

This copy is a reprint which includes current pages from Changes 3 and 4.

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S MANUAL
CARTRIDGE, 40-MILLIMETER: RIOT CONTROL CS, XM674
AND
CARTRIDGE, 40-MILLIMETER: RED SMOKE RS, XM675

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

SAFETY PRECAUTIONS

Do not fire any damaged, corroded, or separated XM674 or XM675 cartridges.

Wear a field protective mask when firing an XM674 cartridge.

Point muzzle end of cartridge or launcher away from body, friendly personnel, and flammable materials. When hand firing, (a) do not hold cartridge with primer end pointing toward body, and (b) make sure no personnel are standing immediately in rear of the cartridge.

Always wait 30 seconds before disposing of a cartridge or unloading a cartridge that has failed to fire. Do not hand fire the XM674 or XM675 munition without prior training in all hand-firing procedures. When hand firing, make sure the hands are as dry as possible, and maintain a *very tight* grip on both the firing-cap assembly and cartridge barrel. If the munition is loosely held when fired, recoil forces will tear both the cartridge barrel and firing cap from the hands and may cause injury, to personnel in its path.

Under no circumstances should the round be fired directly at an individual at ranges less than 35 meters (114.8 feet).

When hand firing, make sure that (a) the left hand is positioned at least one-fourth inch from the muzzle end of the munition, and (b) no part of the right hand (fingers or palm) is positioned over either end of the firing cap. Failure to follow these instructions could result in injury to the firer when the munition is functioned.

Always use caution when *placing* the firing cap over the primer end of the cartridge barrel or when removing the

firing cap from the primer end of the cartridge barrel, to prevent accidental functioning of the cartridge.

Do not drop a cartridge. If the munition accidentally functions, the cartridge barrel may travel rearward and may cause injury to personnel in its path.

Cartridges must be free of sand, mud, grease, or other foreign matter when loaded into an M79 grenade launcher or an AN-M8 pyrotechnic pistol.

Any time a cartridge fails to fire, keep the muzzle end of the M79 grenade launcher, AN-M8 pistol, or cartridge barrel on target. Keep all friendly personnel clear of the muzzle end of the launcher, pistol, or cartridge barrel.

Refer any damaged or misfired munition to Explosive Ordnance Disposal (EOD) personnel.

Always remove, and discard the firing-cap assembly from the muzzle end of an XM674 or XM675 cartridge before loading an M79 grenade launcher.

Before loading an AN-M8 pyrotechnic pistol, always remove and discard the firing-cap assembly from the muzzle end, and the launcher adapter from the primer end, of an XM674 or XM675 cartridge.

Make sure that smoke produced by the burning agent/pyrotechnic filling does not interfere with operations of nearby friendly personnel.

The XM674 and XM675 cartridges can cause ignition of flammable material, and firing at such targets should be avoided when possible.

Impact of body assembly (projectile) on personnel can cause injury including burns. Aiming to hit personnel should be avoided when possible injury is unacceptable.

Changes in force: C 3

CHANGE }
NO. 3 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 27 January 1970

Operator's Manual
CARTRIDGE, 40-MILLIMETER: RIOT CONTROL CS, XM674
AND
CARTRIDGE, 40-MILLIMETER: RED SMOKE RS, XM675

TM 3-1310-244-10, 6 September 1968, is changed as follows:

Page 1. "SAFETY PRECAUTIONS" is changed to WARNINGS.

The following warning is added:

Prolonged exposure to heavy concentrations of colored smoke may cause skin irritations.

Page 2, paragraph 3a. In line 6, "TM 3-315" is changed to read TM 3-215.

Paragraph 3c is superseded as follows:

c. XM674 and XM675 Cartridges. The XM674 or XM675 cartridge can be fired from the M79 grenade launcher (TM 9-1010-205-12), from the AN-M8 pyrotechnic pistol (TM 9-1095-201-15), or by hand.

Page 3, paragraph 4b. In line 2, "(7, fig. 1)" is changed to read (6, fig. 1).

In line 5, "(6)" is changed to read (5).

