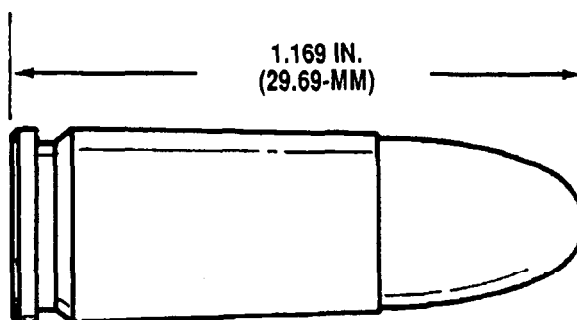
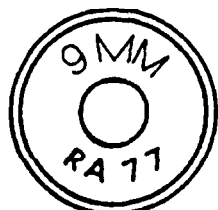


CHAPTER 12
9MM CARTRIDGES

CARTRIDGE, 9MM, BALL



U
AR 5970

Type Classification:

Commerical.

Use:

Modified M3 Submachine Gun or commercial weapons. (The use in M9 Pistol is not authorized.) The cartridge is intended for use against personnel.

Description:

BALL Cartridge.

Tabulated Data:

DODAC----- 1305-A360
 UNO serial number ----- 0012
 UNO proper shipping name----- Cartridges for weapons, inert projectile
 Weight ----- 182 gr
 Length----- 1.169 in. (29.69 mm)
 Tracer----- NA
 Primer----- Percussion
 Fuze ----- NA
 Explosive:
 Type ----- NA
 Weight ----- NA
 Incendiary:
 Type ----- NA

Weight----- NA
 Propellant:
 Type ----- Commerical
 Weight----- MBR
 Projectile weight ----- 115 gr

Performance:

NOTE

Mid case pressures normally run 8000 to 10,000 psi higher than case mouth pressure.

Mid case pressure ----- 38,500 psi (avg), 43,000 psi (max)
 Velocity ----- 1125 ± 90 fps, 15 f from muzzle

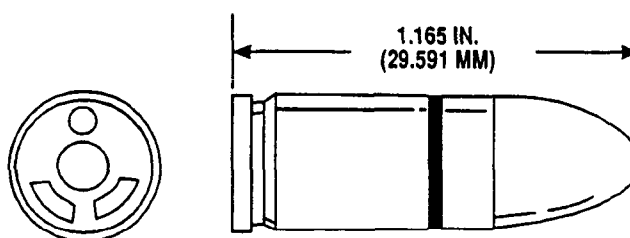
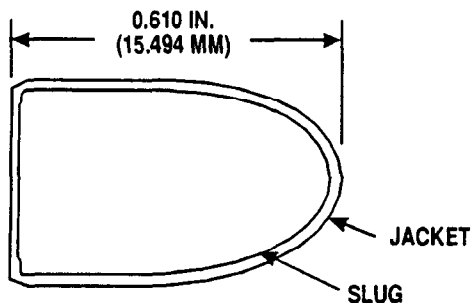
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.4S
 Storage code ----- Class V
 DOT shipping class ----- C
 DOT designation ----- SMALL ARMS AMMUNITION
 Drawing number ----- 10542448

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 9MM, BALL, NATO, M882



U
AR 5971

Type Classification:

HQDA (DAMA-CSM), dated 15 April 85.

Use:

Pistol, 9mm, M9. The cartridge is intended for use against personnel.

NOTE

M882 ammunition can be used in the following nonstandard weapons:

<u>Pistol</u>	<u>Submachine Guns</u>
HK P7 series (GE)	HK MP5 (GE)
Walther P38 (GE)	HK MP5SD (GE)
FN P35 (BE)	IMI Uzi (IS)
	Baretta M12 (IT)
	FFV M45/45B (SW)
	Madsen M50 (DE)
	CZ M23 (CZ)
	Sten MK II (UK)
	Sterling 12A3 (UK)

Description:

BALL Cartridge. The cartridge is identified by the plain bullet tip.

Tabulated Data:

DODAC-----	1305-A363
UNO serial number -----	0012
UNO proper shipping name-----	Cartridges for weapons, inert projectile
Weight -----	179 gr
Length-----	1.165 in. (29.591 mm)
Tracer-----	NA
Primer-----	Percussion
Fuze-----	NA
Explosive:	
Type-----	NA
Weight-----	NA
Incendiary:	
Type-----	NA
Weight-----	NA
Propellant:	
Type-----	HPC 26
Weight-----	6 gr
Projectile weight -----	112 gr

Performance:

Case mouth pressure----- 31,175 psi (avg),
36,250 psi (max)
Velocity----- 1263 ± 5 fps, 15 ft
from muzzle

Shipping and Storage Data:

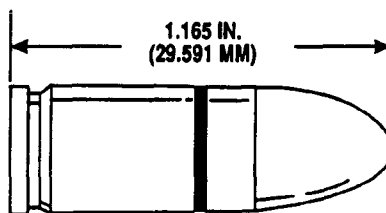
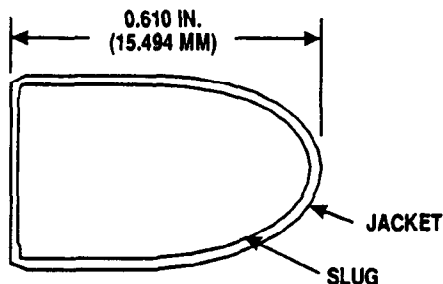
Quantity-distance class/
SCG----- 1.4S

Storage code ----- Class V
DOT shipping class----- C
DOT designation ----- SMALL ARMS
AMMUNITION
Drawing number ----- 9345211

References:

SB 700-20
TM 9-1300-206

CARTRIDGE, 9MM, HIGH PRESSURE TEST, M905



U
AR 5972

Type Classification:

HQDA (DAMA-CSM), dated 15 April 85.

Use:

Proof testing of M9 pistols. The cartridge is intended for use in proofing new pistols and test barrels to demonstrate safety prior to releasing weapons to the field.

Description:

HIGH PRESSURE TEST Cartridge. The cartridge is identified by a tinned cartridge case and high pressure test head stamp.

Tabulated Data:

DODAC----- 1305-A364
 UNO serial number ----- 0012
 UNO proper shipping
 name----- Cartridges for
 weapons, inert pro-
 jectile
 Weight ----- 179 gr
 Length----- 1.165 in.
 (29.591 mm)
 Tracer----- NA
 Primer----- Percussion

Fuze ----- NA
 Explosive:
 Type ----- NA
 Weight----- NA
 Incendiary:
 Type ----- NA
 Weight----- NA
 Propellant:
 Type ----- WC 370
 Weight----- 7.5 gr

Performance:

Chamber pressure ----- 50,000 psi
 Velocity----- NA

Shipping and Storage Data:

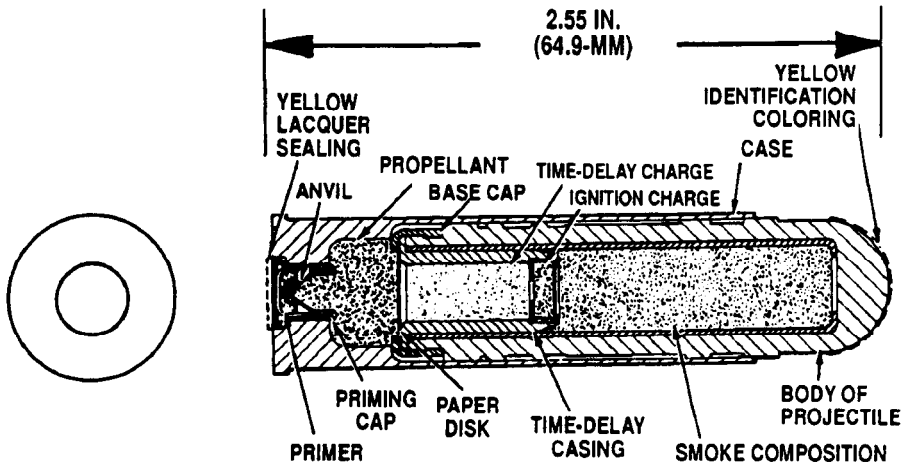
Quantity-distance class/
 SCG ----- 1.4C
 Storage code ----- Class V
 DOT shipping class ----- C
 DOT designation ----- SMALL ARMS
 AMMUNITION
 Drawing number ----- 9378265

References:

SB 700-20
 TM 9-1300-206

CHAPTER 13
14.5MM CARTRIDGES

CARTRIDGE, 14.5MM, TRAINER-SPOTTER, M181A1



U
AR 5973

Type Classification:

STD - AMCTC 138.

Use:

Artillery Trainer, M31.

Description:

TRAINER-SPOTTER Cartridge. The cartridge has a chemical-filled (smoke composition) projectile. It is identified by the markings on the cartridge case and a yellow projectile tip. The cartridge has no fuze and it uses a time delay element to provide an air burst.

Function:

When the cartridge is fired, the heat of the propellant gases ignites the delay element. The delay element burns 3 seconds and, in turn, ignites the smoke composition. The heat and pressure produced by the burning filler rupture the plastic closing disc at the projectile base and a visible puff of smoke is emitted.

