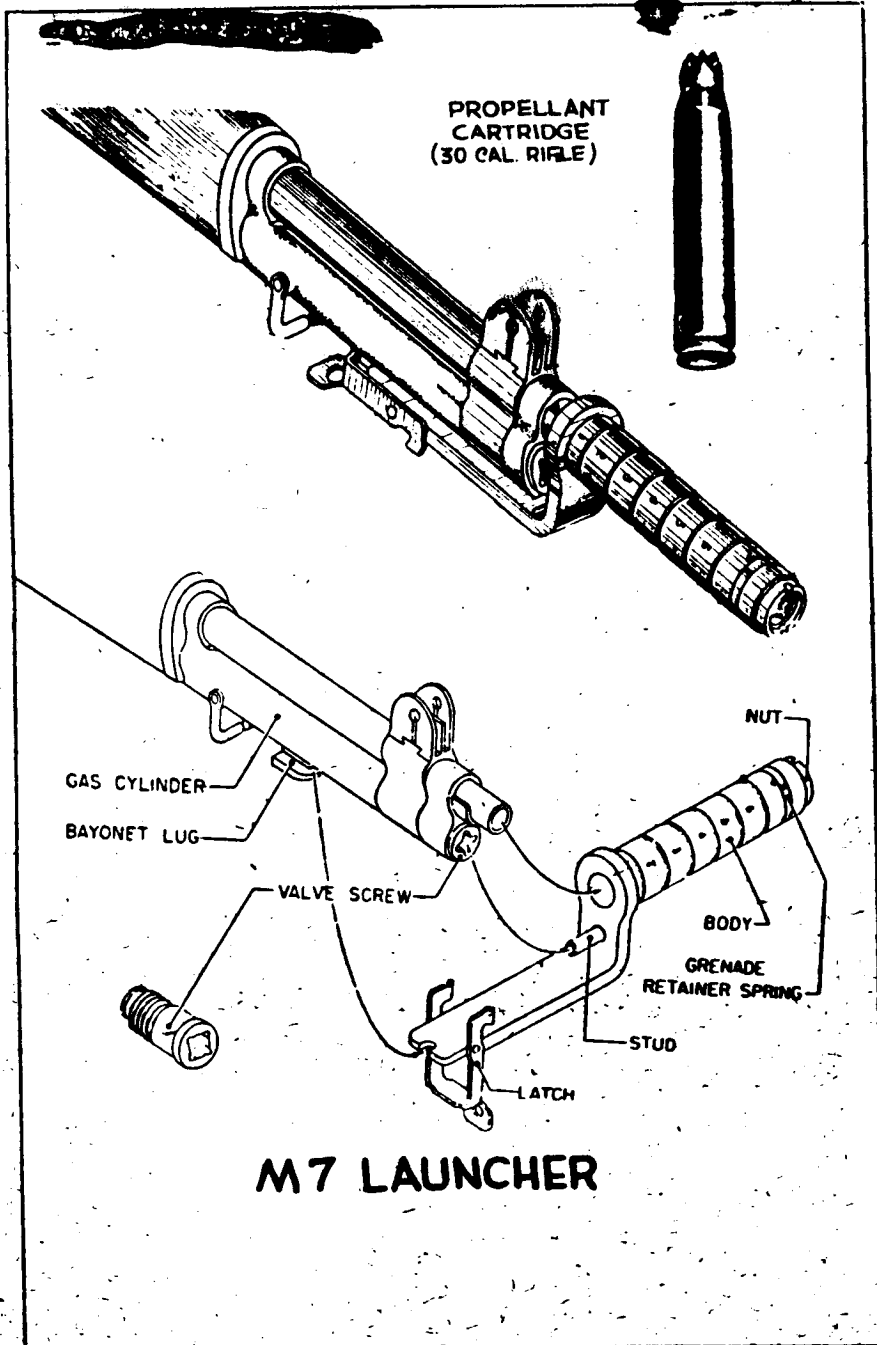
This adapter consists of a stabilizer and fin assembly and a metal setback band. To the stabilizer is attached four short spring steel clips. It is designed to project the following grenades from rifles and carbines equipped with standard grenade launchers and cartridges:

Grenade, hand, irritant, CN-DM, M6.
Grenade, hand, gas, tear, CN-M7.
Grenade, smoke, white, EC, AN-M8.
Grenade, incendiary, AN-M14.
Grenade, smoke, colored, M18.
Grenade, smoke, colored, M18.