Last two sentences are superseded as follows:

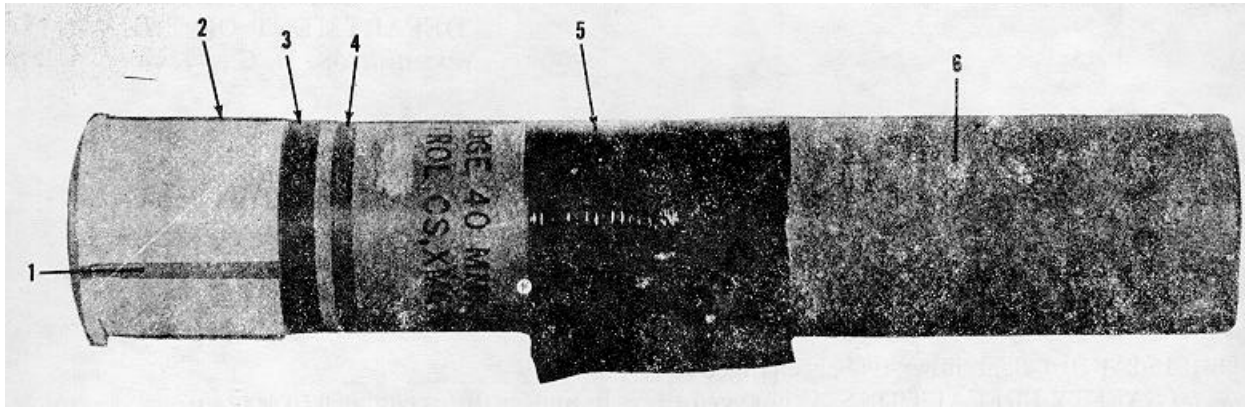
The cartridge barrel is marked with the cartridge nomenclature, lot number, a red identification band (3), and a brown identification band (4).

Paragraph 4c is superseded as follows:

c. XM675 Cartridge. The XM675 cartridge (fig. 2) is identical to the XM674 cartridge (*b* above), except that the XM675 cartridge barrel is marked with the cartridge nomenclature, lot number, and one brown identification band.

* This change supersedes C1, 4 December 1968, and C2, 3 October 1969.

Figure 1 is superseded as follows:



MU-E-622-10-1

- 1 Cartridge barrel
- 2 Launcher adapter
- 3 Identification band (red)
- 4 Identification band (brown)
- 5 Waterproof pressure-sensitive tape
- 6 Firing cap assembly

Figure 1. XM674 riot control CS40-millimeter Cartridge

Page 5, paragraph 7c. In line 1, "cleated" is changed to read packed.

The following is added to paragraph 7c:

The M19A1 ammunition box and the inner fiber-board box are marked with the nomenclature, quantity, contract number, and identification markings that are located on two diagonally opposite edges (one brown and one red stripe on a gray background for XM674 cartridges; one brown stripe on a green background for XM675 cartridges).

Paragraph 7d is added after paragraph 7c.

d. Packaging and Packing (Alternate Method).

(1) Packaging. Four cartridges are placed, with primer ends up, in a cloth bandolier. The bandolier is folded to make two rows of two cartridges each. An instruction sheet is wrapped around the folded bandolier. The web strapping of the bandolier is wound around the assembly. Two bandoliers, with fiberboard filler pads, are placed in an M19A1 small arms ammunition box which is then closed.

(2) Packing. Four M19A1 small arms ammunition boxes, with fiberboard filler pads, are packed in a wirebound box. The packed box, which is 17 3/4 inches long, 12 1/4 inches wide, and 8 1/4 inches deep, weighs approximately 50 pounds and displaces about 1 cubic foot. Palletization consists of either 40 packed boxes placed in five rows of eight each, or 32 packed boxes placed in four rows of eight each.

Paragraph 8a. The second sentence is rescinded.
Page 6, paragraph 8b. The second sentence is rescinded.

Paragraph 9f is added after paragraph 9e.

f. Unpacking (Alternate Method) (para 7d).

- (1) Separate the boxes from the pallet.
- (2) Open the top of a wirebound box and remove the four M19A1 ammunition boxes.
- (3) Open the number of M19A1 ammunition boxes needed for the mission. Remove the cloth bandolier with four cartridges and instruction sheet.
- (4) Fit the bandolier in a carrying position to

suit the person (fig. 4).
Page 7, Section III, Operating Instructions. The following warning is added:

WARNING

Prolonged exposure to heavy concentrations of colored smoke may cause skin irritations.

Page 12. Paragraph 10h is superseded as follows:
h. With the right hand, slide the open end of the firing cap over the primer end of the cartridge barrel until the edge of the firing cap just covers the brown band.

Page 13, paragraph 10j, Note. In line 3, "airborn" is changed to read airborne.

(fig. 6) is added after paragraph 11 title.

Page 15. (fig. 7) is added after paragraph 12 title. Paragraph 12g. In line 2, "M8" is changed to read AN-M8.

Page 18. Paragraphs 15 and 16 are superseded as follows:

15. Shipment

The XM674 and XM675 cartridges are classified as chemical ammunition by the Department of Transportation (DOT) as follows:

a. XM674 Cartridge.

Hazard class Explosive, Class C: Poison C, Tear Gas.

Shipping box marking... Small Arms Ammunition, Tear Gas Cartridges (Tear Gas label required).

b. XM675 Cartridge.