Tabulated Data:

DODAC----- 1305-A365
 UNO serial number ----- 0012
 UNO proper shipping
 name----- Cartridges for
 weapons, inert pro-
 jectile

Weight ----- 1065 gr
 Length ----- 2.55 in. (64.9 mm)
 Tracer ----- NA
 Primer ----- Percussion
 Fuze ----- Powder train delay
 Explosive:
 Type ----- NA
 Weight ----- NA
 Incendiary:
 Type ----- NA
 Weight ----- NA
 Propellant:
 Type ----- Hi Skor 700X
 Weight ----- 3.5 gr

Performance:

Chamber pressure ----- NA
 Velocity ----- 100 mps, 4 m from
 muzzle; 328 fps,
 15 ft from muzzle

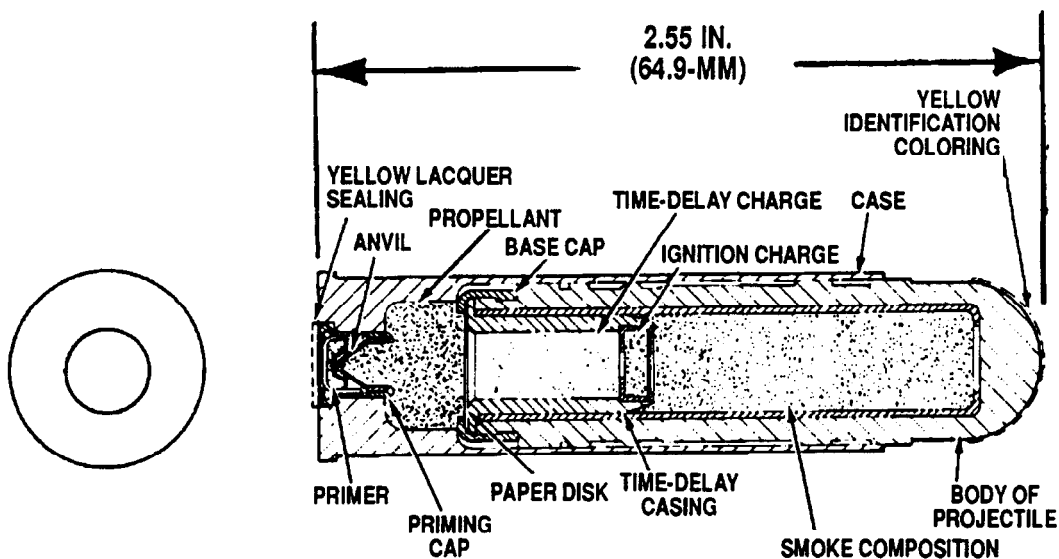
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.4S
 Storage code ----- Class V
 DOT shipping class ----- C
 DOT designation ----- SMALL ARMS
 AMMUNITION
 Drawing number ----- 9098295

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 14.5MM, TRAINER-SPOTTER, M182A1



U
AR 5974

Type Classification:

STD - AMCTC 138.

Use:

Artillery Trainer, M31.

Description:

TRAINER-SPOTTER Cartridge. The cartridge has a chemical-filled (smoke composition) projectile. It is identified by the markings on the cartridge case and a yellow projectile tip. The cartridge has no fuze and it uses a time delay element to provide an air burst.

Function:

When the cartridge is fired, the heat of the propellant gases ignites the delay element. The delay element burns 6 seconds and, in turn, ignites the smoke composition. The heat and pressure produced by the burning filler rupture the plastic closing disc at the projectile base and a visible puff of smoke is emitted.

Tabulated Data:

DODAC----- 1305-A366
 UNO serial number ----- 0012
 UNO proper shipping
 name----- Cartridges for
 weapons, inert pro-
 jectile

Weight ----- 1065 gr
 Length----- 2.55 in. (64.9 mm)
 Tracer----- NA
 Primer----- Percussion
 Fuze----- Powder train delay
 Explosive:
 Type ----- NA
 Weight----- NA
 Incendiary:
 Type ----- NA
 Weight----- NA
 Propellant:
 Type ----- Hi Skor 700X
 Weight----- 3.5 gr

Performance:

Chamber pressure ----- NA
 Velocity----- 100 mps, 4 m from
 muzzle; 328 fps,
 15 ft from muzzle

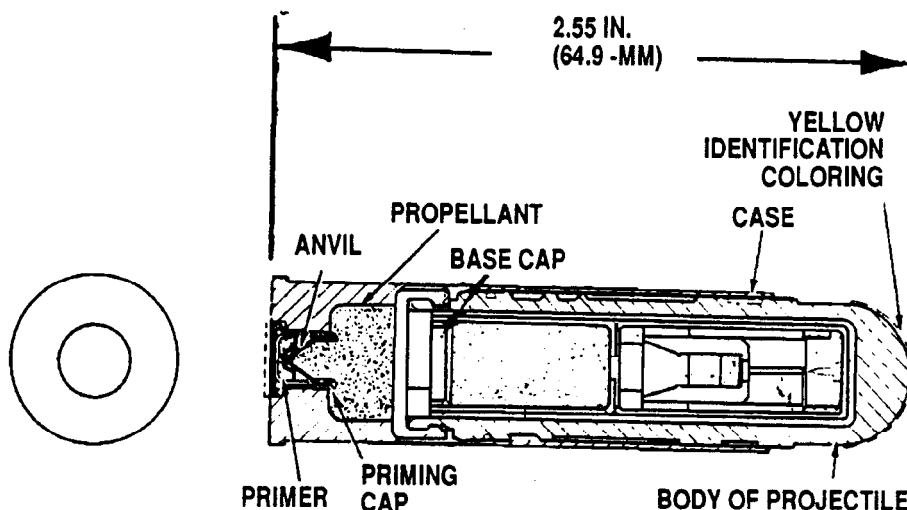
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.4S
 Storage code ----- Class V
 DOT shipping class ----- C
 DOT designation ----- SMALL ARMS
 AMMUNITION
 Drawing number ----- 9098297

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 14.5MM, TRAINER-SPOTTER, M183A1



U
AR 5975

Type Classification:

STD - AMCTC 138.

Use:

Artillery Trainer, M31.

Description:

TRAINER-SPOTTER Cartridge. The cartridge consists of a cartridge case, a chemical-filled (smoke composition) projectile, and a fuze with a small explosive charge to provide a visible and audible verification at point of impact. The cartridge is identified by the markings on the cartridge case and a yellow projectile tip.

Function:

The projectile impacts with the target. The point detonating fuze functions and an explosion charge within the fuze ignites the smoke composition and ejects it out the base of the projectile.

Tabulated Data:

DODAC----- 1305-A367
 UNO serial number ----- 0012
 UNO proper shipping name----- Cartridges for weapons, inert projectile
 Weight ----- 1065 gr

Length----- 2.55 in. (64.9 mm)
 Tracer----- NA
 Primer----- Percussion
 Fuze----- PD
 Explosive:
 Type ----- NA
 Weight----- NA
 Incendiary:
 Type ----- NA
 Weight----- NA
 Propellant:
 Type ----- Hi Skor 700X
 Weight----- 3.5 gr

Performance:

Chamber pressure ----- NA
 Velocity----- 100 mps, 4 m from muzzle; 328 fps, 15 ft from muzzle

Shipping and Storage Data:

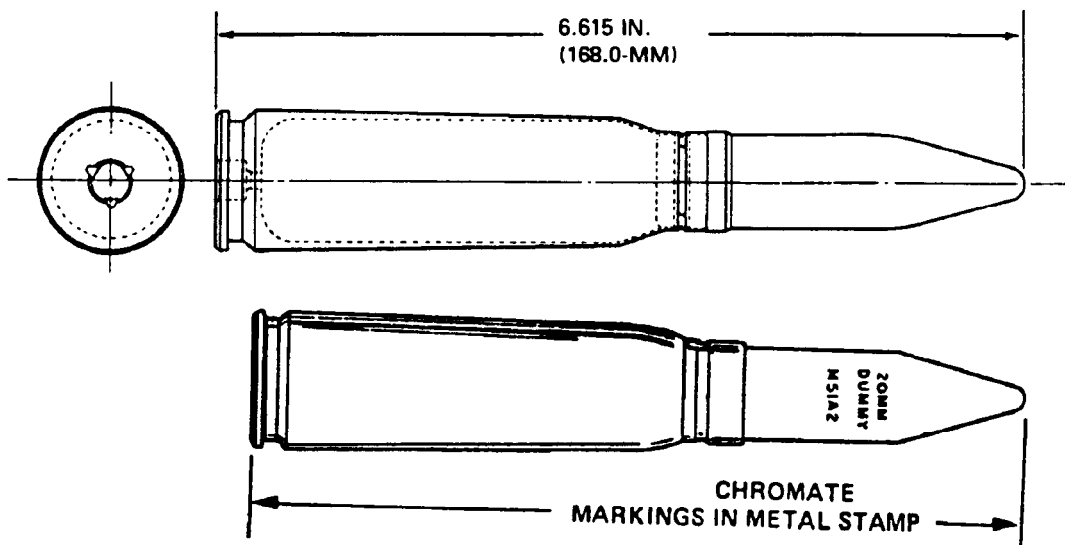
Quantity-distance class/
 SCG----- 1.4S
 Storage code ----- Class V
 DOT shipping class ----- C
 DOT designation ----- SMALL ARMS AMMUNITION
 Drawing number ----- 9098293

References:

SB 700-20
 TM 9-1300-206

CHAPTER 14
20MM CARTRIDGES

CARTRIDGE, DUMMY, 20MM, M51A2



U
AR 5976

Type Classification:

STD - AMCTC 6900.

Use:

Guns, 20mm, M39, M61, M139, M168, M195 and M197. The cartridge is a completely inert assembly used for filling the conveyor system during shipment or storage and for nonfiring system checkout.

Incendiary:

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

Propellant:

Type ----- NA
Weight ----- 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
Drawing number ----- 11075758

References:

SB 700-20
TM 9-1005-286-10
TM 9-1300-206

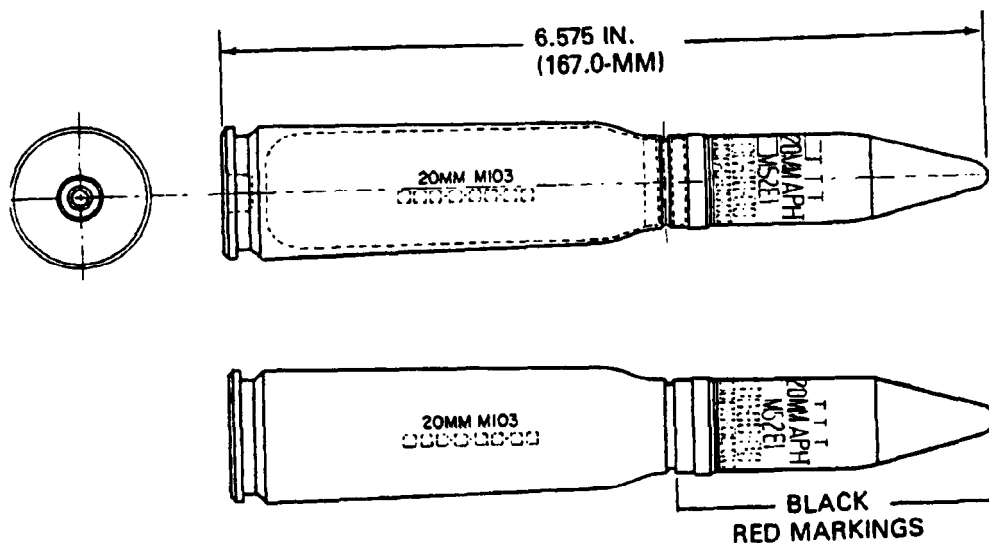
Description:

DUMMY Cartridge.

