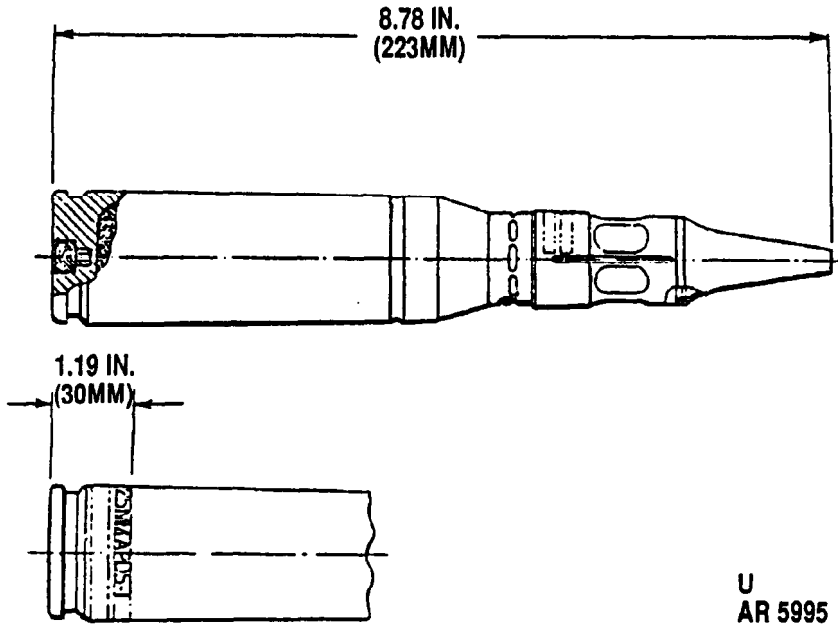


CHAPTER 15
25MM CARTRIDGES

CARTRIDGE, 25MM, ARMOR PIERCING DISCARDING SABOT-TRACER, M791



U
AR 5995

Type Classification:

STD - MSR 12796010.

Use:

Automatic cannon, 25mm, M242.

Description:

ARMOR PIERCING DISCARDING SABOT-TRACER Cartridge. The cartridge is a fixed type, percussion primed 25mm ammunition, intended as the armor piercing service round to successfully engage lightly armored vehicles. The cartridge consists of a sabot encapsulated projectile body, crimped to a steel cartridge case containing 98 grams of extruded propellant, M115 percussion primer and booster pellet. The projectile body consists of a solid tungsten alloy penetrator, pressed on aluminum windshield, pressed-in tracer pellets, molded discarding-type nylon sabot, staked aluminum base and pressed-on polyethylene nose cap.

Function:

When fired, the weapon firing pin initiates the primer which ignites the propelling charge. Gases produced by the burning propellant propel the projectile from the cannon and ignite the tracer. Setback, centrifugal and air pressure forces cause the sabot to discard upon leaving the gun tube. The penetrator (core) is spin-stabilized and penetrates the target solely by kinetic energy.

Tabulated Data:

Complete round:	
DODAC	1305-A974
UNO serial number	0339
UNO proper shipping name	Cartridges for weapons, inert projectile
Type	APDS-T
Weight	458 ± 15 g
Length	8.78 in. (223 mm)
Cannon used with	M242
Projectile:	
Penetrator (core)	Tungsten-alloy
Sabot	Nylon, aluminum base
Nose cap	Polyethylene
Tracer	NA
Explosive	NA
Fuze	NA
Color	Black with white markings
Cartridge case	C1030 steel
Propellant:	
Type	Radford AP225
Weight	0.221 lb
Primer percussion	M115

Performance:

Chamber pressure	56,000 psi
Range	15,000 m
Muzzle velocity	1330 mps, 4370 fps

Shipping and Storage Data:

Quantity-distance class/
SCG ----- 1.4C
Storage code ----- Class IV
DOT shipping class ----- A
DOT designation ----- AMMUNITION
FOR CANNON
WITH SOLID
PROJECTILE

M621 shipping and storage:
Material----- Polypropelene
plastic

Weight (tactically
packed)----- 47.7 lb

Weight (empty) ----- 7.94 lb
Dimensions ----- 13.8 x 13.8 x 5.5 in.
Drawing number C/R----- 12013533

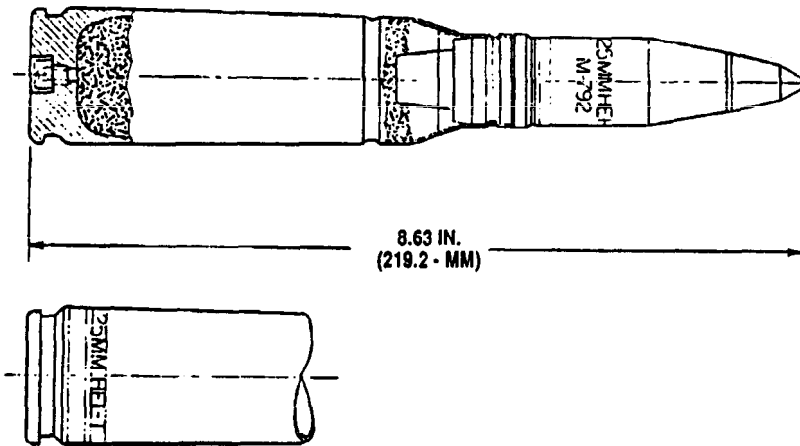
Packing:

Tactical packing unit 30 linked cartridge in two 15-round belts packed nose-to-nose with two plastic separators in plastic shipping and storage container M621.

References:

DARCOM 700-3-2
TM 9-1300-206

**CARTRIDGE, 25MM, HIGH EXPLOSIVE INCENDIARY-TRACER, M792
WITH FUZE POINT-DETONATING SELF-DESTROYING M758**



U
AR 5998

Type Classification:

STD - MSR 12796010.

Use:

Automatic cannon, 25mm, M242.

Description:

HIGH EXPLOSIVE INCENDIARY-TRACER Cartridge. The cartridge is a fixed type, percussion primed 25mm munition, intended as the high explosive service round to successfully engage unarmored ground targets. The cartridge consists of a high explosive incendiary (HEI) filled, one piece projectile body that is crimped to a steel cartridge case containing 90 grams of ball propellant, M115 percussion primer and booster pellet. The projectile body consists of a hollow C1045 steel body, screwed on M758 fuze, swaged iron rotating band, 32 grams of H761 HEI mix and pressed-in tracer pellets. Projectile length, including tracer boom, varies by manufacturer from 3.94 to 4.66 inches.

Function:

When fired, the primer is mechanically initiated by the weapon firing pin. The primer output ignites the booster pellet which, in turn,

ignites the propellant charge. The projectile is launched at a velocity of 1100 meters per second, achieving a maximum effective range of 3000 meters. Upon impact, the fuze functions and the HEI filler detonates dispersing the incendiary mixture. The self-destroying requirement is 6.2 seconds per minute and prior to impact.