Hazard class Explosive, Class C

Marking..... Smoke Signals, Handle

Carefully, Keep Fire Away.

16. Storage

The XM674 and XM675 cartridges are classified for storage purposes in accordance with TM 9-1300-206 as follows:

a. XM674 Cartridge.

Hazard 1

Compatibility Group A

Chemical Storage Group..... B

b. XM675 Cartridge.

Hazard Class..... 1

Compatibility Group A

Chemical Storage Group..... B

Appendix. The following reference is added:

TM 3-250 Storage, Shipment, Handling and Disposal of Chemical Agents and Hazardous Chemicals

By Order of the Secretary of the Army:

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

Official:

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

Distribution:

Active Army:

CNGB (1)
USAMB (2)
USACDC (2)
USACDCCBRA (2)
USACDCADA (2)
USACDCARMA (2)
USACDCARTYA (2)
USACDCAVNA (2)
USACDCIA (2)
USAARMC (2)
USAFACFS (2)
USAECFB (2)
USAPC (2)
USAMMCS (2)
USAIC (2)
USCONARC (10)
ARADCOM (5)
ARADCOM Rgn (5)
USAMUCOM (5)
USAMC (5)
USACDCEC (10)
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Armies (5)
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USMA (10)
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Br Svc Sch (101 except
USACMLCS (50)
Gen Dep (5)
Dep (5)
Army Dep (5)
POE (1)
Instl (2)
USATTC (1)
EAMTMTS (1)
WAMTMTS (1)
MOTBA (1)
MOTBY (1)
MOTKI (1)
MOTSU (1)
USAAPSA (25)
Arsenals (3) except
Edgewood (75)
Ft Knox FLDMS (10)
Units org under fol TOE:
(1 copy each)
19-35
29-36
19-55
19-56
19-247
19-252
19-256
19-316

NG: State AG (3); Units same as active Army except allowance is one copy to each unit.

USAR: Same as active Army except allowance is one copy to each unit.

For explanation of abbreviations used, see AR 310-50.

Changes in force C 3 and C 4

Change

No; 4

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HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D. C., 23 October 1970

Operator's Manual
CARTRIDGE, 40-MILLIMETER: RIOT CONTROL CS, M674
AND
CARTRIDGE, 40-MILLIMETER: RED SMOKE RS, M675

TM 3-1310-244-10, 6 September 1968, is changed as follows:

Title is changed as shown above.

Wherever "XM674" and "XM675" appear, they are changed to read "M674" and "M675."

By Order of the Secretary of the Army:

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

Official:

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

Distribution:

Active Army:

CNGB (1)	Br Svc Sch (10) except
USAMB (2)	USAC,MLCS (50)
USACDC (2)	Gen Dep (5)
USACDCCBRA (2)	Dep (5)
USACOCADA (2)	Army Dep (5)
USACDCARMA (2)	POE (1)
USACDCARTYA (2)	Instl (2)
USACDCAVNA (2)	USATIC (1)
USACDCIA (2)	EATMTS (1)
USAARMC (2)	WAMTMTS (1)
USAFACFS (2)	MOTBA (1)
USAECRB (2)	MOTBY (1)
USAPC (2)	MOTKI (
USAMYCS (2)	MOTSU (1)
USAIC (2)	USAAPSA (25)
USCONARC (10)	Arsenals (3) except
ARADCOM (5)	Edgewood (75)
ARADCOM Rgn (5)	FT Knox FLDMS (10)
USAMUCOM (5)	Units org under fol TOE
USA C (5)	(1 copy each)
USACDCC (10)	19-35
OS Maj Comd (5)	19-36
Armies (5)	19-55
Corps (3)	19-56
Div (5)	19-247
USMA (10)	19-252
PG (5)	19-256
Svc Colleges (10)	19-316

NG: State AG (8); Units same as active Army except is one copy to each unit.

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For explanation of abbreviations used, see AR 310-50

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SECTION I INTRODUCTION

1. Scope

This manual describes the Cartridge, 40-Millimeter: Riot Control CS, XM674 and Cartridge, 40-Millimeter: Red Smoke RS, XM675, and gives information on their use, functioning, shipment, storage, and destruction.

2. Records and Reports

a. Accidents involving injury to personnel, or damage to materiel will be reported as specified in AR 385-40.

b. Accidents or malfunctions in combat or training will be reported as specified in AR 700-1300-8.

c. Records and reports shall be completed as outlined in TM 38-750.

d. Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to

Commanding Officer, Edgewood Arsenal, ATTN: SMUEA-TSE-TP, Edgewood Arsenal, Md., 21010.