Tabulated Data:

DODAC----- 1305-A924
Weight ----- 3850 gr
Length ----- 6.615 in. (168 mm)
Tracer----- NA
Primer ----- NA
Fuze ----- NA
Explosive:
Type ----- NA
Weight ----- NA

CARTRIDGE, 20MM, ARMOR PIERCING INCENDIARY-TRACER, M52E1



U
AR 5977

Type Classification:

STD - OTCM 37404.

Use:

Guns, 20mm, M39, M61 and M195. The cartridge is used against moderately armed targets and when incendiary effect is needed.

Description:

ARMOR PIERCING INCENDIARY-TRACER Cartridge. The armor piercing shot is the main part of the projectile. The ballistic cap (ogive) contains an incendiary composition. The cartridge is identified by a projectile painted black with red markings.

Function:

The nose/ogive of the projectile impacts with the target and ruptures, and the incendiary composition ignites upon exposure to the air.

Tabulated Data:

DODAC----- 1305-A870
 Weight ----- 3900 gr
 Length----- 6.575 in. (167 mm)
 Tracer----- R284
 Primer----- Electric, M52A3B1
 Fuze ----- NA

Explosive:

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

Incendiary:

Type ----- I280
 Weight ----- 65 gr

Propellant:

Type ----- WC 870 or WC 872
 Weight ----- MBR (585-805)

Performance:

Chamber pressure ----- 60,500 psi
 Velocity ----- 3380 fps, 78 ft from muzzle

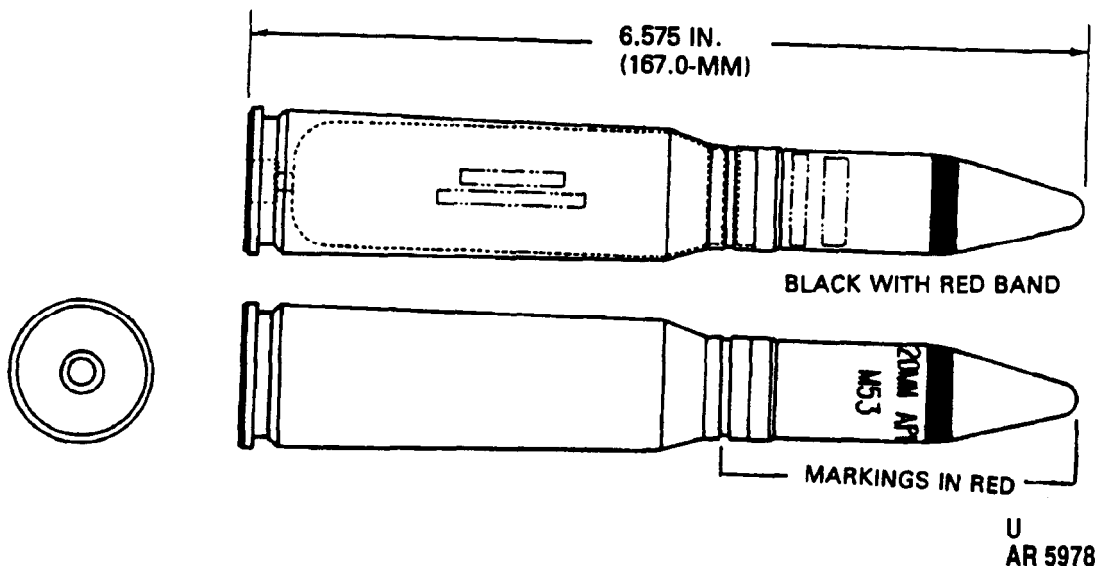
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.4G
 Storage code ----- Class V
 DOT shipping class ----- A
 DOT designation ----- AMMUNITION FOR SMALL ARMS WITH INCENDIARY PROJECTILES
 Drawing number ----- 7259218

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 20MM, ARMOR PIERCING INCENDIARY, M53



Type Classification:

STD - OTCM 36841.

Use:

Guns, 20mm, M39, M61 and M168. The cartridge is used against armored targets, and functions with a combined incendiary and penetrating effect.

Description:

ARMOR PIERCING INCENDIARY Cartridge. The body of the projectile is a solid shot made from bar alloy steel. The nose of the projectile is made from aluminum alloy and is charged with three increments of incendiary composition. The projectile is painted black with red band and red markings.

Tabulated Data:

DODAC-----	1305-A798
Weight-----	3980 gr
Length-----	6.575 in. (167 mm)
Tracer-----	NA
Primer-----	Electric, M52A3B
Fuze-----	NA
Explosive:	
Type-----	NA
Weight-----	NA

Incendiary:

Type ----- No. 23 or No. 136
and No. 68

Weight----- 65 gr

Propellant:

Type ----- WC 870 or WC 872

Weight----- MBR (585-605 gr)

Performance:

Chamber pressure ----- 60,500 psi

Velocity----- 3380 fps, 50 ft from
muzzle

Shipping and Storage Data:

Quantity-distance class/

SCG ----- 1.4G

Storage code ----- Class V

DOT shipping class ----- A

DOT designation ----- AMMUNITION
FOR SMALL
ARMS WITH
INCENDIARY
PROJECTILES

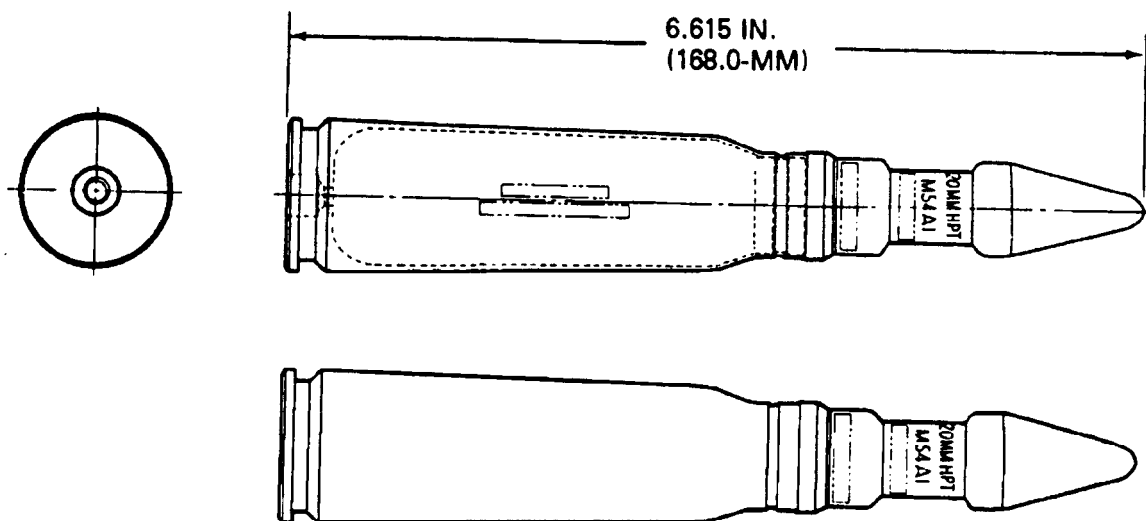
Drawing number ----- 7258802

References:

SB 700-20

TM 9-1300-206

CARTRIDGE, 20MM, BALL, HIGH PRESSURE TEST, M54A1



U
AR 5979

Type Classification:

STD - AMCTC 6899.

Use:

Guns, Automatic, 20mm, M39 and M61 chambered for the M103 case configuration. The cartridge is used for proof testing of 20mm weapons and barrels during manufacture and repair.

Description:

BALL Cartridge. The cartridge is a solid steel projectile, under cut behind the ogive to control projectile weight, for developing high chamber pressure. The cartridge is identified by a stannic-stained (silvered) cartridge case.

Tabulated Data:

DODAC----- 1305-A892
 UNO serial number ----- 0339
 UNO proper shipping name----- Cartridges for weapons, inert projectiles
 Weight ----- 4392 gr
 Length----- 6.615 in. (168 mm)
 Tracer----- NA
 Primer----- Electric, M52A3B1

Fuze ----- NA
 Explosive:
 Type ----- NA
 Weight ----- NA
 Incendiary:
 Type ----- NA
 Weight ----- NA
 Propellant:
 Type ----- WC 870 or WC 872
 Weight ----- MBR

Performance:

Chamber pressure ----- 62,500 to 72,500 psi (copper)
 Velocity ----- NA

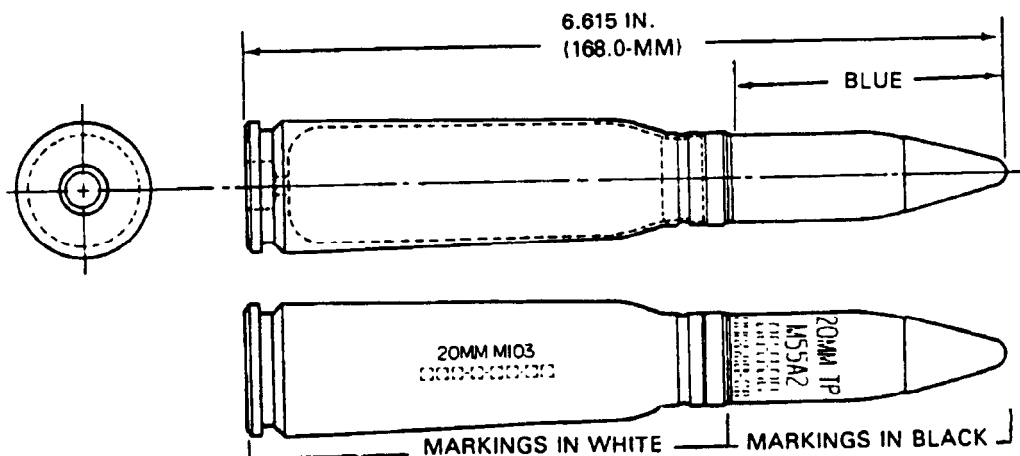
Shipping and Storage Data:

Explosive hazard class----- 1
 Quantity-distance class/
 SCG ----- 1.4C
 Storage code ----- Class V
 DOT shipping class ----- C
 DOT designation ----- SMALL ARMS AMMUNITION
 Drawing number ----- 7258858

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 20MM, TARGET PRACTICE, M55A2



U
AR 5980

Type Classification:

STD - AMCTC 7741.