Tabulated Data:

Complete round:	
DODAC	1305-A975
UNO serial number	0321
UNO proper shipping name	Cartridges for weapons, with bursting charge
Type	HEI-T
Weight	1.11 lb
Length	8.63 in. (219.2 mm)
Projectile:	
Body	Steel, C1045
Tracer	Pellet
Explosive (HEI mix)	4761, 32 g
Fuze	PD SD, M758
Color	Yellow with red band and black markings
Cartridge case	Steel, C1030
Propellant:	
Type	WC 890
Weight	90 g
Primer percussion	M115

Performance:

Range ----- 3000 m
Muzzle velocity ----- 1100 mps, 3610 fps
Self-destruct ----- 6.2 mps

Shipping and Storage Data:

Quantity-distance class/
SCG ----- 1.2E
Storage code ----- Class IV
DOT shipping class ----- A
DOT designation ----- AMMUNITION
FOR CANNON
WITH
EXPLOSIVE
PROJECTILE

M621 shipping and storage container:

Material----- Polypropelene
Weight (tactically
packed) ----- 47.7 lb
Weight (empty) ----- 7.94 lb
Dimensions ----- 13.8 x 13.8 x 5.5 in.
Drawing number----- 12013230

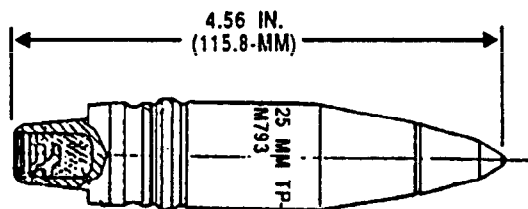
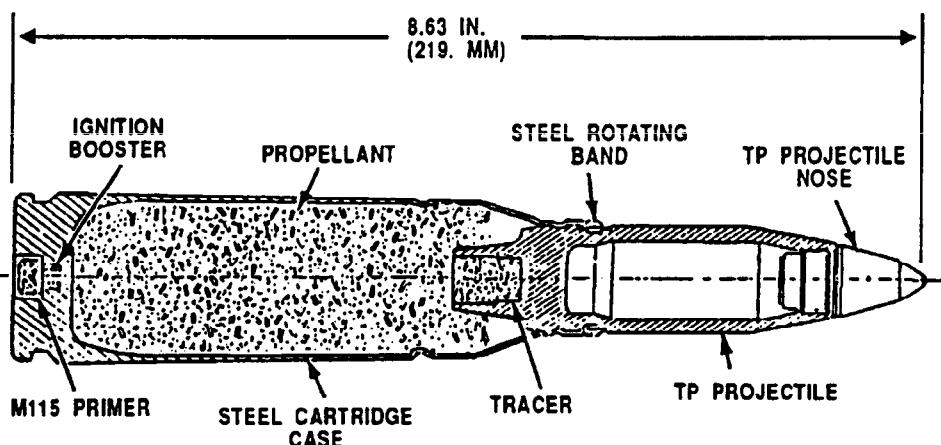
Packing:

Tactical packing unit 30 linked cartridge in two 15-round belts packed nose-to-nose with two plastic separators in plastic shipping and storage container M621.

References:

DARCOM 700-3-2
TM 9-1300-206

CARTRIDGE, 25MM, TARGET PRACTICE-TRACER, M793



**U
AR 5999**

Type Classification:

STD - MSR 12796010.

Use:

Automatic cannon, 25mm, M242.

Description:

TARGET PRACTICE-TRACER Cartridge. The cartridge is a fixed type, percussion primed 25mm munition, intended as a substitute for the high explosive incendiary with tracer service round for target practice in training, gun testing, and gun system functioning. The cartridge consists of a hollow, two piece projectile body that is crimped to a steel cartridge case containing 90 grams of ball propellant, M115 percussion primer and booster pellet. The projectile body consists of a hollow C1035 steel body screw-on steel nose piece, swaged iron rotating even band and pressed-in tracer pellets.

Function:

The cartridge functions the same as the M792, except upon impact the projectile is inert.

Tabulated Data:

Complete round:	
DODAC	1305-A976
UNO serial number	0339
UNO proper shipping name	Cartridges for weapons, inert projectile
Type	TP-T
Weight	1.11 lb
Length	8.63 in. (219 mm)
Projectile:	
Body	Steel, C1035/12/14
Tracer	Pellet
Explosive	NA
Fuze	NA
Color	Blue with white markings
Cartridge case	C1030
Propellant:	
Type	WC 890
Weight	0.3 lb
Primer percussion	M115

Performance:

Range ----- 6000 m, 196858E
Muzzle velocity ----- 3609 fps, 78 ft from
muzzle

Shipping and Storage Data:

Quantity-distance class/
SCG ----- 1.4C
Storage code ----- 11 B
DOT shipping class ----- Class B

DOT designation ----- AMMUNITION
FOR CANNON
WITH EMPTY
PROJECTILE

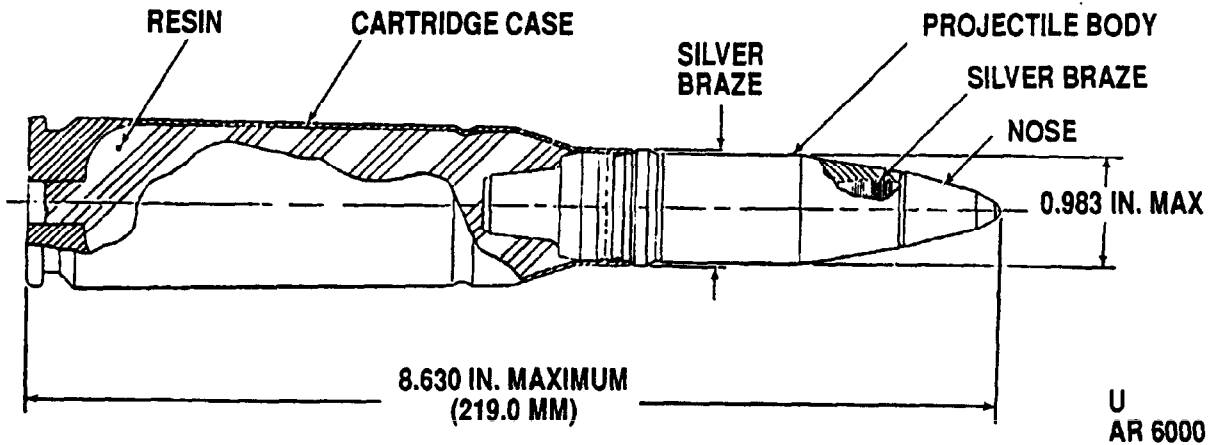
Packing:

Tactical packing unit 30 linked cartridge in two 15-round belts packed nose-to-nose with two plastic separators in plastic shipping and storage container M621.

References:

DARCOM 700-3-2
TM 9-1300-206

CARTRIDGE, 25MM, DUMMY, M794



Type Classification:

STD - DA Letter December 1981.

Use:

Automatic cannon, 25mm, M242. The cartridge is used for non-firing system checkout for the 25mm automatic cannon M242 and training of the crew.