3. Use

a. *XM674 Cartridge.* The XM674 cartridge is intended for use by law-enforcement agencies in such applications as mob dispersion, controlling riots, and protecting law-enforcement personnel. (The capability of CS is described in TM 3-315.

b. *XM675 Cartridge.* The XM675 cartridge is intended for training personnel in the use and handling of the XM674 munition.

c. *XM674 and XM675 Cartridges.* The XM674 or XM675 cartridge can be fired from the AN-M8 pyrotechnic pistol (TM 9-1095-201-15), or by hand.

SECTION II DESCRIPTION AND DATA

4. Description

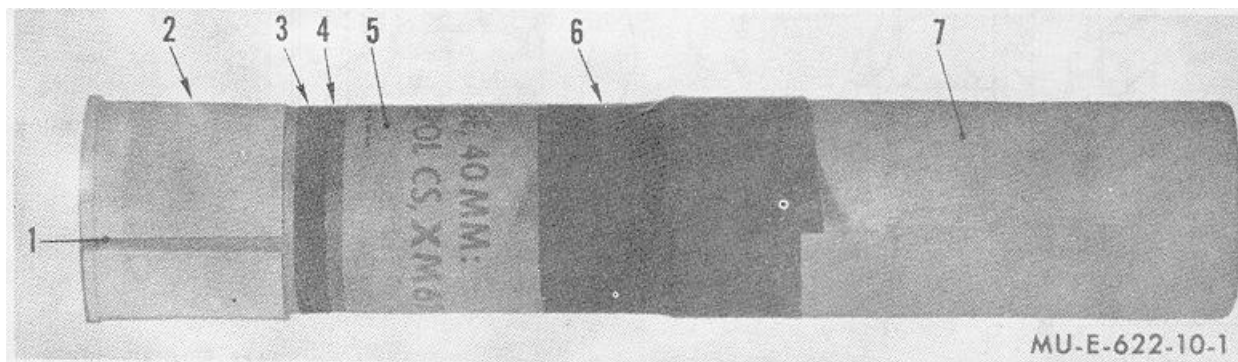
a. *General.* The XM674 and XM675 cartridges consist of a firing-cap assembly, launcher adapter, and cartridge barrel that houses a rubber body assembly. The body assembly is the munition projectile. It contains the filling applicable to either the XM674 CS cartridge or the XM675 RS cartridge. The surfaces of the cartridge barrel and firing-cap assembly are coated with pumice paint to provide for positive gripping during hand firing.

b. *XM674 Cartridge.* The XM674 cartridge firing-cap assembly (7, fig. 1) is held in place over the muzzle end of the cartridge barrel (1) by waterproof pressure-sensitive tape (6). The launcher adapter (2) is positioned around the primer end of the cartridge barrel. The cartridge barrel has a decal (5) affixed to its external surface. The decal contains the cartridge nomenclature, lot number, a red identification band (3), and a brown identification band (4).

c. *XM675 Cartridge.* The XM675 cartridge (fig. 2) is identical to the XM674 cartridge described in *b* above,

except the XM675 cartridge decal contains the cartridge nomenclature, lot number, and one brown identification band.

d. *Cartridge Barrel.* The XM674 cartridge barrel (10, fig. 3) contains a threaded primer holder (9) with a primer (8), black powder (7) held in place by pressure-sensitive tape (11), a synthetic rubber body assembly (1), and a spacer (4). The body assembly contains the CS riot-control (pyrotechnic) mixture (15). An aluminum-alloy sleeve (6) contains one pelletized delay mixture (13) and three first-fire mixtures (3). A plastic cup seal (14) is placed over the bottom end of the sleeve. The sleeve is positioned in the neck end of the body assembly and held in place by a closure cap (12), which is crimped around the neck of the body assembly. The spacer, acting as a gas-retaining seal, fits over the neck of the body assembly and supports the body assembly inside the cartridge barrel. (The XM675 body assembly contains red smoke RS mixture.)



- 1 Cartridge barrel
- 2 Launcher adapter
- 3 Identification band (red)
- 4 Identification band (brown)

- 5 Nomenclature decal
- 6 Waterproof pressure-sensitive tape
- 7 Firing-cap assembly

Figure 1. XM674 CS riot-control 40-millimeter cartridge.