Use:

Guns, 20mm, M39, M61 and M68. The cartridge is a training round intended as a substitute for a service round to be used in target practice.

Description:

TARGET PRACTICE Cartridge. The one piece projectile cavity is hollow. The nose (ogive) made of aluminum or steel is swaged to the projectile body. The projectile is painted blue with markings in black. It consists of a solid projectile without a fuze.

Function:

The projectile is inert, therefore no specific function takes place upon impact except penetration of the target.

Tabulated Data:

DODAC----- 1305-A897
 UNO serial number ----- 0339
 UNO proper shipping
 name----- Cartridges for
 weapons, inert pro-
 jectiles
 Weight ----- 3935 gr

Length----- 6.615 in. (168 mm)
 Tracer----- NA
 Primer----- Electric, M52A3B1
 Fuze----- NA
 Explosive:
 Type ----- NA
 Weight----- NA
 Incendiary:
 Type ----- NA
 Weight----- NA
 Propellant:
 Type ----- WC 870 or WC 872
 Weight----- MBR (585 or
 605 gr)

Performance:

Chamber pressure ----- 60,500 psi
 Velocity ----- 3380 fps, 78 ft from
 muzzle

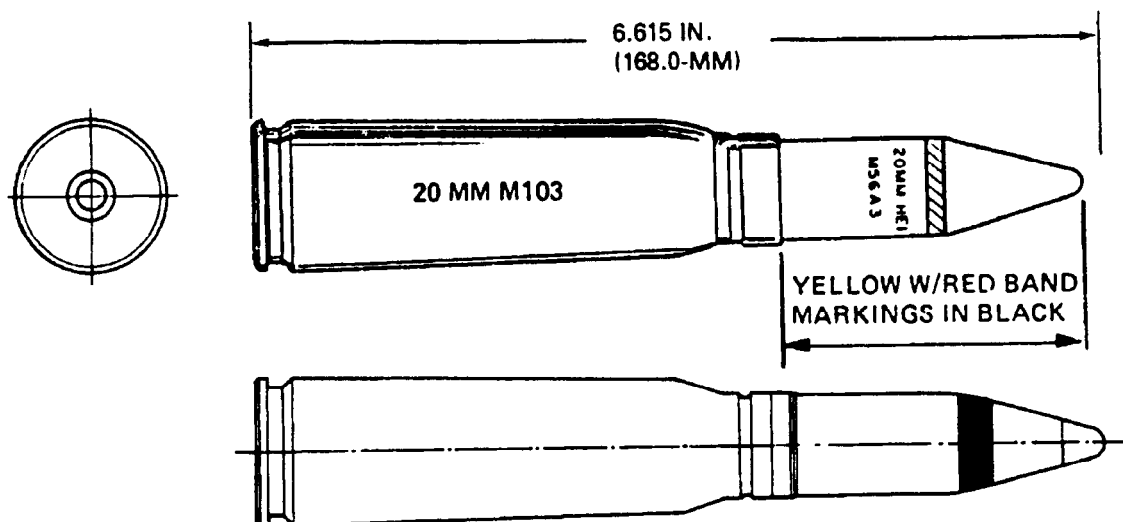
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.4C
 Storage code ----- Class V
 DOT shipping class ----- C
 DOT designation ----- SMALL ARMS
 AMMUNITION
 Drawing number ----- 7258817

References:

SB 700-20
 TM 9-1005-286-10
 TM 9-1300-206

CARTRIDGE, 20MM, HIGH EXPLOSIVE INCENDIARY, M56A3/M56A4



U
AR 5981

Type Classification:

M56A3: STD - LCC-B, MSR 03816015.

M56A4: STD - LCC-A, MSR 03816015.

Use:

Guns, 20mm, M39, M61, M168 and M195. The cartridge is for use against ground targets, including lightly armored vehicles, functioning with both explosive and incendiary effect. The projectile consists of a high explosive incendiary (HEI) charge and is assembled with the M505A3 fuze.

Description:

HIGH EXPLOSIVE INCENDIARY Cartridge. The projectile is thin-walled steel. A base plate is attached to the projectile to prevent ignition of the incendiary mixture by the propellant gases. A point-detonating (PD) fuze is screwed into the nose of the projectile.

Function:

The M505A3 fuze is a point-detonating, single-action fuze intended to function upon impact with the target.

Difference Between Models:

The models differ in the method of loading the projectiles. The M56A3 has the HE mix and the incendiary mix combined in one pellet. The M56A4 has the incendiary pellet inserted into the projectile, then the HE mix pellet is added. This improves fire start capability.

Tabulated Data:

DODAC-----	1305-A890
UNO serial number -----	0321
UNO proper shipping name-----	Cartridges for weapons, with bursting charge
Weight -----	3965 gr
Length -----	6.615 in. (168 mm)
Tracer-----	NA
Primer-----	Electric, M52A3B1
Fuze -----	PD, M505A3
Explosive:	
Type -----	H761
Weight -----	165 gr
Incendiary:	
Type -----	I136
Weight -----	20 gr
Propellant:	
Type -----	WC 870 or WC 872
Weight -----	MBR (585 or 605 gr)

Performance:

Chamber pressure ----- 60,500 psi
Velocity ----- 3380 fps, 78 ft from
muzzle

Shipping and Storage Data:

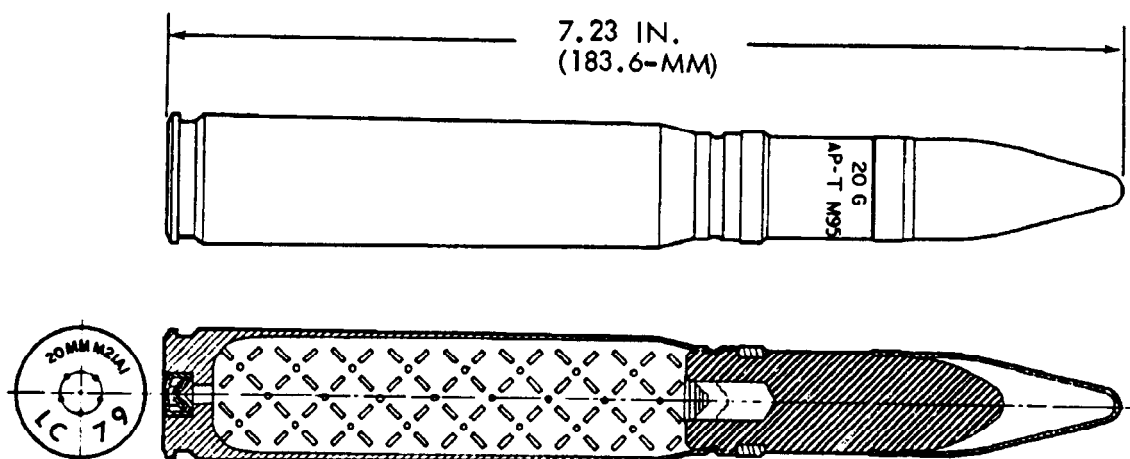
Quantity-distance class/
SCG ----- 1.2E (04)
Storage code ----- Class V
DOT shipping class ----- A

DOT designation ----- AMMUNITION
FOR SMALL
ARMS WITH
EXPLOSIVE
PROJECTILES
Drawing number ----- 7259023 (M56A3);
11075861 (M56A4)

References:

DARCOM 700-3-2
SB 700-20
TM 9-1005-286-10
TM 9-1300-206

CARTRIDGE, 20MM, ARMOR PIERCING-TRACER, M95



U
AR 5982

Type Classification:

CON - OTCM 36841.

Use:

Guns, 20mm, M3 and M24A1.

Description:

ARMOR PIERCING-TRACER Cartridge. The projectile is a solid shot type, made from bar or forged steel. A steel windshield is crimped to the forward part of the projectile body. The base of the projectile contains a red tracer composition.

Function:

When the primer is initiated, the propellant ignites. Ignition of the propellant ignites the tracer composition in the base of the projectile. The tracer burns the first 2.25 seconds of projectile flight, or an approximate range of 1,400 yards.

Tabulated Data:

DODAC----- 1305-A848
Weight ----- 3990 gr
Length----- 7.23 in. (183.6 mm)
Tracer----- R284

Primer	Percussion
Fuze	NA
Explosive:	
Type	NA
Weight	NA
Incendiary:	
Type	NA
Weight	NA
Propellant:	
Type	75-1-177A
Weight	470 gr

Performance:

Chamber pressure	51,000 psi
Velocity	2680 fps, 78 ft from muzzle

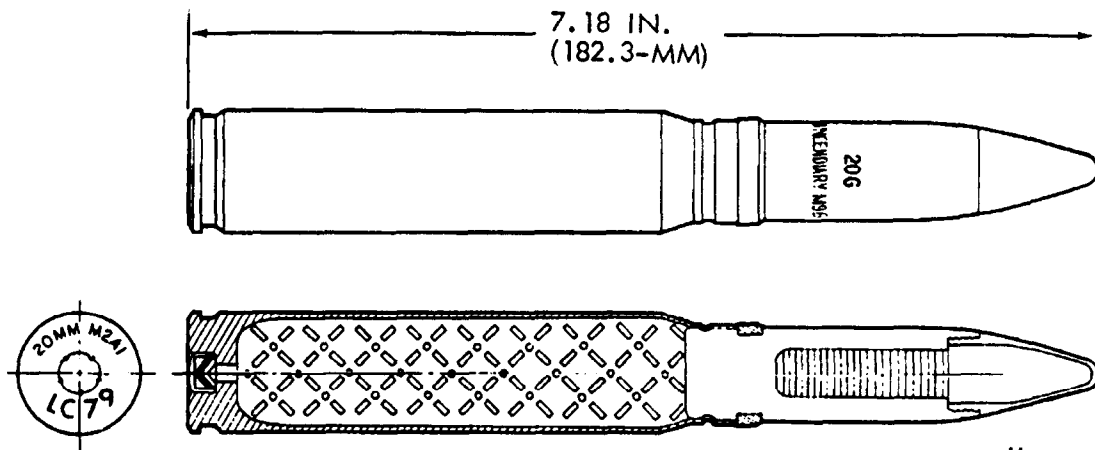
Shipping and Storage Data:

Quantity-distance class/	
SCG	1.4C
Storage code	Class V
DOT shipping class	C
DOT designation	SMALL ARMS AMMUNITION
Drawing number	75-1-177

References:

SB 700-20
TM 9-1300-206

CARTRIDGE, 20MM, INCENDIARY, M96



U
AR 5983

Type Classification:

CON - OTCM 36841.