Description:

DUMMY Cartridge. The cartridge is a modified M793 target practice with tracer (TP-T) projectile silver brazed to a modified standard cartridge case and is completely inert. The cartridge case cavity is filled through an enlarged primer hole with an epoxy resin filler to approximate the weight of the M792 high explosive incendiary-tracer and M793 TP-T service cartridges. The threaded nose of the TP-T projectile is silver brazed to the projectile body to improve physical integrity. The external configuration of the M794 metal dummy cartridge (by use of standard components) is the same as that of the M792 HEI-T and M793 TP-T service cartridges.

Tabulated Data:

Complete round:	
DODAC	1305-A967
Type	Dummy, inert
Weight (w/o link)	1.11 lb
Length	8.63 in. (219 mm)

Projectile:

Body	Steel, C1035
Tracer	NA
Explosive	NA
Fuze	NA
Color	Silver braze
Cartridge case	Steel, C1030
Propellant:	
Filler	Epoxy resin (polyurethane)
Primer	NA

Performance:

Chamber pressure	NA
Velocity	NA

Shipping and Storage Data:

Quantity-distance class/	
SCG	NA
Storage code	NA
DOT shipping class	NA
DOT designation	NONEXPLOSIVE AMMUNITION

M621 shipping and storage container:

Material	Polypropelene plastic
Length (max)	14.3 in.
Width (max)	13.8 in.
Height (max)	5.7 in.
Packaged weight (30 linked rounds)	47.7 lb

Wooden box:

Length ----- 32.5 in.
Width ----- 11.5 in.
Height ----- 12 in.
Weight:
Packed (40 rounds
with link) ----- 85.3 lb
Packed (80 rounds
without link) ----- 119 lb
Drawing number ----- 12013880

Packing:

Packing consists of 30 linked cartridges in two 15-round belts in M621 plastic shipping and storage containers, or

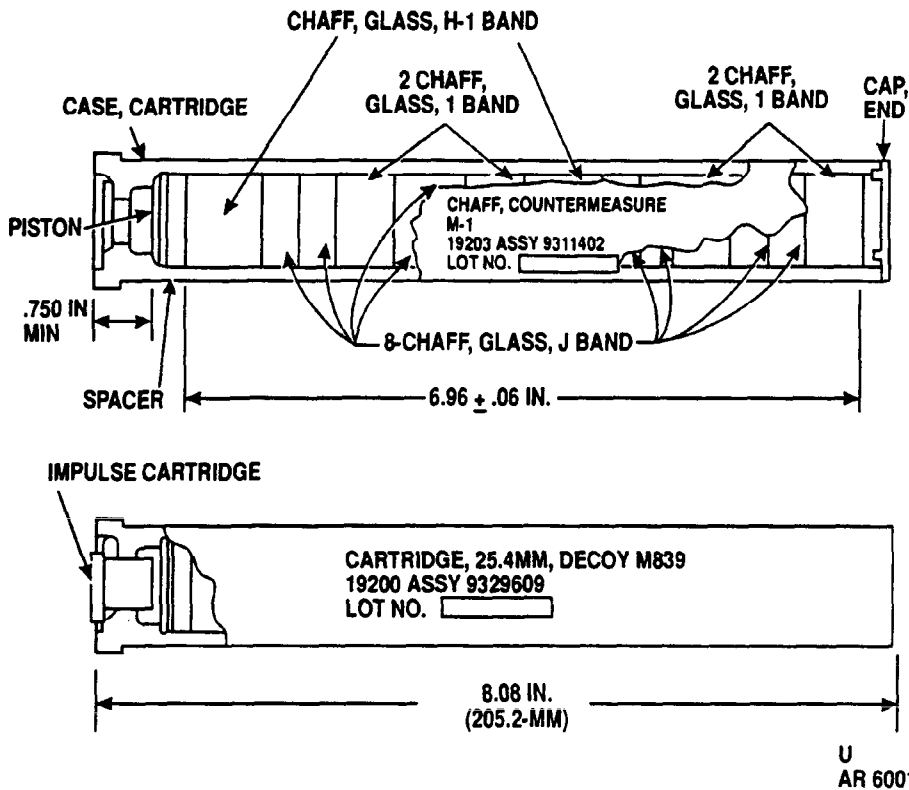
Packing consists of 50 linked cartridges in a wooden shipping and storage container, or

Packing consists of 80 tubed cartridges in a wooden shipping and storage container.

References:

DARCOM 700-3-2

CARTRIDGE, 25.4MM, DECOY, M839



Type Classification:

STD - MSR 02816005.

Use:

The cartridge is a decoy to provide an effective survival counter-measure for Army aircraft against radar controlled weapon systems.

Description:

DECOY Cartridge. The cartridge is ammunition item consisting of a plastic outer case nominally 1-inch wide x 1-inch high x 8-inches long, a payload made up of approximately 390,000 strands of aluminum coated glass fibers. The payload is sectioned into several bundles of chaff dipoles. There are three different lengths of bundles in the payload. In addition, the item contains a plastic end cap, plastic piston, felt spacer, and impulse cartridge.

Function:

The cartridge is fired by electrical initiation of the impulse cartridge M796. The gases generated by the functioned impulse cartridge causes the piston to expel the chaff payload into the

air where it blooms into a radar reflecting cloud that breaks "Lock On" by radar-controlled weapon systems.

Tabulated Data:

Complete round:	
DODAC	1305-A965
UNO serial number	0454
UNO proper shipping name	Igniters
Type	Decoy
Weight	0.34 lb
Length	8.08 in. (205.2 mm)
Body	Plastic
Explosive	NA
Fuze	NA
Color	Unpainted
Drawing number	9329609
Specification number	MIL-C-63338(AR)
Payload:	
Chaff	Aluminum coated glass rods
Weight	0.26 lb
Expelling charge:	
Type	Hercules bulls eye smokeless powder
Weight	0.013 oz
Impulse cartridge	M796

Shipping and Storage Data:

Quantity-distance class/
SCG ----- 1.4S
DOT shipping class ----- C
DOT designation ----- ELECTRIC
SQUIB, CLASS C
EXPLOSIVE,
HANDLE
CAREFULLY

Packing box:
Weight ----- 67 lb
Dimensions ----- 14.25 x 13.27 x
12.8 in.