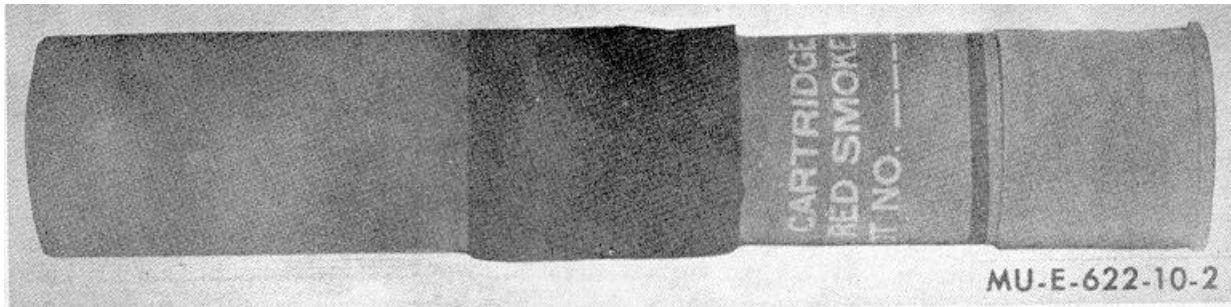


Figure 2. XM675 red smoke RS 40-millimeter cartridge.

- | | | | |
|---|------------------------------------|----|-------------------------|
| 1 | Body assembly | 10 | Cartridge barrel |
| 2 | Waterproof pressure-sensitive tape | 11 | Pressure-sensitive tape |
| 3 | First-fire mixtures | 12 | Closure cap |
| 4 | Spacer | 13 | Delay mixture |
| 5 | Launcher adapter | 14 | Cup seal |
| 6 | Sleeve | 15 | CS riot-control mixture |
| 7 | Black powder | 16 | Firing pin |
| 8 | Primer | 17 | Firing-cap assembly |
| 9 | Primer holder | | |

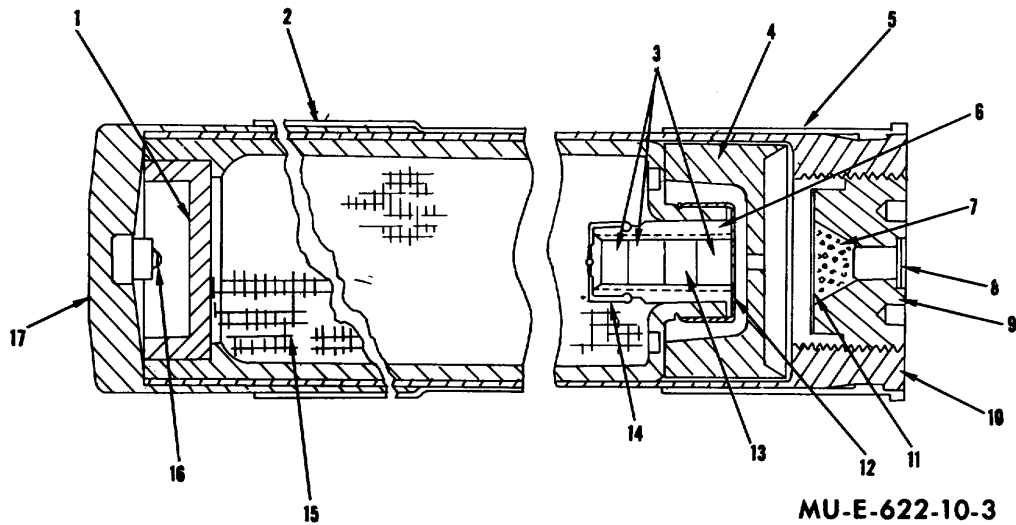


Figure 3. XM674 CS riot-control 40-millimeter cartridge, cross-section view.

e. *Firing-Cap Assembly.* The firing-cap assembly (17) consists of an aluminum-alloy firing cap and a steel firing pin (16). Waterproof pressure-sensitive tape (2) holds the firing-cap assembly on the muzzle end of the cartridge barrel until the munition is used.

f. *Launcher Adapter.* The launcher adapter (5) is a plastic ring which fits over the primer end of the cartridge barrel. The launcher adapter is used when the cartridge is fired from the M79 grenade launcher.

5. Tabulated Data

(All numerical data are approximate.)

Length..... 8 13/16 inches
Diameter..... 1 5/8 inches
Weight 3/4 pound
Burning time..... 12 to 36 seconds
Range (average) 70 meters (230 feet)

6. Functioning

a. *XM674 Cartridge.* The primer fires when struck by the firing pin. The black powder ignites, generating propellant gas. The burning black powder in turn ignites the initial pelletized first-fire mixture through a flash hole in the spacer and closure cap. Gas pressure increases in the space between the spacer, cartridge barrel, and primer holder, which forces the body assembly out of the cartridge barrel. The initial first-fire mixture, ignited by the black powder, ignites the delay mixture, which in turn ignites the second first-fire mixture. The second first-fire mixture in turn ignites the third first-fire mixture. The third first fire mixture burns through the plastic cup seal and ignites the CS pyrotechnic mixture contained in the body assembly. Increased pressure inside the body assembly bursts one or more of the four emission-hole walls in the neck end of the body assembly and releases smoke produced by the burning CS pyrotechnic mixture. Functioning of the munition will occur from 2 to 7 seconds after firing.

b. *XM675 Cartridge.* The functioning sequence of the XM675 cartridge is identical to the XM674 cartridge, except the aluminum-alloy sleeve (6, fig. 3) in the XM675 cartridge contains two first-fire mixtures and two

delay mixtures. The second first-fire mixture ignites the red smoke RS.