Use:

Guns, 20mm, M3 and M24A1.

Description:

INCENDIARY Cartridge. The body of the projectile is made from cold drawn steel. The projectile nose and body are filled with incendiary composition.

Function:

Impact with the target by the projectile produces compression of the heat and friction sensitive elements in the incendiary mixture causing ignition of the mixture.

Tabulated Data:

DODAC----- 1305-A776
 UNO serial number ----- 0009

UNO proper shipping

name-----	Ammunition, incendiary
Weight-----	3850 gr
Length-----	7.18 in. (182.3 mm)
Tracer-----	NA
Primer-----	Percussion
Fuze-----	NA
Explosive:	
Type-----	NA
Weight-----	NA
Incendiary:	
Type-----	I 136
Weight-----	3.92 oz
Propellant:	
Type-----	75-1-178A
Weight-----	470 gr

Performance:

Chamber pressure-----	51,000 psi
Velocity-----	2680 fps, 78 ft from muzzle

Shipping and Storage Data:

Quantity-distance class/	
SCG-----	1.2G
Storage code-----	Class V
DOT shipping class-----	A

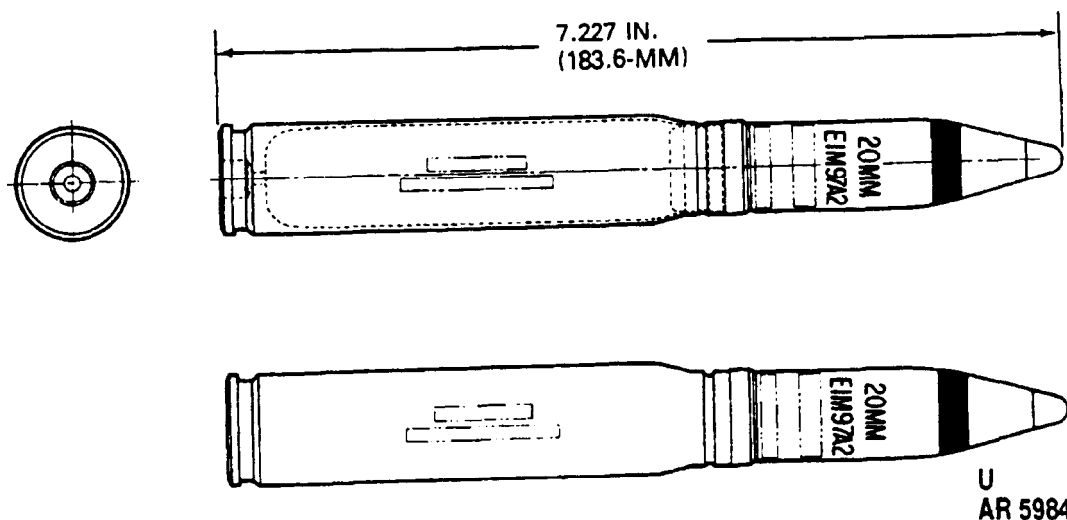
TM 43-0001-27

DOT designation ----- AMMUNITION
FOR SMALL
ARMS WITH
INCENDIARY
PROJECTILES
Drawing number ----- 75-1-178

References:

SB 700-20
TM 9-1300-206

CARTRIDGE, 20MM, HIGH EXPLOSIVE INCENDIARY, M97A2



Type Classification:

STD - AMCTC 4376.

Use:

Gun, 20mm, M24A1.

Description:

HIGH EXPLOSIVE INCENDIARY Cartridge. The projectile has a hollow body filled with an incendiary composition and a high explosive (called RDX). The base of the projectile has a base cover and the forward end has a point-detonating (PD) fuze.

Function:

When the primer is initiated, the propellant ignites. Ignition of the propellant provides hot gases to propel the projectile from the weapon. Upon impact, the point detonating fuze functions, initiating the high explosive filler and dispersing the incendiary composition.

Tabulated Data:

DODAC----- 1305-A845
 Weight ----- 4000 gr
 Length----- 7.227 in.
 (183.6 mm)
 Tracer----- NA
 Primer----- Electric, M52A3B1

Fuze----- PD, M505A3
 Explosive:
 Type----- H761
 Weight----- 120 gr
 Incendiary:
 Type----- NA
 Weight----- NA
 Propellant:
 Type----- WC 875 or
 IMR 7013
 Weight----- MBR

Performance:

Chamber pressure ----- 51,000 psi
 Velocity----- 2680 fps, 78 ft from
 muzzle

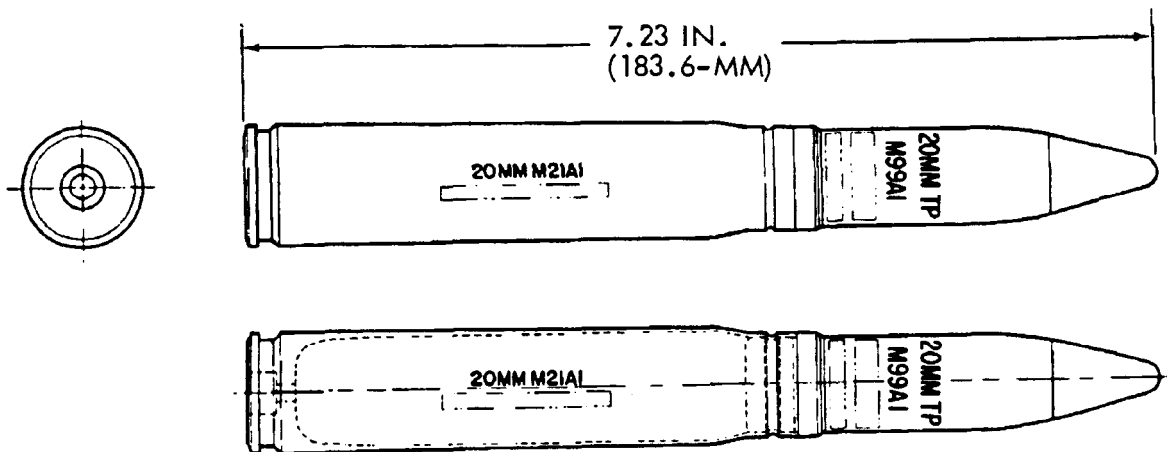
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.2E
 Storage code ----- Class V
 DOT shipping class----- A
 DOT designation ----- AMMUNITION
 FOR SMALL
 ARMS WITH
 EXPLOSIVE
 PROJECTILE
 Drawing number ----- 7259063

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 20MM, TARGET PRACTICE, M99A1



U
AR 5985

Type Classification:

STD - OTCM 37403.

Use:

Gun, 20mm, M24A1. The cartridge is used for training, gun testing, and gun system function tests.

Description:

TARGET PRACTICE Cartridge. The cartridge contains a hollow, inert projectile which has a cavity to control the weight. The aluminum nose is swaged to the body.

Function:

The projectile is inert, therefore no specific function takes place except target penetration.

Tabulated Data:

DODAC..... 1305-A847
 Weight..... 4000 gr
 Length..... 7.23 in. (183.6 mm)
 Tracer..... NA
 Primer..... Electric, M52A3B1
 Fuze..... NA

Explosive:

Type NA
 Weight..... NA

Incendiary:

Type NA
 Weight..... NA

Propellant:

Type IMR 7013 or
 WC 875
 Weight..... 500 gr

Performance:

Chamber pressure 51,000 psi
 Velocity..... 2680 fps, 78 ft from
 muzzle

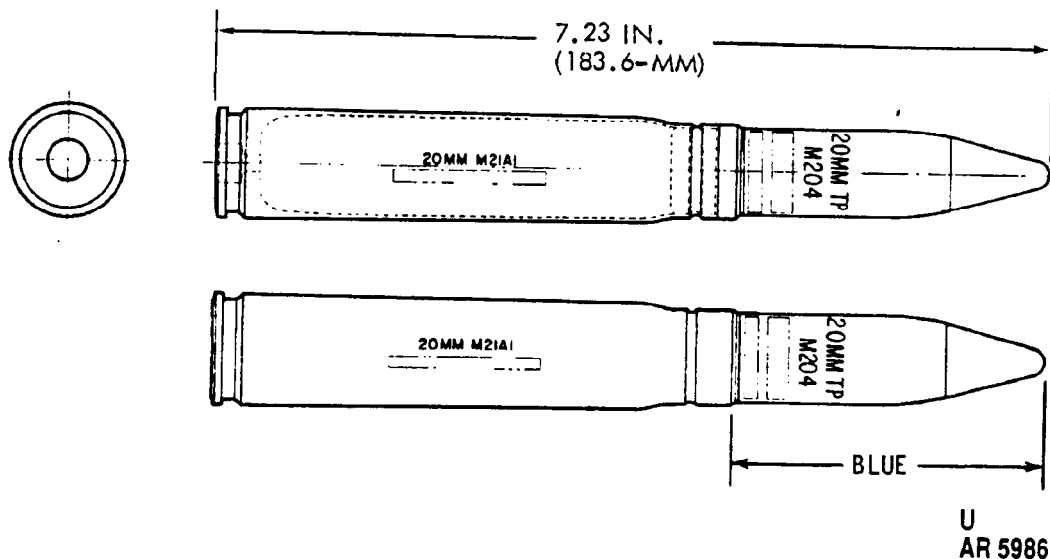
Shipping and Storage Data:

Quantity-distance class/
 SCG 1.4C
 Storage code Class V
 DOT shipping class C
 DOT designation SMALL ARMS
 AMMUNITION
 Drawing number 7258849

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 20MM, TARGET PRACTICE, M204



Type Classification:

STD - AMCTC 4762.

Use:

Guns, 20mm, M3 and M24A1. The cartridge with inert projectile is used in training, gun testing, and gun system function testing.