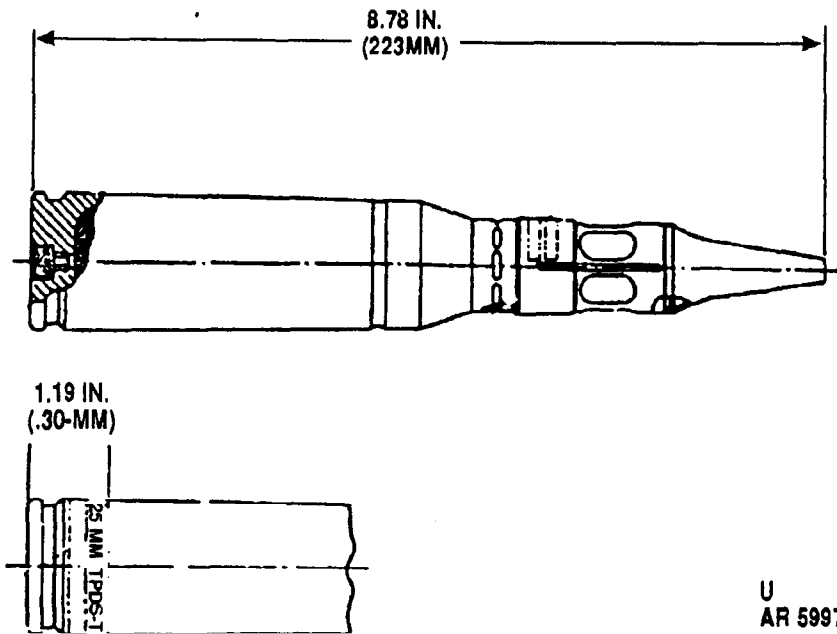
Packing:

Two PA19 metal containers containing 50
decoy cartridges each (width-size) in wood box.

References:

TM 9-1300-206

CARTRIDGE, 25MM, TARGET PRACTICE DISCARDING SABOT-TARGET, M910



U
AR 5997

Type Classification:

To be approved.

Use:

Automatic cannon, 25mm, M242.

Description:

TARGET PRACTICE DISCARDING SABOT-TRACER Cartridge. The cartridge is a fixed type, percussion primed 25mm ammunition, intended as a training substitute for armor piercing service ammunition. The cartridge consists of a sabot encapsulated projectile body, crimped to a steel cartridge case containing 97 grams of extruded propellant, M115 percussion primer and booster pellet. The projectile body consists of a solid steel core, pressed-on aluminum windshield, pressed-in tracer pellets, molded discarding-type nylon sabot, staked aluminum base and pressed-on polyethylene nose cap.

Function:

When fired, the weapon firing pin initiates the primer which ignites the propelling charge. Gases produced by the burning propellant propel the projectile through the barrel and ignite the tracer. Centrifugal and air pressure forces cause the sabot, protective cap, and aluminum base to discard upon leaving the barrel. The high mass flow tracer decreases the base drag,

allowing the spin-stabilized core to match the armor piercing round trajectory to a range of 2000 meters. Upon tracer burnout, the light-weight core loses velocity rapidly and eventually tumbles when its velocity goes below the speed of sound.

Tabulated Data:

Complete round:	
DODAC	1305-A940
UNO serial number	0328
UNO proper shipping name	Cartridges for weapons, inert projectile
Type	TPDS-T
Weight	421 ± 15 g
Length	8.78 in. (223 mm)
Cannon used with	M242
Projectile:	
Core	Steel
Sabot	Nylon, aluminum base
Nose cap	Polyethylene
Tracer	Magnesium
Explosive	NA
Fuze	NA
Color	Blue with white markings
Cartridge case	Steel, C1030
Propellant:	
Type	Expro XPR51C4
Weight	0.214 lb
Primer Percussion	M115

Performance:

Chamber pressure ----- 56,000 psi
Range ----- 8000 m
Muzzle velocity ----- 1545 mps, 5070 fps

Shipping and Storage Data:

DOD hazard class/SCG ----- 1.2C (08)
Storage class ----- Class B explosive
DOT designation ----- AMMUNITION
FOR CANNON
WITH SOLID
PROJECTILES
DOT label ----- Explosive B
UN serial number ----- 0328

M621 shipping and storage:

Material ----- Polypropylene
plastic

Weight (tactically
packed) ----- 45 lb
Weight (empty) ----- 8 lb
Dimensions ----- 13.8 x 13.8 x 5.5 in.
Drawing number (for
packing M910 in
M621) ----- 12556515

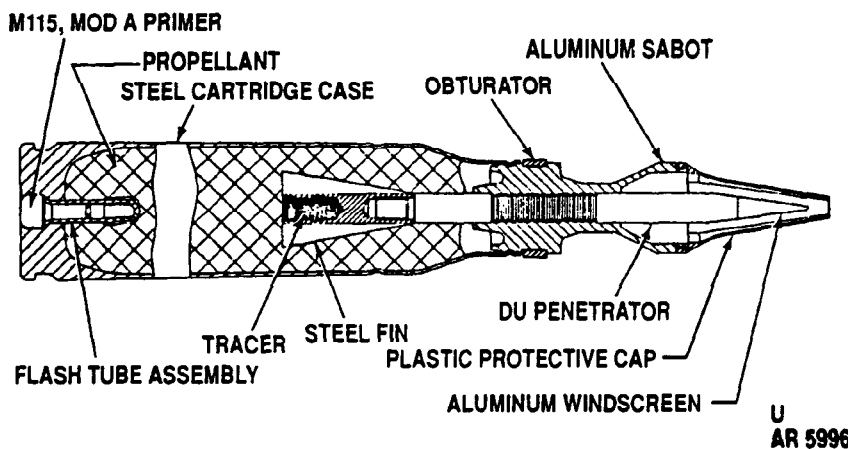
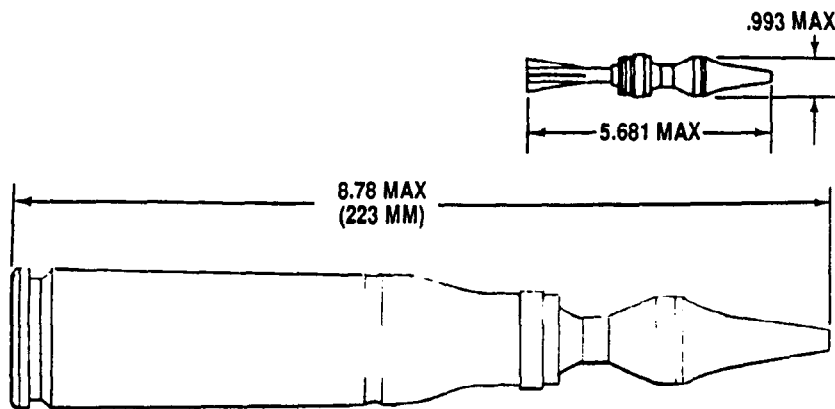
Packing:

Tactical packing unit 30 linked cartridges in two 15-round belts packed nose-to-nose with two plastic separators in plastic shipping and storage container M621.

References:

DARCOM 700-3-2
TM 9-1300-206

**CARTRIDGE, 25MM, ARMOR PIERCING FIN STABILIZED
DISCARDING SABOT-TRACER, M919**



Type Classification:

STD.

Use:

Automatic cannon, 25mm, M242.

Description:

ARMOR PIERCING FIN STABILIZED DISCARDING SABOT-TRACER Cartridge. The cartridge is a fixed type, percussion primed 25mm ammunition, intended to supersede the M791 for use in combat. The cartridge consists of a subcaliber projectile inside an aluminum sabot, crimped to a steel cartridge case containing 97 grams of extruded propellant, modified M115 percussion primer and flash tube. The subprojectile consists of a depleted uranium penetrator with a pressed-on aluminum wind-

screen and a threaded steel fin with pressed-in tracer pellets. The three piece aluminum sabot utilizes a nylon obturator and a polyethylene nose cap.