7. Packaging and Packing

a. *Packaging.* Four cartridges are placed, with primer ends up, into a cloth bandolier, which is folded to make two rows of two cartridges each. An instruction sheet is wrapped around the folded bandolier. The web strapping of the bandolier is spirally wound around this assembly prior to placing it in a vapor-proof bag. The sealed package is then placed, with the cartridge primer ends down, in a vertical position into a fiberboard box, which is then sealed shut.

b. *Packing.* Ten sealed fiberboard boxes are packed with cartridges, primer ends down, in two rows of five each, in a cleated plywood box with dimensions of 20 1/2 inches long, 8 1/4 inches wide, and 10 1/4 inches deep. The packed items weigh approximately 50 pounds and displace 1 cubic foot. Weather-resistant fiber board filler pads are used to assure a snug fitting pack. The box is then closed and strapped with steel strapping. Twenty-four packed boxes are placed on a pallet in three tiers of two rows of four each.

c. *Marking.* The cleated box containing XM674 or XM675 cartridges is marked with the nomenclature, weight, cubage, and Federal stock number. On two diagonally opposite edges of the box containing XM674 cartridges, a red stripe signifying nonpersistent-effect riot-control agent and a brown stripe signifying a low explosive are painted over a gray background. On two diagonally opposite edges of the box containing XM675 cartridges, a brown stripe signifying a low explosive is painted over a green background.

8. Identification

a. *XM674 Cartridge.* The XM674 cartridge barrel and firing-cap assembly are painted gray. A gray decal is affixed to the cartridge barrel (fig. 1). The 1/4-inch-wide red identification band indicates the munition body assembly contains a nonpersistent-effect riot-control agent. The 1/8-inch-wide brown band indicates the munition also contains a low explosive.

b. *XM675 Cartridge.* The XM675 cartridge barrel and firing-cap assembly are painted green. A light green decal is affixed to the cartridge barrel (fig. 2). The 1/8-inch-wide brown band indicates the munition body assembly contains a low explosive.

c. *Body Assembly.* The body assembly in the XM674 or XM675 cartridge barrel does not contain any marking.

9. Unpacking

a. Separate the boxes from the pallet.

b. Open the top of the plywood box and remove the fiberboard boxes.

c. Cut open a fiberboard box and remove the sealed bag containing the cloth bandolier, with four cartridges, and instruction sheet. Open only the number of fiberboard boxes required for the missions.

d. Remove the bandolier and instruction sheet from the sealed bag.

e. Fit the bandolier in a carrying position to suit the person (fig. 4).



Figure 4. Bandoliers in position (typical).

SECTION III OPERATING INSTRUCTIONS

Warning: Do not fire any damaged, corroded, or separated XM674 or XM675 cartridges.

Warning: Wear a field protective mask when firing an XM674 cartridge.

Warning: Point muzzle end of cartridge or launcher away from body, friendly personnel, and flammable materials. When hand firing, (a) do not hold the cartridge with primer end pointing toward body, and (b) make sure no personnel are standing immediately in rear of the cartridge.

Warning: Do not hand fire the XM674 or XM675 munition without prior training in all hand-firing procedures.

Warning: When hand firing, make sure the hands are as dry as possible, and maintain a *very tight* grip on both the firing-cap assembly and cartridge barrel. If the munition is loosely held when fired, recoil forces will tear both the cartridge barrel and firing cap from the hands and may cause injury to personnel in its path.

Warning: Under no circumstances should the round be fired directly at an individual at ranges less than 35 meters (114.8 feet).

Warning: When hand firing, make sure that (a) the left hand is positioned at least one-fourth inch from the muzzle end of the munition, and (b) no part of the right hand (fingers or palm) is positioned over either end of the firing cap. Failure to follow these instructions could result in injury to the firer when the munition is functioned.

Warning: Always use caution when placing the firing cap over the primer end of the cartridge barrel or when removing the firing cap from the primer end of the cartridge barrel, to prevent accidental functioning of the cartridge.

Warning: Do not drop a cartridge. If the munition accidentally functions, the cartridge barrel may travel rearward and may cause injury to personnel in its path.

Warning: Always wait 30 seconds before disposing of a cartridge or unloading a cartridge that has failed to fire.

Warning: Cartridges must be free of sand, mud, grease, or other foreign matter when loaded into an M79 grenade launcher or an AN-M8 pyrotechnic pistol.