Description:

TARGET PRACTICE Cartridge. The cartridge has a blue painted projectile. The body has a cavity to control the weight and the aluminum nose is swaged to the body.

Function:

No specific function takes place upon impact except target penetration.

Tabulated Data:

DODAC----- 1305-A777
 UNO serial number ----- 0339

UNO proper shipping name-----

Cartridges for weapons, inert projectiles

Weight ----- 4000 gr
 Length (max) ----- 7.23 in. (183.6 mm)
 Tracer----- NA
 Primer ----- Percussion, M36A2
 Fuze ----- NA
 Explosive:
 Type ----- NA
 Weight ----- NA
 Incendiary:
 Type ----- NA
 Weight ----- NA
 Propellant:
 Type ----- WC 875 or
 IMR 7013
 Weight ----- MBR

Performance:

Chamber pressure (max) --- 51,000 (copper)
 Velocity ----- 2680 fps, 78 ft from muzzle

Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.4C
 Storage code ----- Class V

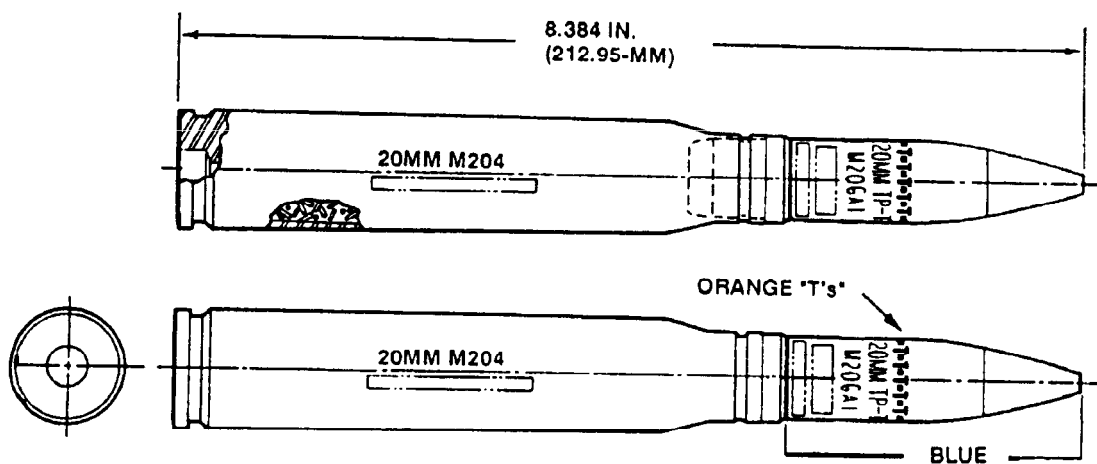
TM 43-0001-27

DOT shipping class ----- C
DOT designation ----- SMALL ARMS
 AMMUNITION
Drawing number ----- 7259106

References:

SB 700-20
TM 9-1300-206

CARTRIDGE, 20MM, TARGET PRACTICE-TRACER, M206A1



U
AR 5987

Type Classification:

STD - AMCTC 4762.

Use:

Gun, 20mm, Automatic, M139. The cartridge is used in training and operation of gun systems with tracer characteristics for visual sighting to target.

Description:

TARGET PRACTICE-TRACER Cartridge. The cartridge has a blue painted projectile body with a row of orange "T's" at the front of the projectile body.

Tabulated Data:

DODAC----- 1305-A790
 UNO serial number ----- 0339
 UNO proper shipping
 name----- Cartridges for
 weapons, inert pro-
 jectiles
 Weight ----- 4886 gr
 Length----- 8.384 in.
 (212.95 mm)

Tracer----- R284
 Primer ----- Percussion, M115
 Fuze ----- NA
 Explosive:
 Type ----- NA
 Weight ----- NA
 Incendiary:
 Type ----- NA
 Weight ----- NA
 Propellant:
 Type ----- CR 8325
 Weight ----- MBR (585-605 gr)

Performance:

Chamber pressure (max) --- 54,000 (copper)
 Velocity----- 3430 fps, 78 ft from
 muzzle

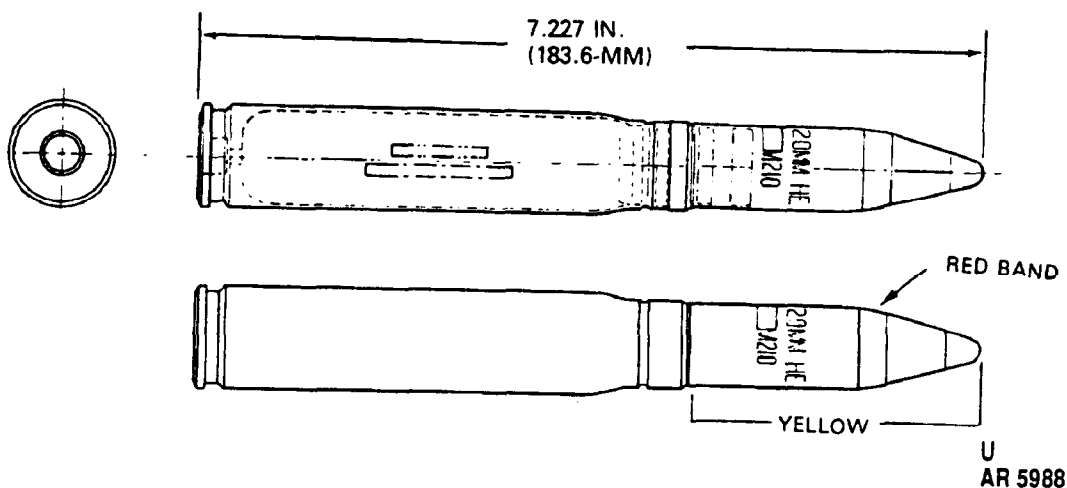
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.4C
 Storage code ----- Class V
 DOT shipping class ----- C
 DOT designation ----- SMALL ARMS
 AMMUNITION
 Drawing number ----- 10542655

References:

SB 700-20
 TM 9-1300-206

CARTRIDGE, 20MM, HIGH EXPLOSIVE INCENDIARY, M210



Type Classification:

STD - AMCTC 5433.

Use:

Guns, 20mm, M3 and M24A1. The projectile is effective against aircraft and other targets that are not heavily armored.

Description:

HIGH EXPLOSIVE INCENDIARY Cartridge. The cartridge has a yellow painted projectile body with a red band, approximately 1/4 inch wide, at forward end. The projectile has a steel body with a cavity filled with RDX and aluminum and a point-detonating (PD) bore-safe fuze.

Function:

The projectile fuze arms in flight. Upon impact, the fuze detonates the projectile causing fragmentation of the body with an incendiary effect.

Tabulated Data:

DODAC----- 1305-A863
 UNO serial number ----- 0009

UNO proper shipping

name-----	Ammunition, incendiary
Weight (approx)-----	4000 gr
Length (max)-----	7.227 in. (183.6 mm)
Tracer-----	NA
Primer-----	Percussion, M36A2
Fuze-----	PD, M505A3
Explosive:	
Type-----	H761
Weight-----	120 gr
Incendiary:	
Type-----	NA
Weight-----	NA
Propellant:	
Type-----	WC 875 or IMR 7013
Weight-----	MBR

Performance:

Chamber pressure (max) ---	51,000 psi (copper)
Velocity-----	2680 ± 50 fps, 78 ft from muzzle

Shipping and Storage Data:

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

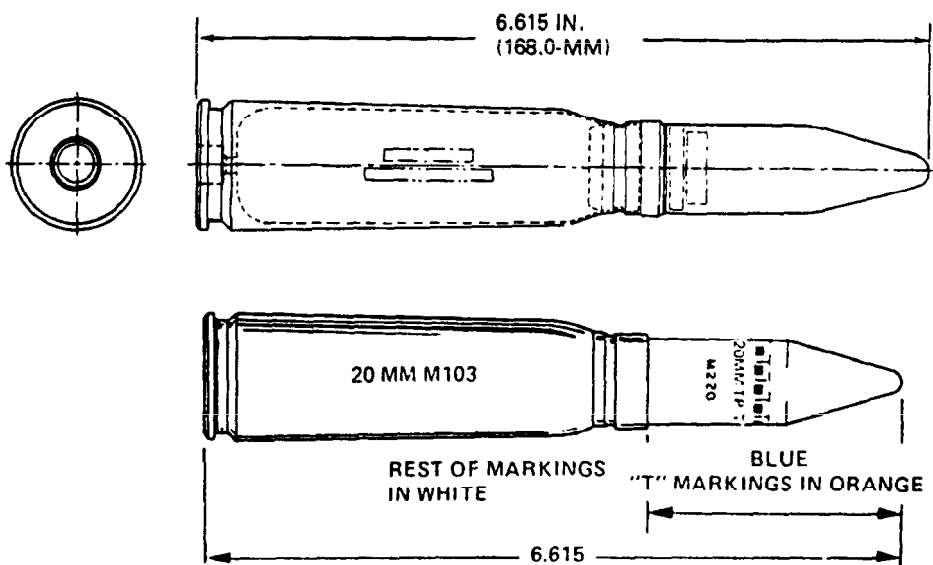
TM 43-0001-27

DOT designation ----- AMMUNITION
FOR SMALL
ARMS WITH
EXPLOSIVE
PROJECTILES
Drawing number ----- 7259105

References:

SB 700-20
TM 9-1300-206

CARTRIDGE, 20MM, TARGET PRACTICE-TRACER, M220



U
AR 5989

Type Classification:

STD - AMCTC 7404.

Use:

Guns, 20mm, M39, M61 and M168. The cartridge is for practice and training.

Description:

TARGET PRACTICE-TRACER Cartridge. The cartridge is ballistically and physically identical to the M55A2 cartridge except that a tracer element has been added to the base of the projectile. The projectile is painted blue with orange colored markings.

Function:

The projectile is similar to the M56A3 projectile, but has no high explosive incendiary charge and is assembled with a dummy fuze. The projectile does contain a tracer composition which burns visibly for a minimum of 1.9 seconds.