Function:

When fired, the weapon firing pin initiates the primer which ignites the propelling charge. Gases produced by the burning propellant propel the projectile through the barrel and ignite the tracer. Centrifugal, air, and gas pressure forces cause the obturator, sabot, and nose cap to discard upon leaving the barrel. The low drag subcaliber projectile travels along its trajectory stabilized by the fin and a small amount of spin. The tracer allows visual contact with the fired round as it travels downrange. Upon impact, kinetic energy stored in the subprojectile causes it to punch through an armored target and inflict considerable damage inside, prohibiting any further use of the target.

Tabulated Data:

Complete round:
 DODAC ----- 1305-A986
 UNO serial number ----- 0328
 UNO proper shipping
 name ----- Cartridges for
 weapons, inert pro-
 jectile
 Type ----- APFSDS-T
 Weight ----- 450 ± 15 g
 Length ----- 8.78 in. (223 mm)
 Cannon used with ----- M242
 Projectile:
 Core ----- Depleted uranium
 Sabot ----- Aluminum
 Nose cap ----- Polyethylene
 Tracer ----- Magnesium
 Explosive ----- NA
 Fuze ----- NA
 Color ----- Black and white
 obturator
 Cartridge case ----- Steel, C1030
 Propellant:
 Type ----- Hercules HES9053

Weight ----- 98 ± 3 g
 Primer percussion ----- M115 Mod A

Performance:

Chamber pressure ----- 56,000 psi
 Muzzle velocity ----- 1420 mps, 4659 fps

Shipping and Storage Data:

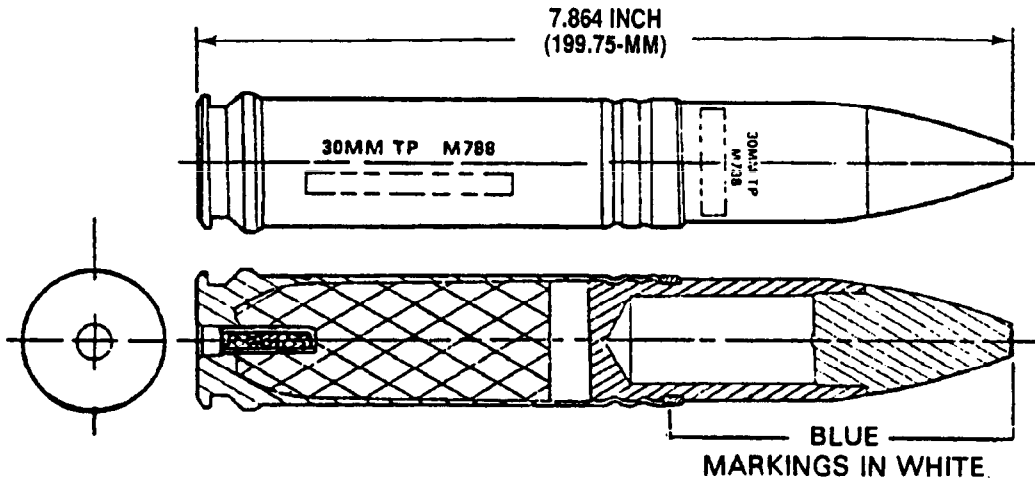
DOD hazard class/SCG ----- 1.2C
 Storage code ----- Class B explosive
 DOT designation ----- AMMUNITION
 FOR CANNON
 WITH SOLID
 PROJECTILES
 UN serial number ----- 0328 and 2912

Packing:

Tactical packing unit 30 linked cartridges in
 two 15-round belts packed nose-to-nose with
 two plastic separators in plastic shipping and
 storage container M621.

CHAPTER 16
30MM CARTRIDGES

CARTRIDGE, 30MM, TARGET PRACTICE, M788



U
AR 6002

Type Classification:

STD.

Use:

Automatic cannon, 30mm, XM230 (U.S.), ADEN MK IV (NATO), DEFA 552/553 (NATO). The cartridge is used in target practice.

Description:

TARGET PRACTICE Cartridge. The cartridge has a blue painted projectile with white markings. The inert/solid projectile is a three piece assembly consisting of steel body with cavity, rotating band, and aluminum nose piece. The cartridge case is aluminum.

Function:

The cartridge consists of an inert, solid projectile without a fuze. No function takes place except penetration of target.

Tabulated Data:

DODAC----- 1305-B118
 UNO serial number ----- 0339
 UNO proper shipping name----- Cartridges for weapons, inert projectile
 Weight ----- 5371 gr

Length----- 7.864 in. (199.75 mm)
 Tracer----- NA
 Primer----- Electric, PA520
 Fuze----- NA
 Explosive:
 Type----- NA
 Weight----- NA
 Incendiary:
 Type----- NA
 Weight----- NA
 Propellant:
 Type----- WC 855
 Weight----- MBR, 50 gr

Performance:

Chamber pressure (avg)----- 40,600 to 44,950 psi (280-310 MPa)
 Velocity----- 2640 fps (805 mps)

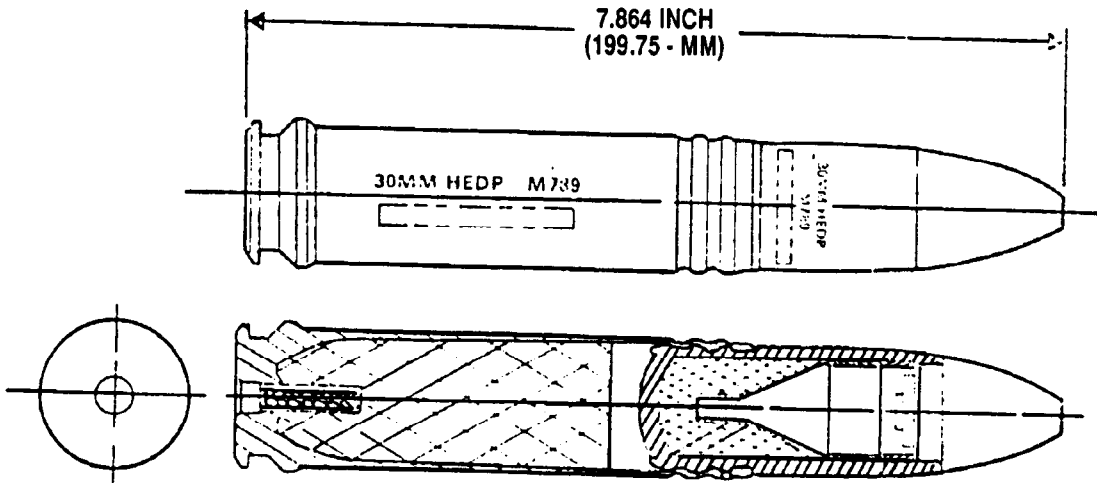
Shipping and Storage Data:

Quantity-distance class/
 SCG----- 1.4C
 Storage code ----- Class V
 DOT shipping class ----- B
 DOT designation ----- AMMUNITION FOR CANNON WITH SOLID PROJECTILES
 Drawing number ----- 28114038

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 30MM, HIGH EXPLOSIVE DUAL PURPOSE, M789



U
AR 6003

Type Classification:

STD.