Warning: Refer any damaged or misfired munition to Explosive Ordnance Disposal (EOD) personnel.

Warning: Always remove and discard the firing-cap assembly from the muzzle end of an XM674 or XM675 cartridge before loading an M79 grenade launcher.

Warning: Before loading an AN-M8 pyrotechnic pistol, always remove and discard the firing-cap assembly from the muzzle end, and the launcher adapter from the primer end, of an XM674 or XM675 cartridge.

Warning: The XM674 or XM675 cartridges can cause ignition of flammable material, and firing at such targets should be avoided when possible.

Warning: Impact of body assembly (projectile) on personnel can cause injury including burns. Aiming to hit personnel should be avoided when possible injury is unacceptable.

10. Hand Firing

(fig. 5)

a. Remove the plastic launcher adapter from the primer end of the cartridge barrel (fig. 5 (step 1)).



Figure 5 (Step1). Discarding launcher adapter.

b. With the right hand, hold the cartridge barrel near the primer end.

c. With the left hand: (1) remove the pressure sensitive tape (fig. 5 (step 2)); (2) remove the firing-cap assembly from the muzzle end of the cartridge barrel; and (3) place the firing cap over the forefinger of the right hand (fig. 5 (step 3)).



MU-E-622-10-5/2

Figure 5 (Step 2). Removing tape.



MIJ-E-622-10-5/3

Figure 5 (Step 3). Holding firing-cap assembly with forefinger.

d. Grasp the muzzle of the cartridge barrel with the left hand, fingers around barrel, and align the thumb and forefinger approximately one-fourth inch from the muzzle end (fig. 5 (step 4)).



Figure 5 (Step 4). Position of left hand holding cartridge barrel.

e. Remove the right hand from the cartridge barrel and position the firing cap across the palm of the right hand with the open end toward the thumb. Wrap the fingers and thumb around the firing cap and make sure that no part of the hand is over either end of the firing cap (fig. 5 (step 5))



Figure 5 (Step 5). Position of right hand holding firing-cap assembly.

f. To assume the correct firing position for the body, stand with the left side toward the target area and place the feet approximately a shoulder width apart.

g. Extend the left arm in front of the body with the hand palm up, and point the muzzle end of the cartridge barrel toward target area. Primer end of the cartridge barrel must not be pointed toward firer's body.

h. With the right hand, slide the open end of the firing cap over the primer end of the cartridge barrel until the edge of the firing cap just covers the brown band printed on the decal label.

i. Angle the munition to an elevation that will produce the desired range (fig. 5 (step 6)).



Figure 5 (Step 6). Hand-firing position.

j. While gripping the cartridge barrel and firing cap *very tightly*, extend the arms to a comfortable position in front of the body and move the hands sharply together to fire the munition (fig. 5 (step 6)).

Note. Aim the cartridge so that the body assembly (projectile) will land near but upwind of the target. The agent cloud will then be airborne across the target.

11. Firing From M79 Grenade Launcher

- a. Remove the pressure-sensitive tape and firing-cap assembly from the cartridge barrel.
- b. Point the *muzzle* of launcher away from all personnel.
- c. Operate the launcher-barrel locking latch by moving it to the right to its full limit of travel. Open the breech.



Figure 6. Loading cartridge into M79 grenade launcher (typical).

d. Insert the muzzle end of the cartridge barrel into the launcher chamber opening until the rim of the plastic launcher adapter contacts the launcher extractor. Close the breech.

e. Aim and fire the launcher.

Note. Aim the launcher so that the body assembly (projectile) will land near but upwind of the target. The agent cloud will then be airborne across the target.

12. Firing from an AN-M8 Pyrotechnic Pistol

Load and unload the XM674 or XM675 cartridge through the muzzle end of the AN-M8 pistol as follows:

a. Remove the waterproof pressure-sensitive tape, firing-cap assembly, and plastic launcher adapter from the cartridge barrel.

b. Point the muzzle of the pistol away from all personnel.

c. Open the pistol breech.

d. Insert the primer end of the cartridge barrel into the muzzle end of the pistol barrel until the rim on the primer end of the cartridge barrel engages the pistol ejector.

e. Close the breech.

f. Aim and fire pistol.

Note. Aim the pistol so that the body assembly (projectile) will land near but upwind of the target. The agent cloud will then be airborne across the target.

g. To remove an XM674 or XM675 cartridge from the M8 pistol, open pistol breech, depress ejector, and remove cartridge from muzzle end of the pistol barrel.



Figure 7. Loading cartridge into AN-M8 pyrotechnic pistol (typical).