Tabulated Data:

DODAC----- 1305-A651
 UNO serial number ----- 0339
 UNO proper shipping name----- Cartridges for weapons, inert projectiles
 Weight ----- 3935 gr

Length----- 6.615 in. (168 mm)
 Tracer----- R505 or R403
 Primer----- Electric
 Fuze----- NA
 Explosive:
 Type ----- NA
 Weight----- NA
 Incendiary:
 Type ----- NA
 Weight----- NA
 Propellant:
 Type ----- WC 870 or WC 872
 Weight----- MBR (585-605 gr)

Performance:

Chamber pressure ----- 61,500 psi
 Velocity ----- 3380 fps, 78 ft from muzzle

Shipping and Storage Data:

Quantity-distance class/
 SCG ----- 1.4C
 Storage code ----- Class V
 DOT shipping class ----- A
 DOT designation ----- SMALL ARMS AMMUNITION
 Drawing number ----- 7259146

References:

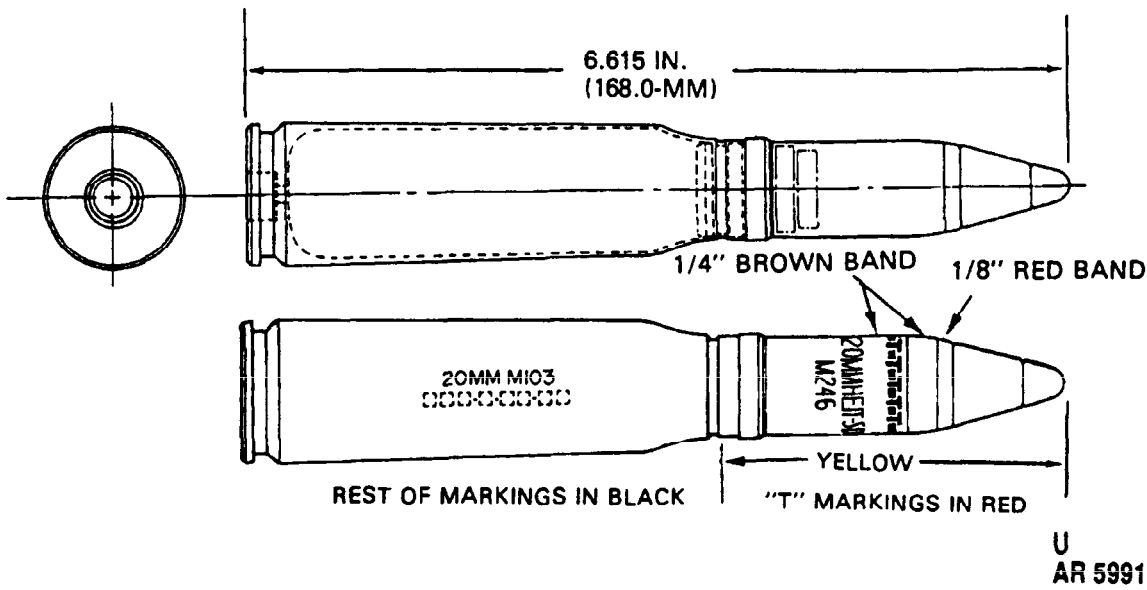
SB 700-20
 TM 9-1005-286-10
 TM 9-1300-206

DOT designation ----- SMALL ARMS
 .AMMUNITION
 WITH
 EXPLOSIVE
 PROJECTILES
Drawing number ----- 7259268 (M242);
 9341740 (M242A1)

References:

SB 700-20
TM 9-1300-206

CARTRIDGE, 20MM, HIGH EXPOSIVE INCENDIARY-TRACER, SELF-DESTROYING, M246/M246A1



Type Classification:

M246: STD - LCC-B MSR 03816015.
 M246A1: STD - LCC-A MSR 03816015.

Use:

Gun, 20mm, M168. The cartridge is for use against aerial targets.

Description:

HIGH EXPLOSIVE INCENDIARY-TRACER, SELF-DESTROYING Cartridge.

Function:

The cartridge is assembled with an M505A3 point-detonating (PD) fuze. The projectile, in addition to the M505A3 fuze, consists of a high explosive incendiary (HEI) charge, self-destroying (SD) relay charge, and a tracer charge. These charges form the SD chain. The tracer burns for about 3 to 7 seconds, whereupon the relay charge is ignited which detonates the HEI charge low order. If impact with target occurs prior to self-destruction, the M505A3 fuze causes the HEI charge to detonate high order.

Difference Between Models:

The basic difference between the models is in the loading of the projectiles. In the M246

projectile, the incendiary mix and the HE mix are combined in one pellet. In the M246A1 projectile, the incendiary is loaded as a separate pellet. The HE mix is also loaded as a separate pellet along with the SD relay charge pellet and the tracer charge pellet. This improves fire start capability.

Tabulated Data:

DODAC:	
M246-----	1305-A791
M246A1-----	1305-A792
UNO serial number -----	0321
UNO proper shipping name-----	Cartridges for weapons, with bursting charge
Weight-----	4070 gr
Length-----	6.615 in. (168 mm)
Tracer-----	R505
Primer-----	Electric, M52A3B1
Fuze-----	PD, M505A3
Explosive:	
Type-----	H761
Weight-----	115 gr
Incendiary:	
Type-----	NA
Weight-----	NA
Propellant:	
Type-----	WC 870
Weight-----	MBR (585-605 gr)

Performance:

Chamber pressure ----- 60,500 psi
Velocity ----- 3380 fps, 50 ft from
muzzle

Shipping and Storage Data:

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

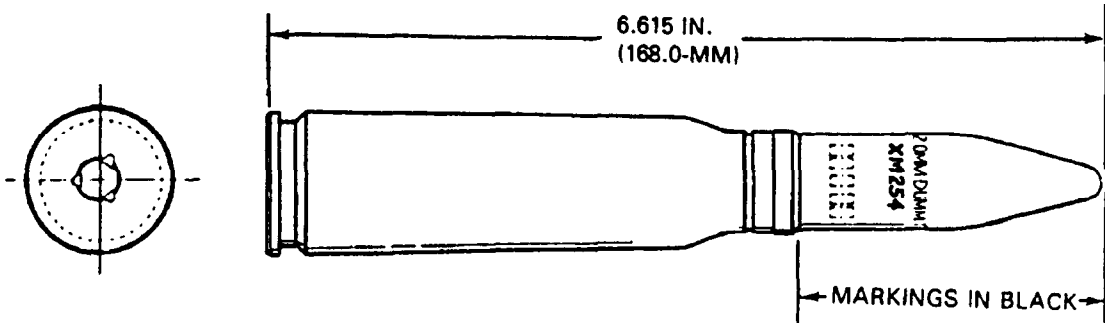
DOT designation ----- AMMUNITION
FOR SMALL
EXPLOSIVE
PROJECTILES

Drawing number:
M246 ----- 10542384
M246A1 ----- 9333764

References:

SB 700-20
TM 9-1005-286-10
TM 9-1300-206

CARTRIDGE, DUMMY, 20MM, XM254



U
AR 5992

Type Classification:

Not applicable.

Use:

Guns, 20mm, M39, M61, M139, M168, M195 and XM197. The cartridge is for training of crews. The plastic material, instead of steel, reduces wear on gun components and fire mechanisms.

Description:

DUMMY Cartridge. The cartridge is of plastic construction.

Tabulated Data:

DODAC----- 1305-A895
 Weight ----- 3850 gr
 Length ----- 6.615 in. (168 mm)
 Tracer ----- NA
 Primer ----- NA
 Fuze ----- NA
 Explosive:
 Type ----- NA

Weight ----- NA
 Incendiary:
 Type ----- NA
 Weight ----- NA
 Propellant:
 Type ----- NA
 Weight ----- NA

Performance:

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

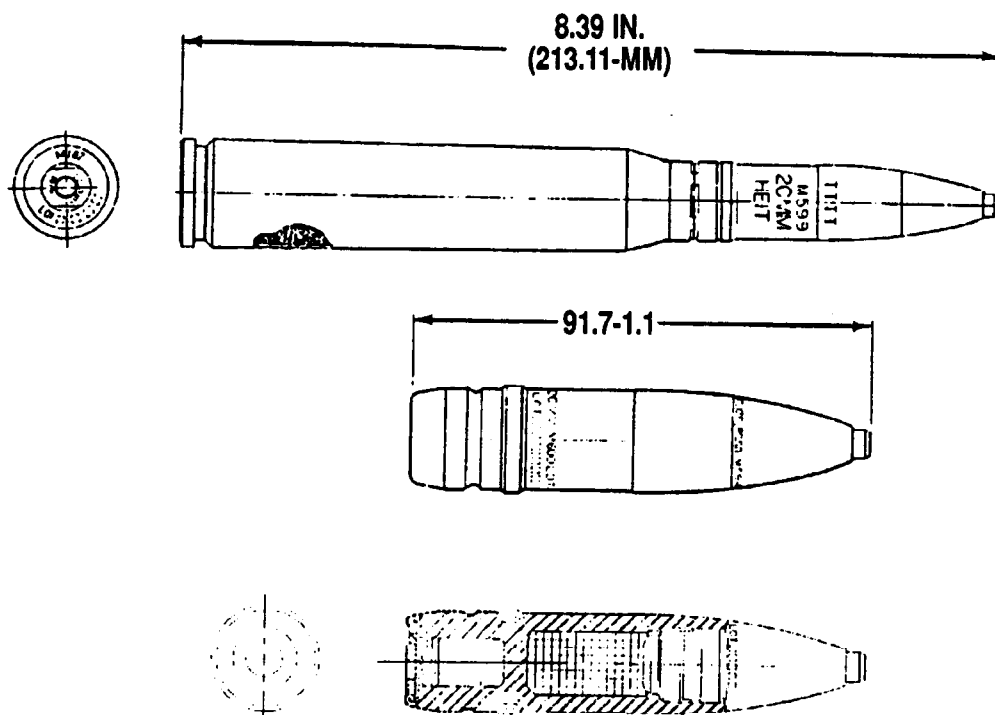
Shipping and Storage Data:

Quantity-distance class/
 SCG ----- NA
 Storage code ----- NA
 DOT shipping class ----- NA
 DOT designation ----- NA
 Drawing number ----- 7259254

References:

SB 700-20
 TM 9-1005-246-24
 TM 9-1005-286-10
 TM 9-1300-206

**CARTRIDGE, 20MM, HIGH EXPLOSIVE INCENDIARY-TRACER,
M599 FUZE POINT-DETONATING SELF-DESTROYING M594**



**U
AR 5993**

Type Classification:

STD - AMCTC 6391.