The grenades are assembled to the adapter with the clips holding over the ridge at the base of the grenade. The setback band contains a short spring and fits around the grenade, over the safety lever. It holds the safety lever in a safe position after removal of the fuse safety pin. When the grenade is fired, setback causes the band to slide off the safety lever toward the base of the grenade. This permits the safety lever to spring outward and the striker to ignite the fuse. The fuse ignites the grenade in approximately 1-1/2 seconds.

III. Ground Signals.

Ground signals which have been adapted for firing from grenade launchers are designated by M model numbers. The signals are packed with the stabilizer assembly closed by a cork plug and with the special blank cartridge attached to the cork by a metal clip. The signal is fired in the same manner as the rifle grenade except that it is fired almost vertically upward. The case rises to a height of approximately 600 feet where the signal assembly is ejected and burns according to type.



1. Rifle Grenade Launchers.

Classification of Launchers.	
Launcher	Used With
1. M1	U.S. rifles, caliber .30, M1903, M1903A1, M1903A3, and M1917.
2. M2	U.S. rifle, caliber .30, M1917.
3. M7	U.S. rifle, caliber .30, M1.
4. M8	U.S. carbine, caliber .30, M1, M1A1, M1A3.

Description

The launcher, on which the grenade is placed for firing, is an extension to the barrel of the rifle or carbine. A special device, integral with the launcher, attached it securely to the muzzle of the weapon. U. S. launchers are all of the spigot type; that is, the stabilizer assembly of the grenade fits over the launcher.

The M7 launcher is secured to the M1 rifle by a latch which clamps in back of the bayonet lug. A valve screw, issued with the launcher, is substituted for the gas cylinder lock screw. A stud on the launcher protrudes into the valve screw when the launcher is attached, opening the valve and providing for enough gas release to avoid damage to recoiling parts. The valve remains open as long as the launcher is attached to the rifle. The launcher has six gradations for different ranges. The range of the grenade is dependent upon the position of the stabilizer assembly on the launcher. A grenade retainer spring, slightly larger in diameter than the launcher, holds the grenade at the position on the launcher for the selected range.

The M8 launcher is smaller to the M7 launcher except that it is secured to the carbine by a simple clamp and wing nut.

If necessity demands, ball cartridges may be fired, even though the launcher is attached; assuming, of course, that no grenade is on the launcher.

II. Rifle Grenade Cartridges.

1. Rifle Caliber .30, M5 - This cartridge is used in U. S. rifles M1, M1903, M1903A1, M1903A3, and M1917. It is loaded in the standard caliber .30 case. The load consists of 5 grains of black powder and approximately 49 grains of a progressive burning smokeless powder; the exact amount is adjusted to give the M5A1 A.T. Rifle Grenade a velocity of 165 feet per second at 8 feet.

2. Carbine caliber .30, M6 - This cartridge is used in the U. S. carbine M1, M1A1, and M1A3. It is loaded in the standard carbine cartridge case with approximately 21 grains of special powder adjusted to give the M6A1 A.T. grenade a velocity of 165 feet per second at 8 feet.

3. Auxiliary Grenade Cartridge M7 - This cartridge, designed to give additional range when used in firing grenades from rifles and carbines, is a caliber .45 case drawn piece loaded with 80 grains of powder and sealed with a paper wad. It is placed in the end of a launcher, a rim on the base of the case holding the cartridge in place. It functions only in combination with the standard M5 or M6 grenade cartridge and fits the M1, M2, M7, and M8 launchers. When using this cartridge the rifle or carbine will not be fired from the shoulder.

U.S.
RIFLE GRENADE
LAUNCHERS &
CARTRIDGES