Use:

Automatic cannon, 30mm, M230 (U.S.).

Description:

HIGH EXPLOSIVE DUAL PURPOSE Cartridge. The cartridge consists of a steel projectile body loaded with HMX explosive and spin compensated shaped charge liner resulting in the formation of an armor-piercing jet. In addition, main charge detonation produces fragmentation of the projectile body resulting in antipersonnel effects in target vicinity.

Purpose:

The projectile fuze arms in flight. Upon impact, the fuze initiates the projectile explosive filler. Detonation of the filler charge collapses the shaped charge liner resulting in the formation of an armor-piercing jet. In addition, main charge detonation produces fragmentation of the projectile body resulting in antipersonnel effects in target vicinity.

Tabulated Data:

DODAC----- 1305-B129
UNO serial number ----- 0321

UNO proper shipping

name----- Cartridges for weapons, with bursting charge
Weight ----- 5371 gr
Length----- 7.864 in.
(199.75 mm)
Tracer----- NA
Primer----- Electric, PA520
Fuze----- PD, M759
Explosive:
Type ----- PBXN-5
Weight----- 340 gr
Incendiary:
Type ----- NA
Weight----- NA
Propellant:
Type ----- WC 855
Weight----- MBR, 50 gr

Performance:

Chamber pressure (avg)----- 40,000 to 44,950
psi (280-310 MPa)
Velocity ----- 2640 fps (805 mps)

Shipping and Storage Data:

Quantity-distance class/
SCG ----- 1.2E (0.4)
Storage code ----- Class V
DOT shipping class----- A

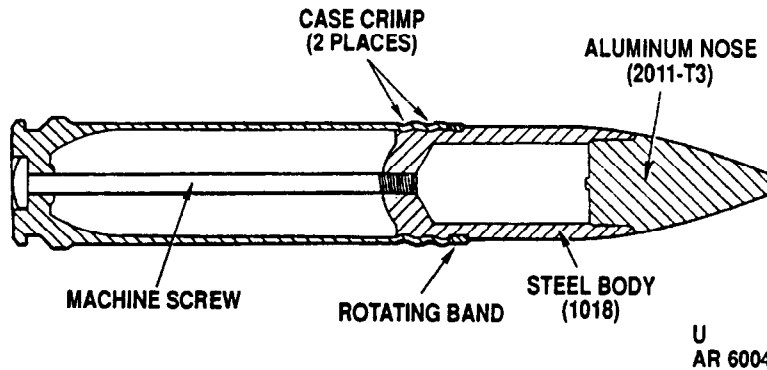
TM 43-0001-27

DOT designation ----- AMMUNITION
FOR CANNON
WITH SOLID
PROJECTILES
Drawing number ----- 28114062

References:

SB 700-20
TM 9-1300-206

CARTRIDGE, 30MM, DUMMY, M848



Type Classification:

STD - LCC-A MSR 04826009.

Use:

Automatic cannon, 30mm, M230. The cartridge is used in drills of the weapon mechanism and to test link/delink functions.

Description:

DUMMY Cartridge. The cartridge is completely inert with modified target practice (TP) projectile and cartridge case. Primer and propellant are replaced with threaded steel bolt attached to the base of the projectile body to maintain same weight and balance as the TP cartridge. The projectile body is steel with an aluminum nose.

Tabulated Data:

DODAC----- 1305-B134
 Weight ----- 5445 gr
 Length----- 199.75 mm
 Tracer----- NA
 Primer----- NA
 Fuze----- NA

Explosive:

Type ----- NA
 Weight----- NA

Incendiary:

Type ----- NA
 Weight----- NA

Propellant:

Type ----- NA
 Weight----- NA

Projectile:

Length ----- 104.28 mm
 Case ----- Aluminum

Performance:

Chamber pressure ----- NA
 Velocity----- NA

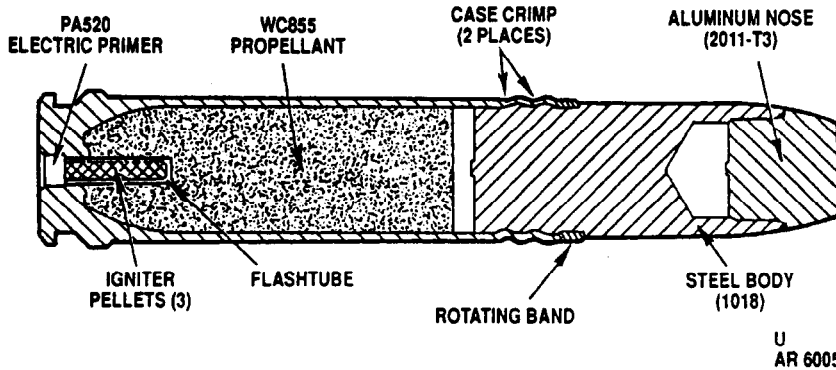
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- NA
 Storage code ----- NA
 DOT shipping class ----- NA
 DOT designation ----- NONEXPLOSIVE
 AMMUNITION
 Drawing number ----- 11825935

References:

DARCOM 700-3-2

CARTRIDGE, 30MM, TEST, M883



Type Classification:

STD - LCC-A, MSR 06827003.

Use:

Automatic cannon, 30mm, M230. The cartridge is used in proof testing the weapon and barrel.

Description:

TEST Cartridge. The cartridge is a high pressure test round which provides 120 percent chamber pressure to proof test the weapon and barrel. Case, primer, and propellant are identical to the target practice round. Excess pressure is achieved through a heavier 1018 steel projectile. Ogive is blunt and cartridge case is silvered to distinguish from service rounds.

Tabulated Data:

DODAC----- 1305-B135
 UNO serial number ----- 0321
 UNO proper shipping name----- Cartridges for weapons, with bursting charge
 Weight ----- 6821 gr
 Length----- 174.35 mm
 Tracer----- NA
 Primer----- Electric, PA520
 Fuze ----- NA

Explosive:

Type ----- NA
 Weight----- NA

Incendiary:

Type ----- NA
 Weight----- NA

Propellant:

Type ----- WC 855
 Weight----- 772 gr

Projectile:

Weight----- 5031 gr
 Length ----- 79.13 mm

Performance:

Chamber pressure ----- NA
 Velocity----- NA

Shipping and Storage Data:

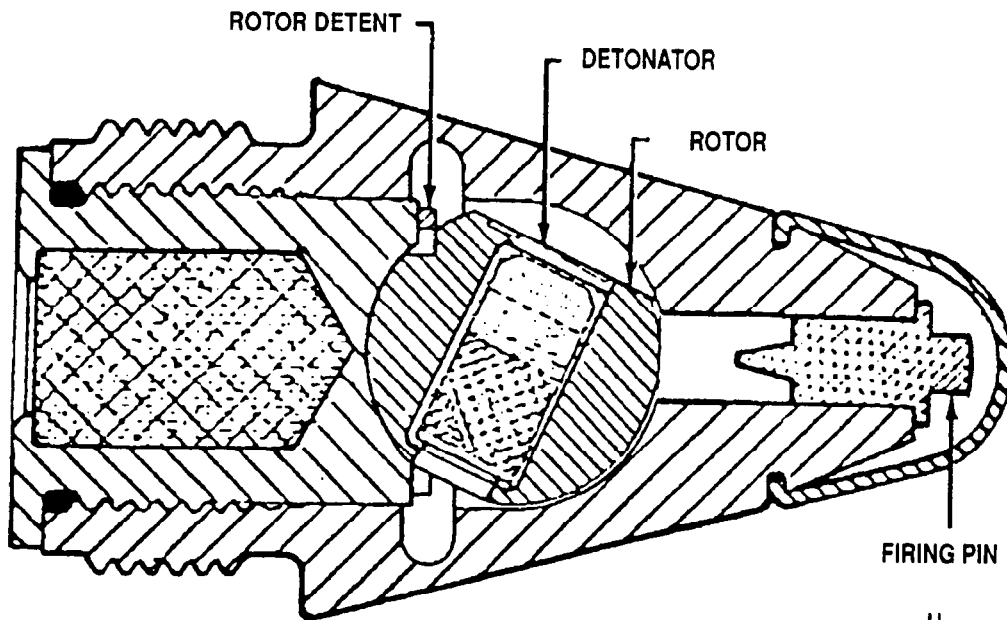
Quantity-distance class/
 SCG ----- 1.4C
 Storage code ----- Class V
 DOT shipping class ----- B
 DOT designation ----- AMMUNITION FOR CANNON WITH SOLID PROJECTILES
 Drawing number ----- 11895941

References:

DARCOM 700-3-2

CHAPTER 17
POINT-DETONATING FUZES

FUZE, POINT-DETONATING: M505A3



U
AR 0363

Type Classification:

STD.

Use:

The fuze is designed for use with the 20mm high explosive incendiary (HEI) and high explosive incendiary with tracer (HEI-T) cartridges against aircraft and light armor.

Description:

The point-detonating, single-action nose fuze is intended to function upon impact with the target. The fuze is used with the following HEI cartridges: M56A3/A4, M97A2, M210, M242 and M246.

Function:

Upon impact, the fuze initiates the HE filler and disperses the incendiary filler. The fuze arms in flight. Its delay is 10 to 35 feet.

Tabulated Data:

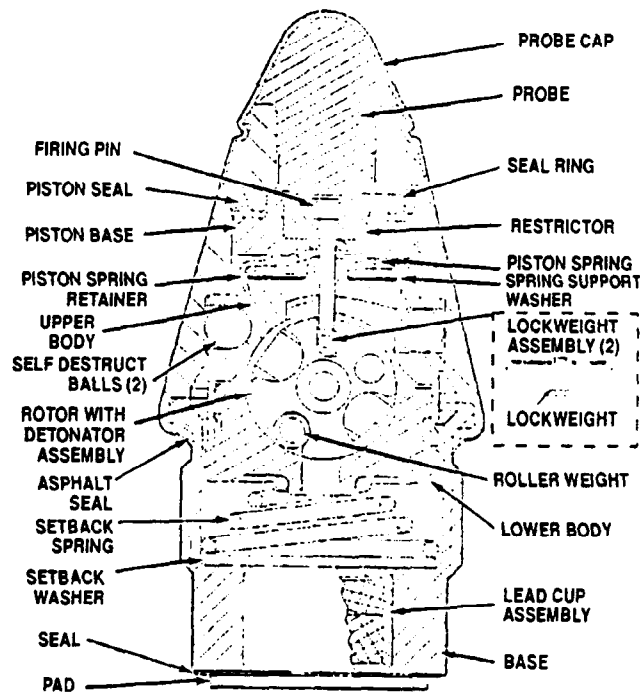
Length (max) -----	1.23 in. (31 mm)
Weight -----	330 gr
Diameter -----	0.669 in. (17 mm)
Explosive components:	
Detonator -----	M47
Booster -----	T42

Packing:

For shipping fuzes from the fuze manufacturer to the cartridge LAP facility, the fuzes are packed 200 fuzes per carton, six cartons per wooden box, 1200 fuzes per wooden box.

Shipping and Storage Data:

Quantity-distance class -----	1.1
DOT shipping class -----	C
DOT designation -----	DETONATING FUZES, CLASS C EXPLOSIVES
Drawing number -----	7258863

FUZE, POINT-DETONATING, SELF-DESTROYING: M758

U
AR 6007

Type Classification:

STD - MSR 12796010.

Use:

The fuze is designed for use with the 25mm, high explosive incendiary with tracer, M792 cartridge, fired from the M242 cannon.

Description:

The point-detonating (PD), self-destroying (SD) M758 fuze is a delayed arming, PD SD type which also features graze impact sensitivity against hard and soft ground media as well as super-quick functioning upon target impact. The fuze consists of an ogive assembly crimped to a base assembly which houses a piston assembly, a piston spring, a body assembly, and a setback spring. The ogive assembly consists of a nylon probe within a steel ogive crimped to a steel probe cap while the base assembly consists of a lead charge within a steel base. The piston spring separates the piston assembly, consisting of an aluminum piston base, a piston seal, a seal ring, a steel restrictor, and a steel firing pin from the body assembly consisting of a nylon upper body, an aluminum lower body, a steel roller weight, a body, a zinc rotor, a detonator, two steel lockweights and lockweight

springs which, in turn, separate from the base assembly by the setback spring.

Function:

Starting from the safe condition, acceleration forces, associated with projectile launch, cause the body assembly and piston assembly located within the fuze ogive to be simultaneously set back to the rear of the fuze against the setback spring. Air originally in the bottom of the fuze is forced through ports into the chamber above the piston. The high spin forces, which occur almost simultaneously with the setback forces, serve three purposes. The spin effect causes two lockweights to move against their firing pin which keeps the motor in a safe position. Spin also causes two balls to move outward into groove located around the inner part of the ogive, locking the body assembly rearward against the compressed force of the setback spring. Spin also causes a rubber piston seal to flare out against the bore of the ogive, resulting in necessary piston sealing action. As the projectile leaves the muzzle, the acceleration force dissipates and the piston becomes free to move forward under forces exerted by the piston spring. The rate of piston movement forward is controlled by air being forced through a porous metal restrictor. This action provides the required arming delay time to meet the fuze no-arm and all-arm requirements. As the piston approaches the forward position, the firing pin is withdrawn from the

rotor, allowing it to rotate to the armed position. Centrifugal force acting on the roller weight causes it to move into a groove and lock the rotor in the armed position. The fuze is fully armed when the detonator is in line with the firing pin and lead assembly. The fuze functions under conditions of direct impact, graze impact or self destruct (non-impact). Direct impact with the target causes a super-quick function of the fuze due to the crushing action of the nose probe. The nose probe is driven into the piston assembly, moving it rapidly rearward. The firing pin, as part of the piston assembly, is thereby driven into the detonator and the explosive train is initiated. Function at low graze angles can occur in two ways. On soft targets where the projectile tends to enter the target, the nose probe is crushed driving the piston firing pin into the detonator. On low angle or graze impacts on hard targets, deceleration of the projectile and spin decay occurs. Spin decay reduces the centrifugal forces acting on the self-destruct balls and inertial force acts on the body assembly due to projectile deceleration. This, coupled with the stored energy of the setback spring, overrides the force exerted by the self-destruct balls and the body assembly is driven forward rapidly. The detonator contacts the firing pin and begins initiation of the explosive train. If no contact is made with a target, the fuze will cause the projectile to function by self-destruct action after a predetermined flight time. Projectile spin decay reduces the centrifugal force acting on the self-destruct balls. The stored energy in the setback spring overrides the holdback force of the balls and forces the body assembly forward to drive the detonator into the firing pin. Initiation of the explosive train occurs, and the projectile is detonated while still in flight.