Use:

Gun, M139.

Description:

HIGH EXPLOSIVE INCENDIARY-TRACER Cartridge. The cartridge has a point-detonating (PD) self-destroying (SD) fuze M594. The projectile is a hollow body filled with 120 grams of high explosive incendiary (HEI) mixture with a tracer tablet at the base and the PD SD fuze screwed onto the nose.

Function:

When fired, the weapon firing pin initiates the primer which ignites the propelling charge. Gases produced by the burning propellant propel the projectile. The projectile shall function with high order detonation upon impact or, if

the projectile does not impact on intended target within 4 to 7 seconds, a SD mechanism will cause high order detonation of the projectile.

Tabulated Data:

DODAC-----	1305-A787
UNO serial number -----	0321
UNO proper shipping name-----	Cartridges for weapons, with bursting charge
Type-----	HEI-T
Weight (approx)-----	317 g
Length-----	8.39 in. (213.11 mm)
Projectile (steel):	
Tracer-----	Tablet, 1.17 g
Explosive (HEI mix) -----	120 g
Fuze-----	PD SD, M594, aluminum
Color-----	Yellow with red "T" band, black markings
Cartridge case-----	Steel, M187
Propellant-----	VTL-1375-502-52 g
Primer percussion-----	M103

Performance:

Chamber pressure ----- 49,500 psi
Velocity ----- 3460 fps, 78 ft from
muzzle

Shipping and Storage Data:

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

M528 shipping and storage container:

Material----- Steel
Dimensions ----- 14-9/16 x 9-39/64 x
4-5/16 in.
Cube ----- 0.35 cu ft
Drawing number C/R----- 10535815

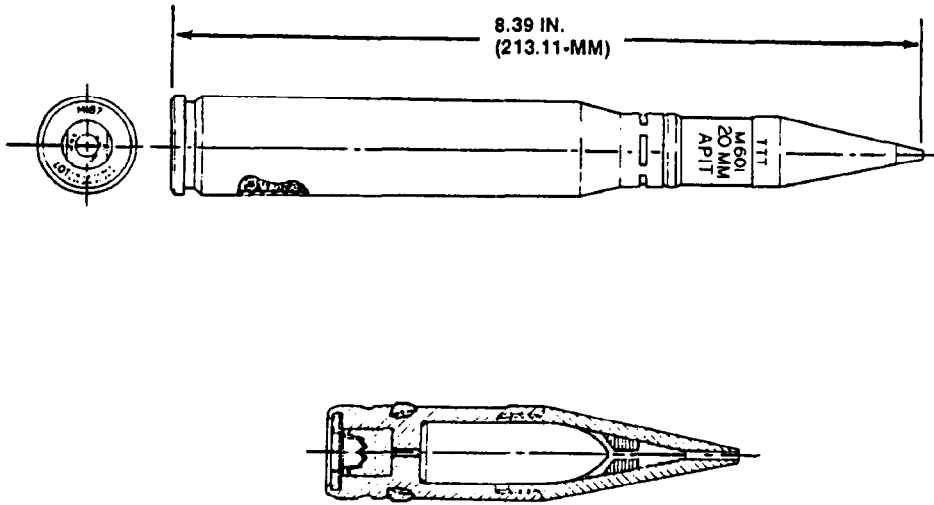
Packing:

25 cartridges, 20mm linked with M601 armor piercing incendiary-tracer, cartridges in ratio with 3 M599 to 2 M601 in shipping and storage containers M528. Two shipping and storage containers (50 cartridges) in a wire-bound box.

References:

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

CARTRIDGE, 20MM, ARMOR PIERCING INCENDIARY-TRACER, M601



U
AR 5994

Type Classification:

STD - AMCTC 4762.

Use:

Gun, M139.

Description:

ARMOR PIERCING INCENDIARY-TRACER
Cartridge. The tungsten-carbide core is the main part of the projectile, and is the penetrator. The ballistic cap (ogive) contains an incendiary pellet. A tracer tablet is at the base of the projectile. The projectile body is painted black with white markings and with red painted "T"s" encircle the ogive (signifying tracer).

Function:

When fired, the weapon firing pin initiates the primer which ignites the propelling charge. Gases produced by the burning propellant propel the projectile. Upon impact with the target, the nose (ogive) ruptures and the incendiary composition ignites on exposure to the air.

Tabulated Data:

Complete round:	
UNO serial number-----	0009
UNO proper shipping name-----	Ammunition, incendiary
DODAC-----	1305-A786
Type-----	API-T
Weight-----	310 g
Length-----	8.39 in. (213.112 mm)
Canon used with-----	M139
Projectile (111 g):	
Penetrator (core)-----	Tungsten-carbide
Body-----	Aluminum alloy, 22.5 g
Windshield-----	Aluminum, 9.4 g
Incendiary-----	XM71 pellet, 0.45 g
Tracer-----	Tablet, 1.17 g
Fuze-----	NA
Color-----	Black with white marking with "T" red bound
Cartridge case-----	Steel, M187
Propellant (VTL 1375-502):	
Weight (approx)-----	53 g
Primer (percussion)-----	M103

Performance:

Chamber pressure ----- 49,500 psi
Velocity ----- 3610 fps, 78 ft from
muzzle

Shipping and Storage Data:

Quantity-distance class/
SCG ----- 1.4G
Storage code ----- Class IV
DOT shipping class ----- A
DOT designation ----- SMALL ARMS
AMMUNITION
WITH
INCENDIARY
PROJECTILE

M528 shipping and storage container:

Material ----- Steel
Dimensions ----- 14-9/16 x 9-39/64 x
4-5/16 in.
Cube ----- 0.35 cu ft
Drawing number C/R ----- 10535805

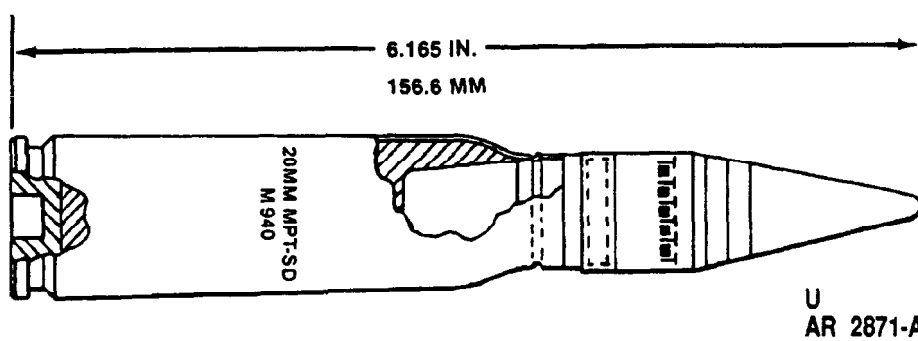
Packing:

25 cartridges, 20mm linked with M599 high explosive incendiary-tracer cartridges in a ratio of 3 M599 to 2 M601 in shipping and storage container M528. Two containers in a wrap-around crate.

References:

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

CARTRIDGE, 20MM, MULTIPURPOSE TRACE SELF-DESTROYING, M940



Type Classification:

TC STD A - Approved March 13, 1989.

Use:

The existing Vulcan Air Defense System (VADS) and Product Improved Vulcan Air Defense System (PIVADS) M246 ammunition is incapable of providing defense against the modern enemy threat at combat ranges greater than 1,600 meters because of inherent performance limitations including poor flight characteristics, self-destroying ranges, and terminal effectiveness. Therefore, the Army decided to pursue acquiring a new round of ammunition for VADS/PIVADS which would exhibit better exterior ballistics and greater lethality than the existing M246 High Explosive Incendiary-Tracer Self-Destroying (HEI-T-SD) ammunition.

Description:

MULTIPURPOSE TRACE SELF-DESTROYING Cartridge. The cartridge is an improved fuzeless pyrotechnic initiated 20mm HE cartridge. The projectile consists of a heavy-walled steel body charged with explosive mix and an incendiary mix, and an aluminum nose charged with another incendiary mix. The projectile also has safe and arming (S&A), tracer, and self-destroying which is initiated by heat from combustion of the tracer composition. The lack of fuze permits an enhanced aerodynamic ogive shape which results in a reduction in drag factor and reduced time of flight, thereby extending the effectiveness of the VADS from 1,200 meters to 2,000 meters against aircraft targets. The M940 will replace

the 20mm M246 HEI-T-SD as the primary air defense cartridge for the VADS and any of its improved versions.

Function:

The projectile consists of a steel body charged with a HE mix, Composition A-4 (MIL-C-440), and an incendiary mix, Type I (equivalent I-68). The projectile has an aluminum nose charged with Type II incendiary (equivalent I-136). The hardened forebody of the projectile provides for defeat of lightweight armor (3/8 RHA at well over 500 m). The incendiaries provide a built-in delay when initiated on the thin skin of an aircraft, and the projectile explodes approximately 1 foot behind the skin. The M940 cartridge, therefore, is primarily intended for air defense but has a secondary roll against light armored vehicles. The M940 contains a chemical S&A intended to reduce the probability of functioning on a 0.04 aluminum plate at 1 meter from the muzzle. When initiated, all projectile fragments go forward.

Tabulated Data:

Complete round:	
UNO serial number -----	0321
UNO proper shipping name -----	Cartridges for weapons, with bursting charge
DODAC -----	1305-A710
Type -----	MPT-SD
Weight -----	264 g
Length (max) -----	6.165 in. (156.6 mm)
Cannon used with -----	M168

Projectile:

Tracer-modified ----- R505
Primer-electric ----- M52A3B1
Fuze----- NA

Explosive:

Type ----- Comp A-4
Weight----- 4g

Incendiary:

Type ----- I
Weight----- 1.2 g

Incendiary:

Type ----- II
Weight----- 3 g

Incendiary:

Type ----- Potassium
Perchlorate
Weight----- 0.2 g

Propellant:

Type ----- WC 866
Weight----- 37 g

Performance:

Chamber pressure (max) --- 60,500 psi
Velocity----- 3350 ± 45 fps, 78 ft
from muzzle

Shipping and Storage Data:

DOD hazard class/division/
SCG ----- 08 (1.2E)
DOT shipping class ----- Class A explosive
DOT designation ----- CARTRIDGE FOR
WEAPONS
Drawing number ----- 12551767
NSN ----- 1305-01-283-2134

References:

TM 9-1300-206