13. Hangfires and Misfires

a. **Hangfire.** A hangfire is an exceeded normal delay in firing up to a 30-second time delay, failure of the percussion primer to ignite the propellant, or failure of the ignited propellant to propel the projectile from the launcher, pistol, or cartridge barrel.

b. **Misfire.** A misfire is the failure to fire after a 30-second delay in firing.

14. Failure to Fire

Warning: During the prescribed time interval, keep the muzzle end of the M79 launcher, AN-M8 pistol, or cartridge barrel on target. Keep all friendly personnel clear of the muzzle end of the launcher, pistol, or cartridge barrel.

a. **Hand Firing.** Any time a cartridge fails to fire during hand firing, assume that a hang-fire has occurred. Perform the following procedures until the round is removed from the hand.

Warning: Maintain a *very tight* grip on both the firing-cap assembly and cartridge barrel. If the munition is loosely held when fired, recoil forces may tear both the cartridge barrel and firing cap from the hands and may cause injury to personnel in its path.

(1) Maintain a tight grip on the cartridge barrel and firing-cap assembly. Keep the muzzle of the cartridge aimed at the target. Keep all personnel clear of the muzzle and primer end of the cartridge.

(2) Make two more attempts to hand fire the cartridge. If the cartridge still fails to fire, continue to maintain a firm grip on the cartridge barrel and firing-cap assembly.

(3) After 30 seconds, examine the cartridge primer to see if it has been dented.

(4) If the cartridge primer is dented, dispose of the munition.

(5) If the cartridge primer is not dented, the firing-cap assembly may be defective. Make another attempt to hand fire the cartridge by using another firing-cap assembly, if available, or make an attempt to fire the cartridge from the M79 grenade launcher or AN-M8 pistol.

b. **M79 Grenade Launcher.** Any time an M79 grenade launcher fails to fire an XM674 or XM675 cartridge, assume that a hang-fire has occurred. Perform the following procedures until the round has been fired or removed from the launcher.

(1) Keep the launcher aimed at the target and keep all personnel clear of the muzzle.

(2) Wait 30 seconds, open the breech to recock the launcher, and make another attempt to fire.

(3) After the round is removed from the launcher, keep the round separate from other ammunition. If it is determined that the round is faulty, dispose of the round.

c. **AN-M8 Pistol.** Any time an AN-M8 pistol fails to fire an XM674 or XM675 cartridge, assume that a hangfire has occurred. Perform the following procedures until the round has been fired or removed from the pistol.

(1) Keep the pistol aimed at the target and keep all personnel clear of the muzzle.

(2) Make two more attempts to fire the cartridge. If the cartridge still fails to fire, wait 30 seconds, then open the breech of the pistol, depress ejector, and remove the cartridge from the muzzle end of the pistol barrel.

(3) After the round is removed from the pistol, keep the round separate from other ammunition. If it is determined that the round is faulty, dispose of the round.

SECTION IV SHIPMENT AND STORAGE

15. Shipment

The XM674 and XM675 cartridges are classified as chemical ammunition by the Department of Transportation (DOT) as follows:

XM674 cartridges-Poison Class C

XM675 cartridges-Explosive Class C

16. Storage

The XM674 and XM675 cartridges are classified for storage purposes in accordance with TM 9-1300-206 as follows:

Quantity Distance-Class 2 for XM674 and XM675 cartridges

Chemical Group-B for XM674 cartridges

Chemical Group-D for XM675 cartridges

Compatibility Group-A for XM674 and XM675 cartridges

17. Destruction to Prevent Enemy Use

a. Authority. When the XM674 CS riot-control agent cartridges are in danger of being captured, authority to destroy them must be obtained from the responsible commander.

b. Destruction. Destroy the cartridges by burning them in a pit or defiladed location. Pile them with flammable material such as brush or dunnage.

Warning: Make sure that smoke produced by the burning agent/pyrotechnic filling does not interfere with operations of nearby friendly personnel.

APPENDIX REFERENCES

AR 385-40	Accident Reporting and Records.
AR 700-1300-8	Malfunctions Involving Ammunition and Explosives.
TM 3-215	Military Chemistry and Chemical Agents.
TM 9-1010-205-12	Operator and Organizational Maintenance Manual Including Repair Parts and Special Tool Lists: 40-MM Grenade Launcher, M79.
TM 9-1095-201-15	Operator, Organizational, Field and Depot Maintenance Manual: Ground Signal Projector M1A1; Hand Pyrotechnic Projector M9; and Pyrotechnic Pistol AN-M8 With Pyrotechnic Pistol Mount M1.
TM 9-1300-206	Care, Handling, Preservation, and Destruction of Ammunition.
TM 38-750	Army Equipment Record Procedures.

By Order of the Secretary of the Army:

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Chief of Staff.

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For explanation of abbreviations used, see AR 320-50.

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