Tabulated Data:

Fuze M758:
 DODAC ----- TBA

Length (max)----- 1.417 in. (36 mm)
 Weight (approx) ----- 0.041 lb (18.56 g)
 Diameter (max)----- 0.661 in. (16.8 mm)
 Center of gravity (from
 base) ----- 0.602 in. (15.3 mm)
 Explosive components:
 Detonator ----- RDX/Lead Axide
 NOL 130, 0.038 g
 Lead charge----- HMX, 0.285 g

Packing:

For shipping fuzes from the fuze manufacturer to the cartridge LAP facility, one packing unit consists of 1000 fuzes individually inserted into foam trays (200 fuzes per tray and five trays per packing unit) which are stacked with chipboard separators and then packed into inner and outer fiberboard boxes.

Length----- 19 in. (482.6 mm)
 Width ----- 12.5 in. (317.5 mm)
 Height ----- 10.1 in. (256.5 mm)
 Weight (empty)----- 11.5 lb (5.23 kg)
 Weight (1000 fuzes)----- 52.6 lb (23.86 kg)

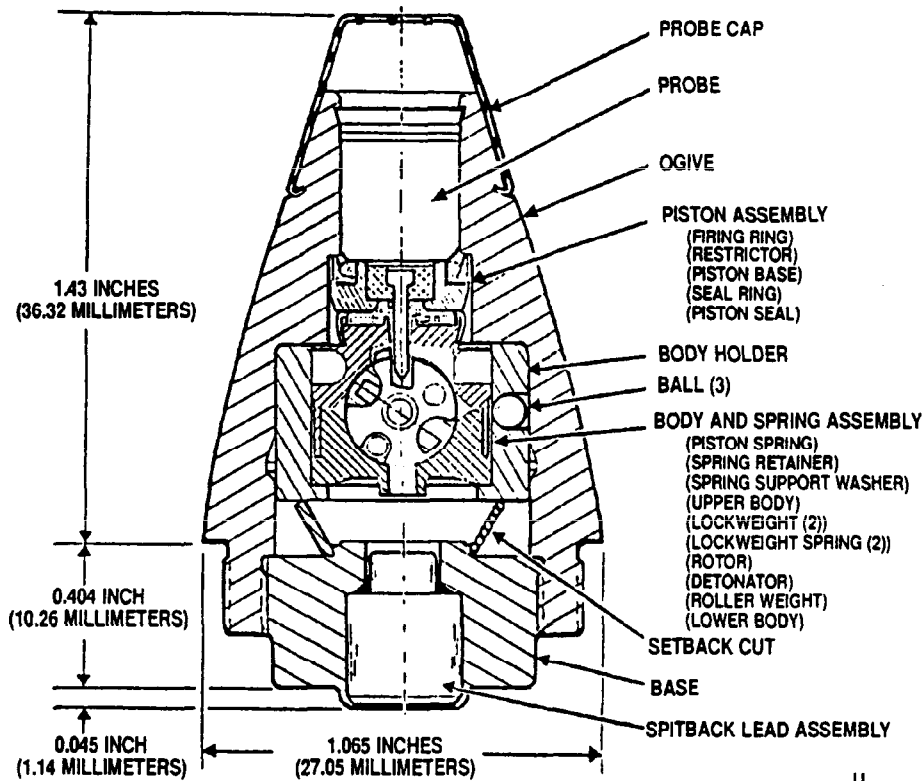
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.1B
 Storage code ----- Class VI
 DOT shipping class ----- A
 DOT designation ----- DETONATING
 FUZES, CLASS A
 EXPLOSIVES
 DOCAC ----- TBA
 Drawing number ----- DS8861

References:

DARCOM 700-3-2
 TM 9-1300-206

FUZE, POINT-DETONATING: M759 (XM714E6)



U
AR 6006

Type Classification:

STD.

Use:

The fuze is designed for use with the 30mm high explosive dual purpose (HEDP) cartridges fired from the M230 automatic cannon.

Description:

Fuze M759 (formally designated as the XM714E6) is a point-detonating type with detonator and spitback charge. It is used with HEDP cartridge M789.

Function:

Prior to launch, the fuze detonator is housed in the rotor with the rotor locked in the safe position by the firing pin tip and two lockweights. On setback, the piston assembly (with firing pin) and body assembly (with detonator and rotor) are moved to the most rearward posi-

tion by the firing pin tip and two lockweights. As the fuzed projectile exits the gun muzzle, spin environment causes the lockweights to retract from the rotor and the two steel balls to engage the ogive groove, locking the body assembly in the position it had achieved at setback. In addition, spin causes the piston seal to flare and engage the ogive sidewalls which eliminates the air flow path between the ogive and piston. Movement of the piston assembly (firing pin) to the forward or armed position is delayed due to the regulated flow of trapped air through the restrictor until the projectile has traveled a minimum of 15 meters from the muzzle. After retraction to the firing pin from the rotor (last safety lock), the spin causes the rotor (with detonator) to rotate to the armed state, i.e., stab detonator aligned with firing pin and lead cup assembly. As the rotor achieves the armed position (150 m), the roller weight moves out-board from the rotor and engages the detent from the lower and upper bodies thus locking the rotor in armed state. Upon target impact, the probe nose piece is driven into the ogive forcing the piston assembly (firing pin) aft. The firing pin stabs the detonator, and its explosive initiates the lead cup assembly explosive which, in turn, ignites the main charge.

Tabulated Data:

Type ----- PD
 Weight ----- 1.41 oz (40 g)
 Length ----- 1.88 in. (47.72 mm)
 Diameter ----- 1.06 in. (27.05 mm)
 Material ----- Aluminum
 Non-arm range ----- 15 m
 All-arm range ----- 150 m
 Explosive components:
 Detonator ----- NOL No. 130
 Priming Mix,
 0.0055 g
 Lead Azide ----- 0.015 g
 RDX Type B ----- 0.016 g

Spitback lead assembly:

PBXN, Type II, C1, 2
 or 3 ----- 0.25 g
 PBXN-5, Type I, C1
 or 3 ----- 0.06 g

Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.1B
 DOT shipping class ----- A
 DOT designation ----- DETONATING
 FUZES, CLASS A
 EXPLOSIVE
 Drawing number ----- 11834312